PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

230 Sixth Avenue
Austral NSW 2179

Austral 1 Pty Ltd – February 2017

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230 Sixth Avenue
Austral, NSW 2179

PREPARED FOR

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EXECUTIVE SUMMARY

Geo-Logix Pty Ltd (Geo-Logix) was commissioned by Vantage Property Pty Ltd (Vantage) of Austral 1 Pty Ltd to conduct a Phase 2 Environmental Site Assessment (ESA) of the property located at 230 Sixth Avenue, Austral NSW. It is understood the property is currently subject to a development application for residential subdivision.

The site is located within a rural residential area on the southern side of Sixth Avenue, Austral NSW. The site, accessed via Sixth Avenue, consists of one rectangular lot encompassing an area of 12,140 m^2. At the time of Geo-Logix investigation the site was occupied by a residential dwelling with landscaped gardens, a tennis court and swimming pool as well as numerous outbuildings and sheds. A fenced paddock is located in the southern portion of the site.

Geo-Logix completed a Phase I ESA for the subject site in September 2016. The Phase I ESA identified a number of historical activities that occurred onsite which had the potential to result in contamination of the land, including:

- Hazardous building materials;
- Fill of unknown origin;
- Vehicle / equipment maintenance; and
- Application of pesticides and herbicides.

The objective of the Phase 2 ESA was to conduct an investigation to assess the presence or otherwise of contamination to the land associated with the above identified historical activities and determine the suitability of the site for the proposed residential subdivision.

Given the site history it was concluded there was a potential for contamination of the site. Contaminants of potential concern (COPC) include pesticides, heavy metals, petroleum, polyaromatic hydrocarbons (PAHs) phenols, volatile organic compounds (VOCs) and asbestos.

Possible market gardening was identified in the northeast corner and a vegetable garden in the central portion of the site. While no other evidence of market garden activities was observed, it could not be ruled out for other areas of the site, particularly given the regional history of market gardening. A systematic based sampling plan was undertaken consisting of the following scope of works:

- Sampling at 26 locations on a 24 m spaced sampling grid. The sample frequency is sufficient to detect a circular contamination hotspot with a diameter of 28.32m or greater at a 95 % statistical degree of certainty. The sampling grid meets minimum sampling standards for the site area (12,140 m^2) as per NSW EPA (1995); and
- In areas of suspected market gardening, native soil samples were analysed for OCPs and heavy metals.

Sampling and analysis of current and former sheds, areas where fragments of suspected ACM were observed, and the corrugated ACM fence included:

- Collection of one soil sample from the footprint of each of the current and former sheds (eight in total) for laboratory analysis of asbestos and lead; and
- Collection of six samples from the base of the corrugated ACM fence. Sample collection targeted areas of damage and were analysed for asbestos.

Portions of the site appear to have been filled and leveled relative to the surrounding topography. To assess fill material at the site the following scope of work was undertaken:

- Collection of a fill samples at locations where grid based samples fell within the filled areas;
- Collection of a soil sample from fill material within stockpile identified at a grid based location; and
- Laboratory analysis of soil samples for fill related COPC including: total recoverable hydrocarbons (TRH); benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN); PAHs; heavy metals (arsenic (As), cadmium (Cd), chromium (Cr), copper, (Cu), lead (Pb), nickel (Ni), zinc (Zn), mercury (Hg)); OCPs; and asbestos.

A truck shed is located in the central western portion of the property. The scope of works completed to assess areas of areas of vehicle / equipment maintenance included:

- Collection of two soil samples from the edge of the slab;
- Concrete coring and collection of one soil sample from beneath the slab; and
- Laboratory analysis of soil samples for vehicle maintenance related COPC including TRH, BTEX, VOCs, PAHs and heavy metals.

The assessment decision adopted for the investigation states:

- Contamination has not been identified in soil at concentrations above residential land use standards and the site is considered suitable for the proposed residential subdivision.

To accept the assessment decision the following decision rules need to be met:

- Shallow soils must be free of circular COPC hotspots of the specified diameter for the site;
- The 95% Upper Confidence Limit of COPC concentration data for systematic soil sampling does not exceed the soil assessment criteria;
- No single systematic soil sample exceeds 250% of the soil COPC assessment criteria;
- The standard deviation of COPC analytical results for systematic soil sampling is less than 50% of the soil assessment criteria;
- No visible identification of ACM at systematic soil sample locations; and
- No single targeted soil sample collected exceeds the COPC assessment criteria.

Results of the assessment identified the soil contamination issues at the site:

- Petroleum hydrocarbon impact detected at concentrations above residential assessment criteria in shallow soils in the vicinity of the shed located in the western portion of the site;
- Asbestos was detected in the form of weathered fragments and as bonded ACM in shallow soil in western portions of the site; and
- Asbestos detected in the form of bonded ACM in shallow fill in the south eastern, eastern, central northern and western portions of the site;

Remediation and / or management of the above is required for the site to be considered suitable for the proposed residential landuse. Further investigation is recommended to define contamination extents and remedial requirements.

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1. INTRODUCTION

Geo-Logix Pty Ltd (Geo-Logix) was commissioned by Vantage Property Pty Ltd (Vantage) on behalf of Austral 1 Pty Ltd to conduct a Phase 2 Environmental Site Assessment (ESA) of the property located at 230 Sixth Avenue, Austral NSW (Figure 1). It is understood the property is currently subject to a development application for residential subdivision.

Geo-Logix completed a Phase I ESA for the subject site in September 2016. The Phase I ESA identified a number of historical activities that occurred on site which had the potential to result in contamination of the land, including:

- Hazardous building materials;
- Fill of unknown origin;
- Vehicle / equipment maintenance; and
- Application of pesticides and herbicides.

The objective of the Phase 2 ESA was to conduct an investigation to assess the presence or otherwise of contamination to the land associated with the above identified historical activities and determine the suitability of the site for the proposed residential subdivision.

2. SITE INFORMATION

2.1 Site Identification

The investigation area comprises the following properties:

Street Address	Lot and Deposited Plan (DP)	Approximate Area (m^2)
230 Sixth Avenue, Austral NSW 2179	Lot 1067 DP2475	12,140

2.2 Site Zoning and Land Use

Under Liverpool Council Local Environment Plan (LEP) (2008), the site is zoned Low density residential (R2). Planning and Development Certificates are provided in Attachment A.

2.3 Site Description

The following observations were made during site inspection in September 2016 and field works conducted by Geo-Logix in October 2016. A photographic log is presented in Attachment B.

The site is located within a rural residential area on the southern side of Sixth Avenue, Austral NSW. The site is accessed via Sixth Avenue and consists of one rectangular lot encompassing an area of 12,140 m^2 (Figure 2). At the time of Geo-Logix investigation the site was occupied by a residential dwelling with landscaped gardens, a tennis court and swimming pool as well as numerous outbuildings and sheds. A fenced paddock is located in the southern portion of the site. Vegetation appears to be in good health across the site however herbicides have been used to control grass growth along fence lines.

The single storey brick dwelling is located in the north-east portion of the site with landscaped gardens to the north and west. A retaining wall is located along the north-eastern property boundary indicating the area surrounding the house has been filled relative to surrounding topography. A small soil / vegetation stockpile was also noted in the grassed area west of dwelling.

A number of structures including swimming pool, pool house, garden shed, outhouse and single-storey granny flat are located to the rear of the dwelling. Asbestos Containing Material (ACM) was observed in all of these structures and appeared to be in moderate condition with some broken panels observed. Peeling paint was also noted throughout many of the buildings and on surrounding ground surfaces. A soil stockpile and possible vegetable garden is located to the west of the granny flat.

A large truck shed is located in a partially fenced area in the central western portion of the site. The one to two storey steel / timber frame and metal clad structure has been extended over time and is currently used to store furniture, building materials and miscellaneous equipment. Some paints, thinners and household pesticides, including a spray pack, were observed in a section of the shed. Paint throughout the shed was in poor condition and peeling. Asphalt hardstand surrounds the shed which is littered with numerous items of furniture, household items, timber and building materials. Fragments of weathered ACM were observed on the asphalt hardstand area to the north of the shed. Three large drums, filled with water were located in front of the shed with another drum used to burn timber materials. A corrugated ACM fence is located to the north of the shed and runs from the residential dwelling to the western boundary and behind the shed. The fence appeared to be in moderate condition with some broken panels observed.

An open grassed area is located east of the large shed and south of the residential dwelling with a fernery and aviary located in the southern portion of this area. A concrete tennis court is situated in in the central portion of the site, adjacent to the eastern boundary. Some filling was observed to the north of the tennis court with a timber retaining wall located to the south.

A grassed, fenced paddock with some vegetation and mature trees occupies the southern portion of the site which contains a stockpile of vegetation and soil. The ground surface appears raised relative to surrounding topography suggesting the area has been filled. A collection of kennels, stables and small sheds is located adjacent the western boundary and have been constructed from timber, metal cladding and ACM. Several sheets of ACM was have been used to patch holes between the kennels. Corrugated ACM used to clad the rear of the kennels appeared to be in moderate to poor condition with numerous fragments scattered on the ground surface and subject to partial burial. Numerous fragments of ACM were observed scattered on the ground surface within and in close proximity to the southernmost shed.

2.4 Surrounding Land Use

At the time of the investigation, the surrounding land use comprised the following:

- **North** – Sixth Avenue with rural residential properties beyond;
- **South** – Rural residential properties with Fifth Avenue beyond;
- **West** – Rural residential properties with Fourth Avenue beyond; and
- **East** – Rural residential properties with Edmondson Avenue beyond.

2.5 Topography

The site slopes gently down towards the north east. The north east portion of the site, below the house and front garden, appears to have been filed relative to surrounding topography with possible filling also observed in the grassed paddock at the rear of the property.

2.6 Surface Water Receptor

The nearest surface water is an unnamed tributary of Kemps Creek, located approximately 150 north east of the site.

2.7 Geology

Review of the NSW 1:100,000 Penrith Geological Map (Geological Survey of NSW, 1991) indicates the site is situated on Wianamatta group shale characterised by shale, carbonaceous claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff.

2.8 Hydrogeology

It is expected that groundwater would follow the natural regional topography and generally flow north–east. Reference to the NSW Water Groundwater Works Report (NSW Government, 2016) indicates there are no registered groundwater bores within a 500 m radius of the site. The groundwater bore map is presented in Attachment C.

2.9 Underground Utilities

A Dial Before You Dig search was conducted to determine the presence of underground utilities which may act as conduits for contamination migration both onsite and offsite (Attachment D). The plans indicate Sydney Water, Telstra utilities run underneath Sixth Avenue to the north. Telstra utilities enter the site from the north-eastern boundary.

3. PREVIOUS ENVIRONMENTAL INVESTIGATIONS

3.1 Geo-Logix (2016) Phase 1 Environmental Site Assessment

Geo-Logix completed a Phase 1 Environmental Site Assessment (ESA) of the site in September 2016. The objective of the Phase I ESA was to conduct a site inspection and collate site historical information in order to establish whether activities have occurred on site which may have resulted in contamination of land. The findings of the report were based on a site inspection conducted on the 6 September 2016 and a review of site historical information.

The following potential contamination issues were observed during site inspection:

- ACM in moderate to poor condition and peeling paint was observed in several structures on site;

- Portions of the site appeared to have been filled and levelled relative to the surrounding topography;
- Small soil stockpiles were also observed across the site at the time of the inspection;
- The presence of a drum labelled ‘grease’ as well as two 205 L drums suggested vehicle / equipment maintenance activities were possibly undertaken in the large truck shed in the central portion of the property; and
- A possible domestic vegetable garden was observed on site with potential for land contamination arising from the application of pesticides. Evidence of herbicide use was also noted at to control grass along fence lines.

The review of historical data indicated the following potential contamination issues:

- The aerial photograph review and site inspection identified possible market gardening in the northeast corner and a vegetable garden in the central portion of the site.

Results of the Phase I ESA indicated that the site and surrounds have a history of rural / residential use with minor commercial activities. While no market garden activities were observed in historical aerial photos, surrounding land had a history of market gardening and as such, market garden activities on the site could be ruled out. Potential sources of contamination noted onsite included:

- Hazardous building materials;
- Fill of unknown origin;
- Vehicle / equipment maintenance; and
- Application of pesticides and herbicides.

Given the site history Geo-Logix concluded there is a potential for land contamination at the site and further investigation would be required to assess the presence or otherwise of such contamination.

4. POTENTIAL SITE CONTAMINATION

Based on the results of the Phase I ESA the following potential contamination issues were identified for the site.

Hazardous Building Materials

ACM in moderate to poor condition and peeling paint was observed in several structures on site. Historical aerial imagery also indicates a building was demolished in the central portion of the site between 1955 and 1965.

Given the age of the buildings, there is potential for land contamination arising from hazardous building materials Contaminants of potential concern (COPC) including lead-based paint and asbestos. Several fragments of bonded ACM were identified on or within the ground surface in several locations.

Fill of Unknown Origin

Portions of the site appears to have been filled and levelled relative to the surrounding topography. It is possible cut and fill activities occurred however it is unknown if fill was imported. Small soil stockpiles were also observed across the site at the time of the inspection. COPC associated with fill of unknown origin comprise:

- Total Recoverable Hydrocarbons (TRH);

- Benzene, Toluene, Ethylbenzene and Xylenes (BTEX);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Organochlorine Pesticides (OCPs);
- Polychlorinated Biphenyls (PCBs);
- Heavy metals; and
- Asbestos

Vehicle / Equipment Maintenance

The presence of a drum labelled 'grease' as well as two 205 L drums suggest vehicle / equipment maintenance activities were possibly undertaken in the large truck shed in the central portion of the property. COPC commonly associated these mechanical maintenance and vehicle washing activities include:

- TRH and BTEX;
- PAHs;
- Heavy metals; and
- Volatile Organic Compounds (VOCs).

Application of Pesticides / Herbicides

The aerial photograph review and site inspection identified possible market gardening in the northeast corner and a vegetable garden in the central portion of the site. While no other evidence of market garden activities was observed, it could not be ruled for other areas of the site, particularly given the regional history of market gardening. COPC associated with the application of pesticides and herbicides include:

- Heavy metals; and
- OCPs.

5. DATA QUALITY OBJECTIVES

The objective of the investigation was to assess the site for contamination that may have originated from historical site activities to determine the suitability of the site for the proposed residential development.

To achieve the objective, Geo-Logix has adopted the seven step Data Quality Objective (DQO) process as described in AS 4482.1-2005, US EPA (2000), DEC (2006) and NEPM (2013).

Step 1: State the problem.

The subject site may be contaminated as a result of previous and current land use and activities. Issues of potential environmental concern for the site include:

- Contamination of shallow soils from deterioration of current structures and demolition of former structures;
- Contamination to soil from the fill of an unknown origin; and
- Contamination of shallow soils from vehicle and equipment maintenance.
- Contamination of the shallow soils from application of pesticides and possible market garden activities;

Step 2: Identify the decision.

Contamination has not been identified in soil at concentrations above residential land use standards and the site is considered suitable for the proposed residential subdivision.

Step 3: Identify inputs into the decision.

- Identification of issues of potential environmental concern;
- Appropriate identification of COPCs;
- Systematic soil sampling and analysis program of shallow soils across the site at a frequency consistent with minimum sampling requirements as defined in NSW EPA (1995);
- A targeted sampling and analysis program of shallow soils in the vicinity of identified potential contamination point sources;
- Appropriate quality assurance / control to enable an evaluation of the reliability of the analytical data; and
- Screening sample analytical results against appropriate assessment criteria for the intended land use (Residential).

Step 4: Define the boundaries of the site.

The project boundary is defined as the area within the site boundary to a maximum depth of intrusive works at approximately 1.0mbg.

Step 5: Develop a decision rule.

The results of the systematic soil sampling assessment must comply with the following decision rules:

- The 95% UCL concentration of any COPC does not exceed the assessment criteria;
- No sample exceeds 250% of the assessment criteria; and
- The standard deviation of results must be less than 50% of the assessment criteria.

The results of targeted soil sampling assessment must comply with the following decision rules:

- COPC do not exist in soil at concentrations in excess of the assessment criteria.

The results of systematic and targeted soil samples must comply with the following decision rule regarding asbestos:

- ACM was not visually observed on the site surface or in the subsurface at soil sampling locations.

Step 6: Specify acceptable limits on decision errors.

The field sampling methodology, sample preservation techniques, and laboratory analytical procedures must be appropriate to provide confidence in data quality so any comparison against assessment criteria can be considered reliable. This is achieved by defining and comparing results against the Data Quality Indicators (DQIs).

Step 7: Optimise the design for obtaining data.

This is achieved by sampling plan design in consideration of the available site history information, area of investigation, contaminant behaviour in the environment, and likely spatial distribution of contamination.

6. ASSESSMENT CRITERIA

The primary reference for environmental site assessment in Australia is the Amended Assessment of Site Contamination (ASC) National Environmental Protection Measure (NEPM) 1999 (NEPC, 2013). This document includes soil, soil vapour and groundwater criteria for use in evaluating potential contamination risk to human health and the environment.

The application of these investigation levels and screening levels is subject to a range of limitations and their selection and use must be in the context of the conceptual site model (CSM) relating to the nature and distribution of impacts and potential exposure pathways. Each relevant guideline is discussed further below and the adopted screening criteria are presented in summary sample analytical tables attached to this report.

6.1 Soil Assessment Criteria

The following soil assessment criteria were adopted for the investigation.

NEPM Health Based Investigation Levels (HILs A)

HILs are Tier 1 risk based generic assessment criteria used for the assessment of potential risks to human health from chronic exposure to contaminants in soil. They are intentionally conservative and based on a reasonable worst-case scenario for generic land use settings including Residential (HILs A/B), Open Space / Recreational (HILs C) and Commercial Industrial (HILs D).

HILs A soil assessment criteria were adopted on the basis the proposed site use is residential.

NEPM Health Screening Levels (HSLs A)

HSLs are Tier 1 risk based generic soil assessment criteria used for the assessment of potential risks to human health from chronic inhalation exposure of petroleum vapour emanating off petroleum contaminated soils (Vapour Risk). They are intentionally conservative and based on a reasonable worst-case scenario for generic soil types, contamination depth and land use settings including Residential (HSLs A/B), Open Space / Recreational (HSLs C) and Commercial Industrial (HSLs D). HSLs A soil assessment criteria were adopted.

NEPM Management Limits – Residential

Management Limits for petroleum have been developed for prevention of explosive vapour accumulation, prevention of the formation of observable Light Non-aqueous Phase Liquids (LNAPL) and protection against effects on buried infrastructure. Residential, parkland and public open space limits are adopted based on the proposed residential land use.

NEPM (1999) Amendment Asbestos Criteria

Asbestos assessment criteria are included in NEPM (1999) Amendment. Those criteria apply to the assessment of known and suspected asbestos contamination in soil and address friable and non-friable forms of asbestos. The presence of asbestos contamination was not known at the time of investigation therefore its investigation was of a preliminary nature. Given the preliminary assessment the following assessment criteria was adopted:

- No visible ACM on site surface or in the subsurface at soil sampling locations.

Ecological Assessment

Ecological Investigation Levels (EILs) are used for the protection of terrestrial ecosystems and have been derived for common contaminants in soil based on a species sensitivity distribution model developed for Australian conditions. EILs apply principally to contaminants in the top 2 m of soil which corresponds to the root zone and habitation zone of many species. EILs have been developed for the following contaminants:

- Arsenic (As);
- Copper (Cu);
- Chromium III (CrIII);
- Nickel (Ni);
- Lead (Pb);
- Zinc (Zn)
- DDT; and
- Naphthalene.

EILs depend on specific soil physicochemical properties and land use scenarios. The protection levels for generic land use settings are:

- 99% for areas of ecological significance;
- 80% for urban residential areas and public open space; and
- 60% for commercial and industrial uses.

80% protection was adopted on the basis the proposed land use is residential. Two soil samples (S4/0.2-0.3 and S23/0.0-0.15) were sent to the laboratory for analysis of cation exchange capacity (CEC), pH and clay content to determine appropriate EILs for site soils.

A summary of EILs adopted for site and rationale are detailed below.

Contaminant	EIL (mg/kg)	Rationale
As	100	Value for urban residential and public open space irrespective of physicochemical properties.
Cu	150	Value for urban residential and public open space based on an average CEC of 12.1, pH of 5.5 and iron content of 2.55 %
CrIII	460	Value for urban residential and public open space based on an average clay content of 15 % and iron content of 2.55 %
Ni	190	Value for urban residential and public open space based on an average CEC of 12.1 and iron content of 2.55 %
Pb	1100	Value for urban residential and public open space without background concentrations
Zn	350	Value for urban residential and public open space based on an average CEC of 12.1, pH of 5.5 and iron content of 2.55 %
DDT	180	Value for urban residential and public open space irrespective of physicochemical properties.
Naphthalene	170	

In addition, Ecological Screening Levels (ESLs) have been developed. The ESLs are based on a review of Canadian guidance for petroleum hydrocarbons contamination in coarse and fine grained soil types and application of the Australian methodology. A summary of ESLs adopted for site and rationale are detailed below.

Contaminant	EIL (mg/kg)	Rationale
F1 C6-C10	180	Value for urban residential/public open space in coarse grained soil.
F2 C10-C16	120	
F3 C16-C34	300	
F4 C34-C40	2800	
Benzene	50	
Toluene	85	
Ethylbenzene	70	
Xylenes (Total)	105	
Benzo(a)pyrene	0.7	

7. INVESTIGATION METHODOLOGIES

Geo-Logix conducted environmental investigations of the site on 4, 5 and 6 October 2016. Sample locations are presented in Figure 3. The investigation methodology undertaken for each issue of potential environmental concern is presented below.

Market Garden Activities

The aerial photograph review and site inspection identified possible market gardening in the northeast corner and a vegetable garden in the central portion of the site. While no other evidence of market garden activities was observed, it cannot be ruled out for other areas of the site, particularly given the regional history of market gardening. A systematic based sampling plan was undertaken consisting of the following scope of works:

- Sampling at 26 locations (S1 to S26) on a 24 m spaced sampling grid. The sample frequency is sufficient to detect a circular contamination hotspot with a diameter of 28.32m or greater at a 95 % statistical degree of certainty. The sampling grid meets minimum sampling standards for the site area (12,140 m^2) as per NSW EPA (1995); and
- In areas of suspected market gardening, native soil samples (S21, S23, S25 and S26) were analysed for OCPs and heavy metals. Samples S25 and S26 were composited (composite sample C1) in the laboratory from two primary systematic soil samples for analysis of OCPs and heavy metals.

Former and Current Sheds and Corrugated ACM Fence

Sampling and analysis of current and former sheds, areas where fragments of suspected ACM were observed, and the corrugated ACM fence included:

- Collection of one surface soil sample (SS1 to SS8) from the footprint of each of the current and former sheds (eight in total) for laboratory analysis of asbestos and lead; and

- Collection of six surface soils samples (AF1 to AF6) from the base of the corrugated ACM fence. Sample collection targeted areas of damage and were analysed for asbestos.

Fill of Unknown Origin

Portions of the site appear to have been filled and leveled relative to the surrounding topography. The origin of the fill at the site is unknown. To assess fill material at the site the following scope of work was undertaken:

- Collection of a fill samples at locations (S1 to S20, S22, S24 to S26) where grid based samples fell within the filled areas;
- Collection of a soil sample from fill material within stockpile identified at grid based location S18; and
- Laboratory analysis of soil samples for fill related COPC including TRH, BTEXN, PAHs, heavy metals, OCPs and asbestos.

A stockpile identified in the Phase 1 in the southern portion of the site was observed to be comprised of vegetation and as such no soil sample was collected from the stockpile.

Vehicle / Equipment Maintenance

A truck maintenance shed is located in the central western portion of the property. The scope of works completed to assess areas of areas of vehicle / equipment maintenance included:

- Collection of two surface soil samples (B1 and B2) from the edge of the slab;
- Concrete coring and collection of one soil sample (BH1) from beneath the slab; and
- Laboratory analysis of soil samples for vehicle maintenance related COPC including TRH, BTEX, VOCs, PAHs and heavy metals.

7.1 Soil Sampling Methodology

Shallow soil sampling at locations S1 to S20, S22, S24 to S26 and B1 and B2 were completed as shallow test pits using a 5.5 tonne excavator. Testpits were completed to a maximum depth of approximately 1.0 mbg. Soil samples were collected directly from the bucket of the excavator.

Shallow soil samples S21, S23 and SS1 to SS8 were collected using a shovel to depths of approximately 0.15 mbg. Care was taken to ensure soil samples were collected from soils that had not come into contact with the shovel blade.

Boring BH1 was completed using a hand auger to a depth of approximately 0.3 mbg. Soil samples were collected directly from the hand auger.

Soil samples were placed in laboratory prepared jars, labelled and placed on ice in an esky for transport under chain of custody to a NATA accredited laboratory for the analysis of COPC. Borelogs where fill was encountered and soil sample descriptions are presented in Attachment E.

7.2 Quality Assurance

Quality control (QC) sampling was undertaken in general accordance with specifications outlined in AS4482.1, *Guide to Sampling and Investigation of Potentially Contaminated Soil.* Field QC samples were collected and included the following:

Sample Identification	Sample Type	Sample Matrix	Rate of Collection
DS1	Field duplicate of S11/0.0-0.2	Soil	1 in 20 samples
TS1	Field triplicate of S11/0.0-0.2	Soil	1 in 20 samples
DS2	Field duplicate of S23/0.0-0.15	Soil	1 in 20 samples
TS2	Field triplicate of S23/0.0-0.15	Soil	1 in 20 samples
R1	Soil sampling equipment rinsate	Water	1 per day
R2	Soil sampling equipment rinsate	Water	1 per day
R3	Soil sampling equipment rinsate	Water	1 per day

Note – Rate of QC sample collection specified as 1 in 20 samples in AS4482.1

The laboratory internal QC procedures are consistent with NEPM policy on laboratory analysis of contaminated soils.

8. INVESTIGATION RESULTS

8.1 Site Geology

Intrusive investigations identified variable fill soils across much of the property. Fill in the southern portion of the site (S1 to S12) was encountered to a maximum depth of 0.85 mbg and consisted of variable silty clays and gravelly silt with anthropogenic material including concrete, asphalt, roof tiles and brick. Fill typically overlaid native silts and lean clays from depths of 0.05 mbg to 0.85 mbg.

A sewerage transpiration pit was identified at sample location S3 which was filled with crushed roof tiles. Fragments of ACM was identified at sample location S4 in shallow fill as well as at sample location S5 in the top 0.05 m of the soil profile. ACM at S5 appeared associated with scattered fragments of ACM observed within and surrounding the nearby shed.

Fill within the central portion of the site (S12 to S20) was encountered to depths between 0.15 to 0.6 mbg. Fill comprised silty clays with crushed sandstone, shales, road base and coal wash. Fill overlaid native silts and heavy clays. In addition to fragments of ACM observed on the ground surface to the north of the truck shed, a fragment of ACM was also identified in shallow fill at sample location S13 towards the rear of the truck shed. Numerous bonded ACM fragments were encountered at sample location S16, associated with fill material surrounding the tennis court. Further exploratory test pits surrounding the tennis court also identified a fragment of bonded ACM in fill between 0.3 and 0.4 mbg. Numerous fragments were also encountered in shallow fill (0.0-0.15 mbg) at sample location S19.

Fill surrounding the dwelling in the northern portion of the site was encountered to a maximum depth of 1.0 mbg and consisted of sandy gravelly clays. Fill was underlain by silts and heavy clays. Fill was not encountered in the north-western corner of the site at S21 which was characterised sandy silt topsoil. Crushed sandstone fill was observed in the location of a former driveway (S22 and S24) to a maximum depth of 0.3 mbg.

8.2 Site Hydrogeology

Groundwater was not encountered during intrusive investigations.

8.3 Soil Analytical Results

Soil analytical results are summarised in Tables 1 through 6. Laboratory reports are presented in Attachment F.

TRH and BTEX

Petroleum hydrocarbons (C_{16} – C_{34}) were detected at concentrations above Residential ESLs in shallow soil samples collected at locations S13, S17, B1 and B2. Petroleum hydrocarbons (F2 fraction) exceeded residential HSLs in shallow soil at B1 (Table 1).

Petroleum hydrocarbons were not detected at concentrations above assessment criteria in all other soil samples analysed.

VOCs

VOCs were not detected in soil at concentrations above laboratory reporting limits in all samples analysed (Table 2).

PAHs

Benzo(a)pyrene was detected at concentrations marginally above Residential ESLs in the shallow soil samples collected at locations S2, S9, S22.

PAHs were not detected in soil at concentrations above assessment criteria in remaining samples analysed (Table 3).

Metals

Copper was detected at concentrations above Residential EILs in the shallow soil samples collected at locations S9, S17 (Table 4).

Lead was detected at concentrations above Residential HILs in the shallow soil samples collected at locations SS4.

Zinc was detected at concentrations above Residential EILs in the shallow soil sample collected at location B1.

Arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc were not detected at concentrations greater than the assessment criteria in remaining soil samples analysed.

OCPs

OCPs were not identified at concentrations above assessment criteria in all samples analysed (Table 5).

Asbestos

Asbestos was detected as small fragments of weathered fibre cement fragments in the shallow soil sample collected from location SS1 (Table 6).

Asbestos was not identified by the laboratory in soil at remaining sample locations.

Asbestos in the form of bonded ACM fragments were visually identified within fill or on site surfaces at locations SS1, S4, S5, S13, S16 and S19.

8.4 Soil Analytical Statistical Summary

Statistical analysis of grid based soil sample analytical results has been undertaken where COPC were detected at concentrations greater than the laboratory reporting limits. Statistical summary is presented in the following table. Statistical computation output sheets are presented in Attachment G.

COPC	# Sample	# Sample Detections	Residential Assessment Criteria (mg/kg)	Min (mg/kg)	Max (mg/kg)	Mean	95% UCL	Standard Deviation
Arsenic	26	10	100	<2	5.3	3.18	2.75	1.037
Cadmium	26	2	20	<0.4	1.4	1.0	0.538	0.566
Chromium	26	25	100	8.7	58	26.23	30.26	14.14
Copper*	25	18	150	7.9	200	29.88	61.91	36.74
Lead	26	18	300	8.2	180	41.85	52.9	34.99
Mercury	26	5	40	<0.05	0.2	0.11	0.0751	0.0696
Nickel	26	24	190	7.2	50	19.18	21.97	11.35
Zinc	26	20	350	7.5	150	56.06	75.27	37.69
Benz(a)anthracene	24	3	NA	<0.05	1.2	0.867	0.609	0.289
Benzo(a)pyrene	24	3	0.7	<0.5	1.2	0.933	0.622	0.231
Benzo(b&j)fluoranthene	24	3	NA	<0.5	1.1	0.867	0.606	0.867
Benzo(ghi)perylene	24	3	NA	<0.5	1.3	0.933	0.627	0.321
Benzo(k)fluoranthene	24	3	NA	<0.5	1.1	0.9	0.611	0.173
Chrysene	24	3	NA	<0.5	1.4	1	0.646	0.361
Fluoranthene	24	3	NA	<0.5	3.3	2.225	1.076	0.885
Phenanthrene	24	4	NA	<0.5	1.4	1.075	0.689	0.25
Pyrene	24	4	NA	<0.5	1.3	2	0.995	0.658
Total PAHs	24	5	300	<0.5	12.6	7.82	3.463	7.82
TRH $C_{10} – C_{16}$	24	3	110	<50	110	84	59.98	25.06
TRH $C_{16} – C_{34}$*	23	6	300	<100	540	235	173	162.6
TRH $C_{34} – C_{40}$	24	2	2800	<100	1200	710	427.8	693

*One or more grid based samples removed from data set if exceeding assessment criteria by 250%

**Only one distinct value detected. ProUCL was unable to process the data set. Mean values calculated using half laboratory reporting limits (LOR) for all non-detects.

ProUCL data output is presented in Attachment G.

With the exception of copper at one location (discussed in section 10) remaining COPC were not detected at concentrations greater than the assessment criteria in all grid based soil samples collected from across the site. In addition the sample data for all grid based samples collected also meets the following qualifiers:

- The 95% Upper Confidence Limit of COPC concentration data does not exceed the soil assessment criteria;
- No single sample exceeds 250% of the soil COPC assessment criteria; and
- The standard deviation of COPC analytical results is less than 50% of the soil assessment criteria.

8.5 QA/QC Results

Soil duplicate/triplicate results are within the adopted acceptance criteria of 30-50% (AS4482.1) relative percent difference (RPD) with the exception of the following:

- Chromium, copper, lead and nickel in soil triplicate pair S11/0.0-0.2 and TS1; and
- Chromium, lead and nickel in soil triplicate pair S23/0.0-0.15 and TS2.

The RPD outliers are attributed to the low levels of metals (<5 time LOR) and heterogeneity of the soils.

COPC were not detected at concentrations above laboratory reporting limits in the rinsate samples collected from the hand auger indicating decontamination procedures were adequate to prevent cross contamination (Tables 7 to 9).

A summary of Laboratory QA/QC data is presented on the following table.

Report #	Analysis Within Holding Time	Surrogate Recovery	Lab. Duplicate RPD %	Lab Matrix Spike Recovery	Lab. Control Sample	Lab Method Blank
518931-S	✓	✓	×	✓	✓	✓
519056-S	✓	✓	×	×	✓	✓

√ = Pass X = Fail - = not required * = refer to report text

Quality Assurance Criteria	Quality Control Criteria
Holding Times	**Accuracy**
VOCs 14 days soil / water	Surrogate, matrix spike, control sample 70-130% and 30-130% for Phenols.
SVOCs 7 days water, 14 days soil	Surrogate recovery 50-150% and 20-130% for Phenols.
Pesticides 7 days water, 14 days soil	**Precision**
Metals 6 months, Mercury 28 days	Method Blank Not detected
	Duplicate - No limit (<10xEQL), 0-50% (10-20xEQL), 0-200% (>20xEQL)

The laboratory QA/QC was within the acceptable limits with the exception of the following:

Report # 518931-S

The laboratory duplicate RPD% exceeded acceptance criteria of 30 – 50% for arsenic, chromium and lead however was accepted under the laboratory QC guidelines as the results were <10 times the LOR.

Report # 519056-S

The laboratory duplicate RPD% exceeded acceptance criteria of 30 – 50% for benzo(g.h.i)perylene and phenanthrene however was accepted under the laboratory QC guidelines as the results were <10 times the LOR.

The matrix spike recovery was outside of the recommended acceptance criteria for benz(a)anthracene, benzo(a)pyrene, benzo(b&j)fluoranthene, chrysene, fluoranthene, phenanthrene and pyrene. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Geo-Logix accepts the integrity of the analytical data.

9. DISCUSSION

Petroleum Impact to Soils

Petroleum hydrocarbons (C_{16} – C_{34} fraction) were detected at concentrations exceeding 250% of residential ESLs in shallow soil sample collected at locations S13, B1 and B2 therefore constitutes a contamination hotspot. Petroleum hydrocarbons were also detected at concentrations exceeding, but below 250% of residential ESLs at S17. Petroleum hydrocarbons (F2 fraction) were detected at concentrations slightly above residential HSLs at sample location B1.

Petroleum hydrocarbons in the F2 fraction identified in soil at sample location B1 requires further assessment to determine the extent and magnitude of impact. From this the requirement for remediation should be evaluated.

The extent of petroleum in fill at concentrations greater than ESLs requires assessment to determine the requirement for remediation.

Asbestos Impact to Soils

Asbestos in the form of weathered fibre cement fragments was detected in a shallow soil sample collected from the floor of the shed in the western portion of the site (SS1). Due to the size of the fragments the asbestos is within the range of asbestos fines (AF) and is therefore considered friable asbestos. Remediation of friable asbestos within the shed would be required for the site to be considered suitable for the proposed residential development. The extent of asbestos impact to soils in the vicinity of SS1 has not been determined.

Asbestos was also visually identified in the form of bonded ACM at nearby location S5 in the shallow surface soils (0.0-0.1m). ACM at S5 appeared associated with scattered fragments of ACM observed within the nearby shed (Figure 4).

Scattered fragments of ACM were also visually identified on the asphalt area to the immediate north of the shed in the western portion of the site and within shallow fill at the following locations:

- S4 in the south eastern corner of the site;
- S13 towards the rear of the truck shed in the western portion of the site;
- S16 in the central eastern portion; and
- S19 in the central northern portion of the site.

The fragments of ACM appear to be either associated with areas of filling or nearby sheds. Further assessment of the above areas is required to determine potential remediation / management requirements.

Metals Impact to Soils

Lead was detected at concentrations marginally above Residential HILs in the shallow soil sample collected at location SS4 in the vicinity of the shed in the central portion of the site. Lead impact to shallow soils is likely the result of lead based paint from the shed. The results of nearby soil samples demonstrate the lead is an isolated one off occurrence. Additionally, the lead is not representative of a contamination hotspot as the concentration is less than 250% of the HIL. No further assessment or remediation is warranted.

Copper and zinc were detected at concentrations marginally above residential EILs at a number of other locations across the site. The marginal exceedances of the grid based samples however is not considered to require remediation given the following statistical findings for grid based results:

- The 95% Upper Confidence Limit of COPC concentration data does not exceed the soil assessment criteria;
- No single sample exceeds 250% of the soil COPC assessment criteria; and
- The standard deviation of COPC analytical results is less than 50% of the soil assessment criteria.

Copper was detected at a concentration greater than 250% of the EILs but well below human health criteria (HILs) at sample location S17 located in the vicinity of the shed located in the central western portion of the site. The shed has historically been used for vehicle and equipment maintenance. Copper was not detected at concentrations above the EILs in all surrounding samples indicating the copper at S17 is likely a one-off isolated occurrence and does represent contamination that may result in measurable impact on environmental health.

10. CONCLUSIONS

Results of the assessment identified the soil contamination issues at the site:

- Petroleum hydrocarbon impact detected at concentrations above residential assessment criteria in shallow soils in the vicinity of the shed located in the western portion of the site;
- Asbestos was detected in the form of weathered fragments and as bonded ACM in shallow soil in western portions of the site; and
- Asbestos detected in the form of bonded ACM in shallow fill in the south eastern, eastern, central northern and western portions of the site;

Remediation and / or management of the above is required for the site to be considered suitable for the proposed residential landuse. Further investigation is recommended to define contamination extents and remedial requirements.

11. LIMITATIONS

This report should be read in full, and no executive summary, conclusion or other section of the report may be used or relied on in isolation, or taken as representative of the report as a whole. No responsibility is accepted by Geo-Logix, and any duty of care that may arise but for this statement is excluded, in relation to any use of any part of this report other than on this basis.

This report has been prepared for the sole benefit of and use by the Client. No other person may rely on the report for any purpose whatsoever except with Geo-Logix's express written consent. Any duty of care to third parties that would or may arise in respect of persons other than the Client, but for this statement, is excluded.

Geo-Logix owns the copyright in this report. No copies of this report are to be made or distributed by any person without express written consent to do so from Geo-Logix. If the Client provides a copy of this report to a third party, without Geo-Logix's consent, the Client indemnifies Geo-Logix against all loss, including without limitation consequential loss, damage and/or liability, howsoever arising, in connection with any use or reliance by a Third Party.

The works undertaken by Geo-Logix are based solely on the scope of works, as agreed by the Client (Scope of Works). No other investigations, sampling, monitoring works or reporting will be carried out other than as expressly provided in the Scope of Works. **A COPY OF THE SCOPE OF WORKS IS AVAILABLE ON REQUEST.**

To the extent permitted by law, Geo-Logix makes no warranties or representations as to the:

a. suitability of the Site for any specific use, or category of use, or

b. potential statutory requirements for remediation, if any, of the Site,

c. approvals, if any, that may be needed in respect of any use or category of use, or

d. level of remediation, if any, that is warranted to render the Site suitable for any specific use, or category of use, or

e. level of ongoing monitoring of Site conditions, if any, that is required in respect of any specific use, or category of use, or

f. presence, extent or absence of any substance in, on or under the Site, other than as expressly stated in this report.

The conclusions stated in this report are based solely on the information, Scope of Works, analysis and data that are stated or expressly referred to in this report.

To the extent that the information and data relied upon to prepare this report has been conveyed to Geo-Logix by the Client or third parties orally or in the form of documents, Geo-Logix has assumed that the information and data are completely accurate and has not sought independently to verify the accuracy of the information or data. Geo-Logix assumes no responsibility or duty of care in respect of any errors or omissions in the information or data provided to it.

Without limiting the paragraph above, where laboratory tests have been carried out by others on Geo-Logix's behalf, the tests are reproduced in this report on the assumption that the tests are accurate. Geo-Logix has not sought independently to verify the accuracy of those tests and assumes no responsibility in respect of them.

Geo-Logix assumes no responsibility in respect of any changes in the condition of the Site which have occurred since the time when Geo-Logix gathered data and/or took samples from the Site on its site inspections dated **6 September and 5 to 6 October 2016**.

Given the nature of asbestos, and the difficulties involved in identifying asbestos fibres, despite the exercise of all reasonable due care and diligence, thorough investigations may not always reveal its presence in either buildings or fill. Even if asbestos has been tested for and those tests' results do not reveal the presence of asbestos at those specific points of sampling, asbestos or asbestos containing materials may still be present at the Site, particularly if fill has been imported at any time, buildings constructed prior to 1980 have been demolished on the Site or materials from such buildings have been disposed of on the Site.

Where the Scope of Works does not include offsite investigations, Geo-Logix provides no warranty as to offsite conditions, including the extent if any to which substances in the Site may be emanating off site, and if so whether any adjoining sites have been or may be impacted by contamination originating from the Site.

Where the Scope of Works does not include the investigation, sampling, monitoring or other testing of groundwater in, on or under the Site, Geo-Logix provides no warranty or representation as to the quality of groundwater on the Site or the actual or potential migration of contamination in groundwater across or off the Site.

Subsurface site conditions are typically heterogeneous, and may change with time. Samples taken from different points on the Site may not enable inferences to be drawn about the condition of areas of the Site significantly removed from the sample points, or about the condition of any part of the Site whatsoever, in particular where the proposed inferences are to be drawn a long time after the date of the report.

Geo-Logix has prepared this report with the diligence, care and skill which a reasonable person would expect from a reputable environmental consultancy and in accordance with environmental regulatory authority and industry standards, guidelines and assessment criteria applicable as at the date of this report. Industry standards and environmental criteria change frequently, and may change at any time after the date of this report.

12. REFERENCES

Australian Standard (2005) AS 4482.1-2005 Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Volatile and Semi-volatile compounds. Standards Australia.

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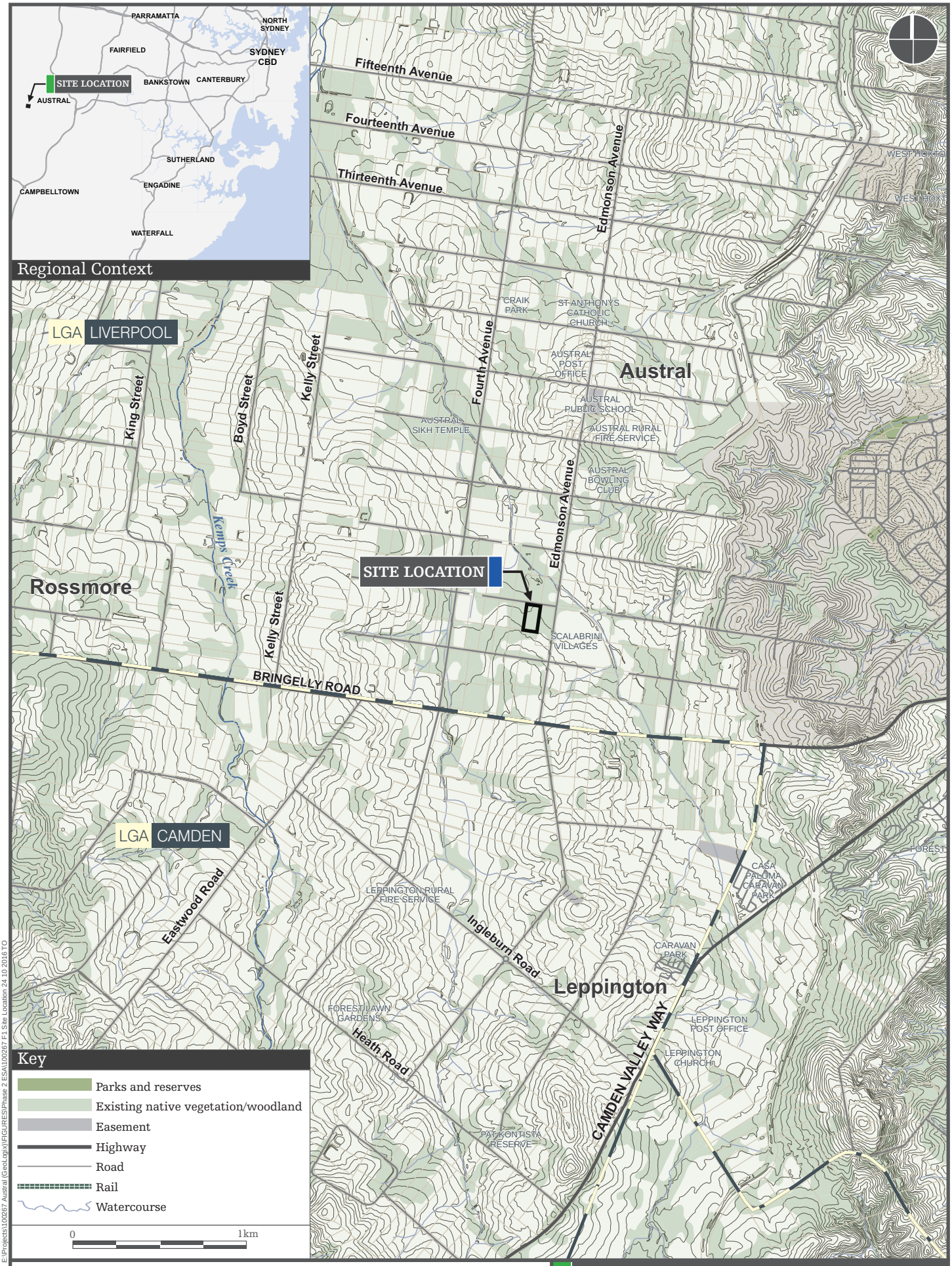
FIGURES



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SITE LOCATION

Phase 2 Environmental Site Assessment
230 Sixth Avenue, Austral NSW

Project No. 1601114

Figure 1

Site Features

1 Residential House
2 Landscaped Gardens
3 Pool
4 Pool House (ACM)
5 Shed (ACM)
6 Timber Retaining Wall
7 Laundry (ACM)
8 Outhouse (ACM)
9 Granny Flat (ACM)
10 Vegetable Garden
11 Soil and Vegetable Stockpile
12 Vegetation Stockpile
13 Former Driveway/Access Road
14 Corrugated ACM Fence
15 Soil Stockpile
16 Asphalt Hardstand
17 Fragments of Weathered ACM on ground surface
18 Burnt Drum
19 205L drums full of water
20 Shed/Shed Extension
21 Aviary
22 Fernery
23 Area of filling
24 Concrete Tennis Court
25 Timber retaining wall
26 Area of filling
27 Soil and Vegetation Stockpile
28 Shed with shallow burial of ACM near rear wall
29 Kennels with ACM sheeting and shallow burial of ACM near rear wall

Key

Site boundary

0 20m

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SITE FEATURES

Phase 2 Environmental Site Assessment
230 Sixth Avenue, Austral NSW

Project No. 1601114

Figure 2

E:\Projects\100267 Austral (Geologix)\FIGURES\Phase 2 ESA\100267 F2 Site Features 24 10 2016 TO

E:\Projects\1002\67 Austral (GeoLogix)\FIGURES\Phase 2 ESA\1002267 F3 Sampling Locations 25 10 2016 TO

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SAMPLING LOCATIONS

Phase 2 Environmental Site Assessment
230 Sixth Avenue, Austral NSW

Project No. 1601114

Figure 3

SIXTH AVENUE

S23
S24
S25
S26
S21
S22
AF2
SS8
S17
AF1
AF3
S18
SS7
S19
B2
SS5
S20
AF4
SS6
BH1
SS4
B1
SS3
S14
AF5
S13
S15
S16
SS2
S9
S10
S11
SS1
S12
AF6
S5
S6
S7
S8
S1
S2
S3
S4

Key

- Site boundary
- Known extent of asbestos on site surfaces
- Inferred extent of fill soil potentially containing asbestos
- Asbestos fence
- Systematic sample location (Geo-Logix, 2016)
- Judgemental sample location (Geo-Logix, 2016)

0 40m

E:\Projects\100267 Austral (Geologix)\FIGURES\Phase 2 ESA\100267 F4 Asbestos Location Map 31 10 2016 TO

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ASBESTOS LOCATION MAP

Phase 2 Environmental Site Assessment
230 Sixth Avenue, Austral NSW

Project No. 1601114

Figure 4

TABLES

Table 1 : Summary of Soil Analytical Data - Petroleum Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S1/0.2-0.3	S2/0.2-0.3	S3/0.3-0.5	S4/0.2-0.3	S5/0.2-0.3
	HSLs - A/B	Management	ESLs	Depth (m)	0.2-0.3	0.2-0.3	0.3-0.5	0.2-0.3	0.2-0.3
	Sand	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Coarse Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
TRH C_6-C_{10}	-	700	-		< 20	< 20	< 20	< 20	< 20
TRH C_6-C_{10} less BTEX (F1)	45	-	180		< 20	< 20	< 20	< 20	< 20
TRH >C_{10}-C_{16}	-	1,000	-		< 50	< 50	< 50	< 50	< 50
TRH >C_{10}-C_{16} less Naphthalene (F2)	110	-	120		< 50	< 50	< 50	< 50	< 50
TRH >C_{16}-C_{34}	-	2,500	300		< 100	180	< 100	< 100	< 100
TRH >C_{34}-C_{40}	-	10,000	2,800		< 100	< 100	< 100	< 100	< 100
Benzene	0.5	-	50		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	160	-	85		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	55	-	70		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	40	-	105		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	3	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, Sand 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, coarse material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, coarse soil.

Bold/red indicates exceedance of assessment criteria

Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Table 1 : Summary of Soil Analytical Data - Petroleum Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15	S9/0.0-0.15	S10/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.4-0.6	0.2-0.3	0.0-0.15	0.0-0.15	0.0-0.15
	Sand	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Coarse Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
TRH C_6-C_{10}	-	700	-		< 20	< 20	< 20	< 20	< 20
TRH C_6-C_{10} less BTEX (F1)	45	-	180		< 20	< 20	< 20	< 20	< 20
TRH >C_{10}-C_{16}	-	1,000	-		60	< 50	< 50	< 50	< 50
TRH >C_{10}-C_{16} less Naphthalene (F2)	110	-	120		60	< 50	< 50	< 50	< 50
TRH >C_{16}-C_{34}	-	2,500	300		< 100	< 100	< 100	120	110
TRH >C_{34}-C_{40}	-	10,000	2,800		< 100	< 100	< 100	< 100	< 100
Benzene	0.5	-	50		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	160	-	85		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	55	-	70		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	40	-	105		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	3	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, Sand 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, coarse material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, coarse soil.

Bold/red indicates exceedance of assessment criteria

Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Table 1 : Summary of Soil Analytical Data - Petroleum Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S11/0.0-0.2	DS1	RPD_TS1	TS1	RPD_DS1
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	-	-	-	-
	Sand	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Coarse Soil	Date	4/10/2016	4/10/2016	-	4/10/2016	-
TRH C_6-C_{10}	-	700	-		< 20	< 20	*nc*	< 20	*nc*
TRH C_6-C_{10} less BTEX (F1)	45	-	180		< 20	< 20	*nc*	< 20	*nc*
TRH >C_{10}-C_{16}	-	1,000	-		< 50	< 50	*nc*	< 50	*nc*
TRH >C_{10}-C_{16} less Naphthalene (F2)	110	-	120		< 50	< 50	*nc*	< 50	*nc*
TRH >C_{16}-C_{34}	-	2,500	300		< 100	100	*nc*	< 100	*nc*
TRH >C_{34}-C_{40}	-	10,000	2,800		< 100	< 100	*nc*	< 100	*nc*
Benzene	0.5	-	50		< 0.1	< 0.1	*nc*	< 0.1	*nc*
Toluene	160	-	85		< 0.1	< 0.1	*nc*	< 0.1	*nc*
Ethylbenzene	55	-	70		< 0.1	< 0.1	*nc*	< 0.1	*nc*
m&p-Xylenes	-	-	-		< 0.2	< 0.2	*nc*	< 0.2	*nc*
o-Xylene	-	-	-		< 0.1	< 0.1	*nc*	< 0.1	*nc*
Xylenes - Total	40	-	105		< 0.3	< 0.3	*nc*	< 0.3	*nc*
Naphthalene	3	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, Sand 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, coarse material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, coarse soil.

Bold/red indicates exceedance of assessment criteria

Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Table 1 : Summary of Soil Analytical Data - Petroleum Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S12/0.0-0.2	S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	0.0-0.15	0.0-0.2	0.1-0.25	0.0-0.15
	Sand	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Coarse Soil	Date	5/10/2016	5/10/2016	4/10/2016	4/10/2016	4/10/2016
TRH C_6-C_{10}	-	700	-		< 20	< 20	< 20	< 20	< 20
TRH C_6-C_{10} less BTEX (F1)	45	-	180		< 20	< 20	< 20	< 20	< 20
TRH >C_{10}-C_{16}	-	1,000	-		< 50	110	82	< 50	< 50
TRH >C_{10}-C_{16} less Naphthalene (F2)	110	-	120		< 50	110	82	< 50	< 50
TRH >C_{16}-C_{34}	-	2,500	300		< 100	**3,500**	290	< 100	< 100
TRH >C_{34}-C_{40}	-	10,000	2,800		< 100	1,200	< 100	< 100	< 100
Benzene	0.5	-	50		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	160	-	85		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	55	-	70		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	40	-	105		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	3	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, Sand 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, coarse material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, coarse soil.

Bold/red indicates exceedance of assessment criteria

Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
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Table 1 : Summary of Soil Analytical Data - Petroleum Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

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Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15	S22/0.15-0.35
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	0.35-0.55	0.0-0.15	0.0-0.15	0.15-0.35
	Sand	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Coarse Soil	Date	5/10/2016	4/10/2016	5/10/2016	5/10/2016	4/10/2016
TRH C_6-C_{10}	-	700	-		< 20	< 20	< 20	< 20	< 20
TRH C_6-C_{10} less BTEX (F1)	45	-	180		< 20	< 20	< 20	< 20	< 20
TRH >C_{10}-C_{16}	-	1,000	-		< 50	< 50	< 50	< 50	< 50
TRH >C_{10}-C_{16} less Naphthalene (F2)	110	-	120		< 50	< 50	< 50	< 50	< 50
TRH >C_{16}-C_{34}	-	2,500	300		**540**	< 100	< 100	< 100	170
TRH >C_{34}-C_{40}	-	10,000	2,800		220	< 100	< 100	< 100	< 100
Benzene	0.5	-	50		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	160	-	85		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	55	-	70		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	40	-	105		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	3	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, Sand 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, coarse material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, coarse soil.

Bold/red indicates exceedance of assessment criteria

Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Table 1 : Summary of Soil Analytical Data - Petroleum Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S24/0.0-0.15	S25/0.4-0.6	S26/0.3-0.5	BH1/0.15-0.3	B1/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.15	0.4-0.6	0.3-0.5	0.15-0.3	0.0-0.15
	Sand	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Coarse Soil	Date	4/10/2016	4/10/2016	4/10/2016	6/10/2016	6/10/2016
TRH C_6-C_{10}	-	700	-		< 20	< 20	< 20	< 20	< 20
TRH C_6-C_{10} less BTEX (F1)	45	-	180		< 20	< 20	< 20	< 20	< 20
TRH >C_{10}-C_{16}	-	1,000	-		< 50	< 50	< 50	< 50	170
TRH >C_{10}-C_{16} less Naphthalene (F2)	110	-	120		< 50	< 50	< 50	< 50	**170**
TRH >C_{16}-C_{34}	-	2,500	300		< 100	< 100	< 100	< 100	**1,900**
TRH >C_{34}-C_{40}	-	10,000	2,800		< 100	< 100	< 100	< 100	620
Benzene	0.5	-	50		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	160	-	85		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	55	-	70		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	40	-	105		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Naphthalene	3	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, Sand 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, coarse material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, coarse soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Bold/red indicates exceedance of assessment criteria

Table 1 : Summary of Soil Analytical Data - Petroleum Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

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	Criteria 1	Criteria 2	Criteria 3	Sample ID	B2/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.15
	Sand	Limits	Urban Res	Type	-
	0 to <1 m	Res/Park	Coarse Soil	Date	6/10/2016
TRH C_6-C_{10}	-	700	-		< 20
TRH C_6-C_{10} less BTEX (F1)	45	-	180		< 20
TRH >C_{10}-C_{16}	-	1,000	-		< 50
TRH >C_{10}-C_{16} less Naphthalene (F2)	110	-	120		< 50
TRH >C_{16}-C_{34}	-	2,500	300		**1,400**
TRH >C_{34}-C_{40}	-	10,000	2,800		250
Benzene	0.5	-	50		< 0.1
Toluene	160	-	85		< 0.1
Ethylbenzene	55	-	70		< 0.1
m&p-Xylenes	-	-	-		< 0.2
o-Xylene	-	-	-		< 0.1
Xylenes - Total	40	-	105		< 0.3
Naphthalene	3	-	-		< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, Sand 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, coarse material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, coarse soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
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	Criteria 1	Criteria 2	Criteria 3	Sample ID	S1/0.2-0.3	S2/0.2-0.3	S3/0.3-0.5	S4/0.2-0.3	S5/0.2-0.3
	HSLs - A/B	Management	ESLs	Depth (m)	0.2-0.3	0.2-0.3	0.3-0.5	0.2-0.3	0.2-0.3
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
1.1-Dichloroethane	-	-	-		--	--	--	--	--
1.1-Dichloroethene	-	-	-		--	--	--	--	--
1.1.1-Trichloroethane	-	-	-		--	--	--	--	--
1.1.1.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.1.2-Trichloroethane	-	-	-		--	--	--	--	--
1.1.2.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.2-Dibromoethane	-	-	-		--	--	--	--	--
1.2-Dichlorobenzene	-	-	-		--	--	--	--	--
1.2-Dichloroethane	-	-	-		--	--	--	--	--
1.2-Dichloropropane	-	-	-		--	--	--	--	--
1.2.3-Trichloropropane	-	-	-		--	--	--	--	--
1.2.4-Trimethylbenzene	-	-	-		--	--	--	--	--
1.3-Dichlorobenzene	-	-	-		--	--	--	--	--
1.3-Dichloropropane	-	-	-		--	--	--	--	--
1.3.5-Trimethylbenzene	-	-	-		--	--	--	--	--
1.4-Dichlorobenzene	-	-	-		--	--	--	--	--
2-Butanone (MEK)	-	-	-		--	--	--	--	--
2-Propanone (Acetone)	-	-	-		--	--	--	--	--
4-Chlorotoluene	-	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
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DS1 = duplicate of S11/0.0-0.2
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S1/0.2-0.3	S2/0.2-0.3	S3/0.3-0.5	S4/0.2-0.3	S5/0.2-0.3
	HSLs - A/B	Management	ESLs	Depth (m)	0.2-0.3	0.2-0.3	0.3-0.5	0.2-0.3	0.2-0.3
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
4-Methyl-2-pentanone (MIBK)	-	-	-		--	--	--	--	--
Allyl chloride	-	-	-		--	--	--	--	--
Benzene	0.6	-	65		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	-	-	-		--	--	--	--	--
Bromochloromethane	-	-	-		--	--	--	--	--
Bromodichloromethane	-	-	-		--	--	--	--	--
Bromoform	-	-	-		--	--	--	--	--
Bromomethane	-	-	-		--	--	--	--	--
Carbon disulfide	-	-	-		--	--	--	--	--
Carbon Tetrachloride	-	-	-		--	--	--	--	--
Chlorobenzene	-	-	-		--	--	--	--	--
Chloroethane	-	-	-		--	--	--	--	--
Chloroform	-	-	-		--	--	--	--	--
Chloromethane	-	-	-		--	--	--	--	--
cis-1.2-Dichloroethene	-	-	-		--	--	--	--	--
cis-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Dibromochloromethane	-	-	-		--	--	--	--	--
Dibromomethane	-	-	-		--	--	--	--	--
Dichlorodifluoromethane	-	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S1/0.2-0.3	S2/0.2-0.3	S3/0.3-0.5	S4/0.2-0.3	S5/0.2-0.3
	HSLs - A/B	Management	ESLs	Depth (m)	0.2-0.3	0.2-0.3	0.3-0.5	0.2-0.3	0.2-0.3
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
Ethylbenzene	NL	-	125		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	-	-	-		--	--	--	--	--
Isopropyl benzene (Cumene)	-	-	-		--	--	--	--	--
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	-	-	-		--	--	--	--	--
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	-	-	-		--	--	--	--	--
Tetrachloroethene	-	-	-		--	--	--	--	--
Toluene	390	-	105		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	-	-	-		--	--	--	--	--
trans-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Trichloroethene	-	-	-		--	--	--	--	--
Trichlorofluoromethane	-	-	-		--	--	--	--	--
Vinyl chloride	-	-	-		--	--	--	--	--
Xylenes - Total	95	-	45		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Notes:

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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15	S9/0.0-0.15	S10/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.4-0.6	0.2-0.3	0.0-0.15	0.0-0.15	0.0-0.15
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
1.1-Dichloroethane	-	-	-		--	--	--	--	--
1.1-Dichloroethene	-	-	-		--	--	--	--	--
1.1.1-Trichloroethane	-	-	-		--	--	--	--	--
1.1.1.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.1.2-Trichloroethane	-	-	-		--	--	--	--	--
1.1.2.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.2-Dibromoethane	-	-	-		--	--	--	--	--
1.2-Dichlorobenzene	-	-	-		--	--	--	--	--
1.2-Dichloroethane	-	-	-		--	--	--	--	--
1.2-Dichloropropane	-	-	-		--	--	--	--	--
1.2.3-Trichloropropane	-	-	-		--	--	--	--	--
1.2.4-Trimethylbenzene	-	-	-		--	--	--	--	--
1.3-Dichlorobenzene	-	-	-		--	--	--	--	--
1.3-Dichloropropane	-	-	-		--	--	--	--	--
1.3.5-Trimethylbenzene	-	-	-		--	--	--	--	--
1.4-Dichlorobenzene	-	-	-		--	--	--	--	--
2-Butanone (MEK)	-	-	-		--	--	--	--	--
2-Propanone (Acetone)	-	-	-		--	--	--	--	--
4-Chlorotoluene	-	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
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Bold/red indicates exceedance of assessment criteria

Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15	S9/0.0-0.15	S10/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.4-0.6	0.2-0.3	0.0-0.15	0.0-0.15	0.0-0.15
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
4-Methyl-2-pentanone (MIBK)	-	-	-		--	--	--	--	--
Allyl chloride	-	-	-		--	--	--	--	--
Benzene	0.6	-	65		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	-	-	-		--	--	--	--	--
Bromochloromethane	-	-	-		--	--	--	--	--
Bromodichloromethane	-	-	-		--	--	--	--	--
Bromoform	-	-	-		--	--	--	--	--
Bromomethane	-	-	-		--	--	--	--	--
Carbon disulfide	-	-	-		--	--	--	--	--
Carbon Tetrachloride	-	-	-		--	--	--	--	--
Chlorobenzene	-	-	-		--	--	--	--	--
Chloroethane	-	-	-		--	--	--	--	--
Chloroform	-	-	-		--	--	--	--	--
Chloromethane	-	-	-		--	--	--	--	--
cis-1.2-Dichloroethene	-	-	-		--	--	--	--	--
cis-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Dibromochloromethane	-	-	-		--	--	--	--	--
Dibromomethane	-	-	-		--	--	--	--	--
Dichlorodifluoromethane	-	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15	S9/0.0-0.15	S10/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.4-0.6	0.2-0.3	0.0-0.15	0.0-0.15	0.0-0.15
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
Ethylbenzene	NL	-	125		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	-	-	-		--	--	--	--	--
Isopropyl benzene (Cumene)	-	-	-		--	--	--	--	--
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	-	-	-		--	--	--	--	--
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	-	-	-		--	--	--	--	--
Tetrachloroethene	-	-	-		--	--	--	--	--
Toluene	390	-	105		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	-	-	-		--	--	--	--	--
trans-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Trichloroethene	-	-	-		--	--	--	--	--
Trichlorofluoromethane	-	-	-		--	--	--	--	--
Vinyl chloride	-	-	-		--	--	--	--	--
Xylenes - Total	95	-	45		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
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DS1 = duplicate of S11/0.0-0.2
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S11/0.0-0.2	DS1	RPD_TS1	TS1	RPD_DS1
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	-	-	-	-
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	-	4/10/2016	-
1.1-Dichloroethane	-	-	-		--	--	--	--	--
1.1-Dichloroethene	-	-	-		--	--	--	--	--
1.1.1-Trichloroethane	-	-	-		--	--	--	--	--
1.1.1.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.1.2-Trichloroethane	-	-	-		--	--	--	--	--
1.1.2.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.2-Dibromoethane	-	-	-		--	--	--	--	--
1.2-Dichlorobenzene	-	-	-		--	--	--	--	--
1.2-Dichloroethane	-	-	-		--	--	--	--	--
1.2-Dichloropropane	-	-	-		--	--	--	--	--
1.2.3-Trichloropropane	-	-	-		--	--	--	--	--
1.2.4-Trimethylbenzene	-	-	-		--	--	--	--	--
1.3-Dichlorobenzene	-	-	-		--	--	--	--	--
1.3-Dichloropropane	-	-	-		--	--	--	--	--
1.3.5-Trimethylbenzene	-	-	-		--	--	--	--	--
1.4-Dichlorobenzene	-	-	-		--	--	--	--	--
2-Butanone (MEK)	-	-	-		--	--	--	--	--
2-Propanone (Acetone)	-	-	-		--	--	--	--	--
4-Chlorotoluene	-	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
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Total concentrations in mg/kg
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S11/0.0-0.2	DS1	RPD_TS1	TS1	RPD_DS1
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	-	-	-	-
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	-	4/10/2016	-
4-Methyl-2-pentanone (MIBK)	-	-	-		--	--	--	--	--
Allyl chloride	-	-	-		--	--	--	--	--
Benzene	0.6	-	65		< 0.1	< 0.1	*nc*	< 0.1	*nc*
Bromobenzene	-	-	-		--	--	--	--	--
Bromochloromethane	-	-	-		--	--	--	--	--
Bromodichloromethane	-	-	-		--	--	--	--	--
Bromoform	-	-	-		--	--	--	--	--
Bromomethane	-	-	-		--	--	--	--	--
Carbon disulfide	-	-	-		--	--	--	--	--
Carbon Tetrachloride	-	-	-		--	--	--	--	--
Chlorobenzene	-	-	-		--	--	--	--	--
Chloroethane	-	-	-		--	--	--	--	--
Chloroform	-	-	-		--	--	--	--	--
Chloromethane	-	-	-		--	--	--	--	--
cis-1.2-Dichloroethene	-	-	-		--	--	--	--	--
cis-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Dibromochloromethane	-	-	-		--	--	--	--	--
Dibromomethane	-	-	-		--	--	--	--	--
Dichlorodifluoromethane	-	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S11/0.0-0.2	DS1	RPD_TS1	TS1	RPD_DS1
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	-	-	-	-
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	-	4/10/2016	-
Ethylbenzene	NL	-	125		< 0.1	< 0.1	*nc*	< 0.1	*nc*
Iodomethane	-	-	-		--	--	--	--	--
Isopropyl benzene (Cumene)	-	-	-		--	--	--	--	--
m&p-Xylenes	-	-	-		< 0.2	< 0.2	*nc*	< 0.2	*nc*
Methylene Chloride	-	-	-		--	--	--	--	--
o-Xylene	-	-	-		< 0.1	< 0.1	*nc*	< 0.1	*nc*
Styrene	-	-	-		--	--	--	--	--
Tetrachloroethene	-	-	-		--	--	--	--	--
Toluene	390	-	105		< 0.1	< 0.1	*nc*	< 0.1	*nc*
trans-1.2-Dichloroethene	-	-	-		--	--	--	--	--
trans-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Trichloroethene	-	-	-		--	--	--	--	--
Trichlorofluoromethane	-	-	-		--	--	--	--	--
Vinyl chloride	-	-	-		--	--	--	--	--
Xylenes - Total	95	-	45		< 0.3	< 0.3	*nc*	< 0.3	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

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Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S12/0.0-0.2	S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	0.0-0.15	0.0-0.2	0.1-0.25	0.0-0.15
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	5/10/2016	5/10/2016	4/10/2016	4/10/2016	4/10/2016
1.1-Dichloroethane	-	-	-		--	--	--	--	--
1.1-Dichloroethene	-	-	-		--	--	--	--	--
1.1.1-Trichloroethane	-	-	-		--	--	--	--	--
1.1.1.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.1.2-Trichloroethane	-	-	-		--	--	--	--	--
1.1.2.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.2-Dibromoethane	-	-	-		--	--	--	--	--
1.2-Dichlorobenzene	-	-	-		--	--	--	--	--
1.2-Dichloroethane	-	-	-		--	--	--	--	--
1.2-Dichloropropane	-	-	-		--	--	--	--	--
1.2.3-Trichloropropane	-	-	-		--	--	--	--	--
1.2.4-Trimethylbenzene	-	-	-		--	--	--	--	--
1.3-Dichlorobenzene	-	-	-		--	--	--	--	--
1.3-Dichloropropane	-	-	-		--	--	--	--	--
1.3.5-Trimethylbenzene	-	-	-		--	--	--	--	--
1.4-Dichlorobenzene	-	-	-		--	--	--	--	--
2-Butanone (MEK)	-	-	-		--	--	--	--	--
2-Propanone (Acetone)	-	-	-		--	--	--	--	--
4-Chlorotoluene	-	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S12/0.0-0.2	S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	0.0-0.15	0.0-0.2	0.1-0.25	0.0-0.15
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	5/10/2016	5/10/2016	4/10/2016	4/10/2016	4/10/2016
4-Methyl-2-pentanone (MIBK)	-	-	-		--	--	--	--	--
Allyl chloride	-	-	-		--	--	--	--	--
Benzene	0.6	-	65		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	-	-	-		--	--	--	--	--
Bromochloromethane	-	-	-		--	--	--	--	--
Bromodichloromethane	-	-	-		--	--	--	--	--
Bromoform	-	-	-		--	--	--	--	--
Bromomethane	-	-	-		--	--	--	--	--
Carbon disulfide	-	-	-		--	--	--	--	--
Carbon Tetrachloride	-	-	-		--	--	--	--	--
Chlorobenzene	-	-	-		--	--	--	--	--
Chloroethane	-	-	-		--	--	--	--	--
Chloroform	-	-	-		--	--	--	--	--
Chloromethane	-	-	-		--	--	--	--	--
cis-1.2-Dichloroethene	-	-	-		--	--	--	--	--
cis-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Dibromochloromethane	-	-	-		--	--	--	--	--
Dibromomethane	-	-	-		--	--	--	--	--
Dichlorodifluoromethane	-	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S12/0.0-0.2	S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	0.0-0.15	0.0-0.2	0.1-0.25	0.0-0.15
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	5/10/2016	5/10/2016	4/10/2016	4/10/2016	4/10/2016
Ethylbenzene	NL	-	125		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	-	-	-		--	--	--	--	--
Isopropyl benzene (Cumene)	-	-	-		--	--	--	--	--
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	-	-	-		--	--	--	--	--
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	-	-	-		--	--	--	--	--
Tetrachloroethene	-	-	-		--	--	--	--	--
Toluene	390	-	105		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	-	-	-		--	--	--	--	--
trans-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Trichloroethene	-	-	-		--	--	--	--	--
Trichlorofluoromethane	-	-	-		--	--	--	--	--
Vinyl chloride	-	-	-		--	--	--	--	--
Xylenes - Total	95	-	45		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15	S22/0.15-0.35
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	0.35-0.55	0.0-0.15	0.0-0.15	0.15-0.35
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	5/10/2016	4/10/2016	5/10/2016	5/10/2016	4/10/2016
1.1-Dichloroethane	-	-	-		--	--	--	--	--
1.1-Dichloroethene	-	-	-		--	--	--	--	--
1.1.1-Trichloroethane	-	-	-		--	--	--	--	--
1.1.1.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.1.2-Trichloroethane	-	-	-		--	--	--	--	--
1.1.2.2-Tetrachloroethane	-	-	-		--	--	--	--	--
1.2-Dibromoethane	-	-	-		--	--	--	--	--
1.2-Dichlorobenzene	-	-	-		--	--	--	--	--
1.2-Dichloroethane	-	-	-		--	--	--	--	--
1.2-Dichloropropane	-	-	-		--	--	--	--	--
1.2.3-Trichloropropane	-	-	-		--	--	--	--	--
1.2.4-Trimethylbenzene	-	-	-		--	--	--	--	--
1.3-Dichlorobenzene	-	-	-		--	--	--	--	--
1.3-Dichloropropane	-	-	-		--	--	--	--	--
1.3.5-Trimethylbenzene	-	-	-		--	--	--	--	--
1.4-Dichlorobenzene	-	-	-		--	--	--	--	--
2-Butanone (MEK)	-	-	-		--	--	--	--	--
2-Propanone (Acetone)	-	-	-		--	--	--	--	--
4-Chlorotoluene	-	-	-		--	--	--	--	--

Notes:

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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15	S22/0.15-0.35
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	0.35-0.55	0.0-0.15	0.0-0.15	0.15-0.35
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	5/10/2016	4/10/2016	5/10/2016	5/10/2016	4/10/2016
4-Methyl-2-pentanone (MIBK)	-	-	-		--	--	--	--	--
Allyl chloride	-	-	-		--	--	--	--	--
Benzene	0.6	-	65		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	-	-	-		--	--	--	--	--
Bromochloromethane	-	-	-		--	--	--	--	--
Bromodichloromethane	-	-	-		--	--	--	--	--
Bromoform	-	-	-		--	--	--	--	--
Bromomethane	-	-	-		--	--	--	--	--
Carbon disulfide	-	-	-		--	--	--	--	--
Carbon Tetrachloride	-	-	-		--	--	--	--	--
Chlorobenzene	-	-	-		--	--	--	--	--
Chloroethane	-	-	-		--	--	--	--	--
Chloroform	-	-	-		--	--	--	--	--
Chloromethane	-	-	-		--	--	--	--	--
cis-1.2-Dichloroethene	-	-	-		--	--	--	--	--
cis-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Dibromochloromethane	-	-	-		--	--	--	--	--
Dibromomethane	-	-	-		--	--	--	--	--
Dichlorodifluoromethane	-	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15	S22/0.15-0.35
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.2	0.35-0.55	0.0-0.15	0.0-0.15	0.15-0.35
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	5/10/2016	4/10/2016	5/10/2016	5/10/2016	4/10/2016
Ethylbenzene	NL	-	125		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	-	-	-		--	--	--	--	--
Isopropyl benzene (Cumene)	-	-	-		--	--	--	--	--
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	-	-	-		--	--	--	--	--
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	-	-	-		--	--	--	--	--
Tetrachloroethene	-	-	-		--	--	--	--	--
Toluene	390	-	105		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	-	-	-		--	--	--	--	--
trans-1.3-Dichloropropene	-	-	-		--	--	--	--	--
Trichloroethene	-	-	-		--	--	--	--	--
Trichlorofluoromethane	-	-	-		--	--	--	--	--
Vinyl chloride	-	-	-		--	--	--	--	--
Xylenes - Total	95	-	45		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S24/0.0-0.15	S25/0.4-0.6	S26/0.3-0.5	BH1/0.15-0.3	B1/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.15	0.4-0.6	0.3-0.5	0.15-0.3	0.0-0.15
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	6/10/2016	6/10/2016
1.1-Dichloroethane	-	-	-		--	--	--	< 0.5	< 0.5
1.1-Dichloroethene	-	-	-		--	--	--	< 0.5	< 0.5
1.1.1-Trichloroethane	-	-	-		--	--	--	< 0.5	< 0.5
1.1.1.2-Tetrachloroethane	-	-	-		--	--	--	< 0.5	< 0.5
1.1.2-Trichloroethane	-	-	-		--	--	--	< 0.5	< 0.5
1.1.2.2-Tetrachloroethane	-	-	-		--	--	--	< 0.5	< 0.5
1.2-Dibromoethane	-	-	-		--	--	--	< 0.5	< 0.5
1.2-Dichlorobenzene	-	-	-		--	--	--	< 0.5	< 0.5
1.2-Dichloroethane	-	-	-		--	--	--	< 0.5	< 0.5
1.2-Dichloropropane	-	-	-		--	--	--	< 0.5	< 0.5
1.2.3-Trichloropropane	-	-	-		--	--	--	< 0.5	< 0.5
1.2.4-Trimethylbenzene	-	-	-		--	--	--	< 0.5	< 0.5
1.3-Dichlorobenzene	-	-	-		--	--	--	< 0.5	< 0.5
1.3-Dichloropropane	-	-	-		--	--	--	< 0.5	< 0.5
1.3.5-Trimethylbenzene	-	-	-		--	--	--	< 0.5	< 0.5
1.4-Dichlorobenzene	-	-	-		--	--	--	< 0.5	< 0.5
2-Butanone (MEK)	-	-	-		--	--	--	< 0.5	< 0.5
2-Propanone (Acetone)	-	-	-		--	--	--	< 5	< 5
4-Chlorotoluene	-	-	-		--	--	--	< 0.5	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S24/0.0-0.15	S25/0.4-0.6	S26/0.3-0.5	BH1/0.15-0.3	B1/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.15	0.4-0.6	0.3-0.5	0.15-0.3	0.0-0.15
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	6/10/2016	6/10/2016
4-Methyl-2-pentanone (MIBK)	-	-	-		--	--	--	< 0.5	< 0.5
Allyl chloride	-	-	-		--	--	--	< 0.05	< 0.05
Benzene	0.6	-	65		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromobenzene	-	-	-		--	--	--	< 0.5	< 0.5
Bromochloromethane	-	-	-		--	--	--	< 0.5	< 0.5
Bromodichloromethane	-	-	-		--	--	--	< 0.5	< 0.5
Bromoform	-	-	-		--	--	--	< 0.5	< 0.5
Bromomethane	-	-	-		--	--	--	< 0.5	< 0.5
Carbon disulfide	-	-	-		--	--	--	< 0.5	< 0.5
Carbon Tetrachloride	-	-	-		--	--	--	< 0.5	< 0.5
Chlorobenzene	-	-	-		--	--	--	< 0.5	< 0.5
Chloroethane	-	-	-		--	--	--	< 0.5	< 0.5
Chloroform	-	-	-		--	--	--	< 0.5	< 0.5
Chloromethane	-	-	-		--	--	--	< 0.5	< 0.5
cis-1.2-Dichloroethene	-	-	-		--	--	--	< 0.5	< 0.5
cis-1.3-Dichloropropene	-	-	-		--	--	--	< 0.5	< 0.5
Dibromochloromethane	-	-	-		--	--	--	< 0.5	< 0.5
Dibromomethane	-	-	-		--	--	--	< 0.5	< 0.5
Dichlorodifluoromethane	-	-	-		--	--	--	< 0.5	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S24/0.0-0.15	S25/0.4-0.6	S26/0.3-0.5	BH1/0.15-0.3	B1/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.15	0.4-0.6	0.3-0.5	0.15-0.3	0.0-0.15
	Silt	Limits	Urban Res	Type	-	-	-	-	-
	0 to <1 m	Res/Park	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	6/10/2016	6/10/2016
Ethylbenzene	NL	-	125		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Iodomethane	-	-	-		--	--	--	< 0.5	< 0.5
Isopropyl benzene (Cumene)	-	-	-		--	--	--	< 0.5	< 0.5
m&p-Xylenes	-	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Methylene Chloride	-	-	-		--	--	--	< 0.5	< 0.5
o-Xylene	-	-	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Styrene	-	-	-		--	--	--	< 0.5	< 0.5
Tetrachloroethene	-	-	-		--	--	--	< 0.5	< 0.5
Toluene	390	-	105		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
trans-1.2-Dichloroethene	-	-	-		--	--	--	< 0.5	< 0.5
trans-1.3-Dichloropropene	-	-	-		--	--	--	< 0.5	< 0.5
Trichloroethene	-	-	-		--	--	--	< 0.5	< 0.5
Trichlorofluoromethane	-	-	-		--	--	--	< 0.5	< 0.5
Vinyl chloride	-	-	-		--	--	--	< 0.5	< 0.5
Xylenes - Total	95	-	45		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	B2/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.15
	Silt	Limits	Urban Res	Type	-
	0 to <1 m	Res/Park	Fine Soil	Date	6/10/2016
1.1-Dichloroethane	-	-	-		< 0.5
1.1-Dichloroethene	-	-	-		< 0.5
1.1.1-Trichloroethane	-	-	-		< 0.5
1.1.1.2-Tetrachloroethane	-	-	-		< 0.5
1.1.2-Trichloroethane	-	-	-		< 0.5
1.1.2.2-Tetrachloroethane	-	-	-		< 0.5
1.2-Dibromoethane	-	-	-		< 0.5
1.2-Dichlorobenzene	-	-	-		< 0.5
1.2-Dichloroethane	-	-	-		< 0.5
1.2-Dichloropropane	-	-	-		< 0.5
1.2.3-Trichloropropane	-	-	-		< 0.5
1.2.4-Trimethylbenzene	-	-	-		< 0.5
1.3-Dichlorobenzene	-	-	-		< 0.5
1.3-Dichloropropane	-	-	-		< 0.5
1.3.5-Trimethylbenzene	-	-	-		< 0.5
1.4-Dichlorobenzene	-	-	-		< 0.5
2-Butanone (MEK)	-	-	-		< 0.5
2-Propanone (Acetone)	-	-	-		< 5
4-Chlorotoluene	-	-	-		< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	B2/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.15
	Silt	Limits	Urban Res	Type	-
	0 to <1 m	Res/Park	Fine Soil	Date	6/10/2016
4-Methyl-2-pentanone (MIBK)	-	-	-		< 0.5
Allyl chloride	-	-	-		< 0.05
Benzene	0.6	-	65		< 0.1
Bromobenzene	-	-	-		< 0.5
Bromochloromethane	-	-	-		< 0.5
Bromodichloromethane	-	-	-		< 0.5
Bromoform	-	-	-		< 0.5
Bromomethane	-	-	-		< 0.5
Carbon disulfide	-	-	-		< 0.5
Carbon Tetrachloride	-	-	-		< 0.5
Chlorobenzene	-	-	-		< 0.5
Chloroethane	-	-	-		< 0.5
Chloroform	-	-	-		< 0.5
Chloromethane	-	-	-		< 0.5
cis-1.2-Dichloroethene	-	-	-		< 0.5
cis-1.3-Dichloropropene	-	-	-		< 0.5
Dibromochloromethane	-	-	-		< 0.5
Dibromomethane	-	-	-		< 0.5
Dichlorodifluoromethane	-	-	-		< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
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Table 2 : Summary of Soil Analytical Data - Volatile Organic Compounds

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	B2/0.0-0.15
	HSLs - A/B	Management	ESLs	Depth (m)	0.0-0.15
	Silt	Limits	Urban Res	Type	-
	0 to <1 m	Res/Park	Fine Soil	Date	6/10/2016
Ethylbenzene	NL	-	125		< 0.1
Iodomethane	-	-	-		< 0.5
Isopropyl benzene (Cumene)	-	-	-		< 0.5
m&p-Xylenes	-	-	-		< 0.2
Methylene Chloride	-	-	-		< 0.5
o-Xylene	-	-	-		< 0.1
Styrene	-	-	-		< 0.5
Tetrachloroethene	-	-	-		< 0.5
Toluene	390	-	105		< 0.1
trans-1.2-Dichloroethene	-	-	-		< 0.5
trans-1.3-Dichloropropene	-	-	-		< 0.5
Trichloroethene	-	-	-		< 0.5
Trichlorofluoromethane	-	-	-		< 0.5
Vinyl chloride	-	-	-		< 0.5
Xylenes - Total	95	-	45		< 0.3

Notes:

Criteria 1 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 2 = NEPC (1999) Amended, Residential and parkland Management Limits for TPH fractions in soil, fine material.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 3 : Summary of Soil Analytical Data - Polyaromatic Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S1/0.2-0.3	S2/0.2-0.3	S3/0.3-0.5	S4/0.2-0.3	S5/0.2-0.3
		HSLs - A/B	ESLs	Depth (m)	0.2-0.3	0.2-0.3	0.3-0.5	0.2-0.3	0.2-0.3
	HILs - A	Silt	Urban Res	Type	-	-	-	-	-
		0 to <1 m	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
Acenaphthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	-	-	-		< 0.5	0.7	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	-	-	0.7		< 0.5	**1.2**	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene	-	-	-		< 0.5	1.1	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	-	-	-		< 0.5	1.3	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	-	-	-		< 0.5	0.8	< 0.5	< 0.5	< 0.5
Chrysene	-	-	-		< 0.5	0.7	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	-	-	-		< 0.5	1.5	< 0.5	1.5	< 0.5
Fluorene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	-	-	-		< 0.5	0.8	< 0.5	< 0.5	< 0.5
Naphthalene	-	4	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	-	-	-		< 0.5	1.1	< 0.5	1	< 0.5
Pyrene	-	-	-		< 0.5	1.6	< 0.5	1.3	< 0.5
Benzo(a)pyrene TEQ	3	-	-		0.6	1.8	0.6	0.6	0.6
Total PAH	300	-	-		< 0.5	10.8	< 0.5	3.8	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 3 : Summary of Soil Analytical Data - Polyaromatic Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Criteria 3	Sample ID	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15	S9/0.0-0.15	S10/0.0-0.15
		HSLs - A/B	ESLs	Depth (m)	0.4-0.6	0.2-0.3	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Silt	Urban Res	Type	-	-	-	-	-
		0 to <1 m	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
Acenaphthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	-	-	-		< 0.5	< 0.5	< 0.5	0.7	< 0.5
Benzo(a)pyrene	-	-	0.7		< 0.5	< 0.5	< 0.5	**0.8**	< 0.5
Benzo(b&j)fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	0.6	< 0.5
Benzo(g.h.i)perylene	-	-	-		< 0.5	< 0.5	< 0.5	0.8	< 0.5
Benzo(k)fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	1.1	< 0.5
Chrysene	-	-	-		< 0.5	< 0.5	< 0.5	0.9	< 0.5
Dibenz(a.h)anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	2.6	< 0.5
Fluorene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	-	4	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	-	-	-		< 0.5	< 0.5	< 0.5	1.4	< 0.5
Pyrene	-	-	-		< 0.5	< 0.5	< 0.5	2.4	< 0.5
Benzo(a)pyrene TEQ	3	-	-		0.6	0.6	0.6	1.3	0.6
Total PAH	300	-	-		< 0.5	< 0.5	< 0.5	11.3	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 3 : Summary of Soil Analytical Data - Polyaromatic Hydrocarbons

Phase 2 Environmental Site Assessment

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	Criteria 1	Criteria 2	Criteria 3	Sample ID	S11/0.0-0.2	DS1	RPD_TS1	TS1	RPD_DS1
		HSLs - A/B	ESLs	Depth (m)	0.0-0.2	-	-	-	-
	HILs - A	Silt	Urban Res	Type	-	-	-	-	-
		0 to <1 m	Fine Soil	Date	4/10/2016	4/10/2016	-	4/10/2016	-
Acenaphthene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Acenaphthylene	-	-	-		< 0.5	0.6	*nc*	< 0.5	*nc*
Anthracene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Benz(a)anthracene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Benzo(a)pyrene	-	-	0.7		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Benzo(b&j)fluoranthene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Benzo(g.h.i)perylene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Benzo(k)fluoranthene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Chrysene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Dibenz(a.h)anthracene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Fluoranthene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Fluorene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Indeno(1.2.3-cd)pyrene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Naphthalene	-	4	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Phenanthrene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Pyrene	-	-	-		< 0.5	< 0.5	*nc*	< 0.5	*nc*
Benzo(a)pyrene TEQ	3	-	-		0.6	0.6	*0%*	0.6	*0%*
Total PAH	300	-	-		< 0.5	0.6	*nc*	< 0.5	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 3 : Summary of Soil Analytical Data - Polyaromatic Hydrocarbons

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	Criteria 1	Criteria 2	Criteria 3	Sample ID	S12/0.0-0.2	S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
		HSLs - A/B	ESLs	Depth (m)	0.0-0.2	0.0-0.15	0.0-0.2	0.1-0.25	0.0-0.15
	HILs - A	Silt	Urban Res	Type	-	-	-	-	-
		0 to <1 m	Fine Soil	Date	5/10/2016	5/10/2016	4/10/2016	4/10/2016	4/10/2016
Acenaphthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	0.6
Anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	-	-	0.7		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	-	4	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ	3	-	-		0.6	0.6	0.6	0.6	0.6
Total PAH	300	-	-		< 0.5	< 0.5	< 0.5	< 0.5	0.6

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 3 : Summary of Soil Analytical Data - Polyaromatic Hydrocarbons

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	Criteria 1	Criteria 2	Criteria 3	Sample ID	S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15	S22/0.15-0.35
		HSLs - A/B	ESLs	Depth (m)	0.0-0.2	0.35-0.55	0.0-0.15	0.0-0.15	0.15-0.35
	HILs - A	Silt	Urban Res	Type	-	-	-	-	-
		0 to <1 m	Fine Soil	Date	5/10/2016	4/10/2016	5/10/2016	5/10/2016	4/10/2016
Acenaphthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	1.2
Benzo(a)pyrene	-	-	0.7		< 0.5	< 0.5	< 0.5	< 0.5	**0.8**
Benzo(b&j)fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	0.9
Benzo(g.h.i)perylene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	0.7
Benzo(k)fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	0.8
Chrysene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	1.4
Dibenz(a.h)anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	3.3
Fluorene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	-	4	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	0.8
Pyrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	2.7
Benzo(a)pyrene TEQ	3	-	-		0.6	0.6	0.6	0.6	1.4
Total PAH	300	-	-		< 0.5	< 0.5	< 0.5	< 0.5	12.6

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Table 3 : Summary of Soil Analytical Data - Polyaromatic Hydrocarbons

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	Criteria 1	Criteria 2	Criteria 3	Sample ID	S24/0.0-0.15	S25/0.4-0.6	S26/0.3-0.5	BH1/0.15-0.3	B1/0.0-0.15
		HSLs - A/B	ESLs	Depth (m)	0.0-0.15	0.4-0.6	0.3-0.5	0.15-0.3	0.0-0.15
	HILs - A	Silt	Urban Res	Type	-	-	-	-	-
		0 to <1 m	Fine Soil	Date	4/10/2016	4/10/2016	4/10/2016	6/10/2016	6/10/2016
Acenaphthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	-	-	0.7		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	-	4	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	-	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ	3	-	-		0.6	0.6	0.6	0.6	0.6
Total PAH	300	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 3 : Summary of Soil Analytical Data - Polyaromatic Hydrocarbons

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230 Sixth Avenue,
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	Criteria 1	Criteria 2	Criteria 3	Sample ID	B2/0.0-0.15
		HSLs - A/B	ESLs	Depth (m)	0.0-0.15
	HILs - A	Silt	Urban Res	Type	-
		0 to <1 m	Fine Soil	Date	6/10/2016
Acenaphthene	-	-	-		< 0.5
Acenaphthylene	-	-	-		< 0.5
Anthracene	-	-	-		< 0.5
Benz(a)anthracene	-	-	-		< 0.5
Benzo(a)pyrene	-	-	0.7		< 0.5
Benzo(b&j)fluoranthene	-	-	-		< 0.5
Benzo(g.h.i)perylene	-	-	-		< 0.5
Benzo(k)fluoranthene	-	-	-		< 0.5
Chrysene	-	-	-		< 0.5
Dibenz(a.h)anthracene	-	-	-		< 0.5
Fluoranthene	-	-	-		< 0.5
Fluorene	-	-	-		< 0.5
Indeno(1.2.3-cd)pyrene	-	-	-		< 0.5
Naphthalene	-	4	-		< 0.5
Phenanthrene	-	-	-		< 0.5
Pyrene	-	-	-		< 0.5
Benzo(a)pyrene TEQ	3	-	-		0.6
Total PAH	300	-	-		< 0.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, 'A/B' Residential Soil Health Screening Levels for vapour intrusion, silt 0 to <1m.
Criteria 3 = NEPC (1999) Amended, Ecological Screening Levels for urban residential/public open space, fine soil.
Total concentrations in mg/kg
- = assessment criteria not available
NL = not limiting
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Soil Analytical Data - Heavy Metals

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S1/0.2-0.3	S2/0.2-0.3	S3/0.3-0.5	S4/0.2-0.3	S5/0.2-0.3
		EILS	Depth (m)	0.2-0.3	0.2-0.3	0.3-0.5	0.2-0.3	0.2-0.3
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
Arsenic	100	100		< 2	< 2	< 2	< 2	2.4
Cadmium	20	-		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	100[1]	460[2]		19	42	11	28	22
Copper	6,000	150		25	27	34	21	14
Lead	300	1,100		47	33	26	32	33
Mercury	40	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	400	190		14	31	16	22	8.1
Zinc	7,400	350		60	39	48	40	81

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Soil Analytical Data - Heavy Metals

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15	S9/0.0-0.15	S10/0.0-0.15
		EILS	Depth (m)	0.4-0.6	0.2-0.3	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
Arsenic	100	100		< 2	< 2	< 2	< 2	4.2
Cadmium	20	-		< 0.4	< 0.4	< 0.4	< 0.4	1.4
Chromium	100[1]	460[2]		25	23	57	45	18
Copper	6,000	150		16	20	37	**200**	29
Lead	300	1,100		28	32	30	180	36
Mercury	40	-		< 0.05	< 0.05	< 0.05	0.17	0.06
Nickel	400	190		7.8	15	50	33	14
Zinc	7,400	350		19	38	41	130	44

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Soil Analytical Data - Heavy Metals

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S11/0.0-0.2	DS1	TS1	RPD_TS1	RPD_DS1
		EILS	Depth (m)	0.0-0.2	-	-	-	-
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	4/10/2016	4/10/2016	-	-
Arsenic	100	100		< 2	< 2	4.7	*nc*	*nc*
Cadmium	20	-		< 0.4	< 0.4	< 0.4	*nc*	*nc*
Chromium	100[1]	460[2]		28	22	12	*80%*	*24%*
Copper	6,000	150		21	17	12	*55%*	*21%*
Lead	300	1,100		42	32	15	*95%*	*27%*
Mercury	40	-		0.2	0.27	< 0.1	*nc*	*30%*
Nickel	400	190		19	15	7.9	*83%*	*24%*
Zinc	7,400	350		38	30	36	*5%*	*24%*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Soil Analytical Data - Heavy Metals

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S12/0.0-0.2	S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
		EILS	Depth (m)	0.0-0.2	0.0-0.15	0.0-0.2	0.1-0.25	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	5/10/2016	4/10/2016	4/10/2016	4/10/2016
Arsenic	100	100		< 2	2.1	< 2	3.4	5.3
Cadmium	20	-		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	100[1]	460[2]		25	< 5	33	58	41
Copper	6,000	150		37	11	42	12	17
Lead	300	1,100		24	8.2	100	36	34
Mercury	40	-		< 0.05	0.07	< 0.05	< 0.05	< 0.05
Nickel	400	190		24	< 5	40	11	9.9
Zinc	7,400	350		110	50	130	31	31

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Soil Analytical Data - Heavy Metals

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15	S21/0.0-0.15
		EILS	Depth (m)	0.0-0.2	0.35-0.55	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	4/10/2016	5/10/2016	5/10/2016	5/10/2016
Arsenic	100	100		3.3	< 2	3.8	< 2	2.4
Cadmium	20	-		0.6	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	100[1]	460[2]		35	11	15	10	25
Copper	6,000	150		**1,300**	33	40	21	7.9
Lead	300	1,100		58	42	95	28	26
Mercury	40	-		< 0.05	< 0.05	0.05	< 0.05	< 0.05
Nickel	400	190		35	23	7.4	21	< 5
Zinc	7,400	350		100	34	150	73	7.5

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
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Table 4 : Summary of Soil Analytical Data - Heavy Metals

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S22/0.15-0.35	S23/0.0-0.15	DS2	TS2	RPD_TS2
		EILS	Depth (m)	0.15-0.35	0.0-0.15	-	-	-
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	5/10/2016	5/10/2016	4/10/2016	-
Arsenic	100	100		2.8	< 2	< 2	23	*nc*
Cadmium	20	-		< 0.4	< 0.4	< 0.4	< 0.4	*nc*
Chromium	100[1]	460[2]		18	11	11	53	*131%*
Copper	6,000	150		21	13	14	14	*7%*
Lead	300	1,100		40	17	20	41	*83%*
Mercury	40	-		< 0.05	< 0.05	< 0.05	0.2	*nc*
Nickel	400	190		14	7.2	7.7	16	*76%*
Zinc	7,400	350		39	31	31	33	*6%*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
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Table 4 : Summary of Soil Analytical Data - Heavy Metals

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	Criteria 1	Criteria 2	Sample ID	RPD_DS2	S24/0.0-0.15	S25/0.4-0.6	S26/0.3-0.5	SS1/0.0-0.15
		EILS	Depth (m)	-	0.0-0.15	0.4-0.6	0.3-0.5	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	-	4/10/2016	4/10/2016	4/10/2016	5/10/2016
Arsenic	100	100		*nc*	< 2	< 2	2.1	--
Cadmium	20	-		*nc*	< 0.4	< 0.4	< 0.4	--
Chromium	100[1]	460[2]		*0%*	8.7	12	35	--
Copper	6,000	150		*7%*	16	16	16	--
Lead	300	1,100		*16%*	17	17	27	40
Mercury	40	-		*nc*	< 0.05	< 0.05	< 0.05	--
Nickel	400	190		*7%*	11	10	17	--
Zinc	7,400	350		*0%*	33	34	26	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Table 4 : Summary of Soil Analytical Data - Heavy Metals

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	Criteria 1	Criteria 2	Sample ID	SS2/0.0-0.15	SS3/0.0-0.15	SS4/0.0-0.15	SS5/0.0-0.15	SS6/0.0-0.15
		EILS	Depth (m)	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	5/10/2016	5/10/2016	5/10/2016	5/10/2016
Arsenic	100	100		--	--	--	--	--
Cadmium	20	-		--	--	--	--	--
Chromium	100[1]	460[2]		--	--	--	--	--
Copper	6,000	150		--	--	--	--	--
Lead	300	1,100		32	57	**380**	98	28
Mercury	40	-		--	--	--	--	--
Nickel	400	190		--	--	--	--	--
Zinc	7,400	350		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
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Table 4 : Summary of Soil Analytical Data - Heavy Metals

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Project No.: 1601114

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	Criteria 1	Criteria 2	Sample ID	SS7/0.0-0.15	SS8/0.0-0.15	BH1/0.15-0.3	B1/0.0-0.15	B2/0.0-0.15
		EILS	Depth (m)	0.0-0.15	0.0-0.15	0.15-0.3	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	5/10/2016	6/10/2016	6/10/2016	6/10/2016
Arsenic	100	100		--	--	2.3	13	< 2
Cadmium	20	-		--	--	< 0.4	< 0.4	< 0.4
Chromium	100[1]	460[2]		--	--	22	23	32
Copper	6,000	150		--	--	15	50	57
Lead	300	1,100		57	34	77	86	54
Mercury	40	-		--	--	< 0.05	< 0.05	< 0.05
Nickel	400	190		--	--	7	26	22
Zinc	7,400	350		--	--	79	**900**	240

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
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Table 4 : Summary of Soil Analytical Data - Heavy Metals

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	C1
		EILS	Depth (m)	-
	HILs - A	Urban	Type	-
		Residential	Date	4/10/2016
Arsenic	100	100		3.3
Cadmium	20	-		< 0.4
Chromium	100[1]	460[2]		29
Copper	6,000	150		22
Lead	300	1,100		49
Mercury	40	-		< 0.05
Nickel	400	190		9
Zinc	7,400	350		42

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
[1]Guideline for Cromium (VI) used conservatively.
[2]Guideline for Chromium (III) used conservatively.
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S1/0.2-0.3	S2/0.2-0.3	S3/0.3-0.5	S4/0.2-0.3	S5/0.2-0.3
		EILS	Depth (m)	0.2-0.3	0.2-0.3	0.3-0.5	0.2-0.3	0.2-0.3
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
4.4'-DDD	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	-	180		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordanes - Total	50	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
d-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	10	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	6	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	10	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S1/0.2-0.3	S2/0.2-0.3	S3/0.3-0.5	S4/0.2-0.3	S5/0.2-0.3
		EILS	Depth (m)	0.2-0.3	0.2-0.3	0.3-0.5	0.2-0.3	0.2-0.3
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
Methoxychlor	300	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	20	-		< 1	< 1	< 1	< 1	< 1
Aldrin + Dieldrin	6	-		ND	ND	ND	ND	ND
Endosulfans - Total	270	-		ND	ND	ND	ND	ND
DDD + DDE + DDT	240	-		ND	ND	ND	ND	ND
Scheduled Chemical Wastes	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15	S9/0.0-0.15	S10/0.0-0.15
		EILS	Depth (m)	0.4-0.6	0.2-0.3	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
4.4'-DDD	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	-	180		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordanes - Total	50	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
d-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	10	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	6	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	10	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15	S9/0.0-0.15	S10/0.0-0.15
		EILS	Depth (m)	0.4-0.6	0.2-0.3	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	4/10/2016	4/10/2016	4/10/2016	4/10/2016
Methoxychlor	300	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	20	-		< 1	< 1	< 1	< 1	< 1
Aldrin + Dieldrin	6	-		ND	ND	ND	ND	ND
Endosulfans - Total	270	-		ND	ND	ND	ND	ND
DDD + DDE + DDT	240	-		ND	ND	ND	ND	ND
Scheduled Chemical Wastes	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S11/0.0-0.2	DS1	TS1	RPD_TS1	RPD_DS1
		EILS	Depth (m)	0.0-0.2	-	-	-	-
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	4/10/2016	4/10/2016	-	-
4.4'-DDD	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
4.4'-DDE	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
4.4'-DDT	-	180		< 0.05	< 0.05	< 0.05	*nc*	*nc*
a-BHC	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Aldrin	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
b-BHC	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Chlordanes - Total	50	-		< 0.1	< 0.1	< 0.1	*nc*	*nc*
d-BHC	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Dieldrin	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Endosulfan I	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Endosulfan II	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Endosulfan sulphate	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Endrin	10	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Endrin aldehyde	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Endrin ketone	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
g-BHC (Lindane)	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Heptachlor	6	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Heptachlor epoxide	-	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*
Hexachlorobenzene	10	-		< 0.05	< 0.05	< 0.05	*nc*	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

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	Criteria 1	Criteria 2	Sample ID	S11/0.0-0.2	DS1	TS1	RPD_TS1	RPD_DS1
		EILS	Depth (m)	0.0-0.2	-	-	-	-
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	4/10/2016	4/10/2016	-	-
Methoxychlor	300	-		< 0.2	< 0.2	< 0.05	*nc*	*nc*
Toxaphene	20	-		< 1	< 1	< 1	*nc*	*nc*
Aldrin + Dieldrin	6	-		ND	ND	ND	*nc*	*nc*
Endosulfans - Total	270	-		ND	ND	ND	*nc*	*nc*
DDD + DDE + DDT	240	-		ND	ND	ND	*nc*	*nc*
Scheduled Chemical Wastes	-	-		ND	ND	ND	*nc*	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

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230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S12/0.0-0.2	S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
		EILS	Depth (m)	0.0-0.2	0.0-0.15	0.0-0.2	0.1-0.25	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	5/10/2016	4/10/2016	4/10/2016	4/10/2016
4.4'-DDD	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	-	180		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordanes - Total	50	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
d-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	10	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	6	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	10	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
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Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

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	Criteria 1	Criteria 2	Sample ID	S12/0.0-0.2	S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
		EILS	Depth (m)	0.0-0.2	0.0-0.15	0.0-0.2	0.1-0.25	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	5/10/2016	4/10/2016	4/10/2016	4/10/2016
Methoxychlor	300	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	20	-		< 1	< 1	< 1	< 1	< 1
Aldrin + Dieldrin	6	-		ND	ND	ND	ND	ND
Endosulfans - Total	270	-		ND	ND	ND	ND	ND
DDD + DDE + DDT	240	-		ND	ND	ND	ND	ND
Scheduled Chemical Wastes	-	-		ND	ND	ND	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

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	Criteria 1	Criteria 2	Sample ID	S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15	S21/0.0-0.15
		EILS	Depth (m)	0.0-0.2	0.35-0.55	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	4/10/2016	5/10/2016	5/10/2016	5/10/2016
4.4'-DDD	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	-	180		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordanes - Total	50	-		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
d-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	-	-		< 0.05	< 0.05	0.48	< 0.05	< 0.05
Endosulfan I	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	10	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	6	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	-	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	10	-		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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	Criteria 1	Criteria 2	Sample ID	S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15	S21/0.0-0.15
		EILS	Depth (m)	0.0-0.2	0.35-0.55	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	4/10/2016	5/10/2016	5/10/2016	5/10/2016
Methoxychlor	300	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	20	-		< 1	< 1	< 1	< 1	< 1
Aldrin + Dieldrin	6	-		ND	ND	0.48	ND	ND
Endosulfans - Total	270	-		ND	ND	ND	ND	ND
DDD + DDE + DDT	240	-		ND	ND	ND	ND	ND
Scheduled Chemical Wastes	-	-		ND	ND	0.48	ND	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

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230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	S22/0.15-0.35	S23/0.0-0.15	DS2	TS2	RPD_TS2
		EILS	Depth (m)	0.15-0.35	0.0-0.15	-	-	-
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	5/10/2016	5/10/2016	4/10/2016	-
4.4'-DDD	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
4.4'-DDE	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
4.4'-DDT	-	180		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
a-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Aldrin	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
b-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Chlordanes - Total	50	-		< 0.1	< 0.1	< 0.1	< 0.1	*nc*
d-BHC	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Dieldrin	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Endosulfan I	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Endosulfan II	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Endosulfan sulphate	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Endrin	10	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Endrin aldehyde	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Endrin ketone	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
g-BHC (Lindane)	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Heptachlor	6	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Heptachlor epoxide	-	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*
Hexachlorobenzene	10	-		< 0.05	< 0.05	< 0.05	< 0.05	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

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	Criteria 1	Criteria 2	Sample ID	S22/0.15-0.35	S23/0.0-0.15	DS2	TS2	RPD_TS2
		EILS	Depth (m)	0.15-0.35	0.0-0.15	-	-	-
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	4/10/2016	5/10/2016	5/10/2016	4/10/2016	-
Methoxychlor	300	-		< 0.2	< 0.2	< 0.2	< 0.05	*nc*
Toxaphene	20	-		< 1	< 1	< 1	< 1	*nc*
Aldrin + Dieldrin	6	-		ND	ND	ND	ND	*nc*
Endosulfans - Total	270	-		ND	ND	ND	ND	*nc*
DDD + DDE + DDT	240	-		ND	ND	ND	ND	*nc*
Scheduled Chemical Wastes	-	-		ND	ND	ND	ND	*nc*

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Bold/red indicates exceedance of assessment criteria

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230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	RPD_DS2	S24/0.0-0.15	S25/0.4-0.6	S26/0.3-0.5	SS1/0.0-0.15
		EILS	Depth (m)	-	0.0-0.15	0.4-0.6	0.3-0.5	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	-	4/10/2016	4/10/2016	4/10/2016	5/10/2016
4.4'-DDD	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
4.4'-DDE	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
4.4'-DDT	-	180		*nc*	< 0.05	< 0.05	< 0.05	--
a-BHC	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Aldrin	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
b-BHC	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Chlordanes - Total	50	-		*nc*	< 0.1	< 0.1	< 0.1	--
d-BHC	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Dieldrin	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Endosulfan I	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Endosulfan II	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Endosulfan sulphate	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Endrin	10	-		*nc*	< 0.05	< 0.05	< 0.05	--
Endrin aldehyde	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Endrin ketone	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
g-BHC (Lindane)	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Heptachlor	6	-		*nc*	< 0.05	< 0.05	< 0.05	--
Heptachlor epoxide	-	-		*nc*	< 0.05	< 0.05	< 0.05	--
Hexachlorobenzene	10	-		*nc*	< 0.05	< 0.05	< 0.05	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
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Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

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230 Sixth Avenue,
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	Criteria 1	Criteria 2	Sample ID	RPD_DS2	S24/0.0-0.15	S25/0.4-0.6	S26/0.3-0.5	SS1/0.0-0.15
		EILS	Depth (m)	-	0.0-0.15	0.4-0.6	0.3-0.5	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	-	4/10/2016	4/10/2016	4/10/2016	5/10/2016
Methoxychlor	300	-		*nc*	< 0.2	< 0.2	< 0.2	--
Toxaphene	20	-		*nc*	< 1	< 1	< 1	--
Aldrin + Dieldrin	6	-		*nc*	ND	ND	ND	--
Endosulfans - Total	270	-		*nc*	ND	ND	ND	--
DDD + DDE + DDT	240	-		*nc*	ND	ND	ND	--
Scheduled Chemical Wastes	-	-		*nc*	ND	ND	ND	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	SS2/0.0-0.15	SS3/0.0-0.15	SS4/0.0-0.15	SS5/0.0-0.15	SS6/0.0-0.15
		EILS	Depth (m)	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	5/10/2016	5/10/2016	5/10/2016	5/10/2016
4.4'-DDD	-	-		--	--	--	--	--
4.4'-DDE	-	-		--	--	--	--	--
4.4'-DDT	-	180		--	--	--	--	--
a-BHC	-	-		--	--	--	--	--
Aldrin	-	-		--	--	--	--	--
b-BHC	-	-		--	--	--	--	--
Chlordanes - Total	50	-		--	--	--	--	--
d-BHC	-	-		--	--	--	--	--
Dieldrin	-	-		--	--	--	--	--
Endosulfan I	-	-		--	--	--	--	--
Endosulfan II	-	-		--	--	--	--	--
Endosulfan sulphate	-	-		--	--	--	--	--
Endrin	10	-		--	--	--	--	--
Endrin aldehyde	-	-		--	--	--	--	--
Endrin ketone	-	-		--	--	--	--	--
g-BHC (Lindane)	-	-		--	--	--	--	--
Heptachlor	6	-		--	--	--	--	--
Heptachlor epoxide	-	-		--	--	--	--	--
Hexachlorobenzene	10	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	SS2/0.0-0.15	SS3/0.0-0.15	SS4/0.0-0.15	SS5/0.0-0.15	SS6/0.0-0.15
		EILS	Depth (m)	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	5/10/2016	5/10/2016	5/10/2016	5/10/2016
Methoxychlor	300	-		--	--	--	--	--
Toxaphene	20	-		--	--	--	--	--
Aldrin + Dieldrin	6	-		--	--	--	--	--
Endosulfans - Total	270	-		--	--	--	--	--
DDD + DDE + DDT	240	-		--	--	--	--	--
Scheduled Chemical Wastes	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	SS7/0.0-0.15	SS8/0.0-0.15	BH1/0.15-0.3	B1/0.0-0.15	B2/0.0-0.15
		EILS	Depth (m)	0.0-0.15	0.0-0.15	0.15-0.3	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	5/10/2016	6/10/2016	6/10/2016	6/10/2016
4.4'-DDD	-	-		--	--	--	--	--
4.4'-DDE	-	-		--	--	--	--	--
4.4'-DDT	-	180		--	--	--	--	--
a-BHC	-	-		--	--	--	--	--
Aldrin	-	-		--	--	--	--	--
b-BHC	-	-		--	--	--	--	--
Chlordanes - Total	50	-		--	--	--	--	--
d-BHC	-	-		--	--	--	--	--
Dieldrin	-	-		--	--	--	--	--
Endosulfan I	-	-		--	--	--	--	--
Endosulfan II	-	-		--	--	--	--	--
Endosulfan sulphate	-	-		--	--	--	--	--
Endrin	10	-		--	--	--	--	--
Endrin aldehyde	-	-		--	--	--	--	--
Endrin ketone	-	-		--	--	--	--	--
g-BHC (Lindane)	-	-		--	--	--	--	--
Heptachlor	6	-		--	--	--	--	--
Heptachlor epoxide	-	-		--	--	--	--	--
Hexachlorobenzene	10	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	SS7/0.0-0.15	SS8/0.0-0.15	BH1/0.15-0.3	B1/0.0-0.15	B2/0.0-0.15
		EILS	Depth (m)	0.0-0.15	0.0-0.15	0.15-0.3	0.0-0.15	0.0-0.15
	HILs - A	Urban	Type	-	-	-	-	-
		Residential	Date	5/10/2016	5/10/2016	6/10/2016	6/10/2016	6/10/2016
Methoxychlor	300	-		--	--	--	--	--
Toxaphene	20	-		--	--	--	--	--
Aldrin + Dieldrin	6	-		--	--	--	--	--
Endosulfans - Total	270	-		--	--	--	--	--
DDD + DDE + DDT	240	-		--	--	--	--	--
Scheduled Chemical Wastes	-	-		--	--	--	--	--

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	C1
		EILS	Depth (m)	-
	HILs - A	Urban	Type	-
		Residential	Date	4/10/2016
4.4'-DDD	-	-		< 0.05
4.4'-DDE	-	-		< 0.05
4.4'-DDT	-	180		< 0.05
a-BHC	-	-		< 0.05
Aldrin	-	-		< 0.05
b-BHC	-	-		< 0.05
Chlordanes - Total	50	-		< 0.1
d-BHC	-	-		< 0.05
Dieldrin	-	-		< 0.05
Endosulfan I	-	-		< 0.05
Endosulfan II	-	-		< 0.05
Endosulfan sulphate	-	-		< 0.05
Endrin	10	-		< 0.05
Endrin aldehyde	-	-		< 0.05
Endrin ketone	-	-		< 0.05
g-BHC (Lindane)	-	-		< 0.05
Heptachlor	6	-		< 0.05
Heptachlor epoxide	-	-		< 0.05
Hexachlorobenzene	10	-		< 0.05

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Soil Analytical Data - Organochlorine Pesticides

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Criteria 2	Sample ID	C1
		EILS	Depth (m)	-
	HILs - A	Urban	Type	-
		Residential	Date	4/10/2016
Methoxychlor	300	-		< 0.2
Toxaphene	20	-		< 1
Aldrin + Dieldrin	6	-		ND
Endosulfans - Total	270	-		ND
DDD + DDE + DDT	240	-		ND
Scheduled Chemical Wastes	-	-		ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'A' Residential Health-based Investigation Levels for soil contaminants.
Criteria 2 = NEPC (1999) Amended, Ecological Investigation Levels for urban residential/public open space, minimum ACLs.
Total concentrations in mg/kg
- = assessment criteria not available
DS1 = duplicate of S11/0.0-0.2
TS1 = triplicate of S11/0.0-0.2
DS2 = duplicate of S23/0.0-0.15
TS2 = triplicate of S23/0.0-0.15
RPD = relative percent difference of duplicate/triplicate
nc = RPD not calculated, one or both samples below laboratory reporting limit
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 6 : Summary of Soil Analytical Data - Asbestos

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Sample ID	SS1	SS2	SS3	SS4	SS5
		Depth (m)	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15
	Asbestos	Type	Soil	Soil	Soil	Soil	Soil
	in Soil	Date	5/10/2016	5/10/2016	5/10/2016	5/10/2016	5/10/2016
Fines/Fibrous Asbestos (AF/FA)	Presence		**Amo, Chr, Cro**	ND	ND	ND	ND
Bonded Asbestos (ACM)	Presence		ND	ND	ND	ND	ND

Notes:

Criteria 1 = Presence/absence of asbestos contamination in soil.
ND = no asbestos detected
Amo = Amosite asbestos detected
Chy = Chrysotile asbestos detected
Cro = Crocidolite asbestos detected
-- = sample not analysed
Bold/red indicates presence of asbestos therefore exceedance of assessment criteria

Table 6 : Summary of Soil Analytical Data - Asbestos

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Sample ID	SS6	SS7	SS8	AF1/0.0-0.15	AF2/0.0-0.15
		Depth (m)	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15
	Asbestos	Type	Soil	Soil	Soil	Soil	Soil
	in Soil	Date	5/10/2016	5/10/2016	5/10/2016	5/10/2016	5/10/2016
Fines/Fibrous Asbestos (AF/FA)	Presence		ND	ND	ND	ND	ND
Bonded Asbestos (ACM)	Presence		ND	ND	ND	ND	ND

Notes:

Criteria 1 = Presence/absence of asbestos contamination in soil.
ND = no asbestos detected
Amo = Amosite asbestos detected
Chy = Chrysotile asbestos detected
Cro = Crocidolite asbestos detected
-- = sample not analysed
Bold/red indicates presence of asbestos therefore exceedance of assessment criteria

Table 6 : Summary of Soil Analytical Data - Asbestos

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Sample ID	AF3/0.0-0.15	AF4/0.0-0.15	AF5/0.0-0.15	AF6/0.0-0.15
		Depth (m)	0.0-0.15	0.0-0.15	0.0-0.15	0.0-0.15
	Asbestos	Type	Soil	Soil	Soil	Soil
	in Soil	Date	5/10/2016	5/10/2016	5/10/2016	5/10/2016
Fines/Fibrous Asbestos (AF/FA)	Presence		ND	ND	ND	ND
Bonded Asbestos (ACM)	Presence		ND	ND	ND	ND

Notes:

Criteria 1 = Presence/absence of asbestos contamination in soil.
ND = no asbestos detected
Amo = Amosite asbestos detected
Chy = Chrysotile asbestos detected
Cro = Crocidolite asbestos detected
-- = sample not analysed
Bold/red indicates presence of asbestos therefore exceedance of assessment criteria

Table 7 : Summary of QAQC Water Analytical Data - Petroleum Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Sample ID	R1	R2	R3
		Depth (m)	-	-	-
		Type	-	-	-
		Date	4/10/2016	5/10/2016	6/10/2016
TRH C_6-C_{10}	-		< 20	< 20	< 20
TRH C_6-C_{10} less BTEX (F1)	-		< 20	< 20	< 20
TRH >C_{10}-C_{16}	-		< 50	< 50	< 50
TRH >C_{10}-C_{16} less Naphthalene (F2)	-		< 50	< 50	< 50
TRH >C_{16}-C_{34}	-		< 100	< 100	< 100
TRH >C_{34}-C_{40}	-		< 100	< 100	< 100
Benzene	-		< 1	< 1	< 1
Toluene	-		< 1	< 1	< 1
Ethylbenzene	-		< 1	< 1	< 1
m&p-Xylenes	-		< 2	< 2	< 2
o-Xylene	-		< 1	< 1	< 1
Xylenes - Total	-		< 3	< 3	< 3
Naphthalene	-		< 1	< 1	< 1

Notes:

Total concentrations in µg/L
- = assessment criteria not available
R1 = rinsate sample
R2 = rinsate sample
R3 = rinsate sample
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria

Table 8 : Summary of QAQC Water Analytical Data - Polyaromatic Hydrocarbons

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Sample ID	R1	R2	R3
		Depth (m)	-	-	-
		Type	-	-	-
		Date	4/10/2016	5/10/2016	6/10/2016
Acenaphthene	-		< 1	< 1	< 1
Acenaphthylene	-		< 1	< 1	< 1
Anthracene	-		< 1	< 1	< 1
Benz(a)anthracene	-		< 1	< 1	< 1
Benzo(a)pyrene	-		< 1	< 1	< 1
Benzo(b&j)fluoranthene	-		< 1	< 1	< 1
Benzo(g.h.i)perylene	-		< 1	< 1	< 1
Benzo(k)fluoranthene	-		< 1	< 1	< 1
Chrysene	-		< 1	< 1	< 1
Dibenz(a.h)anthracene	-		< 1	< 1	< 1
Fluoranthene	-		< 1	< 1	< 1
Fluorene	-		< 1	< 1	< 1
Indeno(1.2.3-cd)pyrene	-		< 1	< 1	< 1
Naphthalene	-		< 1	< 1	< 1
Phenanthrene	-		< 1	< 1	< 1
Pyrene	-		< 1	< 1	< 1
Benzo(a)pyrene TEQ	-		--	--	--
Total PAH	-		< 1	< 1	< 1

Notes:

Total concentrations in µg/L
- = assessment criteria not available
R1 = rinsate sample
R2 = rinsate sample
R3 = rinsate sample
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria

Table 9 : Summary of QAQC Water Analytical Data - Heavy Metals

Phase 2 Environmental Site Assessment

Project No.: 1601114

230 Sixth Avenue,
Austral NSW

	Criteria 1	Sample ID	R1	R2	R3
		Depth (m)	-	-	-
		Type	-	-	-
		Date	4/10/2016	5/10/2016	6/10/2016
Arsenic	-		< 1	< 1	< 1
Cadmium	-		< 0.2	< 0.2	< 0.2
Chromium	-		< 1	< 1	< 1
Copper	-		< 1	< 1	< 1
Lead	-		< 1	< 1	< 1
Mercury	-		< 0.1	< 0.1	< 0.1
Nickel	-		< 1	< 1	< 1
Zinc	-		< 5	< 5	< 5

Notes:

Total concentrations in µg/L
- = assessment criteria not available
R1 = rinsate sample
R2 = rinsate sample
R3 = rinsate sample
< # or ND = analyte(s) not detected in excess of laboratory reporting limit
-- = sample not analysed
Bold/red indicates exceedance of assessment criteria

ATTACHMENT A

LIVERPOOL CITY COUNCIL

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Ref.: 1601067:35521
Ppty: 23501

Cert. No.: 7391
Page No.: 1

Applicant:
GEO-LOGIX
2309/4 DAYDREAM ST
WARRIEWOOD NSW 2102

Receipt No.: 3359773
Receipt Amt.: 133.00
Date: 21-Jun-2016

Property Desc: **BINDI EYE, 230 SIXTH AVENUE, AUSTRAL NSW 2179**
LOT 1067 DP 2475

PRESCRIBED INFORMATION PROVIDED PURSUANT TO

SECTION 149(2) OF THE

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

NOTE: The following information is provided pursuant to Section 149(2) of the Environmental Planning and Assessment Act (EP&A Act) 1979 as prescribed by Schedule 4 of the Environmental Planning and Assessment Regulation (EP&A Regulation) 2000 and is applicable to the subject land as of the date of this certificate.

The Environmental Planning and Assessment Amendment Act 1997 commenced operation on the 1 July 1998. As a consequence of this Act the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment (Amendment) Regulation 1998, Environmental Planning and Assessment (Further Amendment) Regulation 1998 and Environmental Planning and Assessment (Savings and Transitional) Regulation, 1998.

(1) Names of relevant planning instruments and DCPs

(1) The name of each environment planning instrument that applies to the carrying out of Development on the land is/are listed below: -

Local Environmental Plans (LEPs)
Not Applicable

State Environmental Planning Policies (SEPPs)
State Environmental Planning Policy No. 19 – Bushland in Urban Areas
State Environmental Planning Policy No. 21 – Caravan Parks
State Environmental Planning Policy No. 30 – Intensive Agriculture
State Environmental Planning Policy No. 32 – Urban Consolidation (Redevelopment of Urban Land)
State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
State Environmental Planning Policy No. 44 – Koala Habitat
State Environmental Planning Policy No. 50 – Canal Estate Development
State Environmental Planning Policy No. 55 – Remediation of Land
State Environmental Planning Policy – (Exempt and Complying Development Codes) 2008
State Environmental Planning Policy No. 62 – Sustainable Aquaculture
State Environmental Planning Policy No. 64 – Advertising and Signage
State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development
State Environmental Planning Policy – (Building Sustainability Index: BASIX) 2004
State Environmental Planning Policy No. 70 – Affordable Housing (Revised Schemes)
State Environmental Planning Policy – (Infrastructure) 2007
State Environmental Planning Policy – (Mining, Petroleum Production and Extractive Industries) 2007
State Environmental Planning Policy – (Miscellaneous Consent Provisions) 2007
State Environmental Planning Policy – (Affordable Rental Housing) 2009
State Environmental Planning Policy (Sydney Regional Growth Centres) 2006
State Environmental Planning Policy – (Housing for Seniors or People with a Disability) 2004
State Environmental Planning Policy – (State and Regional Development) 2011

Deemed State Environmental Planning Policies (Deemed SEPPs)
Sydney Regional Environmental Plan No. 20 – Hawkesbury – Nepean River (No. 2 – 1997)
This plan applies to all the land within the Hawkesbury – Nepean River catchment. This plan aims to protect the environment of the Hawkesbury – Nepean River system by ensuring that the impacts of future land uses are considered in regional context. The plan provides specific planning policies and strategies and development controls for specific land use.

(2) The name of each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

Draft Local Environmental Plans (LEPs)
Not Applicable

Draft State Environmental Planning Policies (SEPPs)
Draft State Environmental Planning Policy (Competition) 2010

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

Liverpool Growth Centre Precincts Development Control Plan

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

2. ZONING AND LAND USE UNDER RELEVANT LOCAL ENVIRONMENTAL PLANS

Not Applicable

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

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

Part 3 of the State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (the 2006 SEPP), or

A Precinct Plan (within the meaning of the 2006 SEPP), or

A proposed Precinct Plan that is or has been the subject of community consultation or on public exhibition under the Act, or

State Environmental Planning Policy State Significant Precincts 2005.

The land is zoned under:

State Environmental Planning Policy (Sydney Region Growth Centres) 2006

(a) The Identity of the zone

R2 Low Density Residential.

(b) The purposes for which the instrument provides that development may be carried out within the zone without the need for development consent

Home-based child care; Home occupations.

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

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

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

Any development not specified in item (b) or (c)

(e) Dwelling House

The development standards applying to the land that fix minimum land dimensions for the erection of a dwelling house on the land are listed below:

No development standards applying to the land fix minimum land dimensions for the erection of a dwelling house on the land.

(f) Critical Habitat

The land does not include or comprise critical habitat.

(g) Conservation Area

Land is not located in a Conservation Area.

(h) Environmental Heritage

No item of Environmental Heritage is situated on the land.

3. Complying development

(1) The extent to which the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18(1) (C3) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Complying development under the General Housing Code may be carried out on this land.

Complying development under the General Development Code may be carried out on this land.

Complying development under the Rural Housing Code may be carried out on this land.

Complying development under the Fire Safety Code may be carried out on this land.

Complying development under the Housing Alterations Code may be carried out on this land.

Complying Development under the Commercial and Industrial Alterations Code may be carried out on this land.

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

Complying Development under the Subdivisions Code may be carried out on this land.

Complying Development under the Demolition Code may be carried out on this land.

(2) The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (C3) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.

Not Applicable

(3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Not Applicable

4. Coastal Protection Act 1979

There has been no notification from the Department of Public Works that the land is subject to the operation of Section 38 or 39 of the Coastal Protection Act, 1979.

4A Information relating to beaches and coasts

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

Not Applicable

(2) In relation to a coastal council:

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

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

Not Applicable

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

In relation to a coastal council—whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

Not Applicable

5. Mine Subsidence

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

The land is not a mine subsidence district.

6. Road Widening and Road Realignment

Whether or not the land is affected by any road widening or road realignment under:

(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) Any environmental planning instrument, or
(c) Any resolution of the council.

The land is not affected by any road widening or road realignment.

7. Council and Other Public Authority Policies on Hazard Risk Restrictions

Whether or not the land is affected by a policy:

(a) adopted by the council, or

(b) adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council, that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

Land Slip

The land is not affected by a policy adopted by the Council, or any other public authority and notified to the council for the express purpose of its adoption being referred to in a planning certificate that restricts the development of the land because of the likelihood of land slip.

Bushfire
The land is not affected by a policy adopted by the Council, or any other public authority and notified to the council for the express purpose of its adoption being referred to in a planning certificate which restricts the development of the land because of the likelihood of bushfire.

Tidal Inundation
The land is not affected by a policy adopted by the Council, or any other public authority and notified to the council for the express purpose of its adoption being referred to in a planning certificate that restricts the development of the land because of the likelihood of tidal inundation.

Subsidence
The land is not affected by a policy adopted by the Council, or any other public authority and notified to the council for the express purpose of its adoption being referred to in a planning certificate that restricts the development of the land because of the likelihood of subsidence.

Acid Sulphate Soil
The land is not affected by a policy adopted by the Council, or any other public authority and notified to the council for the express purpose of its adoption being referred to in a planning certificate that restricts the development of the land because of the likelihood of acid sulphate soil.

Other Risks
The land is not affected by a policy adopted by the Council, or any other public authority and notified to the council for the express purpose of its adoption being referred to in a planning certificate that restricts the development of the land because of the likelihood of any other risk.

7A. Flood Related Development Controls Information

Whether or not development on that land or part of the land for purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.

(1) Whether or not development on that land or part of the land for purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.

Part of the land is affected by flood inundation and therefore flood related controls apply to the land.

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

Development on part of the land for any other purpose may be subject to flood related development controls as the land is subject to the PMF (Probable Maximum Flood).

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

8. Land Reserved for Acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

No environmental planning instrument or proposed environmental planning instrument applying to the land provides for the acquisition of the land by a public authority.

9. Contribution Plans

The name of each contribution plan applying to the land is/are outlined below:

Liverpool Contributions Plan 2014 (Austral and Leppington North Precinct)

9A Biodiversity certified land

If the land is biodiversity certified land (within the meaning of Part 7AA of the Threatened Species Conservation Act 1995), a statement to that effect.

The land is biodiversity certified land within the meaning of Part 7AA of the Threatened Species Conservation Act (1995).

10. Biobanking agreements

If the land is land to which a bio-banking agreement under Part 7A of the Threatened Species Conservation Act 1995 relates, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Director-General of the Department of Environment, Climate Change and Water).

The land is not land to which a bio-banking agreement under part 7A of the *Threatened Species Conservation Act 1995* relates

11. Bushfire Prone Land

None of the land is bush fire prone land as defined in the Environmental Planning and Assessment Act 1979.

12. Property Vegetation Plans

If the land is land to which a Property Vegetation Plan under the Native Vegetation Act 2003 applies, a statement to that effect (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

The land is not land to which a property vegetation plan relates, as all land in the Liverpool Local Government Area is excluded from the operation of the *Native Vegetation Act 2003.*

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

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

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

14. Directions under Part 3A

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

No such direction applies to the land.

15. Site Compatibility Certificates and Conditions for Seniors Housing

If the land is land to which State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 applies:

(a) a statement of whether there is a current site compatibility certificate (seniors housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(i) The period for which the certificate is current, and
(ii) That a copy may be obtained from the head office of the Department of Planning

Council is not aware of a current site compatibility certificate (seniors housing) on the land

(b) a statement setting out any terms of a kind referred to in clause 18 (2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.

There have been no such terms imposed as a condition of consent to development on the land.

16. Site Compatibility Certificates for Infrastructure

A statement of whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) The period for which the certificate is valid, and
(b) That a copy may be obtained from the head office of the Department of Planning.

Council is not aware of a current site compatibility certificate (infrastructure) on the land.

17. Site compatibility certificates and conditions for affordable rental housing

(1) A statement of whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

(a) the period for which the certificate is current, and
(b) that a copy may be obtained from the head office of the Department of Planning.

Council is not aware of a current site compatibility certificate (affordable rental housing) on the land.

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

There have been no such terms imposed as a condition of consent to development on the land.

18. Paper subdivision information

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.
No such plan applies to the land.

(2) The date of any subdivision order that applies to the land.
No subdivision order applies to the land

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

19. Site verification certificates

A statement of whether there is a current site verification certificate, of which the council is aware, in respect of the land and, if there is a certificate, the statement is to include:

(a) The matter certified by the certificate

Council is not aware of a current site verification certificate on the land.

Note. A site verification certificate sets out the Director-General's opinion as to whether the land concerned is or is not biophysical strategic agricultural land or critical industry cluster land — see Division 3 of Part 4AA of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

(b) The date on which the certificate ceases to be current (if any), and

Not Applicable

(c) That a copy may be obtained from the head office of the Department of Planning and Infrastructure.

Not Applicable

Note. The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

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

No such exemption or authorisation applies to the land.

20. Loose-fill Asbestos Insulation

Some residential homes located in the Liverpool may have been identified as containing 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.

ADDITIONAL INFORMATION PROVIDED PURSUANT TO

SECTION 149(5) OF THE

ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979

1. Threatened Species Conservation Act

It is advisable for any application intending to purchase and/or develop land within the Liverpool Local Government Area to approach Council to ascertain if the requirements of the Threatened Species Act, 1995 are likely to apply to their land.

If the land has native vegetation of any sort (i.e. trees, shrubs, ground covers etc), has recently been cleared or is vacant land, it may have impediments to development under the Threatened Species Act, 1995.

Enquiries should be directed to Council's Infrastructure and Environment Department on 1300 362 170.

2. Tree Preservation Provision

The land is subject to a tree preservation provision.

3. Controlled Access Road

The land does not have a boundary to a controlled access road.

4. Other Information in Relation to Water

The property is identified as flood prone and is within the low risk flood category. Low Flood Risk Category means the outer extent of the floodplain (within the extent of the probable maximum flood) but not identified within either the High Flood Risk or the Medium Flood Risk Category. *(see Section 1 Clause 3 of the 149 Certificate for the relevant Development Control Plan for controls relating to flood prone land)*. For further information on flood risk contact Council on 1300 362 170.

On-Site Sewerage Management System/s

Council's records indicate that the property may not be connected to Sydney Water's sewerage system.

If the property is not connected and emits any waste water (sewerage) it must have an On-Site Sewerage Management System/s (Septic Tank(s)) that is operating satisfactorily. It is the ongoing responsibility of the current owner(s) of the property (at any given time) to ensure that any On-Site Sewerage Management System(s) (Septic Tank(s)) continually operate in compliance with the relevant provisions of the Local Government Act 1993, and the Protection of the Environment Operations Act 1997 (including regulations made there under).

It is recommended that any applicant intending to purchase the property make enquires to ascertain if the property has an On-Site Sewerage Management System/s (Septic Tank/s) and engage the services of a suitably qualified wastewater engineer or plumber to assess the condition and compliance status of those system(s).

5. Sydney Water Corporation
Nil

6. Foreshore Building Line
Nil

7. Contaminated Land
Nil

8. Airport Noise Affectation
Nil

9. Airport Acquisition
Nil

10. Environmentally Significant Land
Nil

11. Archaeological Management Plan
Nil

12. Unhealthy Building Land Proclamation
Nil

Luke West
Administration Services Coordinator
Liverpool City Council

For further information, please contact
CALL CENTRE – 1300 36 2170

ANNEXURE TO SECTION 149(5) CERTIFICATE

LIVERPOOL CITY COUNCIL

Issue Date: 23/06/2016

Issue No: 2026951

File No: 2016/0095

Premises at Lot 1067 DP 2475
Sixth Avenue Austral

Further to the advice contained in the Section 149(2) Certificate and on the basis of the latest information available to the Council:

1. the maximum calculated level of the probable maximum flood (PMF) in the vicinity of your property in metres AHD is **69.9.**

2. the maximum calculated level of the 1% annual exceedance probability flood (previously referred to as the 1 in 100 year) in the vicinity of your property in metres AHD is **69.2.**

3. the maximum calculated level of the 2% annual exceedance probability flood (previously referred to as the 1 in 50 year) in the vicinity of your property in metres AHD is **Not Available.**

4. the maximum calculated level of the 5% annual exceedance probability flood (previously referred to as the 1 in 20 year) in the vicinity of your property in metres AHD is **69.0.**

The Council does not possess accurate information on the natural surface levels of individual allotments or on constructed building levels, and these should be established by private survey to ascertain their relationship to the above flood levels.

Flood levels are obtained from **Austral Floodplain Risk Management Study & Plan - September 2003**

Name of Assessor: **W. Siripala**

Signature:

ATTACHMENT B

Plate 1 – View from Sixth Avenue towards the dwelling.

Plate 2 – View north from the dwelling towards Sixth Avenue

Plate 3 – Fill soil profile at S26 in front of dwelling.

Plate 4 – Garden area in the north east corner of the site.

Plate 5 – Typical native soil profile in the northeast corner of the site

Plate 6 – Granny flat to the rear of the dwelling

Plate 7 – Fragments of ACM encountered in surface soils at S19 adjacent to the granny flat.

Plate 8 – Location of S19 adjacent to the granny flat.

Plate 9 – ACM clad outhouse at the rear of the granny flat.

Plate 10 – Damaged ACM cladding on the outhouse.

Plate 11 – ACM clad laundry at the rear of the granny flat.

Plate 12 – Pool house at the rear of the dwelling

Plate 13 – Pump house to the east of the pool.

Plate 14 – Soil stockpile and possible vegetable garden adjacent to the granny flat.

Plate 15 – View towards the large shed showing ACM clad fence.

Plate 16 – ACM clad fence in the central portion of the site in moderate condition.

Plate 17 – ACM clad fence in the central portion of the site in moderate condition.

Plate 18 – The large shed in the central portion of the site.

Plate 19 – Household items to the north of the shed

Plate 20 – ACM fragments on asphalt north of the shed.

Plate 21 – Internal view of the large shed.

Plate 22 – Storage of small quantities of household chemicals and pesticides.

Plate 23 – Storage of miscellaneous items and machinery in the shed

Plate 24 – Drums stored in front of the large shed.

Plate 25 – Chemical spray pack in the large shed.

Plate 26 – Sample location B2 showing coal wash fill.

Plate 27 – Soil profile below asphalt surface in shed.

Plate 28 – Extensions to the west of the truck shed

Plate 29 – Fragment of ACM identified in fill at the rear of the truck shed at sample location S13.

Plate 30 – Typical soil profile in the central portion of the site showing coal wash fill.

Plate 31 – Fragment of ACM identified in S16 associated with fill near the tennis court.

Plate 32 – Fill soils associated with the tennis court.

Plate 33 – Fragment of ACM identified in fill soils associated with the tennis court.

Plate 34 – View south across the tennis court.

Plate 35 – Retaining wall towards the rear of the tennis court showing filled area in the southern portion of the site.

Plate 36 – View northwest across the filled rear paddock and rear sheds.

Plate 37 – Transpiration pit located at S3.

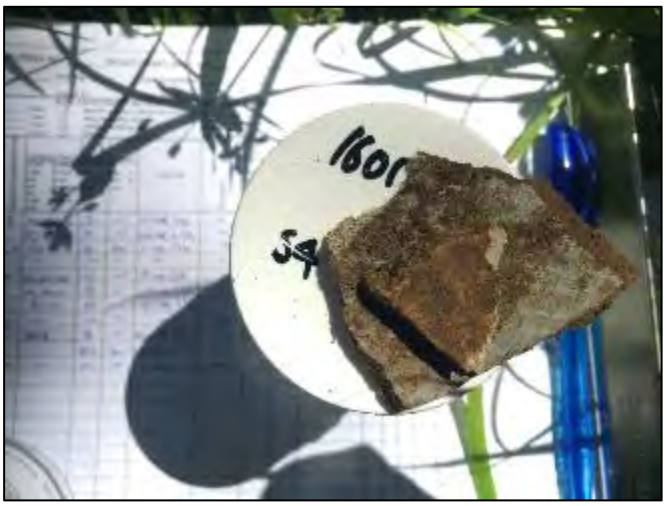


Plate 38 – Fragment of ACM located at S4.

Plate 39 – Fill soil profile showing native clays at S5.

Plate 40 – Fragments of ACM in shallow soils at location S5.

Plate 41 – View west towards the sheds / kennels in the rear paddock.

Plate 42 – Internal view of rear shed.

Plate 43 – Fragments of ACM scattered within and surrounding the southernmost shed at sample location SS1.

Plate 44 –ACM cladding in the rear shed.

Plate 45 – ACM sheet used to patch fencing in the kennels.

Plate 46 – Damaged ACM cladding in the rear kennels.

Plate 47 – ACM fragments subject to shallow burial within the rear kennels.

ATTACHMENT C

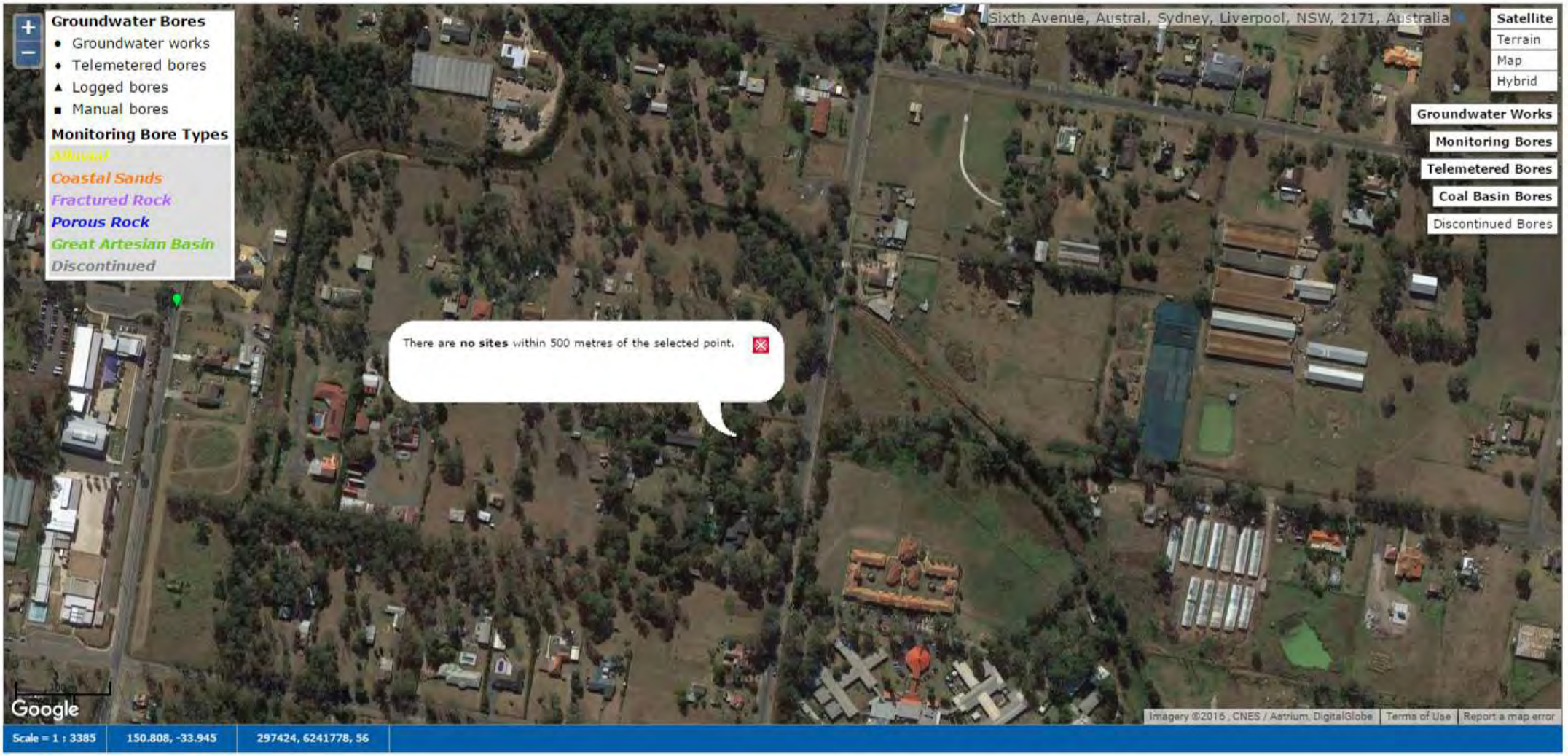
All Groundwater

All Groundwater Map

bookmark this page

All data times are Eastern Standard Time

Map | Info



Scale = 1 : 3385 | 150.808, -33.945 | 297424, 6241778, 56

ATTACHMENT D

Job No 10862444

Phone: 1100
www.1100.com.au

Caller Details

Contact:	Mr Tim Gunns	**Caller Id:**	1486843	**Phone:**	0411724429
Company:	Geo-Logix	**Mobile:**	0411724429	**Fax:**	Not Supplied
Address:	Building Q2, Level 3 Unit 2309 Daydream Stre Warriewood NSW 2102	**Email:**	tgunns@geo-logix.com.au		

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables.
The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

User Reference: Sixth Ave Austral
Working on Behalf of:
Private

Enquiry Date:	**Start Date:**	**End Date:**
22/06/2016	30/06/2016	01/07/2016

Address:
230 Sixth Avenue
Austral NSW 2179

Job Purpose: Excavation
Onsite Activity: Vertical Boring
Location of Workplace: Private Property
Location in Road: Not Supplied

- Check that the location of the dig site is correct. If not you must submit a new enquiry.
- Should the scope of works change, or plan validity dates expire, you must submit a new enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:
Vertical boring 1 m

Your Responsibilities and Duty of Care

- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at **www.1100.com.au**
- **For more information on safe excavation practices, visit www.1100.com.au**

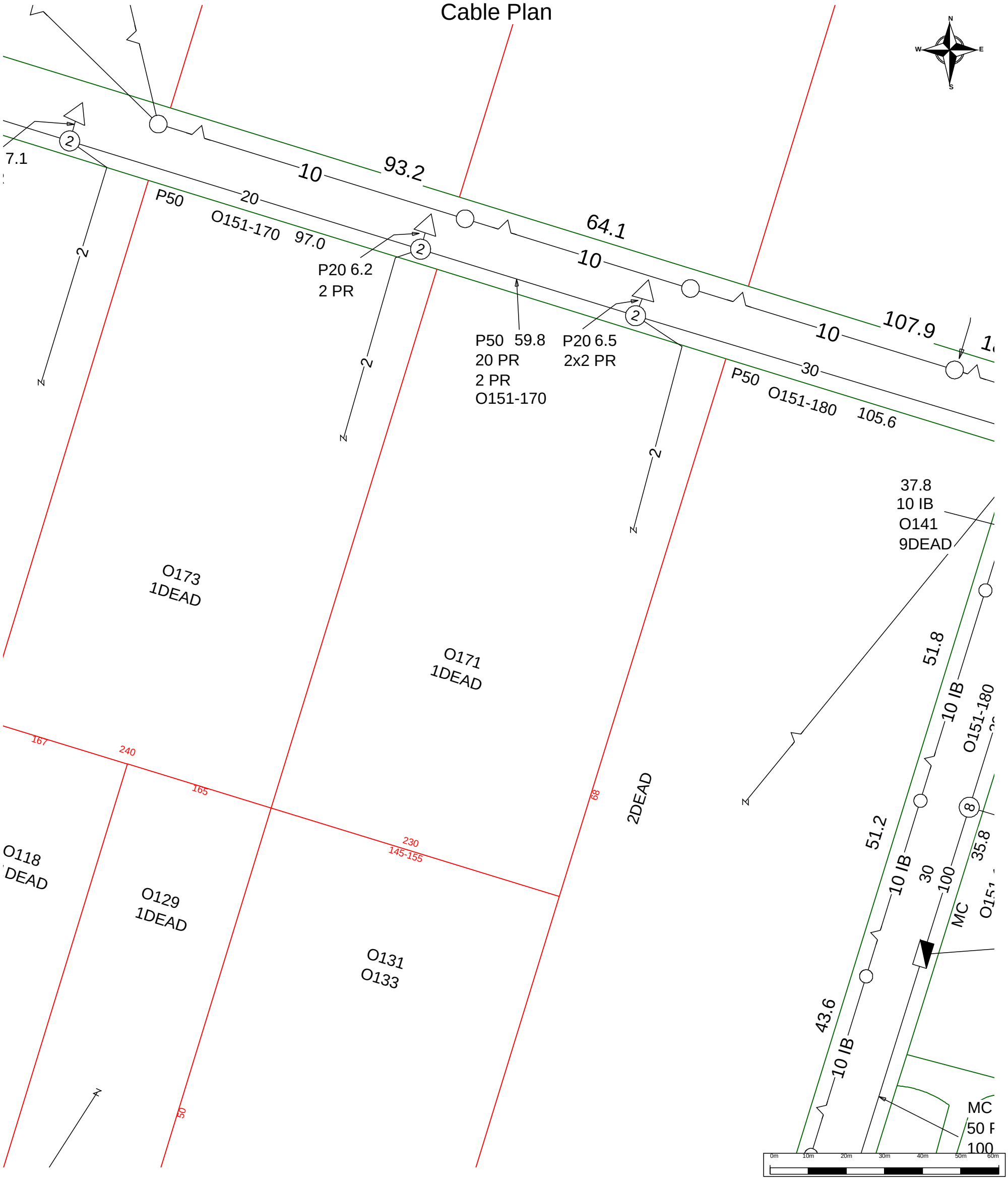
Asset Owner Details

The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days. Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Dial Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.
** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.
# Asset owners highlighted with a hash require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
53735258	Endeavour Energy	0298534161	NOTIFIED
53735260	Jemena Gas West	1300880906	NOTIFIED
53735261	Sydney Water	132092	NOTIFIED
53735259	Telstra NSW, Central	1800653935	NOTIFIED

END OF UTILITIES LIST

Cable Plan



For all Telstra DBYD plan enquiries -
email - Telstra.Plans@team.telstra.com
For urgent onsite contact only - ph 1800 653 935 (bus hrs)

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

Generated On 22/06/2016 13:17:35

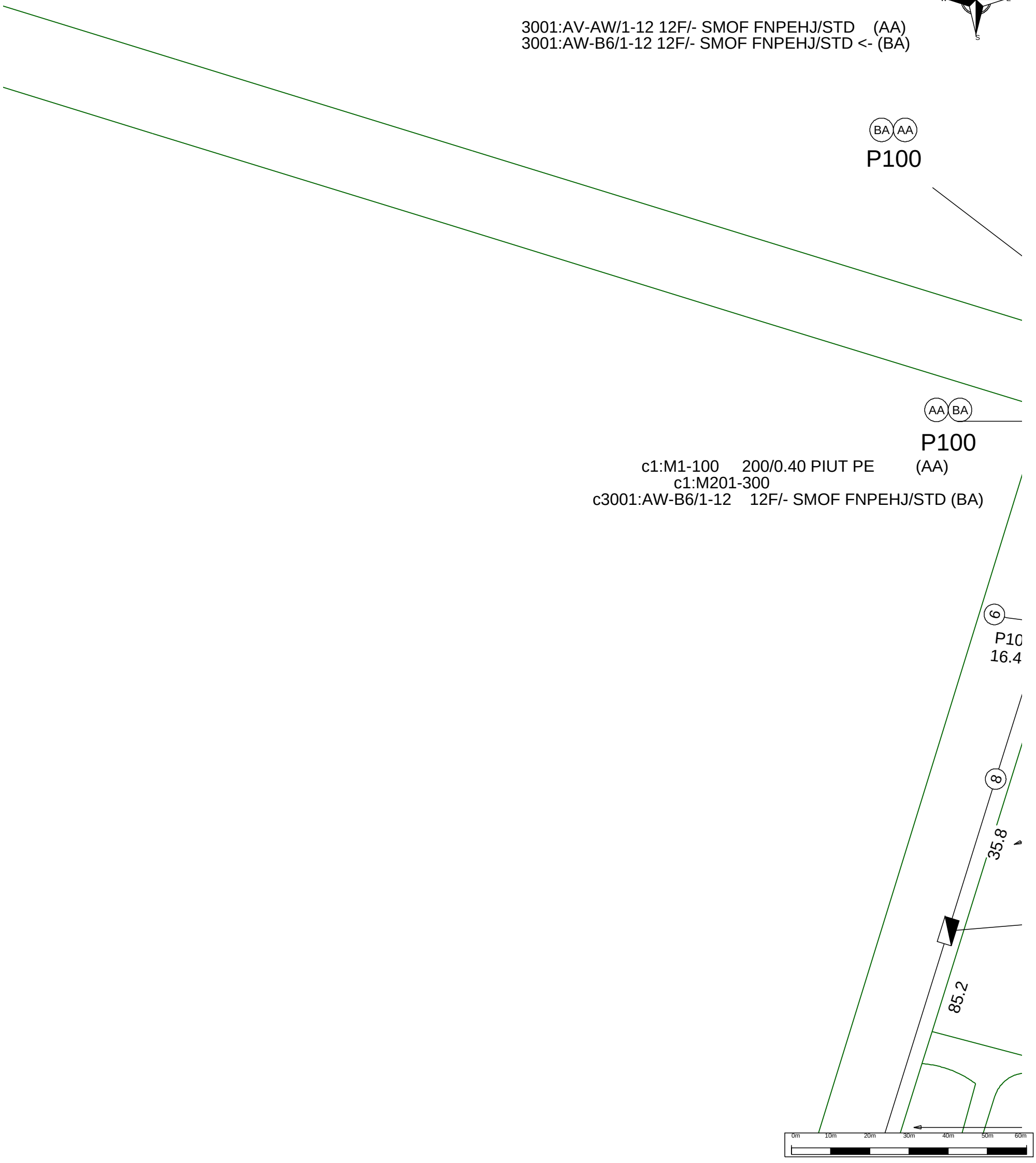
Sequence Number: 53735259

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

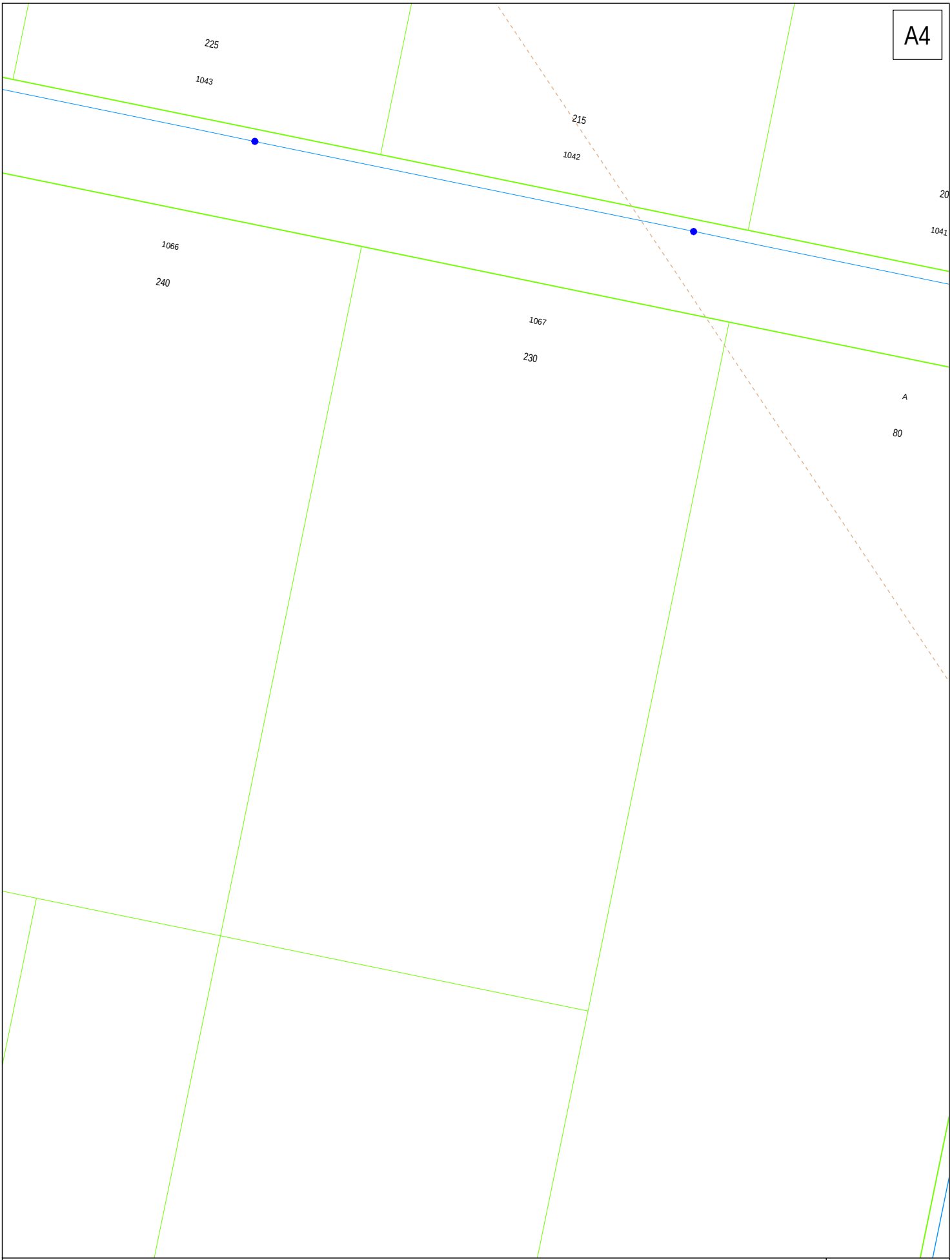
The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

Mains Cable Plan

3001:AV-AW/1-12 12F/- SMOF FNPEHJ/STD (AA)
3001:AW-B6/1-12 12F/- SMOF FNPEHJ/STD <- (BA)



Telstra	For all Telstra DBYD plan enquiries - email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)
TELSTRA CORPORATION LIMITED A.C.N. 051 775 556	
Generated On 22/06/2016 13:17:40	Sequence Number: 53735259 CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.



DBYD Address:
n/a Sixth Avenue
Austral NSW 2179

DBYD Job No: 10862444
DBYD Sequence No: 53735261

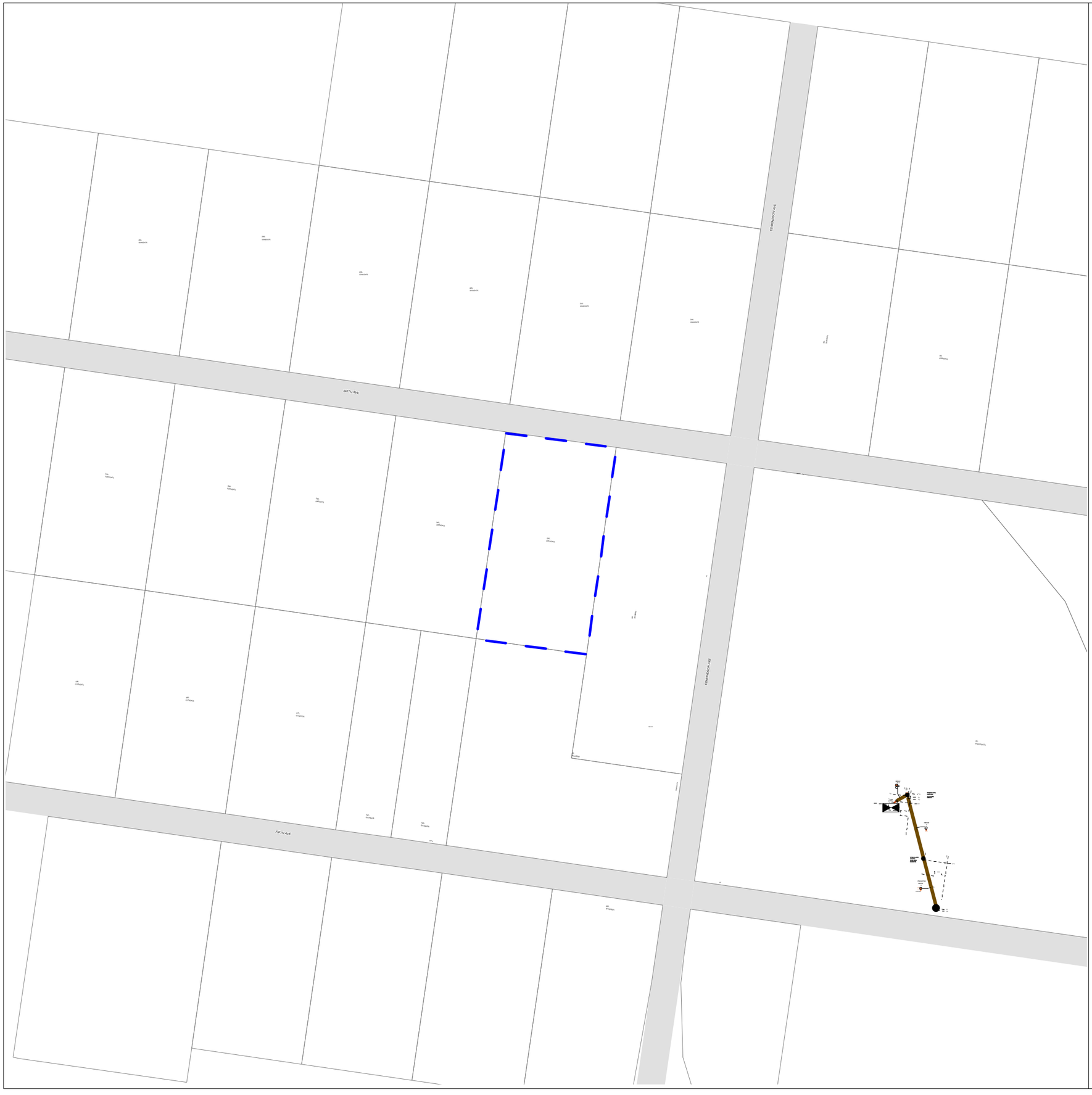
No warranty is given that the information shown is complete or accurate.

SYDNEY WATER CORPORATION

Scale: 1:1000

Date of Production: 22/06/2016

Plan 1 of 1



Endeavour Energy

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty **(20)** working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

LEGEND

- Street light column (or)
- Padmount substation
- Overground pillar (O.G.Box) (or)
- Underground pit
- Duct run
- Cable run
- Typical duct section
- Asbestos warning

N

NOT TO SCALE

DBYD Sequence No.:	53735258
Issued Date:	22/06/2016

LEPPINGTON 4A

SCALE 1:2000

50 0 50 100 150 200

THIS MAP UPDATED ON 17/05/2016
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES SCALED FROM THIS PLAN MAY NOT BE ACCURATE.

BR3D	LIC	LID
BR6B	L4A	L4B
BR6D	L4C	L4D

ADJOINING MAPS

NETWORK AREA MUNICIPALITY AREA

Jemena NG

KEY

		MAX ALLOWABLE OPERATING PRESSURE
T	TRUNK PIPELINE	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
400	NETWORK MAIN	400 kPa
	NETWORK MAIN	300 kPa
	NETWORK MAIN	210 kPa
100	NETWORK MAIN	100 kPa
30	NETWORK MAIN	30 kPa
	NETWORK MAIN	7 kPa
	NETWORK MAIN	2 kPa
	PROPOSED MAINS	
PR 11-2 3	STEEL MAIN PROJECT NUMBER	
P	PRESSURE MONITORING STATION	
	VALVE	
	SYSTEM PRESSURE REGULATOR	
S	SIPHON	
123	NETWORK NODE	
123S	NETWORK VALVE NODE	
298	VALVE NUMBER	
6NB	6 INCH CAST IRON MAIN	
150MM	150MM STEEL MAIN	
110MM PE/NY	110MM POLYETHYLENE/NYLON MAIN	
6NB 50MM NY	50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN	
1.2MBL	DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE	
1957	YEAR LAID	
	MUNICIPALITY BOUNDARY	
	NETWORK BOUNDARY	
123	HOUSE NUMBER	

LEPPINGTON 4A

LEPPINGTON IC

SCALE 1:2000

50 0 50 100 150 200

THIS MAP UPDATED ON 13/05/05
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES SCALED FROM THIS PLAN MAY NOT BE ACCURATE.

BR3B	LIA	LIB
BR3D	LIC	LID
BR6B	L4A	L4B

ADJOINING MAPS

719 709	LIVERPOOL
NETWORK AREA	MUNICIPALITY AREA

Jemena

KEY

		MAX ALLOWABLE OPERATING PRESSURE
T	TRUNK PIPELINE	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
400	NETWORK MAIN	400 kPa
	NETWORK MAIN	300 kPa
	NETWORK MAIN	210 kPa
100	NETWORK MAIN	100 kPa
30	NETWORK MAIN	30 kPa
	NETWORK MAIN	7 kPa
	NETWORK MAIN	2 kPa
	PROPOSED MAINS	
PR II-2 3	STEEL MAIN PROJECT NUMBER	
P	PRESSURE MONITORING STATION	
	VALVE	
	SYSTEM PRESSURE REGULATOR	
S	SIPHON	
123	NETWORK NODE	
1235	NETWORK VALVE NODE	
298	VALVE NUMBER	
6NB	6 INCH CAST IRON MAIN	
150MM	150MM STEEL MAIN	
110MM PE/NY	110MM POLYETHYLENE/NYLON MAIN	
6NB 50MM NY	50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN	
1.2MBL	DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE	
1957	YEAR LAID	
	MUNICIPALITY BOUNDARY	
	NETWORK BOUNDARY	
123	HOUSE NUMBER	

LEPPINGTON IC

ATTACHMENT E

TESTPIT LOG S1

Geo-Logix
environment • geotech

Project Number: 1601114
Project Name: Phase II Environmental Site Assessment Report
Address: 230 Sixth Avenue, Austral NSW 2179

Client Austral 1 Pty Ltd
Date Completed 04/10/2016
Excavation Method 5.5 tonne excavator
Total Depth 0.5 mbg

Logged by: AM
Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Silt 10%, Sand 20%, Gravel 70%, dark yellowish brown (10YR4/2), damp, medium dense		S1/0.2-0.3	Concrete, crushed bricks and blue metal gravels.
0.4	Silt (ML)		Silt with Sand - 80% Silt, Sand 15%, Gravel 5%, dark yellowish brown (10YR2/2), damp, medium dense			
	Heavy Clay (CH)		Heavy Clay - Clay 75%, Silt 5%, Sand 5%, Gravel 5%, light brown (5YR5/6), damp, firm	M	S1/0.4-0.5	
0.6			End of hole at 0.5 mbg.			
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG S2

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
	Total Depth 0.7 mbg — Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 15%, Silt 60%, Sand 10%, Gravel 15%, moderate brown (5YR3/4), damp, medium dense		S1/0.2-0.3	Some gravels and concrete
0.4	Silt (ML)		Silt with Sand - Silt 80%, Sand 15%, Gravel 5%, dusky yellowish brown (10YR2/2), damp, medium dense			
0.6	Heavy Clay (CH)		Heavy Clay - Clay 75%, Silt 5%, Sand 5%, Gravel 5%, light brown (5YR5/6), damp, firm	M	S2/0.5-0.6	
0.8			End of hole at 0.7 mbg.			
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG S3

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 1.1 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 5%, Silt 5%, Sand 30%, Gravel 60%, dark yellowish brown (10YR4/2), dry, loose			
0.4					S3/0.3-0.5	
0.6						
0.8						
1	Lean Clay (CL)		Lean Clay with Gravel, trace Sand, Clay 65%, Silt 5%, Sand 10%, Gravel 20%, moderate yellowish brown (10YR5/4), moist, medium dense	L	S3/0.9-1.0	
1.2			End of hole at 1.1 mbg.			
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S4

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.6 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 10%, Silt 50%, Sand 10%, Gravel 30%, pale brown (5YR5/2), dry, medium dense		S4/0.2-0.3	Fragments of ACM
0.4	Silt (ML)		Silt with Sand - Silt 80%, Sand 15%, Gravel 5%, dusky yellowish brown (10YR2/2), damp, medium dense		S4/0.4-0.5	
0.6	Lean Clay (CL)		Lean Clay with Silt and Sand - Clay 60%, Silt 20%, Sand 15%, Gravel 5%, moderate brown (5YR4/4), damp, soft	L		
0.8			End of hole at 0.6 mbg.			
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG S5

Project Number: 1601114
Project Name: Phase II Environmental Site Assessment Report
Address: 230 Sixth Avenue, Austral NSW 2179

Client Austral 1 Pty Ltd
Date Completed 04/10/2016
Excavation Method 5.5 tonne excavator
Total Depth 0.7 mbg

Logged by: AM
Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 35%, Silt 40%, Sand 15%, Gravel 10%, pale brown (5YR5/2), dry, medium dense		S5/0.2-0.3	Two fragments of corrugated ACM in top 100 mm. Bitumen, gravels, metal and crushed concrete fill.
0.4	Silt (ML)		Silt with Sand - Silt 80%, Sand 15%, Gravel 5%, dusky yellowish brown (10YR2/2), damp, medium dense		S5/0.4-0.6	
0.6	Gravelly Clay (CL)		Gravelly Clay - Clay 60%, Silt 5%, Sand 5%, Gravel 30%, moderate yellowish brown (10YR5/4), damp, firm	L		
0.8			End of hole at 0.7 mbg.			
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG S6

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
	Total Depth 1.1 mbg — Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 35%, Silt 15%, Sand 20%, Gravel 30%, pale brown (5YR5/2), damp, dense			Roof tiles, bitumen and concrete throughout fill layer and blue metal gravels.
0.4					S6/0.4-0.6	
0.6						
0.8						
1	Heavy Clay (CH)		Heavy Clay - Clay 75%, Silt 5%, Sand 5%, Gravel 5%, moderate yellowish brown (10YR5/4), damp, firm	M	S6/0.9-1.1	
1.2			End of hole at 1.1 mbg.			
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S7

Geo-Logix
environment • geotech

Project Number: 1601114
Project Name: Phase II Environmental Site Assessment Report
Address: 230 Sixth Avenue, Austral NSW 2179

Client Austral 1 Pty Ltd
Date Completed 04/10/2016
Excavation Method 5.5 tonne excavator
Total Depth 0.7 mbg

Logged by: AM
Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 10%, Silt 30%, Sand 25%, Gravel 35%, pale brown (5YR5/2), dry, medium dense		S7/0.2-0.3	Some crushed concrete and blue metal gravel
0.4	Silt (ML)		Silt with Sand - Silt 80%, Sand 15%, Gravel 5%, dusky yellowish brown (10YR2/2), damp, medium dense		S7/0.45-0.65	
0.6	Lean Clay (CL)		Lean Clay with Sand - Clay 55%, Silt 10%, Sand 20%, Gravel 15%, moderate yellowish brown (10YR5/4), moist, soft	L		
0.8			End of hole at 0.7 mbg.			
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S8

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.2 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	F		Fill - Clay 5%, Sand 5%, Gravel 90%, dusky yellow brown (10YR2/2), dry, loose		S8/0.0-0.15	
	Heavy Clay (CH)		Heavy Clay - Clay 80%, Silt 10%, Sand 10%, moderate reddish brown (10R4/6), damp, firm	M		
0.2			End of hole at 0.2 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S9

Geo-Logix
environment • geotech

Project Number: 1601114
Project Name: Phase II Environmental Site Assessment Report
Address: 230 Sixth Avenue, Austral NSW 2179

Client Austral 1 Pty Ltd
Date Completed 04/10/2016
Excavation Method 5.5 tonne excavator
Total Depth 0.15 mbg

Logged by: AM
Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Clay 5%, Silt 40%, Sand 50%, Gravel 5%, moderate brown (5YR4/4), damp, loose		S9/0.0-0.15	
	Silt (ML)		Silt with Gravel, trace Sand - Clay 5%, Silt 70%, Sand 10%, Gravel 15%, moderate brown (5YR4/4), damp, medium dense			
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S10

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.15 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 5%, Sand 5%, Gravel 90%, dusky brown (5YR2/2), damp, loose		S10/0.0-0.15	Shale gravels
	Silt (ML)		Silt with Gravel, trace Sand - Clay 5%, Silt 70%, Sand 10%, Gravel 15%, moderate yellowish brown (10YR5/4), damp, soft			
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S11

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
	Total Depth 0.6 mbg — Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 10%, Silt 65%, Sand 20%, Gravel 5%, dark yellowish brown (10YR4/2), dry, loose		S11/0.0-0.2, DS1, TS1	Some shale gravels
0.4	Silt (ML)		Silt with Sand - Silt 80%, Sand 15%, Gravel 5%, dusky yellowish brown(10YR2/2), damp, medium dense		S11/0.3-0.5	
0.6	Sandy Clay (CH)		Sandy Clay - Clay 60%, Silt 5%, Sand 30%, Gravel 5%, moderate yellowsh brown (10YR5/4), damp, firm	M		
			End of hole at 0.6 mbg.			
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S13

Geo-Logix
environment • geotech

Project Number: 1601114
Project Name: Phase II Environmental Site Assessment Report
Address: 230 Sixth Avenue, Austral NSW 2179

Client Austral 1 Pty Ltd
Date Completed 04/10/2016
Excavation Method 5.5 tonne excavator
Total Depth 0.35 mbg

Logged by: AM
Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	F		Fill - Sand 95%, Gravel 5%, pale brown (5YR5/2), dry, loose		S13/0.0-0.15	ACM fragment. Crushed granite fill.
	F		Fill - Clay 40%, Silt 30%, Sand 20%, Gravel 10%, moderate brown 5YR(4/4), damp, loose			Reworked natural
0.2	Heavy Clay (CH)		Heavy Clay with Sand - Clay 70%, Sand 20%, Gravel 10%, pale brown (5YR5/2), damp, firm	M	S13/0.25-0.35	
0.4			End of hole at 0.35 mbg.			
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S14

Geo-Logix
environment • geotech

Project Number: 1601114
Project Name: Phase II Environmental Site Assessment Report
Address: 230 Sixth Avenue, Austral NSW 2179

Client Austral 1 Pty Ltd
Date Completed 04/10/2016
Excavation Method 5.5 tonne excavator
Total Depth 0.5 mbg

Logged by: AM
Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	F		Fill - Clay 5%, Sand 10%, Gravel 85%, pale brown (5YR5/2), dry, loose		S14/0-0.2	Shale gravels and road base fill
0.2	Silt (ML)		Silt with Sand - Silt 80%, Sand 15%, Gravel 5%, dusky yellowish brown (10YR2/2), damp, medium dense		S14/0.2-0.5	
	Heavy Clay (CH)		Heavy Clay - Clay 80%, Silt 10%, Sand 10%, dark yellowish orange (10YR6/6), moist, firm	M		
0.4			End of hole at 0.5 mbg.			
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S15

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
	Total Depth 0.35 mbg — Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Clay 5%, Silt 85%, Sand 5%, Gravel 5%, moderate brown (5YR4/4), damp, medium dense			
	Fill		Fill - Clay 5%, Silt 5%, Sand 10%, Gravel 80%, moderate brown (5YR3/4), damp, medium dense		S15/0.1-0.25	Coal wash fill
0.2	Silt (ML)		Silt with Clay, trace Sand - Clay 20%, Silt 70%, Sand 10%, moderate yellowish brown (10YR5/4), damp, soft		S15/0.25-0.35	
0.4			End of hole at 0.35 mbg.			
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S16

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.3 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Clay 10%, Silt 65%, Sand 10%, Gravel 15%, moderate brown (5YR4/4), damp, medium dense		S16/0.0-0.15	ACM fragments in surface fill. Coal wash Fill.
0.2	Silt (ML)		Silt with Clay, trace Sand - Clay 15%, Silt 70%, Sand 10%, Gravel 5%, moderate brown (5YR4/4), damp, medium dense		S16/0.25-0.3	
0.4			End of hole at 0.3 mbg.			
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG S17

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
	Total Depth 0.7 mbg — Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 10%, Sand 20%, Gravel 70%, dusky yellow brown (10YR2/2), damp, medium dense		S17/0.0-0.2	Roadbase with crushed sandstone.
0.2	Fill		Fill - Clay 10%, Sand 60%, Gravel 30%, light brown (5YR6/4), damp, medium dense			
	Fill		Fill - Sand 20%, Gravel 80%, dusky yellowish brown (10YR2/2), damp, medium dense			Coalwash fill
0.4						
0.6	Heavy Clay (CH)		Heavy Clay, trace Silt - Clay 80%, Silt 10%, Sand 5%, Gravel 5%, moderate yellowish brown (10YR5/4), damp, firm	M	S17/0.6-0.7	
			End of hole at 0.7 mbg.			
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S18

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
	Total Depth 0.8 mbg — Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Silt 35%, Sand 60%, Gravel 5%, moderate brown (5YR3/4), damp, loose			
	Fill		Fill - Clay 5%, Silt 75%, Sand 15%, Gravel 5%, moderate brown (5YR3/4), damp, medium dense			
0.4	Fill		Fill - Silt 5%, Sand 5%, Gravel 80%, dusky yellowish brown (10YR2/2), damp, medium dense		S18/0.35-0.55	Roadbase and coal wash fill
0.6	Heavy Clay (CH)		Heavy Clay, trace Silt, trace Sand - Clay 80%, Silt 10%, Sand 10%, dark yellowish orange (10YR6/6), damp, firm	M	S18/0.6-0.8	
0.8			End of hole at 0.8 mbg.			
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S19

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.4 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 75%, Sand 20%, Gravel 5%, dusky yellow brown (10YR2/2), damp, medium dense		S19/0.0-0.15	Reworked natural with numerous ACM fragments
0.2	Sandy Silt (ML)		Sandy Silt - Clay 5%, Silt 60%, Sand 35%, brown (5YR5/2), damp, dense			
0.4			End of hole at 0.4 mbg.			
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG S20

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
	Total Depth 0.6 mbg — Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 10%, Silt 10%, Sand 40%, Gravel 40%, moderate yellowish brown (10YR5/4), damp, medium dense			
0.4	Sandy Silt (ML)		Sandy Silt - Clay 5%, Silt 60%, Sand 35%, brown (5YR5/2), damp, dense			
0.6			End of hole at 0.6 mbg.			
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG S21

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method Shovel
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.2 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 70%, Sand 20%, Gravel 10%, dusky brown (5YR2/2), damp, medium dense		S21/0.0-0.15	Some road base and roof tiles
	Silt (ML)		Silt with Sand - Silt 80%, Sand 20%, dusky brown (5YR2/2), damp, medium dense			
0.2			End of hole at 0.2 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S22

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
	Total Depth 0.45 mbg — Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 10%, Silt 20%, Sand 20%, Gravel 50%, moderate brown (5YR3/4), damp, medium dense		S22/0.15-0.35	Crushed sandstone and road base
0.4	Heavy Clay (CH)		Heavy Clay trace Sand - Clay 5%, Silt 80%, Sand 10%, Gravel 5%, greyish brown (5YR3/2), damp, firm	M	S22/0.45-0.5	
0.6			End of hole at 0.45 mbg.			
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S23

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method Shovel
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.2 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 80%, Sand 20%, dusky brown (5YR2/2), damp, medium dense		S23/0.0-0.15	With rootlets
0.2			End of hole at 0.2 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG S24

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.2 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Clay 10%, Silt 10%, Sand 40%, Gravel 30%, greyish brown (5YR3/2), damp, medium dense		S24/0.0-0.15	Road base on surface.
	Silt (ML)		Silt with Sand - Silt 80%, Sand 15%, Gravel 5%, greyish brown (5YR3/2), damp, medium dense			
0.2			End of hole at 0.2 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S25

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.95 mbg	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 30%, Silt 20%, Sand 20%, Gravel 30%, moderate brown (5YR4/4), dry, medium dense			Concrete, crushed roadbase
0.4					S25/0.4-0.6	
0.6	Silt (ML)		Silt with Sand - Silt 80%, Sand 20%, moderate brown (5YR4/4), moist, medium dense			Alluvium with charcoal fragments
0.8					S25/0.7-.8	
1			End of hole at 0.95 mbg.			
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG S26

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method 5.5 tonne excavator
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
	Total Depth 1.3 mbg — Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
0.2	Fill		Fill - Clay 30%, Silt 20%, Sand 20%, Gravel 30%, moderate brown (5YR4/4), dry, dense			
0.4					S26/0.3-0.5	
0.6						
0.8						
1	Heavy Clay (CH)		Silt with Clay, trace Sand - Clay 15%, Silt 75%, Sand 10%, moderate yellowish brown (10YR5/4), moist, firm		S26/1.0-1.3	
1.2						
1.4			End of hole at 1.3 mbg.			

Plasticity L = low, M = Medium, H = High

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TESTPIT LOG SS1

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method Shovel
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.15	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 50%, Sand 30%, Gravel 20%, dark yellowish brown (10YR4/2), dry, medium density		SS1/0.0-0.15	
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG SS2

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method Shovel
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.15	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 50%, Sand 40%, Gravel 10%, dark yellowish brown (10YR4/2), dry		SS2/0.0-0.15	
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG SS3

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method Shovel
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.15	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 80%, Sand 15%, Gravel 5%, dusky yellow brown (10YR2/2), damp		SS3/0.0-0.15	
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG SS4

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method Shovel
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.15	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 80%, Sand 15%, Gravel 5%, dusky yellow brown (10YR2/2), damp		SS4/0.0-0.15	
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG SS5

Geo-Logix
environment • geotech

Project Number: 1601114
Project Name: Phase II Environmental Site Assessment Report
Address: 230 Sixth Avenue, Austral NSW 2179

Client Austral 1 Pty Ltd
Date Completed 04/10/2016
Excavation Method Shovel
Total Depth 0.15

Logged by: AM
Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Clay 10%, Silt 70%, Sand 10%, Gravel 10%, dusky yellow brown (10YR2/2), damp		SS5/0.0-0.15	
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG SS6

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method Shovel
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.15	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Clay 10%, Silt 70%, Sand 10%, Gravel 10%, dusky yellow brown (10YR2/2), damp		SS6/0.0-0.15	
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG SS7

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method Shovel
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.15	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 10%, Sand 40%, Gravel 40%, moderate brown (5YR4/4), dry		SS7/0.0-0.15	
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

TESTPIT LOG SS8

Geo-Logix
environment • geotech

Project Number: 1601114	Client Austral 1 Pty Ltd
Project Name: Phase II Environmental Site Assessment Report	Date Completed 04/10/2016
	Excavation Method Shovel
Address: 230 Sixth Avenue, Austral NSW 2179	Logged by: AM
Total Depth 0.15	Checked by: BP

COMMENTS

Depth (m)	USCS	Graphic Log	Material Description	Plasticity	Sample IDs	Comments
	Fill		Fill - Silt 40%, Sand 60%, dark yellowish brown (10YR4/2), dry		SS8/0.0-0.15	
0.2			End of hole at 0.15 mbg.			
0.4						
0.6						
0.8						
1						
1.2						
1.4						

Plasticity L = low, M = Medium, H = High

produced by ESlog.ESdat.net on 20 Oct 2016

Sample ID	Sample Location	Depth	Soil Type	Description	Analysis
AF1/0.0-0.15	AF1	0.0-0.15	Fill	Silt 70%, Sand 25%, Gravel 5%, dark yellowish brown (10YR4/2), damp	Asbestos ID
AF2/0.0-0.15	AF2	0.0-0.15	Fill	Silt 70%, Sand 25%, Gravel 5%, dark yellowish brown (10YR4/2), damp	Asbestos ID
AF3/0.0-0.15	AF3	0.0-0.15	Fill	Silt 70%, Sand 25%, Gravel 5%, dark yellowish brown (10YR4/2), damp	Asbestos ID
AF4/0.0-0.15	AF4	0.0-0.15	Fill	Silt 70%, Sand 25%, Gravel 5%, dark yellowish brown (10YR4/2), damp	Asbestos ID
AF5/0.0-0.15	AF5	0.0-0.15	Fill	Silt 70%, Sand 25%, Gravel 5%, dark yellowish brown (10YR4/2), damp	Asbestos ID
AF6/0.0-0.15	AF6	0.0-0.15	Fill	Silt 70%, Sand 25%, Gravel 5%, dark yellowish brown (10YR4/2), damp	Asbestos ID
B1/0.0-.15	B1	0.0-.15	Fill	Clay 5%, Silt 5%, Sand 30%, Gravel 60%, moderate brown (5YR3/4), dry	TRH/VOC/PAH/ metals (8)
B2/0.0-0.15	B2	0.0-0.15	Fill	Clay 5%, Silt 5%, Sand 20%, Gravel 70%, dusky yellow brown (10YR2/2), dry	TRH/VOC/PAH/ metals (8)
BH1/0.1-0.2	BH1	0.1-0.2	Fill	Silt 10%, Sand 20%, Gravel 70%, dark yellowish brown (10YR4/2), damp	TRH/VOC/PAH/metals (8)
S1/0.4-0.5	S1	0.4-0.5	Heavy Clay (CH)	Clay 75%, Silt 5%, Sand 5%, Gravel 5%, light brown (5YR5/6), damp	TRH/BTEX/PAH/OCP/ metals (8)
S1/0.2-0.7	S1	0.2-0.7	Fill	Clay 15%, Silt 60%, Sand 10%, Gravel 15%, moderate brown (5YR3/4), damp	Hold
S2/0.2-0.3	S2	0.2-0.3	Fill	Clay 15%, Silt 60%, Sand 10%, Gravel 15%, moderate brown (5YR3/4), damp	TRH/BTEX/PAH/OCP/ metals (8)
S2/0.5-0.6	S2	0.5-0.6	Heavy Clay (CH)	Clay 75%, Silt 5%, Sand 5%, Gravel 5%, light brown (5YR5/6), damp	Hold
S3/0.3-0.5	S3	0.3-0.5	Fill	Clay 5%, Silt 5%, Sand 30%, Gravel 60%, dark yellowish brown (10YR4/2), dry	TRH/BTEX/PAH/OCP/ metals (8)
S3/0.9-1.0	S3	0.9-1.0	Lean Clay with Gravel (CH)	Clay 65%, Silt 5%, Sand 10%, Gravel 20%, moderate yellowish brown (10YR5/4), moist	Hold

Sample ID	Sample Location	Depth	Soil Type	Description	Analysis
S4/0.2-0.3	S4	0.2-0.3	Fill	Clay 10%, Silt 50%, Sand 10%, Gravel 30%, pale brown (5YR5/2), dry	TRH/BTEX/PAH/OCP/ metals (8)
S4/0.4-0.5	S4	0.4-0.5	Heavy Clay (CH)	Clay 60%, Silt 20%, Sand 15%, Gravel 5%, moderate brown (5YR4/4), damp	Hold
S5/0.2-0.3	S5	0.2-0.3	Fill	Clay 35%, Silt 40%, Sand 15%, Gravel 10%, pale brown (5YR5/2), dry	TRH/BTEX/PAH/OCP/ metals (8)
S5/0.4-0.6	S5	0.4-0.6	Gravelly Clay (CH)	Clay 60%, Silt 5%, Sand 5%, Gravel 30%, moderate yellowish brown (10YR5/4), damp	Hold
S6/0.4-0.6	S6	0.4-0.6	Fill	Clay 35%, Silt 15%, Sand 20%, Gravel 30%, pale brown (5YR5/2), damp	TRH/BTEX/PAH/OCP/ metals (8)
S6/0.9-1.1	S6	0.9-1.1	Heavy Clay (CH)	Clay 75%, Silt 5%, Sand 5%, Gravel 5%, moderate yellowish brown (10YR5/4), damp	Hold
S7/0.2-0.3	S7	0.2-0.3	Fill	Clay 10%, Silt 30%, Sand 25%, Gravel 35%, pale brown (5YR5/2), dry	TRH/BTEX/PAH/OCP/ metals (8)
S7/0.45-0.65	S7	0.45-0.65	Heavy Clay with Sand (CH)	Clay 55%, Silt 10%, Sand 20%, Gravel 15%, moderate yellowish brown (10YR5/4), moist	Hold
S8/0.0-0.15	S8	0.0-0.15	Fill	Clay 5%, Sand 5%, Gravel 90%, dusky yellow brown (10YR2/2), dry	TRH/BTEX/PAH/OCP/ metals (8)
S9/0.0-0.15	S9	0.0-0.15	Fill	Clay 5%, Silt 40%, Sand 50%, Gravel 5%, moderate brown (5YR4/4), damp	TRH/BTEX/PAH/OCP/ metals (8)
S10/0.0-0.15	S10	0.0-0.15	Fill	Silt 5%, Sand 5%, Gravel 90%, dusky brown (5YR2/2), damp	TRH/BTEX/PAH/OCP/ metals (8)
S11/0.0-0.2	S11	0.0-0.2	Fill	Clay 10%, Silt 65%, Sand 20%, Gravel 5%, dark yellowish brown (10YR4/2), dry	TRH/BTEX/PAH/OCP/ metals (8)

Sample ID	Sample Location	Depth	Soil Type	Description	Analysis
S11/0.3-0.5	S11	0.3-0.5	Sandy Clay (CH)	Clay 60%, Silt 5%, Sand 30%, Gravel 5%, moderate yellowish brown (10YR5/4), damp	Hold
S12/0.0-0.2	S12	0.0-0.2	Fill	Clay 20%, Silt 20%, Sand 20%, Gravel 40%, moderate yellowish brown (10YR5/4), dry	TRH/BTEX/PAH/OCP/ metals (8)
S13/0.0-0.15	S13	0.0-0.15	Fill	Sand 95%, Gravel 5%, pale brown (5YR5/2), dry	TRH/BTEX/PAH/OCP/ metals (8)
S13/0.25-0.35	S13	0.25-0.35	Heavy Clay with Sand (CH)	Clay 70%, Sand 20%, Gravel 10%, pale brown (5YR5/2), damp	Hold
S14/0.0-0.2	S14	0.0-0.2	Fill	Clay 5%, Sand 10%, Gravel 85%, pale brown (5YR5/2), dry	TRH/BTEX/PAH/OCP/ metals (8)
S14/0.2-0.5	S14	0.2-0.5	Heavy Clay (CH)	Clay 75%, Silt 10%, Sand 10%, Gravel 5%, dark yellowish orange (10YR6/6), moist	Hold
S15/0.1-0.25	S15	0.1-0.25	Fill	Clay 5%, Silt 5%, Sand 10%, Gravel 80%, moderate brown (5YR3/4), damp	TRH/BTEX/PAH/OCP/ metals (8)
S15/0.25-0.35	S15	0.25-0.35	Silt (ML)	Clay 20%, Silt 70%, Sand 10%, moderate yellowish brown (10YR5/4), damp	Hold
S16/0.0-0.15	S16	0.0-0.15	Fill	Clay 10%, Silt 65%, Sand 10%, Gravel 15%, moderate brown (5YR4/4), damp	TRH/BTEX/PAH/OCP/ metals (8)
S16/0.2-0.3	S16	0.2-0.3	Silt (ML)	Clay 15%, Silt 70%, Sand 10%, Gravel 5%, moderate brown (5YR4/4), damp	Hold
S17/0.0-0.2	S17	0.0-0.2	Fill	Silt 10%, Sand 20%, Gravel 70%, dusky yellow brown (10YR2/2), damp	TRH/BTEX/PAH/OCP/ metals (8)
S17/0.6-0.7	S17	0.6-0.7	Heavy Clay (CH)	Clay 80%, Silt 10%, Sand 5%, Gravel 5%, moderate yellowish brown (10YR5/4), damp	Hold

Sample ID	Sample Location	Depth	Soil Type	Description	Analysis
S18/0.35-0.55	S18	0.35-0.55	Fill	Silt 35%, Sand 60%, Gravel 5%, moderate brown (5YR3/4), damp	TRH/BTEX/PAH/OCP/ metals (8)
S18/0.6-0.8	S18	0.6-0.8	Heavy Clay (CH)	Clay 80%, Silt 10%, Sand 10%, dark yellowish orange (10YR6/6), damp	Hold
S19/0.0-0.15	S19	0.0-0.15	Fill	Silt 75%, Sand 20%, Gravel 5%, dusky yellow brown (10YR2/2), damp	TRH/BTEX/PAH/OCP/ metals (8)
S20/0.0-0.15	S20	0.0-0.15	Fill	Clay 10%, Silt 10%, Sand 40%, Gravel 40%, moderate yellowish brown (10YR5/4), damp	TRH/BTEX/PAH/OCP/ metals (8)
S21/0.0-0.15	S21	0.0-0.15	Fill	Silt 70%, Sand 20%, Gravel 10%, dusky brown (5YR2/2), damp	Hold
S22/0.15-0.35	S22	0.15-0.35	Fill	Clay 10%, Silt 20%, Sand 20%, Gravel 50%, moderate brown (5YR3/4), damp	TRH/BTEX/PAH/OCP/ metals (8)
S22/0.45-0.5	S22	0.45-0.5	Heavy Clay (CH)	Clay 5%, Silt 80%, Sand 10%, Gravel 5%, greyish brown (5YR3/2), damp	Hold
S23/0.0-0.15	S23	0.0-0.15	Topsoil	Silt 80%, Sand 20%, dusky brown (5YR2/2), damp	OCP/ metals (8)
S24/0.0-0.15	S24	0.0-0.15	Fill	Clay 10%, Silt 10%, Sand 40%, Gravel 30%, greyish brown (5YR3/2), damp	TRH/BTEX/PAH/OCP/ metals (8)
S25/0.4-0.6	S25	0.4-0.6	Fill	Clay 30%, Silt 20%, Sand 20%, Gravel 30%, moderate brown (5YR4/4), dry	TRH/BTEX/PAH/OCP/ metals (8)
S25/0.7-0.8	S25	0.7-0.8	Silt with sand (ML)	Silt 80%, Sand 20%, moderate brown (5YR4/4), moist	Composite with S26/0.0-0.15 as C1 (OCP/ metals (8))
S26/0.3-0.5	S26	0.3-0.5	Fill	Clay 30%, Silt 20%, Sand 20%, Gravel 30%, moderate brown (5YR4/4), dry	TRH/BTEX/PAH/OCP/ metals (8)
S26/1.0-1.3	S26	1.0-1.3	Heavy Clay (CH)	Clay 15%, Silt 75%, Sand 10%, moderate yellowish brown (10YR5/4), moist	Composite with S26/1.0-1.3 as C1 (OCP/ metals (8))

Sample ID	Sample Location	Depth	Soil Type	Description	Analysis
SS1/0.0-0.15	SS1	0.0-0.15	Fill	Silt 50%, Sand 30%, Gravel 20%, dark yellowish brown (10YR4/2), dry	Asbestos ID / Lead
SS2/0.0-0.15	SS2	0.0-0.15	Fill	Silt 50%, Sand 40%, Gravel 10%, dark yellowish brown (10YR4/2), dry	Asbestos ID / Lead
SS3/0.0-0.15	SS3	0.0-0.15	Fill	Silt 80%, Sand 15%, Gravel 5%, dusky yellow brown (10YR2/2), damp	Asbestos ID / Lead
SS4/0.0-0.15	SS4	0.0-0.15	Fill	Silt 80%, Sand 15%, Gravel 5%, dusky yellow brown (10YR2/2), damp	Asbestos ID / Lead
SS5/0.0-0.15	SS5	0.0-0.15	Fill	Clay 10%, Silt 70%, Sand 10%, Gravel 10%, dusky yellow brown (10YR2/2), damp	Asbestos ID / Lead
SS6/0.0-0.15	SS6	0.0-0.15	Fill	Clay 10%, Silt 70%, Sand 10%, Gravel 10%, dusky yellow brown (10YR2/2), damp	Asbestos ID / Lead
SS7/0.0-0.15	SS7	0.0-0.15	Fill	Silt 10%, Sand 40%, Gravel 40%, moderate brown (5YR4/4), dry	Asbestos ID / Lead
SS8/0.0-0.15	SS8	0.0-0.15	Fill	Silt 40%, Sand 60%, dark yellowish brown (10YR4/2), dry	Asbestos ID / Lead

ATTACHMENT F

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Certificate of Analysis

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Tim Gunns**

Report **518931-S-V2**
Project name AUSTRAL PHASE 2
Project ID 1601114A
Received Date Oct 07, 2016

Client Sample ID			**S1/0.2-0.3**	**S2/0.2-0.3**	**S3/0.3-0.5**	**S4/0.2-0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S16-Oc06876**	**S16-Oc06877**	**S16-Oc06878**	**S16-Oc06879**
Date Sampled			**Oct 04, 2016**	**Oct 04, 2016**	**Oct 04, 2016**	**Oct 04, 2016**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	34	20	27	< 20
TRH C15-C28	50	mg/kg	55	100	< 50	52
TRH C29-C36	50	mg/kg	52	110	< 50	51
TRH C10-36 (Total)	50	mg/kg	141	230	< 50	103
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	69	65	64	69
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	1.6	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	1.8	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	2.1	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	0.7	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.2	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	1.1	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	1.3	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	0.7	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	1.5	< 0.5	1.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5

Client Sample ID			S1/0.2-0.3	S2/0.2-0.3	S3/0.3-0.5	S4/0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06876	S16-Oc06877	S16-Oc06878	S16-Oc06879
Date Sampled			Oct 04, 2016	Oct 04, 2016	Oct 04, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	1.1	< 0.5	1.0
Pyrene	0.5	mg/kg	< 0.5	1.6	< 0.5	1.3
Total PAH*	0.5	mg/kg	< 0.5	10.8	< 0.5	3.8
2-Fluorobiphenyl (surr.)	1	%	94	94	90	111
p-Terphenyl-d14 (surr.)	1	%	107	111	109	128
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	116	97	100	102
Tetrachloro-m-xylene (surr.)	1	%	100	86	83	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	180	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	42	11	28
Copper	5	mg/kg	25	27	34	21
Lead	5	mg/kg	47	33	26	32
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	14	31	16	22
Zinc	5	mg/kg	60	39	48	40
% Moisture	1	%	17	12	6.8	11

Client Sample ID			S5/0.2-0.3	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06880	S16-Oc06881	S16-Oc06882	S16-Oc06883
Date Sampled			Oct 04, 2016	Oct 04, 2016	Oct 04, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	34	22	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	56	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	78	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	64	63	64	68
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	60	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	99	95	91	117
p-Terphenyl-d14 (surr.)	1	%	115	116	98	126
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			S5/0.2-0.3	S6/0.4-0.6	S7/0.2-0.3	S8/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06880	S16-Oc06881	S16-Oc06882	S16-Oc06883
Date Sampled			Oct 04, 2016	Oct 04, 2016	Oct 04, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	97	105	112	109
Tetrachloro-m-xylene (surr.)	1	%	83	90	91	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	60	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	2.4	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	25	23	57
Copper	5	mg/kg	14	16	20	37
Lead	5	mg/kg	33	28	32	30
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	8.1	7.8	15	50
Zinc	5	mg/kg	81	19	38	41
% Moisture	1	%	11	15	15	17

Client Sample ID			S9/0.0-0.15	S10/0.0-0.15	S11/0.0-0.2	S12/0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06884	S16-Oc06885	S16-Oc06886	S16-Oc06887
Date Sampled			Oct 04, 2016	Oct 04, 2016	Oct 04, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	36	27	27	25
TRH C15-C28	50	mg/kg	71	81	< 50	52
TRH C29-C36	50	mg/kg	55	55	< 50	53
TRH C10-36 (Total)	50	mg/kg	162	163	< 50	130
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			S9/0.0-0.15	S10/0.0-0.15	S11/0.0-0.2	S12/0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06884	S16-Oc06885	S16-Oc06886	S16-Oc06887
Date Sampled			Oct 04, 2016	Oct 04, 2016	Oct 04, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
BTEX						
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	62	61	63	69
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	1.1	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.3	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.6	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	1.1	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	0.9	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	2.6	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	1.4	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	2.4	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	11.3	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	122	64	112	103
p-Terphenyl-d14 (surr.)	1	%	123	64	119	116
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			S9/0.0-0.15	S10/0.0-0.15	S11/0.0-0.2	S12/0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06884	S16-Oc06885	S16-Oc06886	S16-Oc06887
Date Sampled			Oct 04, 2016	Oct 04, 2016	Oct 04, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	127	108	109	85
Tetrachloro-m-xylene (surr.)	1	%	84	79	84	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	120	110	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	< 2	4.2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	1.4	< 0.4	< 0.4
Chromium	5	mg/kg	45	18	28	25
Copper	5	mg/kg	200	29	21	37
Lead	5	mg/kg	180	36	42	24
Mercury	0.05	mg/kg	0.17	0.06	0.20	< 0.05
Nickel	5	mg/kg	33	14	19	24
Zinc	5	mg/kg	130	44	38	110
% Moisture	1	%	15	10	13	17

Client Sample ID			S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06888	S16-Oc06889	S16-Oc06890	S16-Oc06891
Date Sampled			Oct 05, 2016	Oct 04, 2016	Oct 04, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	92	39	32	21
TRH C15-C28	50	mg/kg	1500	280	58	51
TRH C29-C36	50	mg/kg	2200	71	< 50	52
TRH C10-36 (Total)	50	mg/kg	3792	390	90	124
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	62	68	63	61
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	110	82	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20

Client Sample ID			S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06888	S16-Oc06889	S16-Oc06890	S16-Oc06891
Date Sampled			Oct 05, 2016	Oct 04, 2016	Oct 04, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.6
2-Fluorobiphenyl (surr.)	1	%	101	97	105	106
p-Terphenyl-d14 (surr.)	1	%	78	99	107	105
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	136	96	103	106
Tetrachloro-m-xylene (surr.)	1	%	85	65	79	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	110	82	< 50	< 50
TRH >C16-C34	100	mg/kg	3500	290	< 100	< 100
TRH >C34-C40	100	mg/kg	1200	< 100	< 100	< 100

Client Sample ID			S13/0.0-0.15	S14/0.0-0.2	S15/0.1-0.25	S16/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06888	S16-Oc06889	S16-Oc06890	S16-Oc06891
Date Sampled			Oct 05, 2016	Oct 04, 2016	Oct 04, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.1	< 2	3.4	5.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	33	58	41
Copper	5	mg/kg	11	42	12	17
Lead	5	mg/kg	8.2	100	36	34
Mercury	0.05	mg/kg	0.07	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	40	11	9.9
Zinc	5	mg/kg	50	130	31	31
% Moisture	1	%	21	14	21	18

Client Sample ID			S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06892	S16-Oc06893	S16-Oc06894	S16-Oc06895
Date Sampled			Oct 05, 2016	Oct 04, 2016	Oct 05, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	41	< 20	31	< 20
TRH C15-C28	50	mg/kg	230	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	350	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	621	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	74	88	86	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			S17/0.0-0.2	S18/0.35-0.55	S19/0.0-0.15	S20/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06892	S16-Oc06893	S16-Oc06894	S16-Oc06895
Date Sampled			Oct 05, 2016	Oct 04, 2016	Oct 05, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	106	103	87	103
p-Terphenyl-d14 (surr.)	1	%	118	103	102	110
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	0.48	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	85	81	88	88
Tetrachloro-m-xylene (surr.)	1	%	77	70	86	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	540	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	220	< 100	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	3.3	< 2	3.8	< 2
Cadmium	0.4	mg/kg	0.6	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	35	11	15	10
Copper	5	mg/kg	1300	33	40	21
Lead	5	mg/kg	58	42	95	28
Mercury	0.05	mg/kg	< 0.05	< 0.05	0.05	< 0.05
Nickel	5	mg/kg	35	23	7.4	21
Zinc	5	mg/kg	100	34	150	73
% Moisture	1	%	8.7	7.7	21	13

Client Sample ID			S21/0.0-0.15	S22/0.15-0.35	S23/0.0-0.15	S24/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06896	S16-Oc06897	S16-Oc06898	S16-Oc06899
Date Sampled			Oct 05, 2016	Oct 04, 2016	Oct 05, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	30	-	< 20
TRH C15-C28	50	mg/kg	-	110	-	< 50
TRH C29-C36	50	mg/kg	-	68	-	< 50
TRH C10-36 (Total)	50	mg/kg	-	208	-	< 50
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	-	< 0.1
Xylenes - Total	0.3	mg/kg	-	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	91	-	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	< 50
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	1.1	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	1.4	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.7	-	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	1.2	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	0.8	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	0.9	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	0.7	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	0.8	-	< 0.5
Chrysene	0.5	mg/kg	-	1.4	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	-	3.3	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	-	0.8	-	< 0.5
Pyrene	0.5	mg/kg	-	2.7	-	< 0.5
Total PAH*	0.5	mg/kg	-	12.6	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	109	-	95
p-Terphenyl-d14 (surr.)	1	%	-	109	-	106
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			S21/0.0-0.15	S22/0.15-0.35	S23/0.0-0.15	S24/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06896	S16-Oc06897	S16-Oc06898	S16-Oc06899
Date Sampled			Oct 05, 2016	Oct 04, 2016	Oct 05, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchlorendate (surr.)	1	%	116	91	91	87
Tetrachloro-m-xylene (surr.)	1	%	89	82	81	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	170	-	< 100
TRH >C34-C40	100	mg/kg	-	< 100	-	< 100
Heavy Metals						
Arsenic	2	mg/kg	2.4	2.8	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	25	18	11	8.7
Copper	5	mg/kg	7.9	21	13	16
Lead	5	mg/kg	26	40	17	17
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	< 5	14	7.2	11
Zinc	5	mg/kg	7.5	39	31	33
% Moisture	1	%	14	11	14	15

Client Sample ID			S25/0.4-0.6	S26/0.3-0.5	SS1/0.0-0.15	SS2/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06900	S16-Oc06901	S16-Oc06902	S16-Oc06903
Date Sampled			Oct 04, 2016	Oct 04, 2016	Oct 05, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	27	< 20	-	-
TRH C15-C28	50	mg/kg	< 50	< 50	-	-
TRH C29-C36	50	mg/kg	< 50	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-

Client Sample ID			S25/0.4-0.6	S26/0.3-0.5	SS1/0.0-0.15	SS2/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06900	S16-Oc06901	S16-Oc06902	S16-Oc06903
Date Sampled			Oct 04, 2016	Oct 04, 2016	Oct 05, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
BTEX						
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	90	90	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	94	104	-	-
p-Terphenyl-d14 (surr.)	1	%	103	117	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-

Client Sample ID			S25/0.4-0.6	S26/0.3-0.5	SS1/0.0-0.15	SS2/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06900	S16-Oc06901	S16-Oc06902	S16-Oc06903
Date Sampled			Oct 04, 2016	Oct 04, 2016	Oct 05, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Dibutylchlorendate (surr.)	1	%	85	82	-	-
Tetrachloro-m-xylene (surr.)	1	%	81	78	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	2.1	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	12	35	-	-
Copper	5	mg/kg	16	16	-	-
Lead	5	mg/kg	17	27	40	32
Mercury	0.05	mg/kg	< 0.05	< 0.05	-	-
Nickel	5	mg/kg	10	17	-	-
Zinc	5	mg/kg	34	26	-	-
% Moisture	1	%	13	8.9	13	9.8

Client Sample ID			SS3/0.0-0.15	SS4/0.0-0.15	SS5/0.0-0.15	SS6/0.0-0.15
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06904	S16-Oc06905	S16-Oc06906	S16-Oc06907
Date Sampled			Oct 05, 2016	Oct 05, 2016	Oct 05, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	57	380	98	28
% Moisture	1	%	25	29	9.6	9.3

Client Sample ID			SS7/0.0-0.15	SS8/0.0-0.15	DS1	DS2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06908	S16-Oc06909	S16-Oc06916	S16-Oc06917
Date Sampled			Oct 05, 2016	Oct 05, 2016	Oct 04, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	31	-
TRH C15-C28	50	mg/kg	-	-	63	-
TRH C29-C36	50	mg/kg	-	-	< 50	-
TRH C10-36 (Total)	50	mg/kg	-	-	94	-

Client Sample ID			SS7/0.0-0.15	SS8/0.0-0.15	DS1	DS2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06908	S16-Oc06909	S16-Oc06916	S16-Oc06917
Date Sampled			Oct 05, 2016	Oct 05, 2016	Oct 04, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-
Xylenes - Total	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	81	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	< 50	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	0.6	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Chrysene	0.5	mg/kg	-	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	-
Fluoranthene	0.5	mg/kg	-	-	< 0.5	-
Fluorene	0.5	mg/kg	-	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	0.6	-
2-Fluorobiphenyl (surr.)	1	%	-	-	99	-
p-Terphenyl-d14 (surr.)	1	%	-	-	104	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.05
a-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
d-BHC	0.05	mg/kg	-	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.05

Client Sample ID			SS7/0.0-0.15	SS8/0.0-0.15	DS1	DS2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06908	S16-Oc06909	S16-Oc06916	S16-Oc06917
Date Sampled			Oct 05, 2016	Oct 05, 2016	Oct 04, 2016	Oct 05, 2016
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	-	-	< 0.2	< 0.2
Toxaphene	1	mg/kg	-	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	-	102	101
Tetrachloro-m-xylene (surr.)	1	%	-	-	80	78
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	100	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
Heavy Metals						
Arsenic	2	mg/kg	-	-	< 2	< 2
Cadmium	0.4	mg/kg	-	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	22	11
Copper	5	mg/kg	-	-	17	14
Lead	5	mg/kg	57	34	32	20
Mercury	0.05	mg/kg	-	-	0.27	< 0.05
Nickel	5	mg/kg	-	-	15	7.7
Zinc	5	mg/kg	-	-	30	31
% Moisture	1	%	28	17	10	14

Client Sample ID			BH1/0.15-0.3	B1/0.0-0.15	B2/0.0-0.15	C1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06920	S16-Oc06921	S16-Oc06922	S16-Oc06923
Date Sampled			Oct 06, 2016	Oct 06, 2016	Oct 06, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	130	35	-
TRH C15-C28	50	mg/kg	< 50	1100	580	-
TRH C29-C36	50	mg/kg	< 50	930	920	-
TRH C10-36 (Total)	50	mg/kg	< 50	2160	1535	-
Volatile Organics						
1.1-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dibromoethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dichloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			BH1/0.15-0.3	B1/0.0-0.15	B2/0.0-0.15	C1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S16-Oc06920	S16-Oc06921	S16-Oc06922	S16-Oc06923
Date Sampled			Oct 06, 2016	Oct 06, 2016	Oct 06, 2016	Oct 04, 2016
Test/Reference	LOR	Unit				
Volatile Organics						
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.3-Dichloropropane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Propanone (Acetone)	5	mg/kg	< 5	< 5	< 5	-
4-Chlorotoluene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Allyl chloride	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Bromobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromodichloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromoform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Bromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Carbon disulfide	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Carbon Tetrachloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chlorobenzene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chloroethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chloroform	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibromochloromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibromomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dichlorodifluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Iodomethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Methylene Chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Styrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Tetrachloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Trichloroethene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Trichlorofluoromethane	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Vinyl chloride	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
Fluorobenzene (surr.)	1	%	96	108	97	-
4-Bromofluorobenzene (surr.)	1	%	108	71	70	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	170	< 50	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-

Client Sample ID			BH1/0.15-0.3	B1/0.0-0.15	B2/0.0-0.15	C1
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S16-Oc06920**	**S16-Oc06921**	**S16-Oc06922**	**S16-Oc06923**
Date Sampled			**Oct 06, 2016**	**Oct 06, 2016**	**Oct 06, 2016**	**Oct 04, 2016**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	98	97	102	-
p-Terphenyl-d14 (surr.)	1	%	108	101	95	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.2	mg/kg	-	-	-	< 0.2
Toxaphene	1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	96
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	170	< 50	-
TRH >C16-C34	100	mg/kg	< 100	1900	1400	-
TRH >C34-C40	100	mg/kg	< 100	620	250	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH1/0.15-0.3 Soil S16-Oc06920 Oct 06, 2016	B1/0.0-0.15 Soil S16-Oc06921 Oct 06, 2016	B2/0.0-0.15 Soil S16-Oc06922 Oct 06, 2016	C1 Soil S16-Oc06923 Oct 04, 2016
Heavy Metals						
Arsenic	2	mg/kg	2.3	13	< 2	3.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	23	32	29
Copper	5	mg/kg	15	50	57	22
Lead	5	mg/kg	77	86	54	49
Mercury	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	5	mg/kg	7.0	26	22	9.0
Zinc	5	mg/kg	79	900	240	42
% Moisture	1	%	19	14	5.0	24

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B8			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 13, 2016	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Volatile Organics	Sydney	Oct 10, 2016	7 Day
- Method: E016 Volatile Organic Compounds (VOC)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 12, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Oct 13, 2016	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 13, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Metals M8	Sydney	Oct 12, 2016	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Eurofins | mgt Suite B9			
BTEX	Sydney	Oct 12, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Organochlorine Pesticides	Sydney	Oct 13, 2016	14 Day
- Method: E013 Organochlorine Pesticides (OC)			
Heavy Metals	Sydney	Oct 12, 2016	180 Day
- Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)			
% Moisture	Sydney	Oct 10, 2016	14 Day
- Method: LTM-GEN-7080 Moisture			

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Company Name:	Geo-Logix P/L	**Order No.:**	PO1543	**Received:**	Oct 7, 2016 5:25 PM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	518931	**Due:**	Oct 14, 2016
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	S1/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06876						X	X	
2	S2/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06877						X	X	
3	S3/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06878						X	X	
4	S4/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06879						X	X	
5	S5/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06880						X	X	
6	S6/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06881						X	X	
7	S7/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06882						X	X	
8	S8/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06883						X	X	
9	S9/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06884						X	X	
10	S10/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06885						X	X	

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Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
11	S11/0.0-0.2	Oct 04, 2016		Soil	S16-Oc06886						X	X	
12	S12/0.0-0.2	Oct 05, 2016		Soil	S16-Oc06887						X	X	
13	S13/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06888						X	X	
14	S14/0.0-0.2	Oct 04, 2016		Soil	S16-Oc06889						X	X	
15	S15/0.1-0.25	Oct 04, 2016		Soil	S16-Oc06890						X	X	
16	S16/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06891						X	X	
17	S17/0.0-0.2	Oct 05, 2016		Soil	S16-Oc06892						X	X	
18	S18/0.35-0.55	Oct 04, 2016		Soil	S16-Oc06893						X	X	
19	S19/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06894						X	X	
20	S20/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06895						X	X	
21	S21/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06896				X	X	X		
22	S22/0.15-0.35	Oct 04, 2016		Soil	S16-Oc06897						X	X	

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Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
23	S23/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06898				X	X	X		
24	S24/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06899						X	X	
25	S25/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06900						X	X	
26	S26/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06901						X	X	
27	SS1/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06902	X		X			X		
28	SS2/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06903	X		X			X		
29	SS3/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06904	X		X			X		
30	SS4/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06905	X		X			X		
31	SS5/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06906	X		X			X		
32	SS6/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06907	X		X			X		
33	SS7/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06908	X		X			X		
34	SS8/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06909	X		X			X		

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Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
35	AF1/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06910	X							
36	AF2/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06911	X							
37	AF3/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06912	X							
38	AF4/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06913	X							
39	AF5/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06914	X							
40	AF6/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06915	X							
41	DS1	Oct 04, 2016		Soil	S16-Oc06916						X	X	
42	DS2	Oct 05, 2016		Soil	S16-Oc06917				X	X	X		
43	R1	Oct 04, 2016		Water	S16-Oc06918							X	
44	R2	Oct 05, 2016		Water	S16-Oc06919							X	
45	BH1/0.15-0.3	Oct 06, 2016		Soil	S16-Oc06920						X		X
46	B1/0.0-0.15	Oct 06, 2016		Soil	S16-Oc06921						X		X

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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
47	B2/0.0-0.15	Oct 06, 2016		Soil	S16-Oc06922						X		X
48	C1	Oct 04, 2016		Soil	S16-Oc06923				X	X	X		
49	S1/0.4-0.5	Oct 04, 2016		Soil	S16-Oc06924		X						
50	S2/0.5-0.6	Oct 04, 2016		Soil	S16-Oc06925		X						
51	S3/0.9-1.0	Oct 04, 2016		Soil	S16-Oc06926		X						
52	S4/0.4-0.5	Oct 04, 2016		Soil	S16-Oc06927		X						
53	S5/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06928		X						
54	S6/0.9-1.1	Oct 04, 2016		Soil	S16-Oc06929		X						
55	S7/0.45-0.65	Oct 04, 2016		Soil	S16-Oc06930		X						
56	S11/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06931		X						
57	S13/0.25-0.35	Oct 05, 2016		Soil	S16-Oc06932		X						
58	S14/0.2-0.5	Oct 04, 2016		Soil	S16-Oc06933		X						

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Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
59	S15/0.25-0.35	Oct 04, 2016		Soil	S16-Oc06934		X						
60	S16/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06935		X						
61	S17/0.6-0.7	Oct 05, 2016		Soil	S16-Oc06936		X						
62	S18/0.6-0.8	Oct 04, 2016		Soil	S16-Oc06937		X						
63	S22/0.45-0.5	Oct 04, 2016		Soil	S16-Oc06938		X						
64	S25/0.7-0.8	Oct 04, 2016		Soil	S16-Oc06939		X						
65	S26/1.0-1.3	Oct 04, 2016		Soil	S16-Oc06940		X						
66	R3	Oct 06, 2016		Water	S16-Oc07118							X	
Test Counts						14	17	8	4	4	40	28	3

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 5			5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.05			0.05	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	92			70-130	Pass	
TRH C10-C14	%	83			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	106			70-130	Pass	
Toluene	%	108			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	106			70-130	Pass	
o-Xylene	%	106			70-130	Pass	
Xylenes - Total	%	106			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	112			70-130	Pass	
1.1-Dichloroethene	%	80			70-130	Pass	
1.1.1-Trichloroethane	%	106			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	96			70-130	Pass	
1.1.2-Trichloroethane	%	111			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	99			70-130	Pass	
1.2-Dibromoethane	%	109			70-130	Pass	
1.2-Dichlorobenzene	%	114			70-130	Pass	
1.2-Dichloroethane	%	112			70-130	Pass	
1.2-Dichloropropane	%	111			70-130	Pass	
1.2.3-Trichloropropane	%	114			70-130	Pass	
1.2.4-Trimethylbenzene	%	111			70-130	Pass	
1.3-Dichlorobenzene	%	113			70-130	Pass	
1.3-Dichloropropane	%	113			70-130	Pass	
1.3.5-Trimethylbenzene	%	109			70-130	Pass	
1.4-Dichlorobenzene	%	111			70-130	Pass	
2-Butanone (MEK)	%	96			70-130	Pass	
2-Propanone (Acetone)	%	82			70-130	Pass	
4-Chlorotoluene	%	111			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	111			70-130	Pass	
Allyl chloride	%	78			70-130	Pass	
Bromobenzene	%	111			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Bromochloromethane	%	106			70-130	Pass	
Bromodichloromethane	%	104			70-130	Pass	
Bromoform	%	86			70-130	Pass	
Bromomethane	%	98			70-130	Pass	
Carbon disulfide	%	73			70-130	Pass	
Carbon Tetrachloride	%	104			70-130	Pass	
Chlorobenzene	%	96			70-130	Pass	
Chloroethane	%	98			70-130	Pass	
Chloroform	%	111			70-130	Pass	
Chloromethane	%	99			70-130	Pass	
cis-1.2-Dichloroethene	%	111			70-130	Pass	
cis-1.3-Dichloropropene	%	97			70-130	Pass	
Dibromochloromethane	%	102			70-130	Pass	
Dibromomethane	%	106			70-130	Pass	
Dichlorodifluoromethane	%	84			70-130	Pass	
Iodomethane	%	74			70-130	Pass	
Isopropyl benzene (Cumene)	%	94			70-130	Pass	
Methylene Chloride	%	97			70-130	Pass	
Styrene	%	91			70-130	Pass	
Tetrachloroethene	%	102			70-130	Pass	
trans-1.2-Dichloroethene	%	96			70-130	Pass	
trans-1.3-Dichloropropene	%	101			70-130	Pass	
Trichloroethene	%	105			70-130	Pass	
Trichlorofluoromethane	%	71			70-130	Pass	
Vinyl chloride	%	98			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	113			70-130	Pass	
TRH C6-C10	%	83			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	112			70-130	Pass	
Acenaphthylene	%	112			70-130	Pass	
Anthracene	%	123			70-130	Pass	
Benz(a)anthracene	%	111			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	77			70-130	Pass	
Benzo(g.h.i)perylene	%	98			70-130	Pass	
Benzo(k)fluoranthene	%	118			70-130	Pass	
Chrysene	%	114			70-130	Pass	
Dibenz(a.h)anthracene	%	81			70-130	Pass	
Fluoranthene	%	123			70-130	Pass	
Fluorene	%	110			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	84			70-130	Pass	
Naphthalene	%	112			70-130	Pass	
Phenanthrene	%	116			70-130	Pass	
Pyrene	%	116			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	87			70-130	Pass	
4.4'-DDD	%	89			70-130	Pass	
4.4'-DDE	%	87			70-130	Pass	
4.4'-DDT	%	84			70-130	Pass	
a-BHC	%	85			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin	%	85			70-130	Pass	
b-BHC	%	81			70-130	Pass	
d-BHC	%	114			70-130	Pass	
Dieldrin	%	88			70-130	Pass	
Endosulfan I	%	87			70-130	Pass	
Endosulfan II	%	87			70-130	Pass	
Endosulfan sulphate	%	89			70-130	Pass	
Endrin	%	89			70-130	Pass	
Endrin aldehyde	%	102			70-130	Pass	
Endrin ketone	%	88			70-130	Pass	
g-BHC (Lindane)	%	85			70-130	Pass	
Heptachlor	%	99			70-130	Pass	
Heptachlor epoxide	%	88			70-130	Pass	
Hexachlorobenzene	%	83			70-130	Pass	
Methoxychlor	%	78			70-130	Pass	
Toxaphene	%	84			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	91			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	93			70-130	Pass	
Cadmium	%	100			70-130	Pass	
Chromium	%	92			70-130	Pass	
Copper	%	104			70-130	Pass	
Lead	%	107			70-130	Pass	
Lead	%	91			70-130	Pass	
Mercury	%	100			70-130	Pass	
Nickel	%	98			70-130	Pass	
Zinc	%	82			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDT	S16-Oc07081	NCP	%	93			70-130	Pass	
Methoxychlor	S16-Oc07081	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S16-Oc06882	CP	%	94			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S16-Oc06882	CP	%	93			70-130	Pass	
Toluene	S16-Oc06882	CP	%	88			70-130	Pass	
Ethylbenzene	S16-Oc06882	CP	%	86			70-130	Pass	
m&p-Xylenes	S16-Oc06882	CP	%	88			70-130	Pass	
o-Xylene	S16-Oc06882	CP	%	86			70-130	Pass	
Xylenes - Total	S16-Oc06882	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S16-Oc06882	CP	%	81			70-130	Pass	
TRH C6-C10	S16-Oc06882	CP	%	91			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S16-Oc06882	CP	%	95			70-130	Pass	
4.4'-DDD	S16-Oc06882	CP	%	110			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDE	S16-Oc06882	CP	%	103			70-130	Pass	
a-BHC	S16-Oc06882	CP	%	91			70-130	Pass	
Aldrin	S16-Oc06882	CP	%	88			70-130	Pass	
b-BHC	S16-Oc06882	CP	%	83			70-130	Pass	
d-BHC	S16-Oc06882	CP	%	119			70-130	Pass	
Dieldrin	S16-Oc06882	CP	%	97			70-130	Pass	
Endosulfan I	S16-Oc06882	CP	%	92			70-130	Pass	
Endosulfan II	S16-Oc06882	CP	%	91			70-130	Pass	
Endosulfan sulphate	S16-Oc06882	CP	%	89			70-130	Pass	
Endrin	S16-Oc06882	CP	%	94			70-130	Pass	
Endrin aldehyde	S16-Oc06882	CP	%	102			70-130	Pass	
Endrin ketone	S16-Oc06882	CP	%	89			70-130	Pass	
g-BHC (Lindane)	S16-Oc06882	CP	%	87			70-130	Pass	
Heptachlor	S16-Oc06882	CP	%	104			70-130	Pass	
Heptachlor epoxide	S16-Oc06882	CP	%	99			70-130	Pass	
Hexachlorobenzene	S16-Oc06882	CP	%	87			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S16-Oc06882	CP	%	90			70-130	Pass	
Chromium	S16-Oc06882	CP	%	106			70-130	Pass	
Copper	S16-Oc06882	CP	%	93			70-130	Pass	
Lead	S16-Oc06882	CP	%	81			70-130	Pass	
Mercury	S16-Oc06882	CP	%	92			70-130	Pass	
Nickel	S16-Oc06882	CP	%	77			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S16-Oc06883	CP	%	82			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S16-Oc06883	CP	%	112			70-130	Pass	
Acenaphthylene	S16-Oc06883	CP	%	113			70-130	Pass	
Anthracene	S16-Oc06883	CP	%	108			70-130	Pass	
Benz(a)anthracene	S16-Oc06883	CP	%	98			70-130	Pass	
Benzo(a)pyrene	S16-Oc06883	CP	%	97			70-130	Pass	
Benzo(b&j)fluoranthene	S16-Oc06883	CP	%	73			70-130	Pass	
Benzo(g.h.i)perylene	S16-Oc06883	CP	%	95			70-130	Pass	
Benzo(k)fluoranthene	S16-Oc06883	CP	%	123			70-130	Pass	
Chrysene	S16-Oc06883	CP	%	119			70-130	Pass	
Dibenz(a.h)anthracene	S16-Oc06883	CP	%	78			70-130	Pass	
Fluoranthene	S16-Oc06883	CP	%	112			70-130	Pass	
Fluorene	S16-Oc06883	CP	%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S16-Oc06883	CP	%	85			70-130	Pass	
Naphthalene	S16-Oc06883	CP	%	116			70-130	Pass	
Phenanthrene	S16-Oc06883	CP	%	113			70-130	Pass	
Pyrene	S16-Oc06883	CP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S16-Oc06883	CP	%	87			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S16-Oc06892	CP	%	103			70-130	Pass	
Cadmium	S16-Oc06892	CP	%	82			70-130	Pass	
Lead	S16-Oc06892	CP	%	84			70-130	Pass	
Mercury	S16-Oc06892	CP	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S16-Oc06893	CP	%	86			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S16-Oc06893	CP	%	121			70-130	Pass	
Acenaphthylene	S16-Oc06893	CP	%	124			70-130	Pass	
Anthracene	S16-Oc06893	CP	%	117			70-130	Pass	
Benz(a)anthracene	S16-Oc06893	CP	%	112			70-130	Pass	
Benzo(a)pyrene	S16-Oc06893	CP	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	S16-Oc06893	CP	%	84			70-130	Pass	
Benzo(g.h.i)perylene	S16-Oc06893	CP	%	92			70-130	Pass	
Benzo(k)fluoranthene	S16-Oc06893	CP	%	118			70-130	Pass	
Chrysene	S16-Oc06893	CP	%	121			70-130	Pass	
Dibenz(a.h)anthracene	S16-Oc06893	CP	%	79			70-130	Pass	
Fluoranthene	S16-Oc06893	CP	%	119			70-130	Pass	
Fluorene	S16-Oc06893	CP	%	120			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S16-Oc06893	CP	%	86			70-130	Pass	
Naphthalene	S16-Oc06893	CP	%	124			70-130	Pass	
Phenanthrene	S16-Oc06893	CP	%	125			70-130	Pass	
Pyrene	S16-Oc06893	CP	%	113			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S16-Oc06893	CP	%	90			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S16-Oc06900	CP	%	78			70-130	Pass	
4.4'-DDD	S16-Oc06900	CP	%	85			70-130	Pass	
4.4'-DDE	S16-Oc06900	CP	%	79			70-130	Pass	
a-BHC	S16-Oc06900	CP	%	73			70-130	Pass	
Aldrin	S16-Oc06900	CP	%	75			70-130	Pass	
b-BHC	S16-Oc06900	CP	%	78			70-130	Pass	
d-BHC	S16-Oc06900	CP	%	100			70-130	Pass	
Dieldrin	S16-Oc06900	CP	%	85			70-130	Pass	
Endosulfan I	S16-Oc06900	CP	%	78			70-130	Pass	
Endosulfan II	S16-Oc06900	CP	%	77			70-130	Pass	
Endosulfan sulphate	S16-Oc06900	CP	%	75			70-130	Pass	
Endrin	S16-Oc06900	CP	%	74			70-130	Pass	
Endrin aldehyde	S16-Oc06900	CP	%	83			70-130	Pass	
Endrin ketone	S16-Oc06900	CP	%	81			70-130	Pass	
g-BHC (Lindane)	S16-Oc06900	CP	%	72			70-130	Pass	
Heptachlor	S16-Oc06900	CP	%	79			70-130	Pass	
Heptachlor epoxide	S16-Oc06900	CP	%	82			70-130	Pass	
Hexachlorobenzene	S16-Oc06900	CP	%	72			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Mercury	S16-Oc06902	CP	%	93			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S16-Oc06916	CP	%	87			70-130	Pass	
4.4'-DDD	S16-Oc06916	CP	%	89			70-130	Pass	
4.4'-DDE	S16-Oc06916	CP	%	88			70-130	Pass	
a-BHC	S16-Oc06916	CP	%	81			70-130	Pass	
Aldrin	S16-Oc06916	CP	%	83			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
b-BHC	S16-Oc06916	CP	%	76			70-130	Pass	
d-BHC	S16-Oc06916	CP	%	111			70-130	Pass	
Endosulfan I	S16-Oc06916	CP	%	86			70-130	Pass	
Endosulfan II	S16-Oc06916	CP	%	86			70-130	Pass	
Endosulfan sulphate	S16-Oc06916	CP	%	87			70-130	Pass	
Endrin	S16-Oc06916	CP	%	74			70-130	Pass	
Endrin aldehyde	S16-Oc06916	CP	%	105			70-130	Pass	
Endrin ketone	S16-Oc06916	CP	%	95			70-130	Pass	
g-BHC (Lindane)	S16-Oc06916	CP	%	80			70-130	Pass	
Heptachlor	S16-Oc06916	CP	%	81			70-130	Pass	
Heptachlor epoxide	S16-Oc06916	CP	%	90			70-130	Pass	
Hexachlorobenzene	S16-Oc06916	CP	%	79			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S16-Oc03157	NCP	%	83			70-130	Pass	
1.1-Dichloroethene	S16-Oc03157	NCP	%	70			70-130	Pass	
1.1.1-Trichloroethane	S16-Oc03157	NCP	%	102			70-130	Pass	
1.1.1.2-Tetrachloroethane	S16-Oc03157	NCP	%	106			70-130	Pass	
1.1.2-Trichloroethane	S16-Oc03157	NCP	%	100			70-130	Pass	
1.1.2.2-Tetrachloroethane	S16-Oc03157	NCP	%	83			70-130	Pass	
1.2-Dibromoethane	S16-Oc03157	NCP	%	99			70-130	Pass	
1.2-Dichlorobenzene	S16-Oc03157	NCP	%	110			70-130	Pass	
1.2-Dichloroethane	S16-Oc03157	NCP	%	87			70-130	Pass	
1.2-Dichloropropane	S16-Oc03157	NCP	%	116			70-130	Pass	
1.2.3-Trichloropropane	S16-Oc03157	NCP	%	112			70-130	Pass	
1.2.4-Trimethylbenzene	S16-Oc03157	NCP	%	112			70-130	Pass	
1.3-Dichlorobenzene	S16-Oc03157	NCP	%	112			70-130	Pass	
1.3-Dichloropropane	S16-Oc03157	NCP	%	108			70-130	Pass	
1.3.5-Trimethylbenzene	S16-Oc03157	NCP	%	111			70-130	Pass	
1.4-Dichlorobenzene	S16-Oc03157	NCP	%	110			70-130	Pass	
2-Propanone (Acetone)	S16-Oc03157	NCP	%	75			70-130	Pass	
4-Chlorotoluene	S16-Oc03157	NCP	%	111			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S16-Oc03157	NCP	%	78			70-130	Pass	
Allyl chloride	S16-Oc03157	NCP	%	71			70-130	Pass	
Bromobenzene	S16-Oc03157	NCP	%	119			70-130	Pass	
Bromochloromethane	S16-Oc03157	NCP	%	80			70-130	Pass	
Bromodichloromethane	S16-Oc03157	NCP	%	97			70-130	Pass	
Bromoform	S16-Oc03157	NCP	%	82			70-130	Pass	
Bromomethane	S16-Oc03157	NCP	%	88			70-130	Pass	
Carbon Tetrachloride	S16-Oc03157	NCP	%	97			70-130	Pass	
Chlorobenzene	S16-Oc03157	NCP	%	107			70-130	Pass	
Chloroethane	S16-Oc03157	NCP	%	74			70-130	Pass	
Chloroform	S16-Oc03157	NCP	%	83			70-130	Pass	
Chloromethane	S16-Oc03157	NCP	%	122			70-130	Pass	
cis-1.2-Dichloroethene	S16-Oc03157	NCP	%	79			70-130	Pass	
cis-1.3-Dichloropropene	S16-Oc03157	NCP	%	91			70-130	Pass	
Dibromochloromethane	S16-Oc03157	NCP	%	90			70-130	Pass	
Dibromomethane	S16-Oc03157	NCP	%	99			70-130	Pass	
Dichlorodifluoromethane	S16-Oc03157	NCP	%	93			70-130	Pass	
Isopropyl benzene (Cumene)	S16-Oc03157	NCP	%	106			70-130	Pass	
Methylene Chloride	S16-Oc03157	NCP	%	92			70-130	Pass	
Styrene	S16-Oc03157	NCP	%	102			70-130	Pass	
Tetrachloroethene	S16-Oc03157	NCP	%	94			70-130	Pass	
trans-1.2-Dichloroethene	S16-Oc03157	NCP	%	72			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
trans-1.3-Dichloropropene	S16-Oc03157	NCP	%	97			70-130	Pass	
Trichloroethene	S16-Oc03157	NCP	%	121			70-130	Pass	
Trichlorofluoromethane	S16-Oc03157	NCP	%	74			70-130	Pass	
Vinyl chloride	S16-Oc03157	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S16-Oc06920	CP	%	96			70-130	Pass	
Chromium	S16-Oc06920	CP	%	112			70-130	Pass	
Copper	S16-Oc06920	CP	%	118			70-130	Pass	
Mercury	S16-Oc06920	CP	%	97			70-130	Pass	
Nickel	S16-Oc06920	CP	%	84			70-130	Pass	
Zinc	S16-Oc06920	CP	%	80			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
2-Butanone (MEK)	S16-Oc11156	NCP	%	102			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S16-Oc06922	CP	%	70			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S16-Oc06922	CP	%	110			70-130	Pass	
Acenaphthylene	S16-Oc06922	CP	%	113			70-130	Pass	
Anthracene	S16-Oc06922	CP	%	100			70-130	Pass	
Benz(a)anthracene	S16-Oc06922	CP	%	100			70-130	Pass	
Benzo(a)pyrene	S16-Oc06922	CP	%	111			70-130	Pass	
Benzo(b&j)fluoranthene	S16-Oc06922	CP	%	99			70-130	Pass	
Benzo(g.h.i)perylene	S16-Oc06922	CP	%	79			70-130	Pass	
Benzo(k)fluoranthene	S16-Oc06922	CP	%	118			70-130	Pass	
Chrysene	S16-Oc06922	CP	%	119			70-130	Pass	
Dibenz(a.h)anthracene	S16-Oc06922	CP	%	77			70-130	Pass	
Fluoranthene	S16-Oc06922	CP	%	101			70-130	Pass	
Fluorene	S16-Oc06922	CP	%	108			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S16-Oc06922	CP	%	81			70-130	Pass	
Naphthalene	S16-Oc06922	CP	%	109			70-130	Pass	
Phenanthrene	S16-Oc06922	CP	%	89			70-130	Pass	
Pyrene	S16-Oc06922	CP	%	96			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S16-Oc06922	CP	%	75			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S16-Oc06881	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S16-Oc06881	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S16-Oc06881	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S16-Oc06881	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S16-Oc06881	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S16-Oc06881	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S16-Oc06881	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S16-Oc06881	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S16-Oc06881	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S16-Oc06881	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S16-Oc06881	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S16-Oc06881	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S16-Oc06881	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Cadmium	S16-Oc06881	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S16-Oc06881	CP	mg/kg	25	28	13	30%	Pass	
Copper	S16-Oc06881	CP	mg/kg	16	17	3.0	30%	Pass	
Lead	S16-Oc06881	CP	mg/kg	28	23	20	30%	Pass	
Mercury	S16-Oc06881	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S16-Oc06881	CP	mg/kg	7.8	6.8	13	30%	Pass	
Zinc	S16-Oc06881	CP	mg/kg	19	17	13	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S16-Oc06882	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S16-Oc06882	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S16-Oc06882	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S16-Oc06882	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S16-Oc06882	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S16-Oc06882	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S16-Oc06882	CP	%	15	14	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S16-Oc06891	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S16-Oc06891	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S16-Oc06891	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S16-Oc06891	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S16-Oc06891	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S16-Oc06891	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S16-Oc06891	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S16-Oc06891	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S16-Oc06891	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S16-Oc06891	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S16-Oc06891	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S16-Oc06891	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S16-Oc06891	CP	mg/kg	5.3	4.2	24	30%	Pass	
Cadmium	S16-Oc06891	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S16-Oc06891	CP	mg/kg	41	36	14	30%	Pass	
Copper	S16-Oc06891	CP	mg/kg	17	18	7.0	30%	Pass	
Lead	S16-Oc06891	CP	mg/kg	34	31	9.0	30%	Pass	
Mercury	S16-Oc06891	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S16-Oc06891	CP	mg/kg	9.9	12	19	30%	Pass	
Zinc	S16-Oc06891	CP	mg/kg	31	32	3.0	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S16-Oc06892	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S16-Oc06892	CP	%	8.7	10.0	13	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S16-Oc06901	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S16-Oc06901	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S16-Oc06901	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S16-Oc06901	CP	mg/kg	2.1	< 2	200	30%	Fail	Q15
Cadmium	S16-Oc06901	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S16-Oc06901	CP	mg/kg	35	20	56	30%	Fail	Q15
Copper	S16-Oc06901	CP	mg/kg	16	17	7.0	30%	Pass	
Lead	S16-Oc06901	CP	mg/kg	27	17	42	30%	Fail	Q15
Mercury	S16-Oc06901	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Nickel	S16-Oc06901	CP	mg/kg	17	15	11	30%	Pass	
Zinc	S16-Oc06901	CP	mg/kg	26	25	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S16-Oc06902	CP	%	13	12	2.0	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.4-Trimethylbenzene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.4-Dichlorobenzene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	S16-Oc07109	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
4-Chlorotoluene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	S16-Oc07109	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Bromobenzene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Iodomethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S16-Oc07109	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S16-Oc06920	CP	%	19	17	10	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S16-Oc06921	CP	mg/kg	130	160	18	30%	Pass	
TRH C15-C28	S16-Oc06921	CP	mg/kg	1100	1100	2.0	30%	Pass	
TRH C29-C36	S16-Oc06921	CP	mg/kg	930	1000	10	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Indeno(1.2.3-cd)pyrene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S16-Oc06921	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S16-Oc06921	CP	mg/kg	170	200	14	30%	Pass	
TRH >C16-C34	S16-Oc06921	CP	mg/kg	1900	2000	5.0	30%	Pass	
TRH >C34-C40	S16-Oc06921	CP	mg/kg	620	730	16	30%	Pass	

Comments

This report has been revised to amend Sample IDs for samples S16-Oc06921 and S16-Oc06922.

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya	Analytical Services Manager
Rhys Thomas	Senior Analyst-Asbestos (NSW)
Ryan Hamilton	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Attention:	Tim Gunns
Report	518931-V2-AID
Project Name	AUSTRAL PHASE 2
Project ID	1601114A
Received Date	Oct 07, 2016
Date Reported	Oct 17, 2016

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, “Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise” therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

Project Name AUSTRAL PHASE 2
Project ID 1601114A
Date Sampled Oct 05, 2016
Report 518931-V2-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
SS1/0.0-0.15	16-Oc06902	Oct 05, 2016	Approximate Sample 83g Sample consisted of: Brown coarse grain soil and rocks	Chrysotile, amosite and crocidolite asbestos detected in weathered fibre cement fragments Approximate raw weight of asbestos containing material = 0.0190g Organic fibre detected. No respirable fibres detected.
SS2/0.0-0.15	16-Oc06903	Oct 05, 2016	Approximate Sample 58g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
SS3/0.0-0.15	16-Oc06904	Oct 05, 2016	Approximate Sample 70g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
SS4/0.0-0.15	16-Oc06905	Oct 05, 2016	Approximate Sample 55g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
SS5/0.0-0.15	16-Oc06906	Oct 05, 2016	Approximate Sample 53g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
SS6/0.0-0.15	16-Oc06907	Oct 05, 2016	Approximate Sample 84g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
SS7/0.0-0.15	16-Oc06908	Oct 05, 2016	Approximate Sample 52g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
SS8/0.0-0.15	16-Oc06909	Oct 05, 2016	Approximate Sample 68g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
AF1/0.0-0.15	16-Oc06910	Oct 05, 2016	Approximate Sample 59g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
AF2/0.0-0.15	16-Oc06911	Oct 05, 2016	Approximate Sample 58g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
AF3/0.0-0.15	16-Oc06912	Oct 05, 2016	Approximate Sample 58g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
AF4/0.0-0.15	16-Oc06913	Oct 05, 2016	Approximate Sample 88g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
AF5/0.0-0.15	16-Oc06914	Oct 05, 2016	Approximate Sample 51g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.
AF6/0.0-0.15	16-Oc06915	Oct 05, 2016	Approximate Sample 93g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Oct 10, 2016	Indefinite

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

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

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

Company Name:	Geo-Logix P/L	**Order No.:**	PO1543	**Received:**	Oct 7, 2016 5:25 PM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	518931	**Due:**	Oct 14, 2016
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	S1/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06876						X	X	
2	S2/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06877						X	X	
3	S3/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06878						X	X	
4	S4/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06879						X	X	
5	S5/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06880						X	X	
6	S6/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06881						X	X	
7	S7/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06882						X	X	
8	S8/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06883						X	X	
9	S9/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06884						X	X	
10	S10/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06885						X	X	

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

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: AUSTRAL PHASE 2
Project ID: 1601114A

Order No.: PO1543
Report #: 518931
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Oct 7, 2016 5:25 PM
Due: Oct 14, 2016
Priority: 5 Day
Contact Name: Tim Gunns

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
11	S11/0.0-0.2	Oct 04, 2016		Soil	S16-Oc06886						X	X	
12	S12/0.0-0.2	Oct 05, 2016		Soil	S16-Oc06887						X	X	
13	S13/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06888						X	X	
14	S14/0.0-0.2	Oct 04, 2016		Soil	S16-Oc06889						X	X	
15	S15/0.1-0.25	Oct 04, 2016		Soil	S16-Oc06890						X	X	
16	S16/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06891						X	X	
17	S17/0.0-0.2	Oct 05, 2016		Soil	S16-Oc06892						X	X	
18	S18/0.35-0.55	Oct 04, 2016		Soil	S16-Oc06893						X	X	
19	S19/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06894						X	X	
20	S20/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06895						X	X	
21	S21/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06896				X	X	X		
22	S22/0.15-0.35	Oct 04, 2016		Soil	S16-Oc06897						X	X	

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Contact Name: Tim Gunns

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
23	S23/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06898				X	X	X		
24	S24/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06899						X	X	
25	S25/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06900						X	X	
26	S26/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06901						X	X	
27	SS1/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06902	X		X			X		
28	SS2/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06903	X		X			X		
29	SS3/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06904	X		X			X		
30	SS4/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06905	X		X			X		
31	SS5/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06906	X		X			X		
32	SS6/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06907	X		X			X		
33	SS7/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06908	X		X			X		
34	SS8/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06909	X		X			X		

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
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NATA # 1261 Site # 20794

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: AUSTRAL PHASE 2
Project ID: 1601114A

Order No.: PO1543
Report #: 518931
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Oct 7, 2016 5:25 PM
Due: Oct 14, 2016
Priority: 5 Day
Contact Name: Tim Gunns

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
35	AF1/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06910	X							
36	AF2/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06911	X							
37	AF3/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06912	X							
38	AF4/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06913	X							
39	AF5/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06914	X							
40	AF6/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06915	X							
41	DS1	Oct 04, 2016		Soil	S16-Oc06916						X	X	
42	DS2	Oct 05, 2016		Soil	S16-Oc06917				X	X	X		
43	R1	Oct 04, 2016		Water	S16-Oc06918							X	
44	R2	Oct 05, 2016		Water	S16-Oc06919							X	
45	BH1/0.15-0.3	Oct 06, 2016		Soil	S16-Oc06920						X		X
46	B1/0.0-0.15	Oct 06, 2016		Soil	S16-Oc06921						X		X

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Company Name:	Geo-Logix P/L	**Order No.:**	PO1543	**Received:**	Oct 7, 2016 5:25 PM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	518931	**Due:**	Oct 14, 2016
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
47	B2/0.0-0.15	Oct 06, 2016		Soil	S16-Oc06922						X		X
48	C1	Oct 04, 2016		Soil	S16-Oc06923				X	X	X		
49	S1/0.4-0.5	Oct 04, 2016		Soil	S16-Oc06924		X						
50	S2/0.5-0.6	Oct 04, 2016		Soil	S16-Oc06925		X						
51	S3/0.9-1.0	Oct 04, 2016		Soil	S16-Oc06926		X						
52	S4/0.4-0.5	Oct 04, 2016		Soil	S16-Oc06927		X						
53	S5/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06928		X						
54	S6/0.9-1.1	Oct 04, 2016		Soil	S16-Oc06929		X						
55	S7/0.45-0.65	Oct 04, 2016		Soil	S16-Oc06930		X						
56	S11/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06931		X						
57	S13/0.25-0.35	Oct 05, 2016		Soil	S16-Oc06932		X						
58	S14/0.2-0.5	Oct 04, 2016		Soil	S16-Oc06933		X						

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		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
59	S15/0.25-0.35	Oct 04, 2016		Soil	S16-Oc06934		X						
60	S16/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06935		X						
61	S17/0.6-0.7	Oct 05, 2016		Soil	S16-Oc06936		X						
62	S18/0.6-0.8	Oct 04, 2016		Soil	S16-Oc06937		X						
63	S22/0.45-0.5	Oct 04, 2016		Soil	S16-Oc06938		X						
64	S25/0.7-0.8	Oct 04, 2016		Soil	S16-Oc06939		X						
65	S26/1.0-1.3	Oct 04, 2016		Soil	S16-Oc06940		X						
66	R3	Oct 06, 2016		Water	S16-Oc07118							X	
Test Counts						14	17	8	4	4	40	28	3

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
COC	Chain of custody
SRA	Sample Receipt Advice
ISO	International Stardards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substatntial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

This report has been revised to amend Sample IDs for samples S16-Oc06921 and S16-Oc06922.

The samples received were not collected in approved asbestos bags and were therefore sub-sampled from the 250mL glass jars. Valid sub-sampling procedures were applied so as to ensure that the sub-samples to be analysed accurately represented the samples received.

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Authorised by:

Rhys Thomas Senior Analyst-Asbestos (NSW)

Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Certificate of Analysis

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Tim Gunns**

Report **518931-W-V2**
Project name AUSTRAL PHASE 2
Project ID 1601114A
Received Date Oct 07, 2016

Client Sample ID			**R1**	**R2**	**R3**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S16-Oc06918**	**S16-Oc06919**	**S16-Oc07118**
Date Sampled			**Oct 04, 2016**	**Oct 05, 2016**	**Oct 06, 2016**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	106	105	106
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001

Client Sample ID			R1	R2	R3
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			S16-Oc06918	S16-Oc06919	S16-Oc07118
Date Sampled			Oct 04, 2016	Oct 05, 2016	Oct 06, 2016
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	75	68	76
p-Terphenyl-d14 (surr.)	1	%	70	65	73
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01
Dibutylchlorendate (surr.)	1	%	143	108	117
Tetrachloro-m-xylene (surr.)	1	%	131	96	105
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1
Heavy Metals					
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001	< 0.001
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B8			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 13, 2016	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 10, 2016	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	Oct 13, 2016	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 13, 2016	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Metals M8	Sydney	Oct 10, 2016	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Eurofins | mgt Suite B9			
BTEX	Sydney	Oct 10, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Organochlorine Pesticides	Sydney	Oct 13, 2016	7 Day
- Method: E013 Organochlorine Pesticides (OC)			

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Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	518931	**Due:**	Oct 14, 2016
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	S1/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06876						X	X	
2	S2/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06877						X	X	
3	S3/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06878						X	X	
4	S4/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06879						X	X	
5	S5/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06880						X	X	
6	S6/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06881						X	X	
7	S7/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06882						X	X	
8	S8/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06883						X	X	
9	S9/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06884						X	X	
10	S10/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06885						X	X	

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NATA # 1261 Site # 20794

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: AUSTRAL PHASE 2
Project ID: 1601114A

Order No.: PO1543
Report #: 518931
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Oct 7, 2016 5:25 PM
Due: Oct 14, 2016
Priority: 5 Day
Contact Name: Tim Gunns

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
11	S11/0.0-0.2	Oct 04, 2016		Soil	S16-Oc06886						X	X	
12	S12/0.0-0.2	Oct 05, 2016		Soil	S16-Oc06887						X	X	
13	S13/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06888						X	X	
14	S14/0.0-0.2	Oct 04, 2016		Soil	S16-Oc06889						X	X	
15	S15/0.1-0.25	Oct 04, 2016		Soil	S16-Oc06890						X	X	
16	S16/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06891						X	X	
17	S17/0.0-0.2	Oct 05, 2016		Soil	S16-Oc06892						X	X	
18	S18/0.35-0.55	Oct 04, 2016		Soil	S16-Oc06893						X	X	
19	S19/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06894						X	X	
20	S20/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06895						X	X	
21	S21/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06896				X	X	X		
22	S22/0.15-0.35	Oct 04, 2016		Soil	S16-Oc06897						X	X	

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
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Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
23	S23/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06898				X	X	X		
24	S24/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06899						X	X	
25	S25/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06900						X	X	
26	S26/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06901						X	X	
27	SS1/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06902	X		X			X		
28	SS2/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06903	X		X			X		
29	SS3/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06904	X		X			X		
30	SS4/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06905	X		X			X		
31	SS5/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06906	X		X			X		
32	SS6/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06907	X		X			X		
33	SS7/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06908	X		X			X		
34	SS8/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06909	X		X			X		

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Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
35	AF1/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06910	X							
36	AF2/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06911	X							
37	AF3/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06912	X							
38	AF4/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06913	X							
39	AF5/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06914	X							
40	AF6/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06915	X							
41	DS1	Oct 04, 2016		Soil	S16-Oc06916						X	X	
42	DS2	Oct 05, 2016		Soil	S16-Oc06917				X	X	X		
43	R1	Oct 04, 2016		Water	S16-Oc06918							X	
44	R2	Oct 05, 2016		Water	S16-Oc06919							X	
45	BH1/0.15-0.3	Oct 06, 2016		Soil	S16-Oc06920						X		X
46	B1/0.0-0.15	Oct 06, 2016		Soil	S16-Oc06921						X		X

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Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
47	B2/0.0-0.15	Oct 06, 2016		Soil	S16-Oc06922						X		X
48	C1	Oct 04, 2016		Soil	S16-Oc06923				X	X	X		
49	S1/0.4-0.5	Oct 04, 2016		Soil	S16-Oc06924		X						
50	S2/0.5-0.6	Oct 04, 2016		Soil	S16-Oc06925		X						
51	S3/0.9-1.0	Oct 04, 2016		Soil	S16-Oc06926		X						
52	S4/0.4-0.5	Oct 04, 2016		Soil	S16-Oc06927		X						
53	S5/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06928		X						
54	S6/0.9-1.1	Oct 04, 2016		Soil	S16-Oc06929		X						
55	S7/0.45-0.65	Oct 04, 2016		Soil	S16-Oc06930		X						
56	S11/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06931		X						
57	S13/0.25-0.35	Oct 05, 2016		Soil	S16-Oc06932		X						
58	S14/0.2-0.5	Oct 04, 2016		Soil	S16-Oc06933		X						

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Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
59	S15/0.25-0.35	Oct 04, 2016		Soil	S16-Oc06934		X						
60	S16/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06935		X						
61	S17/0.6-0.7	Oct 05, 2016		Soil	S16-Oc06936		X						
62	S18/0.6-0.8	Oct 04, 2016		Soil	S16-Oc06937		X						
63	S22/0.45-0.5	Oct 04, 2016		Soil	S16-Oc06938		X						
64	S25/0.7-0.8	Oct 04, 2016		Soil	S16-Oc06939		X						
65	S26/1.0-1.3	Oct 04, 2016		Soil	S16-Oc06940		X						
66	R3	Oct 06, 2016		Water	S16-Oc07118							X	
Test Counts						14	17	8	4	4	40	28	3

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	114			70-130	Pass	
TRH C10-C14	%	72			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	100			70-130	Pass	
Toluene	%	105			70-130	Pass	
Ethylbenzene	%	105			70-130	Pass	
m&p-Xylenes	%	103			70-130	Pass	
o-Xylene	%	107			70-130	Pass	
Xylenes - Total	%	104			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	101			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	130			70-130	Pass	
Acenaphthylene	%	124			70-130	Pass	
Anthracene	%	129			70-130	Pass	
Benz(a)anthracene	%	106			70-130	Pass	
Benzo(a)pyrene	%	104			70-130	Pass	
Benzo(b&j)fluoranthene	%	91			70-130	Pass	
Benzo(g.h.i)perylene	%	128			70-130	Pass	
Benzo(k)fluoranthene	%	115			70-130	Pass	
Chrysene	%	124			70-130	Pass	
Dibenz(a.h)anthracene	%	115			70-130	Pass	
Fluoranthene	%	120			70-130	Pass	
Fluorene	%	126			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	122			70-130	Pass	
Naphthalene	%	130			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenanthrene	%	129			70-130	Pass	
Pyrene	%	123			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	130			70-130	Pass	
4.4'-DDE	%	120			70-130	Pass	
4.4'-DDT	%	110			70-130	Pass	
a-BHC	%	120			70-130	Pass	
Aldrin	%	120			70-130	Pass	
b-BHC	%	120			70-130	Pass	
d-BHC	%	130			70-130	Pass	
Dieldrin	%	120			70-130	Pass	
Endosulfan I	%	120			70-130	Pass	
Endosulfan II	%	130			70-130	Pass	
Endosulfan sulphate	%	130			70-130	Pass	
Endrin	%	120			70-130	Pass	
Endrin aldehyde	%	130			70-130	Pass	
Endrin ketone	%	120			70-130	Pass	
g-BHC (Lindane)	%	120			70-130	Pass	
Heptachlor	%	130			70-130	Pass	
Heptachlor epoxide	%	120			70-130	Pass	
Hexachlorobenzene	%	120			70-130	Pass	
Methoxychlor	%	120			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	71			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	97			70-130	Pass	
Cadmium	%	95			70-130	Pass	
Chromium	%	100			70-130	Pass	
Copper	%	96			70-130	Pass	
Lead	%	96			70-130	Pass	
Mercury	%	102			70-130	Pass	
Nickel	%	90			70-130	Pass	
Zinc	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S16-Oc06733	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S16-Oc06733	NCP	%	126			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S16-Oc07118	CP	%	96			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S16-Oc07118	CP	%	89			70-130	Pass	
Toluene	S16-Oc07118	CP	%	94			70-130	Pass	
Ethylbenzene	S16-Oc07118	CP	%	94			70-130	Pass	
m&p-Xylenes	S16-Oc07118	CP	%	92			70-130	Pass	
o-Xylene	S16-Oc07118	CP	%	94			70-130	Pass	
Xylenes - Total	S16-Oc07118	CP	%	92			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S16-Oc07118	CP	%	75			70-130	Pass	
TRH C6-C10	S16-Oc07118	CP	%	85			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S16-Oc07117	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S16-Oc06732	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S16-Oc06732	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S16-Oc06732	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S16-Oc07117	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S16-Oc07117	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S16-Oc07117	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S16-Oc07117	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S16-Oc07117	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S16-Oc07117	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S16-Oc07117	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S16-Oc07117	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S16-Oc06732	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S16-Oc06732	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S16-Oc06732	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Comments

This report has been revised to amend Sample IDs for samples S16-Oc06921 and S16-Oc06922.

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

Geo-Logix

Geo-Logix Pty Ltd
Building Q2, Level 3 Unit 2309/4
Daydream St, Warriewood
NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722

CHAIN OF CUSTODY

Project Manager: Tim Gunns

Contact Email: tgunns@geo-logix.com.au

Project Name: Austral Phase 2

Project Number: 1601114A

Date Submitted: 07-10-16

Purchase Order No: PO1543

Quote Reference: 161006GLX

Invoice to: accounts@geo-logix.com.au

TAT required: STD

519331.

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: Soil	Water	Air	Paint / ACM	Other	Comments	HOLD	COMPOSITE	OCP/M8	B9
	S1/0.2-0.3	04-10-16	X									X
	S1/0.4-0.5	04-10-16	X						X			
	S2/0.2-0.3	04-10-16	X									X
	S2/0.5-0.6	04-10-16	X						X			
	S3/0.3-0.5	04-10-16	X									X
	S3/0.9-1.0	04-10-16	X						X			
	S4/0.2-0.3	04-10-16	X									X
	S4/0.4-0.5	04-10-16	X						X			
	S5/0.2-0.3	04-10-16	X									X
	S5/0.4-0.6	04-10-16	X						X			
	S6/0.4-0.6	04-10-16	X									X
	S6/0.9-1.1	04-10-16	X						X			
	S7/0.2-0.3	04-10-16	X									X
	S7/0.45-0.65	04-10-16	X						X			
	S8/0.0-0.15	04-10-16	X									X
	S9/0.0-0.15	04-10-16	X									X
	S10/0.0-0.15	04-10-16	X									X
	S11/0.0-0.2	04-10-16	X									X
	S11/0.3-0.5	04-10-16	X						X			
	S12/0.0-0.2	05-10-16	X									X
	S13/0.0-0.15	05-10-16	X									X

Eurofins | MGT Suite Codes

Code	Suite
B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO4/CO3/HCO3/NH3/NO3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO4/CH4/Alk/BOD/COD/HPC/CUB
B17	SO4/NO3/Fe++/HPC/CUB
B18	Cl-/SO4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K
R21	%Fe/ CEC/ pH(CaCl2)/ TOC/ % Clay

CHAIN OF CUSTODY

Relinquished by: TG Date/Time: 7-10-16 Signature: [signature]

Received by: [signature] Date/Time: 7-10-16 Signature:

Eken Wg Eflingt .071016 17:25 [initials]

Geo-Logix

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Daydream St, Warriewood
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P: (02) 9979 1722

CHAIN OF CUSTODY

PTO →

Project Manager: Tim Gunns
Contact Email: tgunns@geo-logix.com.au
Project Name: Austral Phase 2
Project Number: 1601114A
Date Submitted: 07-10-16

Purchase Order No: PO1543
Quote Reference: 161006GLX
Invoice to: accounts@geo-logix.com.au
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: Soil	Water	Air	Paint / ACM	Other	Comments	HOLD	COMPOSITE	OCP/M8	B9	ASBESTOS ID	LEAD
	S13/0.25-0.35	05-10-16	X						X					
	S14/0.0-0.2	04-10-16	X									X		
	S14/0.2-0.5	04-10-16	X						X					
	S15/0.1-0.25	04-10-16	X									X		
	S15/0.25-0.35	04-10-16	X						X					
	S16/0.0-0.15	04-10-16	X									X		
	S16/0.2-0.3	04-10-16	X						X					
	S17/0.0-0.2	05-10-16	X									X		
	S17/0.6-0.7	05-10-16	X						X					
	S18/0.35-0.55	04-10-16	X									X		
	S18/0.6-0.8	04-10-16	X						X					
	S19/0.0-0.15	05-10-16	X									X		
	S20/0.0-0.15	05-10-16	X									X		
	S21/0.0-0.15	05-10-16	X								X			
	S22/0.15-0.35	04-10-16	X									X		
	S22/0.45-0.5	04-10-16	X						X					
	S23/0.0-0.15	05-10-16	X								X			
	S24/0.0-0.15	04-10-16	X									X		
	S25/0.4-0.6	04-10-16	X									X		
	S25/0.7-0.8	04-10-16	X					Composite with S26/0.0-0.15		X				
	S26/0.3-0.5	04-10-16	X									X		
	S26/1.0-1.3	04-10-16	X					Composite with S25/0.7-0.8		X				
	SS1/0.0-0.15	05-10-16	X										X	X

Eurofins | MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO4/CO3/HCO3/NH3/NO3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO4/CH4/Alk/BOD/COD/HPC/CUB
B17	SO4/NO3/Fe++/HPC/CUB
B18	Cl-/SO4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K
R21	%Fe/ CEC/ pH(CaCl2)/ TOC/ % Clay

CHAIN OF CUSTODY

Relinquished by: TG Date/Time: 7-10-16 Signature: _____ Received by: _____ Date/Time: 7-10-16 Signature: _____

Geo-Logix

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NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722

CHAIN OF CUSTODY

Project Manager: Tim Gunns
Contact Email: tgunns@geo-logix.com.au
Project Name: Austral Phase 2
Project Number: 1601114A
Date Submitted: 07-10-16

Purchase Order No: PO1543
Quote Reference: 161006GLX
Invoice to: accounts@geo-logix.com.au
TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: Soil	Water	Air	Paint / ACM	Other	Comments	HOLD	COMPOSITE	OCP/M8	B9	ASBESTOS ID	LEAD	B8
	SS2/0.0-0.15	05-10-16	X										X	X	
	SS3/0.0-0.15	05-10-16	X										X	X	
	SS4/0.0-0.15	05-10-16	X										X	X	
	SS5/0.0-0.15	05-10-16	X										X	X	
	SS6/0.0-0.15	05-10-16	X										X	X	
	SS7/0.0-0.15	05-10-16	X										X	X	
	SS8/0.0-0.15	05-10-16	X										X	X	
	AF1/0.0-0.15	05-10-16	X										X		
	AF2/0.0-0.15	05-10-16	X										X		
	AF3/0.0-0.15	05-10-16	X										X		
	AF4/0.0-0.15	05-10-16	X										X		
	AF5/0.0-0.15	05-10-16	X										X		
	AF6/0.0-0.15	05-10-16	X										X		
	DS1	04-10-16	X									X			
	DS2	05-10-16	X								X				
	R1	04-10-16		X								X			
	R2	05-10-16		X								X			
	R3	06-10-16		X											X
	BH1/0.15-0.3	06-10-16	X												X
	B1/0.0-0.15	06-10-16	X												X
	B2/0.0-0.15	06-10-16	X												X

Eurofins | MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO4/CO3/HCO3/NH3/NO3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO4/CH4/Alk/BOD/COD/HPC/CUB
B17	SO4/NO3/Fe++/HPC/CUB
B18	Cl-/SO4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K
R21	%Fe/ CEC/ pH(CaCl2)/ TOC/ % Clay

CHAIN OF CUSTODY

Relinquished by: TG Date/Time: 7-10-16 Signature:

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TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: Soil	Water	Air	Paint / ACM	Other	Comments	HOLD	COMPOSITE	OCP/M8	B9	ASBESTOS ID	LEAD	B8
	C1	-	X					COMPOSITE OF S24/S25 AS ABOVE			X				

Eurofins | MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO4/CO3/HCO3/NH3/NO3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO4/CH4/Alk/BOD/COD/HPC/CUB
B17	SO4/NO3/Fe++/HPC/CUB
B18	Cl-/SO4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Mg/Na/K
R21	%Fe/ CEC/ pH(CaCl2)/ TOC/ % Clay

CHAIN OF CUSTODY

Relinquished by: TG Date/Time: 7-10-16 Signature:

Received by: Date/Time: 7-10-16 Signature:

CHAIN OF CUSTODY

Geo-Logix

Geo-Logix Pty Ltd
Building Q2, Level 3 Unit 2309/4
Daydream St, Warriewood
NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722

Project Manager: Tim Gunns

Contact Email: tgunns@geo-logix.com.au

Project Name: Austral Phase 2

Project Number: 1601114A

Date Submitted: 07-10-16

Purchase Order No: PO1544

Quote Reference: 161006GLX

Invoice to: accounts@geo-logix.com.au

TAT required: STD

Lab ID	Sample ID	Date	Matrix: Soil	Water	Air	Paint / ACM	Other	Comments	ANALYSIS REQUIRED: HOLD	COMPOSITE	OCP/M8	B9	ASBESTOS ID	LEAD	B8
	TS1	04-10-16	X					ND TO TO MELBOURNE AS TRIPLICA				X			
	TS2	05-10-16	X								X				

Eurofins | MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO4/CO3/HCO3/NH3/NO3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO4/CH4/Alk/BOD/COD/HPC/CUB
B17	SO4/NO3/Fe++/HPC/CUB
B18	Cl-/SO4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K
R21	%Fe/ CEC/ pH(CaCl2)/ TOC/ % Clay

CHAIN OF CUSTODY

Relinquished by: [illegible] Date/Time: 7-10-16 Signature: [signature]

Received by: [signature] Elkn [illegible] 071016 1725 Date/Time: 7-10-16 Signature: [signature]

Ellen Wandala Gamage

From: Nibha Vaidya
Sent: Tuesday, 11 October 2016 10:30 AM
To: !AU04_CAU001_EnviroSampleNSW
Subject: FW: AUSTRAL PHASE 2 (1601114A)
Attachments: 10102016141153_0001.pdf

Update on this batch –

Composite 'S25/0.7-0.8' and 'S26/1.0-1.3' to make up sample 'C1'. Test 'C1' for OCP/M8.

Kind Regards,

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com

From: Tim Gunns [mailto:tgunns@geo-logix.com.au]
Sent: Monday, 10 October 2016 3:50 PM
To: Nibha Vaidya
Subject: Re: AUSTRAL PHASE 2 (1601114A)

Hi Nibha

Apologies. Typo I meant s25 and s26 as per page 1.

Cheers

Tim

Sent from my iPhone

Ord # 518931

On 10 Oct. 2016, at 3:41 pm, Nibha Vaidya <NibhaVaidya@eurofins.com> wrote:

> Hi Tim,
>
> Hope your weekend was good.
>
> For sample 'C1' in the attached COC, could you please clarify which samples are to be composited?
> Cheers.
>
> Kind Regards,
>
> Nibha Vaidya
> **Analytical Services Manager**
>
> **Eurofins | mgt**
> Unit F3, Parkview Building
> 16 Mars Road
> LANE COVE WEST NSW 2066

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NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name:	**Geo-Logix P/L**
Contact name:	Tim Gunns
Project name:	AUSTRAL PHASE 2
Project ID:	1601114A
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Oct 7, 2016 5:25 PM
Eurofins | mgt reference:	**518931**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : .9 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Jar ID received as S5/0.2-0.35 labelled as S15/0.2-0.35

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Tim Gunns - tgunns@geo-logix.com.au.

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

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: AUSTRAL PHASE 2
Project ID: 1601114A

Order No.: PO1543
Report #: 518931
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Oct 7, 2016 5:25 PM
Due: Oct 14, 2016
Priority: 5 Day
Contact Name: Tim Gunns

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	S1/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06876						X	X	
2	S2/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06877						X	X	
3	S3/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06878						X	X	
4	S4/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06879						X	X	
5	S5/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06880						X	X	
6	S6/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06881						X	X	
7	S7/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06882						X	X	
8	S8/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06883						X	X	
9	S9/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06884						X	X	
10	S10/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06885						X	X	

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Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	518931	**Due:**	Oct 14, 2016
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
11	S11/0.0-0.2	Oct 04, 2016		Soil	S16-Oc06886						X	X	
12	S12/0.0-0.2	Oct 05, 2016		Soil	S16-Oc06887						X	X	
13	S13/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06888						X	X	
14	S14/0.0-0.2	Oct 04, 2016		Soil	S16-Oc06889						X	X	
15	S15/0.1-0.25	Oct 04, 2016		Soil	S16-Oc06890						X	X	
16	S16/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06891						X	X	
17	S17/0.0-0.2	Oct 05, 2016		Soil	S16-Oc06892						X	X	
18	S18/0.35-0.55	Oct 04, 2016		Soil	S16-Oc06893						X	X	
19	S19/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06894						X	X	
20	S20/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06895						X	X	
21	S21/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06896				X	X	X		
22	S22/0.15-0.35	Oct 04, 2016		Soil	S16-Oc06897						X	X	

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		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
23	S23/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06898				X	X	X		
24	S24/0.0-0.15	Oct 04, 2016		Soil	S16-Oc06899						X	X	
25	S25/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06900						X	X	
26	S26/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06901						X	X	
27	SS1/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06902	X		X			X		
28	SS2/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06903	X		X			X		
29	SS3/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06904	X		X			X		
30	SS4/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06905	X		X			X		
31	SS5/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06906	X		X			X		
32	SS6/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06907	X		X			X		
33	SS7/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06908	X		X			X		
34	SS8/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06909	X		X			X		

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Contact Name: Tim Gunns

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
35	AF1/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06910	X							
36	AF2/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06911	X							
37	AF3/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06912	X							
38	AF4/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06913	X							
39	AF5/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06914	X							
40	AF6/0.0-0.15	Oct 05, 2016		Soil	S16-Oc06915	X							
41	DS1	Oct 04, 2016		Soil	S16-Oc06916						X	X	
42	DS2	Oct 05, 2016		Soil	S16-Oc06917				X	X	X		
43	R1	Oct 04, 2016		Water	S16-Oc06918							X	
44	R2	Oct 05, 2016		Water	S16-Oc06919							X	
45	BH1/0.15-0.3	Oct 06, 2016		Soil	S16-Oc06920						X		X
46	B1/0.0-0.15	Oct 06, 2016		Soil	S16-Oc06921						X		X

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		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
47	B2/0.0-0.15	Oct 06, 2016		Soil	S16-Oc06922						X		X
48	C1	Oct 04, 2016		Soil	S16-Oc06923				X	X	X		
49	S1/0.4-0.5	Oct 04, 2016		Soil	S16-Oc06924		X						
50	S2/0.5-0.6	Oct 04, 2016		Soil	S16-Oc06925		X						
51	S3/0.9-1.0	Oct 04, 2016		Soil	S16-Oc06926		X						
52	S4/0.4-0.5	Oct 04, 2016		Soil	S16-Oc06927		X						
53	S5/0.4-0.6	Oct 04, 2016		Soil	S16-Oc06928		X						
54	S6/0.9-1.1	Oct 04, 2016		Soil	S16-Oc06929		X						
55	S7/0.45-0.65	Oct 04, 2016		Soil	S16-Oc06930		X						
56	S11/0.3-0.5	Oct 04, 2016		Soil	S16-Oc06931		X						
57	S13/0.25-0.35	Oct 05, 2016		Soil	S16-Oc06932		X						
58	S14/0.2-0.5	Oct 04, 2016		Soil	S16-Oc06933		X						

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Company Name:	Geo-Logix P/L	**Order No.:**	PO1543	**Received:**	Oct 7, 2016 5:25 PM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	518931	**Due:**	Oct 14, 2016
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos Absence /Presence	HOLD	Lead	Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9	Eurofins | mgt Suite B8
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
External Laboratory													
59	S15/0.25-0.35	Oct 04, 2016		Soil	S16-Oc06934		X						
60	S16/0.2-0.3	Oct 04, 2016		Soil	S16-Oc06935		X						
61	S17/0.6-0.7	Oct 05, 2016		Soil	S16-Oc06936		X						
62	S18/0.6-0.8	Oct 04, 2016		Soil	S16-Oc06937		X						
63	S22/0.45-0.5	Oct 04, 2016		Soil	S16-Oc06938		X						
64	S25/0.7-0.8	Oct 04, 2016		Soil	S16-Oc06939		X						
65	S26/1.0-1.3	Oct 04, 2016		Soil	S16-Oc06940		X						
66	R3	Oct 06, 2016		Water	S16-Oc07118							X	
Test Counts						14	17	8	4	4	40	28	3

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Certificate of Analysis

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Tim Gunns**

Report **519056-S**
Project name AUSTRAL PHASE 2
Project ID 1601114A
Received Date Oct 11, 2016

Client Sample ID			**TS1**	**TS2**
Sample Matrix			**Soil**	**Soil**
Eurofins | mgt Sample No.			**M16-Oc08606**	**M16-Oc08607**
Date Sampled			**Oct 04, 2016**	**Oct 04, 2016**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	-
TRH C10-C14	20	mg/kg	< 20	-
TRH C15-C28	50	mg/kg	< 50	-
TRH C29-C36	50	mg/kg	< 50	-
TRH C10-36 (Total)	50	mg/kg	< 50	-
BTEX				
Benzene	0.1	mg/kg	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	72	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-
TRH C6-C10	20	mg/kg	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-

Client Sample ID			TS1	TS2
Sample Matrix			Soil	Soil
Eurofins | mgt Sample No.			M16-Oc08606	M16-Oc08607
Date Sampled			Oct 04, 2016	Oct 04, 2016
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Naphthalene	0.5	mg/kg	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	92	-
p-Terphenyl-d14 (surr.)	1	%	88	-
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1
Dibutylchlorendate (surr.)	1	%	93	112
Tetrachloro-m-xylene (surr.)	1	%	71	91
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
TRH >C10-C16	50	mg/kg	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-
Heavy Metals				
Arsenic	2	mg/kg	4.7	23
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	12	53
Copper	5	mg/kg	12	14
Lead	5	mg/kg	15	41
Mercury	0.1	mg/kg	< 0.1	0.2
Nickel	5	mg/kg	7.9	16
Zinc	5	mg/kg	36	33
% Moisture	1	%	12	15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
Eurofins | mgt Suite B9			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 12, 2016	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Melbourne	Oct 12, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 12, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 12, 2016	14 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Oct 12, 2016	14 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 12, 2016	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Metals M8	Melbourne	Oct 12, 2016	28 Days
- Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)			
% Moisture	Melbourne	Oct 11, 2016	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name:	Geo-Logix P/L	**Order No.:**	PO1544	**Received:**	Oct 11, 2016 8:30 AM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	519056	**Due:**	Oct 18, 2016
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	TS1	Oct 04, 2016		Soil	M16-Oc08606			X	X
2	TS2	Oct 04, 2016		Soil	M16-Oc08607	X	X	X	
Test Counts						1	1	2	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	105			70-130	Pass	
TRH C10-C14	%	106			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	122			70-130	Pass	
Toluene	%	110			70-130	Pass	
Ethylbenzene	%	103			70-130	Pass	
m&p-Xylenes	%	102			70-130	Pass	
Xylenes - Total	%	102			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	120			70-130	Pass	
TRH C6-C10	%	96			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	96			70-130	Pass	
Acenaphthylene	%	103			70-130	Pass	
Anthracene	%	105			70-130	Pass	
Benz(a)anthracene	%	107			70-130	Pass	
Benzo(a)pyrene	%	106			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g.h.i)perylene	%	75			70-130	Pass	
Benzo(k)fluoranthene	%	130			70-130	Pass	
Chrysene	%	104			70-130	Pass	
Dibenz(a.h)anthracene	%	86			70-130	Pass	
Fluoranthene	%	101			70-130	Pass	
Fluorene	%	102			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	78			70-130	Pass	
Naphthalene	%	94			70-130	Pass	
Phenanthrene	%	97			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pyrene	%	100			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	97			70-130	Pass	
4.4'-DDE	%	85			70-130	Pass	
4.4'-DDT	%	90			70-130	Pass	
a-BHC	%	91			70-130	Pass	
Aldrin	%	87			70-130	Pass	
b-BHC	%	77			70-130	Pass	
d-BHC	%	89			70-130	Pass	
Dieldrin	%	93			70-130	Pass	
Endosulfan I	%	125			70-130	Pass	
Endosulfan II	%	86			70-130	Pass	
Endosulfan sulphate	%	91			70-130	Pass	
Endrin	%	72			70-130	Pass	
Endrin aldehyde	%	124			70-130	Pass	
Endrin ketone	%	119			70-130	Pass	
g-BHC (Lindane)	%	89			70-130	Pass	
Heptachlor	%	82			70-130	Pass	
Heptachlor epoxide	%	89			70-130	Pass	
Hexachlorobenzene	%	86			70-130	Pass	
Methoxychlor	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	113			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	108			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Chromium	%	105			80-120	Pass	
Copper	%	104			80-120	Pass	
Lead	%	107			80-120	Pass	
Mercury	%	100			75-125	Pass	
Nickel	%	109			80-120	Pass	
Zinc	%	107			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	B16-Oc09191	NCP	%	99			70-130	Pass	
TRH C10-C14	B16-Oc09188	NCP	%	97			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	B16-Oc09191	NCP	%	125			70-130	Pass	
Toluene	B16-Oc09191	NCP	%	117			70-130	Pass	
Ethylbenzene	B16-Oc09191	NCP	%	113			70-130	Pass	
m&p-Xylenes	B16-Oc09191	NCP	%	111			70-130	Pass	
o-Xylene	B16-Oc09191	NCP	%	111			70-130	Pass	
Xylenes - Total	B16-Oc09191	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	B16-Oc09191	NCP	%	105			70-130	Pass	
TRH C6-C10	B16-Oc09191	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthene	M16-Oc06610	NCP	%	107			70-130	Pass	
Acenaphthylene	M16-Oc06610	NCP	%	106			70-130	Pass	
Anthracene	M16-Oc06610	NCP	%	123			70-130	Pass	
Benz(a)anthracene	M16-Oc06610	NCP	%	int			70-130	Fail	Q08
Benzo(a)pyrene	M16-Oc06610	NCP	%	int			70-130	Fail	Q08
Benzo(b&j)fluoranthene	M16-Oc06610	NCP	%	int			70-130	Fail	Q08
Benzo(g.h.i)perylene	M16-Oc06610	NCP	%	118			70-130	Pass	
Benzo(k)fluoranthene	M16-Oc06610	NCP	%	112			70-130	Pass	
Chrysene	M16-Oc06610	NCP	%	int			70-130	Fail	Q08
Dibenz(a.h)anthracene	M16-Oc06610	NCP	%	104			70-130	Pass	
Fluoranthene	M16-Oc06610	NCP	%	int			70-130	Fail	Q08
Fluorene	M16-Oc06610	NCP	%	108			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M16-Oc06610	NCP	%	116			70-130	Pass	
Naphthalene	M16-Oc06610	NCP	%	85			70-130	Pass	
Phenanthrene	M16-Oc06610	NCP	%	int			70-130	Fail	Q08
Pyrene	M16-Oc06610	NCP	%	int			70-130	Fail	Q08
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M16-Oc08917	NCP	%	111			70-130	Pass	
4.4'-DDE	M16-Oc08917	NCP	%	100			70-130	Pass	
4.4'-DDT	M16-Oc08917	NCP	%	77			70-130	Pass	
a-BHC	M16-Oc08917	NCP	%	86			70-130	Pass	
Aldrin	M16-Oc08917	NCP	%	101			70-130	Pass	
b-BHC	M16-Oc08917	NCP	%	94			70-130	Pass	
d-BHC	M16-Oc08917	NCP	%	104			70-130	Pass	
Dieldrin	M16-Oc08917	NCP	%	107			70-130	Pass	
Endosulfan I	M16-Oc08917	NCP	%	102			70-130	Pass	
Endosulfan II	M16-Oc08917	NCP	%	108			70-130	Pass	
Endosulfan sulphate	M16-Oc08917	NCP	%	101			70-130	Pass	
Endrin	M16-Oc08917	NCP	%	86			70-130	Pass	
Endrin aldehyde	M16-Oc08917	NCP	%	91			70-130	Pass	
Endrin ketone	M16-Oc08917	NCP	%	123			70-130	Pass	
g-BHC (Lindane)	M16-Oc08917	NCP	%	102			70-130	Pass	
Heptachlor	M16-Oc08917	NCP	%	98			70-130	Pass	
Heptachlor epoxide	M16-Oc08917	NCP	%	100			70-130	Pass	
Hexachlorobenzene	M16-Oc08917	NCP	%	98			70-130	Pass	
Methoxychlor	M16-Oc08917	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	B16-Oc09188	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	A16-Oc09073	NCP	%	106			75-125	Pass	
Cadmium	A16-Oc09073	NCP	%	104			75-125	Pass	
Chromium	A16-Oc09073	NCP	%	104			75-125	Pass	
Copper	A16-Oc09073	NCP	%	101			75-125	Pass	
Lead	A16-Oc09073	NCP	%	101			75-125	Pass	
Mercury	A16-Oc09073	NCP	%	103			70-130	Pass	
Nickel	A16-Oc09073	NCP	%	106			75-125	Pass	
Zinc	A16-Oc09073	NCP	%	107			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M16-Oc09044	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	B16-Oc09186	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	B16-Oc09186	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	B16-Oc09186	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M16-Oc09044	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M16-Oc09044	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M16-Oc09044	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M16-Oc09044	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M16-Oc09044	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M16-Oc09044	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M16-Oc09044	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M16-Oc09044	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M16-Oc06609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M16-Oc06609	NCP	mg/kg	< 0.5	0.5	23	30%	Pass	
Anthracene	M16-Oc06609	NCP	mg/kg	0.6	0.7	20	30%	Pass	
Benz(a)anthracene	M16-Oc06609	NCP	mg/kg	2.3	2.4	5.0	30%	Pass	
Benzo(a)pyrene	M16-Oc06609	NCP	mg/kg	2.7	2.8	7.0	30%	Pass	
Benzo(b&j)fluoranthene	M16-Oc06609	NCP	mg/kg	2.5	2.5	2.0	30%	Pass	
Benzo(g.h.i)perylene	M16-Oc06609	NCP	mg/kg	1.3	1.8	33	30%	Fail	Q15
Benzo(k)fluoranthene	M16-Oc06609	NCP	mg/kg	2.2	2.2	2.0	30%	Pass	
Chrysene	M16-Oc06609	NCP	mg/kg	2.2	2.4	8.0	30%	Pass	
Dibenz(a.h)anthracene	M16-Oc06609	NCP	mg/kg	0.5	0.6	4.0	30%	Pass	
Fluoranthene	M16-Oc06609	NCP	mg/kg	4.5	4.9	7.0	30%	Pass	
Fluorene	M16-Oc06609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M16-Oc06609	NCP	mg/kg	1.4	1.4	5.0	30%	Pass	
Naphthalene	M16-Oc06609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M16-Oc06609	NCP	mg/kg	1.6	2.2	32	30%	Fail	Q15
Pyrene	M16-Oc06609	NCP	mg/kg	4.2	4.6	8.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M16-Oc08917	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Heptachlor	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M16-Oc08917	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M16-Oc08917	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	B16-Oc09186	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	B16-Oc09186	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	B16-Oc09186	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	A16-Oc09073	NCP	mg/kg	9.5	9.4	1.0	30%	Pass	
Cadmium	A16-Oc09073	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	A16-Oc09073	NCP	mg/kg	25	25	<1	30%	Pass	
Copper	A16-Oc09073	NCP	mg/kg	12	12	<1	30%	Pass	
Lead	A16-Oc09073	NCP	mg/kg	9.8	9.7	1.0	30%	Pass	
Mercury	A16-Oc09073	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	A16-Oc09073	NCP	mg/kg	15	15	<1	30%	Pass	
Zinc	A16-Oc09073	NCP	mg/kg	23	23	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M16-Oc08525	NCP	%	18	17	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins | mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)

Glenn Jackson
National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

Geo-Logix

Geo-Logix Pty Ltd
Building Q2, Level 3 Unit 2309/4
Daydream St, Warriewood
NSW 2102

ABN: 86 116 892 936

P: (02) 9979 1722

CHAIN OF CUSTODY

Project Manager: Tim Gunns

Contact Email: tgunns@geo-logix.com.au

Project Name: Austral Phase 2

Project Number: 1601114A

Date Submitted: 07-10-16

Purchase Order No: PO1544

Quote Reference: 161006GLX

Invoice to: accounts@geo-logix.com.au

TAT required: STD

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix: Soil	Matrix: Water	Matrix: Air	Matrix: Paint / ACM	Matrix: Other	Comments	HOLD	COMPOSITE	OCP/M8	B9	ASBESTOS ID	LEAD	B8
	TS1	04-10-16	X					ND TO TO MELBOURNE AS TRIPLIC/				X			
	TS2	05-10-16	X								X				

Eurofins | MGT Suite Codes

B1	TRH/BTEXN
B1A	TRH/MAH
B2	TRH/BTEXN/Pb
B2A	TRH/MAH/Pb
B3	PAH/Phenols
B4	TRH/BTEXN/PAH
B4A	TRH/BTEXN/PAH/Phenols
B5	TRH/BTEXN/M7
B6	TRH/BTEXN/M8
B7	TRH/BTEXN/PAH/M8
B7A	TRH/BTEXN/PAH/Phenols/M8
B8	TRH/VOC/PAH/M8
B9	TRH/BTEXN/PAH/OCP/M8
B10	TRH/BTEXN/PAH/OCP/OPP/M8
B11	Na/K/Ca/Mg/Cl/SO4/CO3/HCO3/NH3/NO3
B11A	B11/Alkalinity
B11B	B11/EC/TDS
B12	TRH/BTEXN/Oxygenates/Ethanol
B12A	TRH/BTEXN/Oxygenates
B13	OCP/PCB
B14	OCP/OPP
B15	OCP/OPP/PCB
B16	TDS/SO4/CH4/Alk/BOD/COD/HPC/CUB
B17	SO4/NO3/Fe++/HPC/CUB
B18	Cl-/SO4/pH
B19	N/P/K
B20	CEC/%ESP/Ca/Ma/Na/K
R21	%Fe/ CEC/ pH(CaCl2)/ TOC/ % Clay

CHAIN OF CUSTODY

Relinquished by: R Date/Time: 7-10-16 Signature: [signature] Received by: [signature] Date/Time: 7-10-16 Signature:

DANIEL WRIGHT [signature] 11/10/16 #519056 Ellen [illegible] 071016 1725 [signature]

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

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Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name:	**Geo-Logix P/L**
Contact name:	Tim Gunns
Project name:	AUSTRAL PHASE 2
Project ID:	1601114A
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Oct 11, 2016 8:30 AM
Eurofins | mgt reference:	**519056**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 11.9 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Tim Gunns - tgunns@geo-logix.com.au.

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

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NATA # 1261 Site # 20794

Company Name:	Geo-Logix P/L	**Order No.:**	PO1544	**Received:**	Oct 11, 2016 8:30 AM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	519056	**Due:**	Oct 18, 2016
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Organochlorine Pesticides	Metals M8	Moisture Set	Eurofins | mgt Suite B9
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	TS1	Oct 04, 2016		Soil	M16-Oc08606			X	X
2	TS2	Oct 04, 2016		Soil	M16-Oc08607	X	X	X	
Test Counts						1	1	2	1

Certificate of Analysis

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Tim Gunns**

Report **519960-S**
Project name ADDITIONAL: AUSTRAL PHASE 2
Project ID 1601114A
Received Date Oct 14, 2016

Client Sample ID			**S4/0.2-0.3**	**S23/0.0-0.15**
Sample Matrix			**Soil**	**Soil**
Eurofins | mgt Sample No.			**S16-Oc15381**	**S16-Oc15382**
Date Sampled			**Oct 04, 2016**	**Oct 04, 2016**
Test/Reference	LOR	Unit		
% Clay	1	%	20	10
Conductivity (1:5 aqueous extract at 25°C)	5	uS/cm	100	18
pH (units)(1:5 soil:CaCl2 extract)	0.1	pH Units	6.2	4.8
Total Organic Carbon	0.1	%	2.1	1.2
% Moisture	1	%	13	13
Heavy Metals				
Iron	20	mg/kg	36000	15000
Heavy Metals				
Iron (%)	0.01	%	3.6	1.5
Ion Exchange Properties				
Cation Exchange Capacity	0.05	meq/100g	17	7.2

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

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

Description	Testing Site	Extracted	Holding Time
NEPM Screen for Soil Classification			
% Clay	Brisbane	Oct 19, 2016	6 Day
- Method: LTM-GEN-7040			
Conductivity (1:5 aqueous extract at 25°C)	Sydney	Oct 19, 2016	7 Day
- Method: LTM-INO-4030			
pH (units)(1:5 soil:CaCl2 extract)	Sydney	Oct 19, 2016	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Total Organic Carbon	Melbourne	Oct 19, 2016	28 Day
- Method: APHA 5310B Total Organic Carbon			
Heavy Metals	Sydney	Oct 20, 2016	180 Day
- Method: LTM-MET-3030 by ICP-OES (hydride ICP-OES for Mercury)			
Ion Exchange Properties	Melbourne	Oct 19, 2016	
% Moisture	Sydney	Oct 18, 2016	14 Day
- Method: LTM-GEN-7080 Moisture			

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Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Geo-Logix P/L	**Order No.:**		**Received:**	Oct 14, 2016 10:45 AM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:**	519960	**Due:**	Oct 21, 2016
		Phone:	02 9979 1722	**Priority:**	5 Day
		Fax:	02 9979 1222	**Contact Name:**	Tim Gunns
Project Name:	ADDITIONAL: AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Moisture Set	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271							X
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	S4/0.2-0.3	Oct 04, 2016		Soil	S16-Oc15381	X	X
2	S23/0.0-0.15	Oct 04, 2016		Soil	S16-Oc15382	X	X
Test Counts						2	2

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
% Clay	%	< 1			1	Pass	
Conductivity (1:5 aqueous extract at 25°C)	uS/cm	< 5			5	Pass	
Total Organic Carbon	%	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Iron	mg/kg	< 20			20	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
% Clay	%	100			70-130	Pass	
Total Organic Carbon	%	99			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Iron	%	91			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C)	S16-Oc15381	CP	uS/cm	100	110	4.0	30%	Pass	
Total Organic Carbon	S16-Oc15461	NCP	%	3.6	3.4	4.0	30%	Pass	
% Moisture	S16-Se26786	NCP	%	8.8	8.9	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay	S16-Oc15382	CP	%	10	9.8	2.0	30%	Pass	

Comments

Sample Integrity

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

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Ryan Hamilton	Senior Analyst-Inorganic (NSW)

Glenn Jackson
National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

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

Esther Yew

579960

From: Nibha Vaidya
Sent: Friday, 14 October 2016 10:45 AM
To: !AU04_CAU001_EnviroSampleNSW
Subject: Geologix - Additional Analysis

Additional R21 suite (% Fe/ CEC/ pH(CaCl2)/ TOC/ % Clay Content) for the following samples please. Analysis on the discrete samples.

Report	Samples
518931	S4 0.2-0.3
	S23 0.0-0.15
518936	S4 0.0-.15
	S22 0-.15
518939	S4 0-0.15
	S21 0-0.15

Cheers!

Kind Regards,

Nibha Vaidya
Analytical Services Manager

Eurofins | mgt
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Fax : +61 2 9420 2977

Email : NibhaVaidya@eurofins.com
Website : www.eurofins.com.au/environmental-testing

esther 14/10/16 10:45am

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

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name:	**Geo-Logix P/L**
Contact name:	-INVOICES cc'd
Project name:	ADDITIONAL: AUSTRAL PHASE 2
Project ID:	1601114A
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Oct 14, 2016 10:45 AM
Eurofins | mgt reference:	**519960**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Additional report from 518931

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to -INVOICES cc'd - accounts@geo-logix.com.au.

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

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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name:	Geo-Logix P/L	**Order No.:**		**Received:**	Oct 14, 2016 10:45 AM
Address:	Bld Q2 Level 3, 2309/4 Daydream St Warriewood NSW 2102	**Report #:** **Phone:** **Fax:**	519960 02 9979 1722 02 9979 1222	**Due:** **Priority:** **Contact Name:**	Oct 21, 2016 5 Day -INVOICES cc'd
Project Name:	ADDITIONAL: AUSTRAL PHASE 2				
Project ID:	1601114A				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Moisture Set	NEPM Screen for Soil Classification
Melbourne Laboratory - NATA Site # 1254 & 14271							X
Sydney Laboratory - NATA Site # 18217						X	X
Brisbane Laboratory - NATA Site # 20794							X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	S4/0.2-0.3	Oct 04, 2016		Soil	S16-Oc15381	X	X
2	S23/0.0-0.15	Oct 04, 2016		Soil	S16-Oc15382	X	X
Test Counts						2	2

ATTACHMENT G

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 10:44:02 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Total Number of Observations	26	Number of Distinct Observations	9
Number of Detects	10	Number of Non-Detects	16
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	2.1	Minimum Non-Detect	2
Maximum Detect	5.3	Maximum Non-Detect	2
Variance Detects	1.075	Percent Non-Detects	61.54%
Mean Detects	3.18	SD Detects	1.037
Median Detects	3.05	CV Detects	0.326
Skewness Detects	0.912	Kurtosis Detects	0.365
Mean of Logged Detects	1.112	SD of Logged Detects	0.312

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.911	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.174	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.28	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.454	Standard Error of Mean	0.173
SD	0.838	95% KM (BCA) UCL	2.746
95% KM (t) UCL	2.75	95% KM (Percentile Bootstrap) UCL	2.75
95% KM (z) UCL	2.739	95% KM Bootstrap t UCL	2.925
90% KM Chebyshev UCL	2.973	95% KM Chebyshev UCL	3.209
97.5% KM Chebyshev UCL	3.535	99% KM Chebyshev UCL	4.177

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.304	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.725	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.189	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.267	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	11.3	k star (bias corrected MLE)	7.979
Theta hat (MLE)	0.281	Theta star (bias corrected MLE)	0.399
nu hat (MLE)	226.1	nu star (bias corrected)	159.6
MLE Mean (bias corrected)	3.18	MLE Sd (bias corrected)	1.126

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	8.581	nu hat (KM)	446.2
Approximate Chi Square Value (446.21, α)	398.2	Adjusted Chi Square Value (446.21, β)	395.2
95% Gamma Approximate KM-UCL (use when n>=50)	2.749	95% Gamma Adjusted KM-UCL (use when n<50)	2.77

56											
57	Gamma ROS Statistics using Imputed Non-Detects										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62				Minimum	0.01			Mean	1.552		
63				Maximum	5.3			Median	1.177		
64				SD	1.519			CV	0.979		
65				k hat (MLE)	0.512			k star (bias corrected MLE)	0.478		
66				Theta hat (MLE)	3.033			Theta star (bias corrected MLE)	3.245		
67				nu hat (MLE)	26.6			nu star (bias corrected)	24.87		
68				MLE Mean (bias corrected)	1.552			MLE Sd (bias corrected)	2.244		
69								Adjusted Level of Significance (β)	0.0398		
70				Approximate Chi Square Value (24.87, α)	14.51			Adjusted Chi Square Value (24.87, β)	13.99		
71				95% Gamma Approximate UCL (use when n>=50)	2.659			95% Gamma Adjusted UCL (use when n<50)	2.758		
72											
73	Lognormal GOF Test on Detected Observations Only										
74				Shapiro Wilk Test Statistic	0.94			Shapiro Wilk GOF Test			
75				5% Shapiro Wilk Critical Value	0.842			Detected Data appear Lognormal at 5% Significance Level			
76				Lilliefors Test Statistic	0.176			Lilliefors GOF Test			
77				5% Lilliefors Critical Value	0.28			Detected Data appear Lognormal at 5% Significance Level			
78	Detected Data appear Lognormal at 5% Significance Level										
79											
80	Lognormal ROS Statistics Using Imputed Non-Detects										
81				Mean in Original Scale	1.932			Mean in Log Scale	0.473		
82				SD in Original Scale	1.225			SD in Log Scale	0.627		
83				95% t UCL (assumes normality of ROS data)	2.342			95% Percentile Bootstrap UCL	2.308		
84				95% BCA Bootstrap UCL	2.342			95% Bootstrap t UCL	2.438		
85				95% H-UCL (Log ROS)	2.536						
86											
87	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
88				KM Mean (logged)	0.854			95% H-UCL (KM -Log)	2.693		
89				KM SD (logged)	0.274			95% Critical H Value (KM-Log)	1.8		
90				KM Standard Error of Mean (logged)	0.0567						
91											
92	DL/2 Statistics										
93				DL/2 Normal				DL/2 Log-Transformed			
94				Mean in Original Scale	1.838			Mean in Log Scale	0.428		
95				SD in Original Scale	1.248			SD in Log Scale	0.583		
96				95% t UCL (Assumes normality)	2.256			95% H-Stat UCL	2.305		
97	DL/2 is not a recommended method, provided for comparisons and historical reasons										
98											
99	Nonparametric Distribution Free UCL Statistics										
100	Detected Data appear Normal Distributed at 5% Significance Level										
101											
102	Suggested UCL to Use										
103				95% KM (t) UCL	2.75			95% KM (Percentile Bootstrap) UCL	2.75		
104											
105	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
106	Recommendations are based upon data size, data distribution, and skewness.										
107	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
108	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
109											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 10:46:16 AM
From File	WorkSheet_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Cadmium

General Statistics

Total Number of Observations	26	Number of Distinct Observations	3
Number of Detects	2	Number of Non-Detects	24
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.6	Minimum Non-Detect	0.4
Maximum Detect	1.4	Maximum Non-Detect	0.4
Variance Detects	0.32	Percent Non-Detects	92.31%
Mean Detects	1	SD Detects	0.566
Median Detects	1	CV Detects	0.566
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-0.0872	SD of Logged Detects	0.599

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.446	Standard Error of Mean	0.054
SD	0.195	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.538	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.535	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.608	95% KM Chebyshev UCL	0.681
97.5% KM Chebyshev UCL	0.783	99% KM Chebyshev UCL	0.983

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	5.897	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.17	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	23.59	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	5.256	nu hat (KM)	273.3
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (273.33, α)	236	Adjusted Chi Square Value (273.33, β)	233.8
95% Gamma Approximate KM-UCL (use when n>=50)	0.517	95% Gamma Adjusted KM-UCL (use when n<50)	0.522

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

	A	B	C	D	E	F	G	H	I	J	K	L
56												
57	Lognormal ROS Statistics Using Imputed Non-Detects											
58					Mean in Original Scale	0.101			Mean in Log Scale	-4.856		
59					SD in Original Scale	0.291			SD in Log Scale	2.497		
60				95% t UCL (assumes normality of ROS data)		0.199			95% Percentile Bootstrap UCL	0.206		
61					95% BCA Bootstrap UCL	0.273			95% Bootstrap t UCL	0.638		
62					95% H-UCL (Log ROS)	1.965						
63												
64	DL/2 Statistics											
65	DL/2 Normal						DL/2 Log-Transformed					
66					Mean in Original Scale	0.262			Mean in Log Scale	-1.492		
67					SD in Original Scale	0.245			SD in Log Scale	0.431		
68					95% t UCL (Assumes normality)	0.344			95% H-Stat UCL	0.291		
69	DL/2 is not a recommended method, provided for comparisons and historical reasons											
70												
71	Nonparametric Distribution Free UCL Statistics											
72	Data do not follow a Discernible Distribution at 5% Significance Level											
73												
74	Suggested UCL to Use											
75					95% KM (t) UCL	0.538			95% KM (% Bootstrap) UCL	N/A		
76	Warning: One or more Recommended UCL(s) not available!											
77												
78	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
79	Recommendations are based upon data size, data distribution, and skewness.											
80	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
81	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
82												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 10:47:54 AM
From File	WorkSheet_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Chromium

General Statistics

Total Number of Observations	26	Number of Distinct Observations	19
Number of Detects	25	Number of Non-Detects	1
Number of Distinct Detects	18	Number of Distinct Non-Detects	1
Minimum Detect	8.7	Minimum Non-Detect	5
Maximum Detect	58	Maximum Non-Detect	5
Variance Detects	199.9	Percent Non-Detects	3.846%
Mean Detects	26.23	SD Detects	14.14
Median Detects	25	CV Detects	0.539
Skewness Detects	0.809	Kurtosis Detects	0.0116
Mean of Logged Detects	3.124	SD of Logged Detects	0.557

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.918	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.135	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.177	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	25.41	Standard Error of Mean	2.839
SD	14.18	95% KM (BCA) UCL	30.08
95% KM (t) UCL	30.26	95% KM (Percentile Bootstrap) UCL	30.05
95% KM (z) UCL	30.08	95% KM Bootstrap t UCL	30.86
90% KM Chebyshev UCL	33.93	95% KM Chebyshev UCL	37.79
97.5% KM Chebyshev UCL	43.14	99% KM Chebyshev UCL	53.66

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.307	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.112	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.176	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.653	k star (bias corrected MLE)	3.241
Theta hat (MLE)	7.18	Theta star (bias corrected MLE)	8.092
nu hat (MLE)	182.7	nu star (bias corrected)	162.1
MLE Mean (bias corrected)	26.23	MLE Sd (bias corrected)	14.57

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	3.21	nu hat (KM)	166.9
Approximate Chi Square Value (166.92, α)	138	Adjusted Chi Square Value (166.92, β)	136.3
95% Gamma Approximate KM-UCL (use when n>=50)	30.73	95% Gamma Adjusted KM-UCL (use when n<50)	31.12

56											
57	Gamma ROS Statistics using Imputed Non-Detects										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62				Minimum	1.979			Mean	25.3		
63				Maximum	58			Median	24		
64				SD	14.65			CV	0.579		
65				k hat (MLE)	2.645			k star (bias corrected MLE)	2.366		
66				Theta hat (MLE)	9.562			Theta star (bias corrected MLE)	10.69		
67				nu hat (MLE)	137.6			nu star (bias corrected)	123		
68				MLE Mean (bias corrected)	25.3			MLE Sd (bias corrected)	16.45		
69								Adjusted Level of Significance (β)	0.0398		
70				Approximate Chi Square Value (123.03, α)	98.41			Adjusted Chi Square Value (123.03, β)	96.96		
71				95% Gamma Approximate UCL (use when n>=50)	31.62			95% Gamma Adjusted UCL (use when n<50)	32.1		
72											
73	Lognormal GOF Test on Detected Observations Only										
74				Shapiro Wilk Test Statistic	0.957			Shapiro Wilk GOF Test			
75				5% Shapiro Wilk Critical Value	0.918			Detected Data appear Lognormal at 5% Significance Level			
76				Lilliefors Test Statistic	0.114			Lilliefors GOF Test			
77				5% Lilliefors Critical Value	0.177			Detected Data appear Lognormal at 5% Significance Level			
78	Detected Data appear Lognormal at 5% Significance Level										
79											
80	Lognormal ROS Statistics Using Imputed Non-Detects										
81				Mean in Original Scale	25.44			Mean in Log Scale	3.07		
82				SD in Original Scale	14.43			SD in Log Scale	0.61		
83				95% t UCL (assumes normality of ROS data)	30.27			95% Percentile Bootstrap UCL	29.94		
84				95% BCA Bootstrap UCL	30.59			95% Bootstrap t UCL	31.05		
85				95% H-UCL (Log ROS)	33.39						
86											
87	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
88				KM Mean (logged)	3.066			95% H-UCL (KM -Log)	33.19		
89				KM SD (logged)	0.609			95% Critical H Value (KM-Log)	2.064		
90				KM Standard Error of Mean (logged)	0.122						
91											
92	DL/2 Statistics										
93				DL/2 Normal				DL/2 Log-Transformed			
94				Mean in Original Scale	25.32			Mean in Log Scale	3.039		
95				SD in Original Scale	14.61			SD in Log Scale	0.696		
96				95% t UCL (Assumes normality)	30.21			95% H-Stat UCL	35.9		
97	DL/2 is not a recommended method, provided for comparisons and historical reasons										
98											
99	Nonparametric Distribution Free UCL Statistics										
100	Detected Data appear Approximate Normal Distributed at 5% Significance Level										
101											
102	Suggested UCL to Use										
103				95% KM (t) UCL	30.26			95% KM (Percentile Bootstrap) UCL	30.05		
104											
105	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
106	Recommendations are based upon data size, data distribution, and skewness.										
107	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
108	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
109											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 10:53:22 AM
From File	WorkSheet_c.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Copper

General Statistics

Total Number of Observations	25	Number of Distinct Observations	18
		Number of Missing Observations	0
Minimum	7.9	Mean	29.88
Maximum	200	Median	21
SD	36.74	Std. Error of Mean	7.348
Coefficient of Variation	1.23	Skewness	4.455

Normal GOF Test

Shapiro Wilk Test Statistic	0.439	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.918	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.331	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.177	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	42.45	95% Adjusted-CLT UCL (Chen-1995)	48.96
		95% Modified-t UCL (Johnson-1978)	43.54

Gamma GOF Test

A-D Test Statistic	1.74	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.757	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.189	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.177	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.982	k star (bias corrected MLE)	1.771
Theta hat (MLE)	15.07	Theta star (bias corrected MLE)	16.87
nu hat (MLE)	99.12	nu star (bias corrected)	88.56
MLE Mean (bias corrected)	29.88	MLE Sd (bias corrected)	22.45
		Approximate Chi Square Value (0.05)	67.86
Adjusted Level of Significance	0.0395	Adjusted Chi Square Value	66.62

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	38.99	95% Adjusted Gamma UCL (use when n<50)	39.71

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.882	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.918	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.15	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.177	Data appear Lognormal at 5% Significance Level

56	Data appear Approximate Lognormal at 5% Significance Level										
57											
58	Lognormal Statistics										
59				Minimum of Logged Data	2.067				Mean of logged Data	3.124	
60				Maximum of Logged Data	5.298				SD of logged Data	0.63	
61											
62	Assuming Lognormal Distribution										
63				95% H-UCL	36.21				90% Chebyshev (MVUE) UCL	38.5	
64				95% Chebyshev (MVUE) UCL	43.49				97.5% Chebyshev (MVUE) UCL	50.43	
65				99% Chebyshev (MVUE) UCL	64.05						
66											
67	Nonparametric Distribution Free UCL Statistics										
68	Data appear to follow a Discernible Distribution at 5% Significance Level										
69											
70	Nonparametric Distribution Free UCLs										
71				95% CLT UCL	41.96				95% Jackknife UCL	42.45	
72				95% Standard Bootstrap UCL	41.67				95% Bootstrap-t UCL	68.04	
73				95% Hall's Bootstrap UCL	88.16				95% Percentile Bootstrap UCL	43.76	
74				95% BCA Bootstrap UCL	51.44						
75				90% Chebyshev(Mean, Sd) UCL	51.92				95% Chebyshev(Mean, Sd) UCL	61.91	
76				97.5% Chebyshev(Mean, Sd) UCL	75.77				99% Chebyshev(Mean, Sd) UCL	103	
77											
78	Suggested UCL to Use										
79				95% Chebyshev (Mean, Sd) UCL	61.91						
80											
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)										
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.										
84	For additional insight the user may want to consult a statistician.										
85											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 10:55:03 AM
From File	WorkSheet_d.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead

General Statistics

Total Number of Observations	26	Number of Distinct Observations	18
		Number of Missing Observations	0
Minimum	8.2	Mean	41.85
Maximum	180	Median	32.5
SD	34.99	Std. Error of Mean	6.863
Coefficient of Variation	0.836	Skewness	2.908

Normal GOF Test

Shapiro Wilk Test Statistic	0.652	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.306	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.174	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	53.58	95% Adjusted-CLT UCL (Chen-1995)	57.32
		95% Modified-t UCL (Johnson-1978)	54.23

Gamma GOF Test

A-D Test Statistic	1.462	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.753	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.223	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.173	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.569	k star (bias corrected MLE)	2.298
Theta hat (MLE)	16.29	Theta star (bias corrected MLE)	18.21
nu hat (MLE)	133.6	nu star (bias corrected)	119.5
MLE Mean (bias corrected)	41.85	MLE Sd (bias corrected)	27.61
		Approximate Chi Square Value (0.05)	95.25
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	93.82

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	52.51	95% Adjusted Gamma UCL (use when n<50)	53.31

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.927	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.173	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level

56	Data appear Lognormal at 5% Significance Level										
57											
58	Lognormal Statistics										
59	Minimum of Logged Data				2.104		Mean of logged Data				3.527
60	Maximum of Logged Data				5.193		SD of logged Data				0.613
61											
62	Assuming Lognormal Distribution										
63	95% H-UCL				52.9		90% Chebyshev (MVUE) UCL				56.28
64	95% Chebyshev (MVUE) UCL				63.34		97.5% Chebyshev (MVUE) UCL				73.13
65	99% Chebyshev (MVUE) UCL				92.36						
66											
67	Nonparametric Distribution Free UCL Statistics										
68	Data appear to follow a Discernible Distribution at 5% Significance Level										
69											
70	Nonparametric Distribution Free UCLs										
71	95% CLT UCL				53.14		95% Jackknife UCL				53.58
72	95% Standard Bootstrap UCL				52.95		95% Bootstrap-t UCL				63.45
73	95% Hall's Bootstrap UCL				105.6		95% Percentile Bootstrap UCL				54.04
74	95% BCA Bootstrap UCL				58.25						
75	90% Chebyshev(Mean, Sd) UCL				62.44		95% Chebyshev(Mean, Sd) UCL				71.77
76	97.5% Chebyshev(Mean, Sd) UCL				84.71		99% Chebyshev(Mean, Sd) UCL				110.1
77											
78	Suggested UCL to Use										
79	95% H-UCL				52.9						
80											
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)										
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.										
84	For additional insight the user may want to consult a statistician.										
85											
86	ProUCL computes and outputs H-statistic based UCLs for historical reasons only.										
87	H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.										
88	It is therefore recommended to avoid the use of H-statistic based 95% UCLs.										
89	Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.										
90											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 10:57:56 AM
From File	WorkSheet_e.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mercury

General Statistics

Total Number of Observations	26	Number of Distinct Observations	5
Number of Detects	5	Number of Non-Detects	21
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	0.05	Minimum Non-Detect	0.05
Maximum Detect	0.2	Maximum Non-Detect	0.05
Variance Detects	0.00485	Percent Non-Detects	80.77%
Mean Detects	0.11	SD Detects	0.0696
Median Detects	0.07	CV Detects	0.633
Skewness Detects	0.666	Kurtosis Detects	-2.668
Mean of Logged Detects	-2.37	SD of Logged Detects	0.634

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.821	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.317	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0615	Standard Error of Mean	0.00792
SD	0.0361	95% KM (BCA) UCL	0.0742
95% KM (t) UCL	0.0751	95% KM (Percentile Bootstrap) UCL	0.0738
95% KM (z) UCL	0.0746	95% KM Bootstrap t UCL	0.116
90% KM Chebyshev UCL	0.0853	95% KM Chebyshev UCL	0.0961
97.5% KM Chebyshev UCL	0.111	99% KM Chebyshev UCL	0.14

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.53	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.682	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.313	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.359	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.231	k star (bias corrected MLE)	1.426
Theta hat (MLE)	0.0341	Theta star (bias corrected MLE)	0.0772
nu hat (MLE)	32.31	nu star (bias corrected)	14.26
MLE Mean (bias corrected)	0.11	MLE Sd (bias corrected)	0.0921

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	2.901	nu hat (KM)	150.9
Approximate Chi Square Value (150.86, α)	123.5	Adjusted Chi Square Value (150.86, β)	121.8
95% Gamma Approximate KM-UCL (use when n>=50)	0.0752	95% Gamma Adjusted KM-UCL (use when n<50)	0.0762

56											
57	Gamma ROS Statistics using Imputed Non-Detects										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62				Minimum	0.01			Mean	0.0292		
63				Maximum	0.2			Median	0.01		
64				SD	0.0489			CV	1.673		
65				k hat (MLE)	0.908			k star (bias corrected MLE)	0.829		
66				Theta hat (MLE)	0.0322			Theta star (bias corrected MLE)	0.0352		
67				nu hat (MLE)	47.24			nu star (bias corrected)	43.12		
68				MLE Mean (bias corrected)	0.0292			MLE Sd (bias corrected)	0.0321		
69								Adjusted Level of Significance (β)	0.0398		
70				Approximate Chi Square Value (43.12, α)	29.06			Adjusted Chi Square Value (43.12, β)	28.3		
71				95% Gamma Approximate UCL (use when n>=50)	0.0434			95% Gamma Adjusted UCL (use when n<50)	0.0445		
72											
73	Lognormal GOF Test on Detected Observations Only										
74				Shapiro Wilk Test Statistic	0.855			Shapiro Wilk GOF Test			
75				5% Shapiro Wilk Critical Value	0.762			Detected Data appear Lognormal at 5% Significance Level			
76				Lilliefors Test Statistic	0.276			Lilliefors GOF Test			
77				5% Lilliefors Critical Value	0.396			Detected Data appear Lognormal at 5% Significance Level			
78	Detected Data appear Lognormal at 5% Significance Level										
79											
80	Lognormal ROS Statistics Using Imputed Non-Detects										
81				Mean in Original Scale	0.028			Mean in Log Scale	-4.793		
82				SD in Original Scale	0.05			SD in Log Scale	1.669		
83				95% t UCL (assumes normality of ROS data)	0.0448			95% Percentile Bootstrap UCL	0.046		
84				95% BCA Bootstrap UCL	0.0511			95% Bootstrap t UCL	0.0675		
85				95% H-UCL (Log ROS)	0.107						
86											
87	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
88				KM Mean (logged)	-2.875			95% H-UCL (KM -Log)	0.0683		
89				KM SD (logged)	0.35			95% Critical H Value (KM-Log)	1.85		
90				KM Standard Error of Mean (logged)	0.0768						
91											
92	DL/2 Statistics										
93				DL/2 Normal				DL/2 Log-Transformed			
94				Mean in Original Scale	0.0413			Mean in Log Scale	-3.435		
95				SD in Original Scale	0.0441			SD in Log Scale	0.588		
96				95% t UCL (Assumes normality)	0.0561			95% H-Stat UCL	0.0487		
97	DL/2 is not a recommended method, provided for comparisons and historical reasons										
98											
99	Nonparametric Distribution Free UCL Statistics										
100	Detected Data appear Normal Distributed at 5% Significance Level										
101											
102	Suggested UCL to Use										
103				95% KM (t) UCL	0.0751			95% KM (Percentile Bootstrap) UCL	0.0738		
104											
105	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
106	Recommendations are based upon data size, data distribution, and skewness.										
107	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
108	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
109											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 10:59:54 AM
From File	WorkSheet_f.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Nickel

General Statistics

Total Number of Observations	26	Number of Distinct Observations	22
Number of Detects	24	Number of Non-Detects	2
Number of Distinct Detects	21	Number of Distinct Non-Detects	1
Minimum Detect	7.2	Minimum Non-Detect	5
Maximum Detect	50	Maximum Non-Detect	5
Variance Detects	128.9	Percent Non-Detects	7.692%
Mean Detects	19.18	SD Detects	11.35
Median Detects	15.5	CV Detects	0.592
Skewness Detects	1.21	Kurtosis Detects	1.005
Mean of Logged Detects	2.801	SD of Logged Detects	0.559

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.879	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.916	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.16	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.181	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	18.09	Standard Error of Mean	2.269
SD	11.33	95% KM (BCA) UCL	21.91
95% KM (t) UCL	21.97	95% KM (Percentile Bootstrap) UCL	22
95% KM (z) UCL	21.83	95% KM Bootstrap t UCL	22.91
90% KM Chebyshev UCL	24.9	95% KM Chebyshev UCL	27.98
97.5% KM Chebyshev UCL	32.26	99% KM Chebyshev UCL	40.67

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.398	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.108	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.179	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.425	k star (bias corrected MLE)	3.024
Theta hat (MLE)	5.602	Theta star (bias corrected MLE)	6.343
nu hat (MLE)	164.4	nu star (bias corrected)	145.2
MLE Mean (bias corrected)	19.18	MLE Sd (bias corrected)	11.03

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	2.551	nu hat (KM)	132.6
Approximate Chi Square Value (132.64, α)	107	Adjusted Chi Square Value (132.64, β)	105.5
95% Gamma Approximate KM-UCL (use when n>=50)	22.42	95% Gamma Adjusted KM-UCL (use when n<50)	22.74

56											
57	Gamma ROS Statistics using Imputed Non-Detects										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62				Minimum	0.01			Mean	17.75		
63				Maximum	50			Median	14.5		
64				SD	12.01			CV	0.676		
65				k hat (MLE)	1.22			k star (bias corrected MLE)	1.105		
66				Theta hat (MLE)	14.56			Theta star (bias corrected MLE)	16.07		
67				nu hat (MLE)	63.42			nu star (bias corrected)	57.44		
68				MLE Mean (bias corrected)	17.75			MLE Sd (bias corrected)	16.89		
69								Adjusted Level of Significance (β)	0.0398		
70				Approximate Chi Square Value (57.44, α)	41.02			Adjusted Chi Square Value (57.44, β)	40.1		
71				95% Gamma Approximate UCL (use when n>=50)	24.86			95% Gamma Adjusted UCL (use when n<50)	25.43		
72											
73	Lognormal GOF Test on Detected Observations Only										
74				Shapiro Wilk Test Statistic	0.962			Shapiro Wilk GOF Test			
75				5% Shapiro Wilk Critical Value	0.916			Detected Data appear Lognormal at 5% Significance Level			
76				Lilliefors Test Statistic	0.0977			Lilliefors GOF Test			
77				5% Lilliefors Critical Value	0.181			Detected Data appear Lognormal at 5% Significance Level			
78	Detected Data appear Lognormal at 5% Significance Level										
79											
80	Lognormal ROS Statistics Using Imputed Non-Detects										
81				Mean in Original Scale	18.04			Mean in Log Scale	2.698		
82				SD in Original Scale	11.61			SD in Log Scale	0.649		
83				95% t UCL (assumes normality of ROS data)	21.93			95% Percentile Bootstrap UCL	21.77		
84				95% BCA Bootstrap UCL	22.28			95% Bootstrap t UCL	22.69		
85				95% H-UCL (Log ROS)	24.08						
86											
87	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
88				KM Mean (logged)	2.709			95% H-UCL (KM -Log)	23.39		
89				KM SD (logged)	0.615			95% Critical H Value (KM-Log)	2.069		
90				KM Standard Error of Mean (logged)	0.123						
91											
92	DL/2 Statistics										
93	DL/2 Normal							DL/2 Log-Transformed			
94				Mean in Original Scale	17.9			Mean in Log Scale	2.656		
95				SD in Original Scale	11.8			SD in Log Scale	0.742		
96				95% t UCL (Assumes normality)	21.85			95% H-Stat UCL	25.98		
97	DL/2 is not a recommended method, provided for comparisons and historical reasons										
98											
99	Nonparametric Distribution Free UCL Statistics										
100	Detected Data appear Approximate Normal Distributed at 5% Significance Level										
101											
102	Suggested UCL to Use										
103				95% KM (t) UCL	21.97			95% KM (Percentile Bootstrap) UCL	22		
104											
105	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
106	Recommendations are based upon data size, data distribution, and skewness.										
107	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
108	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
109											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:00:54 AM
From File	WorkSheet_g.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Zinc

General Statistics

Total Number of Observations	26	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	7.5	Mean	56.06
Maximum	150	Median	39.5
SD	37.69	Std. Error of Mean	7.392
Coefficient of Variation	0.672	Skewness	1.291

Normal GOF Test

Shapiro Wilk Test Statistic	0.823	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.256	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.174	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	68.68	95% Adjusted-CLT UCL (Chen-1995)	70.22
		95% Modified-t UCL (Johnson-1978)	69

Gamma GOF Test

A-D Test Statistic	1.05	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.753	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.184	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.173	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.648	k star (bias corrected MLE)	2.368
Theta hat (MLE)	21.17	Theta star (bias corrected MLE)	23.67
nu hat (MLE)	137.7	nu star (bias corrected)	123.1
MLE Mean (bias corrected)	56.06	MLE Sd (bias corrected)	36.43
		Approximate Chi Square Value (0.05)	98.51
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	97.05

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	70.07	95% Adjusted Gamma UCL (use when n<50)	71.12

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.929	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.161	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level

	A	B	C	D	E	F	G	H	I	J	K	L
56	Data appear Lognormal at 5% Significance Level											
57												
58	Lognormal Statistics											
59					Minimum of Logged Data	2.015				Mean of logged Data		3.826
60					Maximum of Logged Data	5.011				SD of logged Data		0.659
61												
62	Assuming Lognormal Distribution											
63					95% H-UCL	75.27				90% Chebyshev (MVUE) UCL		79.81
64					95% Chebyshev (MVUE) UCL	90.4				97.5% Chebyshev (MVUE) UCL		105.1
65					99% Chebyshev (MVUE) UCL	134						
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data appear to follow a Discernible Distribution at 5% Significance Level											
69												
70	Nonparametric Distribution Free UCLs											
71					95% CLT UCL	68.22				95% Jackknife UCL		68.68
72					95% Standard Bootstrap UCL	67.86				95% Bootstrap-t UCL		70.94
73					95% Hall's Bootstrap UCL	69.15				95% Percentile Bootstrap UCL		68.77
74					95% BCA Bootstrap UCL	69.75						
75					90% Chebyshev(Mean, Sd) UCL	78.23				95% Chebyshev(Mean, Sd) UCL		88.28
76					97.5% Chebyshev(Mean, Sd) UCL	102.2				99% Chebyshev(Mean, Sd) UCL		129.6
77												
78	Suggested UCL to Use											
79					95% H-UCL	75.27						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
83	and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
84	For additional insight the user may want to consult a statistician.											
85												
86	ProUCL computes and outputs H-statistic based UCLs for historical reasons only.											
87	H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.											
88	It is therefore recommended to avoid the use of H-statistic based 95% UCLs.											
89	Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.											
90												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Data Sets with Non-Detects											
2												
3	User Selected Options											
4	Date/Time of Computation	25/10/2016 11:04:27 AM										
5	From File	WorkSheet_h.xls										
6	Full Precision	OFF										
7	Confidence Coefficient	95%										
8	Number of Bootstrap Operations	2000										
9												
10	Benz(a)anthracene											
11												
12	General Statistics											
13	Total Number of Observations	24					Number of Distinct Observations	3				
14	Number of Detects	3					Number of Non-Detects	21				
15	Number of Distinct Detects	2					Number of Distinct Non-Detects	1				
16	Minimum Detect	0.7					Minimum Non-Detect	0.5				
17	Maximum Detect	1.2					Maximum Non-Detect	0.5				
18	Variance Detects	0.0833					Percent Non-Detects	87.5%				
19	Mean Detects	0.867					SD Detects	0.289				
20	Median Detects	0.7					CV Detects	0.333				
21	Skewness Detects	1.732					Kurtosis Detects	N/A				
22	Mean of Logged Detects	-0.177					SD of Logged Detects	0.311				
23												
24	Warning: Data set has only 3 Detected Values.											
25	This is not enough to compute meaningful or reliable statistics and estimates.											
26												
27												
28	Normal GOF Test on Detects Only											
29	Shapiro Wilk Test Statistic	0.75					Shapiro Wilk GOF Test					
30	5% Shapiro Wilk Critical Value	0.767					Detected Data Not Normal at 5% Significance Level					
31	Lilliefors Test Statistic	0.385					Lilliefors GOF Test					
32	5% Lilliefors Critical Value	0.512					Detected Data appear Normal at 5% Significance Level					
33	Detected Data appear Approximate Normal at 5% Significance Level											
34												
35	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
36	Mean	0.546					Standard Error of Mean	0.0368				
37	SD	0.147					95% KM (BCA) UCL	N/A				
38	95% KM (t) UCL	0.609					95% KM (Percentile Bootstrap) UCL	N/A				
39	95% KM (z) UCL	0.606					95% KM Bootstrap t UCL	N/A				
40	90% KM Chebyshev UCL	0.656					95% KM Chebyshev UCL	0.706				
41	97.5% KM Chebyshev UCL	0.776					99% KM Chebyshev UCL	0.912				
42												
43	Gamma GOF Tests on Detected Observations Only											
44	Not Enough Data to Perform GOF Test											
45												
46	Gamma Statistics on Detected Data Only											
47	k hat (MLE)	14.91					k star (bias corrected MLE)	N/A				
48	Theta hat (MLE)	0.0581					Theta star (bias corrected MLE)	N/A				
49	nu hat (MLE)	89.46					nu star (bias corrected)	N/A				
50	MLE Mean (bias corrected)	N/A					MLE Sd (bias corrected)	N/A				
51												
52	Gamma Kaplan-Meier (KM) Statistics											
53	k hat (KM)	13.76					nu hat (KM)	660.6				
54							Adjusted Level of Significance (β)	0.0392				
55	Approximate Chi Square Value (660.57, α)	601.9					Adjusted Chi Square Value (660.57, β)	598				

	A	B	C	D	E	F	G	H	I	J	K	L
56	95% Gamma Approximate KM-UCL (use when n>=50)					0.599	95% Gamma Adjusted KM-UCL (use when n<50)					0.603
57												
58	Lognormal GOF Test on Detected Observations Only											
59	Shapiro Wilk Test Statistic					0.75	Shapiro Wilk GOF Test					
60	5% Shapiro Wilk Critical Value					0.767	Detected Data Not Lognormal at 5% Significance Level					
61	Lilliefors Test Statistic					0.385	Lilliefors GOF Test					
62	5% Lilliefors Critical Value					0.512	Detected Data appear Lognormal at 5% Significance Level					
63	Detected Data appear Approximate Lognormal at 5% Significance Level											
64												
65	Lognormal ROS Statistics Using Imputed Non-Detects											
66	Mean in Original Scale					0.257	Mean in Log Scale					-1.806
67	SD in Original Scale					0.274	SD in Log Scale					0.97
68	95% t UCL (assumes normality of ROS data)					0.352	95% Percentile Bootstrap UCL					0.346
69	95% BCA Bootstrap UCL					0.371	95% Bootstrap t UCL					0.4
70	95% H-UCL (Log ROS)					0.436						
71												
72	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed											
73	KM Mean (logged)					-0.629	95% H-UCL (KM -Log)					0.583
74	KM SD (logged)					0.193	95% Critical H Value (KM-Log)					1.763
75	KM Standard Error of Mean (logged)					0.0482						
76												
77	DL/2 Statistics											
78	DL/2 Normal						DL/2 Log-Transformed					
79	Mean in Original Scale					0.327	Mean in Log Scale					-1.235
80	SD in Original Scale					0.225	SD in Log Scale					0.419
81	95% t UCL (Assumes normality)					0.406	95% H-Stat UCL					0.375
82	DL/2 is not a recommended method, provided for comparisons and historical reasons											
83												
84	Nonparametric Distribution Free UCL Statistics											
85	Detected Data appear Approximate Normal Distributed at 5% Significance Level											
86												
87	Suggested UCL to Use											
88	95% KM (t) UCL					0.609	95% KM (Percentile Bootstrap) UCL					N/A
89	Warning: One or more Recommended UCL(s) not available!											
90												
91	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
92	Recommendations are based upon data size, data distribution, and skewness.											
93	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
94	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
95												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:08:54 AM
From File	WorkSheet_i.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(a)pyrene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	3
Number of Detects	3	Number of Non-Detects	21
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.8	Minimum Non-Detect	0.5
Maximum Detect	1.2	Maximum Non-Detect	0.5
Variance Detects	0.0533	Percent Non-Detects	87.5%
Mean Detects	0.933	SD Detects	0.231
Median Detects	0.8	CV Detects	0.247
Skewness Detects	1.732	Kurtosis Detects	N/A
Mean of Logged Detects	-0.088	SD of Logged Detects	0.234

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.554	Standard Error of Mean	0.0395
SD	0.158	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.622	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.619	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.673	95% KM Chebyshev UCL	0.726
97.5% KM Chebyshev UCL	0.801	99% KM Chebyshev UCL	0.947

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	26.49	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0352	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	158.9	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	12.29	nu hat (KM)	590
		Adjusted Level of Significance (β)	0.0392
Approximate Chi Square Value (590.04, α)	534.7	Adjusted Chi Square Value (590.04, β)	531

	A	B	C	D	E	F	G	H	I	J	K	L
56	95% Gamma Approximate KM-UCL (use when n>=50)					0.612	95% Gamma Adjusted KM-UCL (use when n<50)					0.616
57												
58	Lognormal GOF Test on Detected Observations Only											
59	Shapiro Wilk Test Statistic					0.75	Shapiro Wilk GOF Test					
60	5% Shapiro Wilk Critical Value					0.767	Detected Data Not Lognormal at 5% Significance Level					
61	Lilliefors Test Statistic					0.385	Lilliefors GOF Test					
62	5% Lilliefors Critical Value					0.512	Detected Data appear Lognormal at 5% Significance Level					
63	Detected Data appear Approximate Lognormal at 5% Significance Level											
64												
65	Lognormal ROS Statistics Using Imputed Non-Detects											
66	Mean in Original Scale					0.347	Mean in Log Scale					-1.314
67	SD in Original Scale					0.272	SD in Log Scale					0.73
68	95% t UCL (assumes normality of ROS data)					0.442	95% Percentile Bootstrap UCL					0.448
69	95% BCA Bootstrap UCL					0.465	95% Bootstrap t UCL					0.472
70	95% H-UCL (Log ROS)					0.491						
71												
72	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed											
73	KM Mean (logged)					-0.618	95% H-UCL (KM -Log)					0.596
74	KM SD (logged)					0.211	95% Critical H Value (KM-Log)					1.773
75	KM Standard Error of Mean (logged)					0.0528						
76												
77	DL/2 Statistics											
78	DL/2 Normal						DL/2 Log-Transformed					
79	Mean in Original Scale					0.335	Mean in Log Scale					-1.224
80	SD in Original Scale					0.241	SD in Log Scale					0.444
81	95% t UCL (Assumes normality)					0.42	95% H-Stat UCL					0.388
82	DL/2 is not a recommended method, provided for comparisons and historical reasons											
83												
84	Nonparametric Distribution Free UCL Statistics											
85	Detected Data appear Approximate Normal Distributed at 5% Significance Level											
86												
87	Suggested UCL to Use											
88	95% KM (t) UCL					0.622	95% KM (Percentile Bootstrap) UCL					N/A
89	Warning: One or more Recommended UCL(s) not available!											
90												
91	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
92	Recommendations are based upon data size, data distribution, and skewness.											
93	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
94	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
95												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:17:51 AM
From File	WorkSheet_j.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(b&j)fluoranthene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	4
Number of Detects	3	Number of Non-Detects	21
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	0.6	Minimum Non-Detect	0.5
Maximum Detect	1.1	Maximum Non-Detect	0.5
Variance Detects	0.0633	Percent Non-Detects	87.5%
Mean Detects	0.867	SD Detects	0.252
Median Detects	0.9	CV Detects	0.29
Skewness Detects	-0.586	Kurtosis Detects	N/A
Mean of Logged Detects	-0.174	SD of Logged Detects	0.309

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.987	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.219	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.546	Standard Error of Mean	0.0353
SD	0.141	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.606	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.604	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.652	95% KM Chebyshev UCL	0.7
97.5% KM Chebyshev UCL	0.767	99% KM Chebyshev UCL	0.897

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	16.55	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0524	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	99.27	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	14.91	nu hat (KM)	715.7
		Adjusted Level of Significance (β)	0.0392
Approximate Chi Square Value (715.66, α)	654.6	Adjusted Chi Square Value (715.66, β)	650.5

	A	B	C	D	E	F	G	H	I	J	K	L
56	95% Gamma Approximate KM-UCL (use when n>=50)					0.597	95% Gamma Adjusted KM-UCL (use when n<50)					0.601
57												
58	Lognormal GOF Test on Detected Observations Only											
59	Shapiro Wilk Test Statistic					0.963	Shapiro Wilk GOF Test					
60	5% Shapiro Wilk Critical Value					0.767	Detected Data appear Lognormal at 5% Significance Level					
61	Lilliefors Test Statistic					0.254	Lilliefors GOF Test					
62	5% Lilliefors Critical Value					0.512	Detected Data appear Lognormal at 5% Significance Level					
63	Detected Data appear Lognormal at 5% Significance Level											
64												
65	Lognormal ROS Statistics Using Imputed Non-Detects											
66	Mean in Original Scale					0.252	Mean in Log Scale					-1.848
67	SD in Original Scale					0.272	SD in Log Scale					0.996
68	95% t UCL (assumes normality of ROS data)					0.347	95% Percentile Bootstrap UCL					0.347
69	95% BCA Bootstrap UCL					0.368	95% Bootstrap t UCL					0.401
70	95% H-UCL (Log ROS)					0.438						
71												
72	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed											
73	KM Mean (logged)					-0.628	95% H-UCL (KM -Log)					0.584
74	KM SD (logged)					0.194	95% Critical H Value (KM-Log)					1.763
75	KM Standard Error of Mean (logged)					0.0484						
76												
77	DL/2 Statistics											
78	DL/2 Normal						DL/2 Log-Transformed					
79	Mean in Original Scale					0.327	Mean in Log Scale					-1.235
80	SD in Original Scale					0.221	SD in Log Scale					0.42
81	95% t UCL (Assumes normality)					0.404	95% H-Stat UCL					0.376
82	DL/2 is not a recommended method, provided for comparisons and historical reasons											
83												
84	Nonparametric Distribution Free UCL Statistics											
85	Detected Data appear Normal Distributed at 5% Significance Level											
86												
87	Suggested UCL to Use											
88	95% KM (t) UCL					0.606	95% KM (Percentile Bootstrap) UCL					N/A
89	Warning: One or more Recommended UCL(s) not available!											
90												
91	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
92	Recommendations are based upon data size, data distribution, and skewness.											
93	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
94	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
95												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:22:33 AM
From File	WorkSheet_k.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(ghi)perylene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	4
Number of Detects	3	Number of Non-Detects	21
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	0.7	Minimum Non-Detect	0.5
Maximum Detect	1.3	Maximum Non-Detect	0.5
Variance Detects	0.103	Percent Non-Detects	87.5%
Mean Detects	0.933	SD Detects	0.321
Median Detects	0.8	CV Detects	0.344
Skewness Detects	1.545	Kurtosis Detects	N/A
Mean of Logged Detects	-0.106	SD of Logged Detects	0.326

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.871	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.328	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.554	Standard Error of Mean	0.0427
SD	0.171	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.627	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.624	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.682	95% KM Chebyshev UCL	0.74
97.5% KM Chebyshev UCL	0.821	99% KM Chebyshev UCL	0.979

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	13.74	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0679	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	82.45	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	10.54	nu hat (KM)	505.7
		Adjusted Level of Significance (β)	0.0392
Approximate Chi Square Value (505.70, α)	454.6	Adjusted Chi Square Value (505.70, β)	451.1

56	95% Gamma Approximate KM-UCL (use when n>=50)					0.617	95% Gamma Adjusted KM-UCL (use when n<50)					0.621
57												
58	Lognormal GOF Test on Detected Observations Only											
59	Shapiro Wilk Test Statistic					0.903	Shapiro Wilk GOF Test					
60	5% Shapiro Wilk Critical Value					0.767	Detected Data appear Lognormal at 5% Significance Level					
61	Lilliefors Test Statistic					0.307	Lilliefors GOF Test					
62	5% Lilliefors Critical Value					0.512	Detected Data appear Lognormal at 5% Significance Level					
63	Detected Data appear Lognormal at 5% Significance Level											
64												
65	Lognormal ROS Statistics Using Imputed Non-Detects											
66	Mean in Original Scale					0.253	Mean in Log Scale					-1.925
67	SD in Original Scale					0.301	SD in Log Scale					1.082
68	95% t UCL (assumes normality of ROS data)					0.358	95% Percentile Bootstrap UCL					0.359
69	95% BCA Bootstrap UCL					0.388	95% Bootstrap t UCL					0.435
70	95% H-UCL (Log ROS)					0.477						
71												
72	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed											
73	KM Mean (logged)					-0.62	95% H-UCL (KM -Log)					0.597
74	KM SD (logged)					0.216	95% Critical H Value (KM-Log)					1.775
75	KM Standard Error of Mean (logged)					0.054						
76												
77	DL/2 Statistics											
78	DL/2 Normal						DL/2 Log-Transformed					
79	Mean in Original Scale					0.335	Mean in Log Scale					-1.226
80	SD in Original Scale					0.25	SD in Log Scale					0.443
81	95% t UCL (Assumes normality)					0.423	95% H-Stat UCL					0.387
82	DL/2 is not a recommended method, provided for comparisons and historical reasons											
83												
84	Nonparametric Distribution Free UCL Statistics											
85	Detected Data appear Normal Distributed at 5% Significance Level											
86												
87	Suggested UCL to Use											
88	95% KM (t) UCL					0.627	95% KM (Percentile Bootstrap) UCL					N/A
89	Warning: One or more Recommended UCL(s) not available!											
90												
91	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
92	Recommendations are based upon data size, data distribution, and skewness.											
93	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
94	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
95												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:30:29 AM
From File	WorkSheet_I.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(k)fluoranthene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	3
Number of Detects	3	Number of Non-Detects	21
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	0.8	Minimum Non-Detect	0.5
Maximum Detect	1.1	Maximum Non-Detect	0.5
Variance Detects	0.03	Percent Non-Detects	87.5%
Mean Detects	0.9	SD Detects	0.173
Median Detects	0.8	CV Detects	0.192
Skewness Detects	1.732	Kurtosis Detects	N/A
Mean of Logged Detects	-0.117	SD of Logged Detects	0.184

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.75	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.55	Standard Error of Mean	0.0354
SD	0.141	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.611	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.608	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.656	95% KM Chebyshev UCL	0.704
97.5% KM Chebyshev UCL	0.771	99% KM Chebyshev UCL	0.902

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	43.15	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0209	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	258.9	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	15.13	nu hat (KM)	726
		Adjusted Level of Significance (β)	0.0392
Approximate Chi Square Value (726.00, α)	664.5	Adjusted Chi Square Value (726.00, β)	660.4

56	95% Gamma Approximate KM-UCL (use when n>=50)					0.601	95% Gamma Adjusted KM-UCL (use when n<50)					0.605
57												
58	Lognormal GOF Test on Detected Observations Only											
59	Shapiro Wilk Test Statistic					0.75	Shapiro Wilk GOF Test					
60	5% Shapiro Wilk Critical Value					0.767	Detected Data Not Lognormal at 5% Significance Level					
61	Lilliefors Test Statistic					0.385	Lilliefors GOF Test					
62	5% Lilliefors Critical Value					0.512	Detected Data appear Lognormal at 5% Significance Level					
63	Detected Data appear Approximate Lognormal at 5% Significance Level											
64												
65	Lognormal ROS Statistics Using Imputed Non-Detects											
66	Mean in Original Scale					0.398	Mean in Log Scale					-1.08
67	SD in Original Scale					0.24	SD in Log Scale					0.573
68	95% t UCL (assumes normality of ROS data)					0.482	95% Percentile Bootstrap UCL					0.477
69	95% BCA Bootstrap UCL					0.49	95% Bootstrap t UCL					0.51
70	95% H-UCL (Log ROS)					0.511						
71												
72	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed											
73	KM Mean (logged)					-0.621	95% H-UCL (KM -Log)					0.589
74	KM SD (logged)					0.198	95% Critical H Value (KM-Log)					1.765
75	KM Standard Error of Mean (logged)					0.0494						
76												
77	DL/2 Statistics											
78	DL/2 Normal						DL/2 Log-Transformed					
79	Mean in Original Scale					0.331	Mean in Log Scale					-1.228
80	SD in Original Scale					0.225	SD in Log Scale					0.432
81	95% t UCL (Assumes normality)					0.41	95% H-Stat UCL					0.383
82	DL/2 is not a recommended method, provided for comparisons and historical reasons											
83												
84	Nonparametric Distribution Free UCL Statistics											
85	Detected Data appear Approximate Normal Distributed at 5% Significance Level											
86												
87	Suggested UCL to Use											
88	95% KM (t) UCL					0.611	95% KM (Percentile Bootstrap) UCL					N/A
89	Warning: One or more Recommended UCL(s) not available!											
90												
91	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
92	Recommendations are based upon data size, data distribution, and skewness.											
93	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
94	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
95												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:33:34 AM
From File	WorkSheet_m.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Chrysene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	4
Number of Detects	3	Number of Non-Detects	21
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	0.7	Minimum Non-Detect	0.5
Maximum Detect	1.4	Maximum Non-Detect	0.5
Variance Detects	0.13	Percent Non-Detects	87.5%
Mean Detects	1	SD Detects	0.361
Median Detects	0.9	CV Detects	0.361
Skewness Detects	1.152	Kurtosis Detects	N/A
Mean of Logged Detects	-0.0419	SD of Logged Detects	0.351

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.942	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.276	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level	

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.563	Standard Error of Mean	0.0488
SD	0.195	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.646	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.643	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.709	95% KM Chebyshev UCL	0.775
97.5% KM Chebyshev UCL	0.868	99% KM Chebyshev UCL	1.049

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	12.11	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0826	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	72.66	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	8.288	nu hat (KM)	397.8
		Adjusted Level of Significance (β)	0.0392
Approximate Chi Square Value (397.82, α)	352.6	Adjusted Chi Square Value (397.82, β)	349.6

	A	B	C	D	E	F	G	H	I	J	K	L
56	95% Gamma Approximate KM-UCL (use when n>=50)					0.635	95% Gamma Adjusted KM-UCL (use when n<50)					0.64
57												
58	Lognormal GOF Test on Detected Observations Only											
59	Shapiro Wilk Test Statistic					0.975	Shapiro Wilk GOF Test					
60	5% Shapiro Wilk Critical Value					0.767	Detected Data appear Lognormal at 5% Significance Level					
61	Lilliefors Test Statistic					0.238	Lilliefors GOF Test					
62	5% Lilliefors Critical Value					0.512	Detected Data appear Lognormal at 5% Significance Level					
63	Detected Data appear Lognormal at 5% Significance Level											
64												
65	Lognormal ROS Statistics Using Imputed Non-Detects											
66	Mean in Original Scale					0.251	Mean in Log Scale					-2.039
67	SD in Original Scale					0.328	SD in Log Scale					1.188
68	95% t UCL (assumes normality of ROS data)					0.366	95% Percentile Bootstrap UCL					0.367
69	95% BCA Bootstrap UCL					0.399	95% Bootstrap t UCL					0.48
70	95% H-UCL (Log ROS)					0.528						
71												
72	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed											
73	KM Mean (logged)					-0.612	95% H-UCL (KM -Log)					0.61
74	KM SD (logged)					0.238	95% Critical H Value (KM-Log)					1.788
75	KM Standard Error of Mean (logged)					0.0595						
76												
77	DL/2 Statistics											
78	DL/2 Normal						DL/2 Log-Transformed					
79	Mean in Original Scale					0.344	Mean in Log Scale					-1.218
80	SD in Original Scale					0.275	SD in Log Scale					0.466
81	95% t UCL (Assumes normality)					0.44	95% H-Stat UCL					0.398
82	DL/2 is not a recommended method, provided for comparisons and historical reasons											
83												
84	Nonparametric Distribution Free UCL Statistics											
85	Detected Data appear Normal Distributed at 5% Significance Level											
86												
87	Suggested UCL to Use											
88	95% KM (t) UCL					0.646	95% KM (Percentile Bootstrap) UCL					N/A
89	Warning: One or more Recommended UCL(s) not available!											
90												
91	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
92	Recommendations are based upon data size, data distribution, and skewness.											
93	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
94	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
95												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:35:54 AM
From File	WorkSheet_n.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Fluoranthene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	4
Number of Detects	4	Number of Non-Detects	20
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	1.5	Minimum Non-Detect	0.5
Maximum Detect	3.3	Maximum Non-Detect	0.5
Variance Detects	0.783	Percent Non-Detects	83.33%
Mean Detects	2.225	SD Detects	0.885
Median Detects	2.05	CV Detects	0.398
Skewness Detects	0.513	Kurtosis Detects	-3.114
Mean of Logged Detects	0.74	SD of Logged Detects	0.398

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.861	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.294	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.788	Standard Error of Mean	0.169
SD	0.715	95% KM (BCA) UCL	N/A
95% KM (t) UCL	1.076	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	1.065	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.293	95% KM Chebyshev UCL	1.522
97.5% KM Chebyshev UCL	1.84	99% KM Chebyshev UCL	2.464

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.468	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.658	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.332	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.395	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	8.543	k star (bias corrected MLE)	2.302
Theta hat (MLE)	0.26	Theta star (bias corrected MLE)	0.966
nu hat (MLE)	68.35	nu star (bias corrected)	18.42
MLE Mean (bias corrected)	2.225	MLE Sd (bias corrected)	1.466

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.213	nu hat (KM)	58.24
Approximate Chi Square Value (58.24, α)	41.7	Adjusted Chi Square Value (58.24, β)	40.71
95% Gamma Approximate KM-UCL (use when n>=50)	1.1	95% Gamma Adjusted KM-UCL (use when n<50)	1.127

56											
57	Gamma ROS Statistics using Imputed Non-Detects										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62				Minimum	0.01			Mean	0.42		
63				Maximum	3.3			Median	0.01		
64				SD	0.895			CV	2.13		
65				k hat (MLE)	0.283			k star (bias corrected MLE)	0.275		
66				Theta hat (MLE)	1.487			Theta star (bias corrected MLE)	1.527		
67				nu hat (MLE)	13.57			nu star (bias corrected)	13.21		
68				MLE Mean (bias corrected)	0.42			MLE Sd (bias corrected)	0.801		
69								Adjusted Level of Significance (β)	0.0392		
70				Approximate Chi Square Value (13.21, α)	6.031			Adjusted Chi Square Value (13.21, β)	5.692		
71				95% Gamma Approximate UCL (use when n>=50)	0.92			95% Gamma Adjusted UCL (use when n<50)	N/A		
72											
73	Lognormal GOF Test on Detected Observations Only										
74				Shapiro Wilk Test Statistic	0.844			Shapiro Wilk GOF Test			
75				5% Shapiro Wilk Critical Value	0.748			Detected Data appear Lognormal at 5% Significance Level			
76				Lilliefors Test Statistic	0.299			Lilliefors GOF Test			
77				5% Lilliefors Critical Value	0.443			Detected Data appear Lognormal at 5% Significance Level			
78	Detected Data appear Lognormal at 5% Significance Level										
79											
80	Lognormal ROS Statistics Using Imputed Non-Detects										
81				Mean in Original Scale	0.671			Mean in Log Scale	-0.99		
82				SD in Original Scale	0.817			SD in Log Scale	1.13		
83				95% t UCL (assumes normality of ROS data)	0.957			95% Percentile Bootstrap UCL	0.952		
84				95% BCA Bootstrap UCL	1.019			95% Bootstrap t UCL	1.156		
85				95% H-UCL (Log ROS)	1.335						
86											
87	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
88				KM Mean (logged)	-0.454			95% H-UCL (KM -Log)	0.934		
89				KM SD (logged)	0.552			95% Critical H Value (KM-Log)	2.028		
90				KM Standard Error of Mean (logged)	0.13						
91											
92	DL/2 Statistics										
93	DL/2 Normal							DL/2 Log-Transformed			
94				Mean in Original Scale	0.579			Mean in Log Scale	-1.032		
95				SD in Original Scale	0.817			SD in Log Scale	0.822		
96				95% t UCL (Assumes normality)	0.865			95% H-Stat UCL	0.743		
97	DL/2 is not a recommended method, provided for comparisons and historical reasons										
98											
99	Nonparametric Distribution Free UCL Statistics										
100	Detected Data appear Normal Distributed at 5% Significance Level										
101											
102	Suggested UCL to Use										
103				95% KM (t) UCL	1.076			95% KM (Percentile Bootstrap) UCL	N/A		
104	Warning: One or more Recommended UCL(s) not available!										
105											
106	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
107	Recommendations are based upon data size, data distribution, and skewness.										
108	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
109	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
110											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:40:10 AM
From File	WorkSheet_o.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Phenanthrene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	20
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.8	Minimum Non-Detect	0.5
Maximum Detect	1.4	Maximum Non-Detect	0.5
Variance Detects	0.0625	Percent Non-Detects	83.33%
Mean Detects	1.075	SD Detects	0.25
Median Detects	1.05	CV Detects	0.233
Skewness Detects	0.56	Kurtosis Detects	0.928
Mean of Logged Detects	0.0522	SD of Logged Detects	0.232

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.982	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.21	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.596	Standard Error of Mean	0.0546
SD	0.232	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.689	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.686	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.76	95% KM Chebyshev UCL	0.834
97.5% KM Chebyshev UCL	0.937	99% KM Chebyshev UCL	1.139

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.21	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.657	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.178	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.394	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	24.97	k star (bias corrected MLE)	6.408
Theta hat (MLE)	0.0431	Theta star (bias corrected MLE)	0.168
nu hat (MLE)	199.7	nu star (bias corrected)	51.27
MLE Mean (bias corrected)	1.075	MLE Sd (bias corrected)	0.425

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	6.607	nu hat (KM)	317.1
Approximate Chi Square Value (317.14, α)	276.9	Adjusted Chi Square Value (317.14, β)	274.2
95% Gamma Approximate KM-UCL (use when n>=50)	0.682	95% Gamma Adjusted KM-UCL (use when n<50)	0.689

56											
57	Gamma ROS Statistics using Imputed Non-Detects										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62				Minimum	0.01			Mean	0.29		
63				Maximum	1.4			Median	0.0363		
64				SD	0.409			CV	1.41		
65				k hat (MLE)	0.431			k star (bias corrected MLE)	0.405		
66				Theta hat (MLE)	0.673			Theta star (bias corrected MLE)	0.716		
67				nu hat (MLE)	20.69			nu star (bias corrected)	19.44		
68				MLE Mean (bias corrected)	0.29			MLE Sd (bias corrected)	0.456		
69								Adjusted Level of Significance (β)	0.0392		
70				Approximate Chi Square Value (19.44, α)	10.44			Adjusted Chi Square Value (19.44, β)	9.975		
71				95% Gamma Approximate UCL (use when n>=50)	0.54			95% Gamma Adjusted UCL (use when n<50)	N/A		
72											
73	Lognormal GOF Test on Detected Observations Only										
74				Shapiro Wilk Test Statistic	0.995			Shapiro Wilk GOF Test			
75				5% Shapiro Wilk Critical Value	0.748			Detected Data appear Lognormal at 5% Significance Level			
76				Lilliefors Test Statistic	0.176			Lilliefors GOF Test			
77				5% Lilliefors Critical Value	0.443			Detected Data appear Lognormal at 5% Significance Level			
78	Detected Data appear Lognormal at 5% Significance Level										
79											
80	Lognormal ROS Statistics Using Imputed Non-Detects										
81				Mean in Original Scale	0.464			Mean in Log Scale	-0.988		
82				SD in Original Scale	0.329			SD in Log Scale	0.679		
83				95% t UCL (assumes normality of ROS data)	0.579			95% Percentile Bootstrap UCL	0.578		
84				95% BCA Bootstrap UCL	0.6			95% Bootstrap t UCL	0.62		
85				95% H-UCL (Log ROS)	0.636						
86											
87	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
88				KM Mean (logged)	-0.569			95% H-UCL (KM -Log)	0.659		
89				KM SD (logged)	0.29			95% Critical H Value (KM-Log)	1.82		
90				KM Standard Error of Mean (logged)	0.0683						
91											
92	DL/2 Statistics										
93				DL/2 Normal				DL/2 Log-Transformed			
94				Mean in Original Scale	0.388			Mean in Log Scale	-1.147		
95				SD in Original Scale	0.327			SD in Log Scale	0.554		
96				95% t UCL (Assumes normality)	0.502			95% H-Stat UCL	0.468		
97	DL/2 is not a recommended method, provided for comparisons and historical reasons										
98											
99	Nonparametric Distribution Free UCL Statistics										
100	Detected Data appear Normal Distributed at 5% Significance Level										
101											
102	Suggested UCL to Use										
103				95% KM (t) UCL	0.689			95% KM (Percentile Bootstrap) UCL	N/A		
104	Warning: One or more Recommended UCL(s) not available!										
105											
106	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
107	Recommendations are based upon data size, data distribution, and skewness.										
108	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
109	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
110											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:42:38 AM
From File	WorkSheet_p.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Pyrene

General Statistics

Total Number of Observations	24	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	20
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	1.3	Minimum Non-Detect	0.5
Maximum Detect	2.7	Maximum Non-Detect	0.5
Variance Detects	0.433	Percent Non-Detects	83.33%
Mean Detects	2	SD Detects	0.658
Median Detects	2	CV Detects	0.329
Skewness Detects	7.784E-16	Kurtosis Detects	-4.067
Mean of Logged Detects	0.65	SD of Logged Detects	0.342

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.228	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.75	Standard Error of Mean	0.143
SD	0.606	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.995	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.985	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.178	95% KM Chebyshev UCL	1.372
97.5% KM Chebyshev UCL	1.641	99% KM Chebyshev UCL	2.17

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.33	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.657	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.271	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.395	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	11.83	k star (bias corrected MLE)	3.123
Theta hat (MLE)	0.169	Theta star (bias corrected MLE)	0.64
nu hat (MLE)	94.61	nu star (bias corrected)	24.99
MLE Mean (bias corrected)	2	MLE Sd (bias corrected)	1.132

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.534	nu hat (KM)	73.64
Approximate Chi Square Value (73.64, α)	54.87	Adjusted Chi Square Value (73.64, β)	53.74
95% Gamma Approximate KM-UCL (use when n>=50)	1.006	95% Gamma Adjusted KM-UCL (use when n<50)	1.028

56											
57	Gamma ROS Statistics using Imputed Non-Detects										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62				Minimum	0.01			Mean	0.421		
63				Maximum	2.7			Median	0.01		
64				SD	0.786			CV	1.866		
65				k hat (MLE)	0.307			k star (bias corrected MLE)	0.296		
66				Theta hat (MLE)	1.374			Theta star (bias corrected MLE)	1.423		
67				nu hat (MLE)	14.72			nu star (bias corrected)	14.21		
68				MLE Mean (bias corrected)	0.421			MLE Sd (bias corrected)	0.774		
69								Adjusted Level of Significance (β)	0.0392		
70				Approximate Chi Square Value (14.21, α)	6.715			Adjusted Chi Square Value (14.21, β)	6.354		
71				95% Gamma Approximate UCL (use when n>=50)	0.892			95% Gamma Adjusted UCL (use when n<50)	N/A		
72											
73	Lognormal GOF Test on Detected Observations Only										
74				Shapiro Wilk Test Statistic	0.926			Shapiro Wilk GOF Test			
75				5% Shapiro Wilk Critical Value	0.748			Detected Data appear Lognormal at 5% Significance Level			
76				Lilliefors Test Statistic	0.245			Lilliefors GOF Test			
77				5% Lilliefors Critical Value	0.443			Detected Data appear Lognormal at 5% Significance Level			
78	Detected Data appear Lognormal at 5% Significance Level										
79											
80	Lognormal ROS Statistics Using Imputed Non-Detects										
81				Mean in Original Scale	0.674			Mean in Log Scale	-0.836		
82				SD in Original Scale	0.696			SD in Log Scale	0.971		
83				95% t UCL (assumes normality of ROS data)	0.917			95% Percentile Bootstrap UCL	0.913		
84				95% BCA Bootstrap UCL	0.976			95% Bootstrap t UCL	1.047		
85				95% H-UCL (Log ROS)	1.152						
86											
87	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
88				KM Mean (logged)	-0.469			95% H-UCL (KM -Log)	0.885		
89				KM SD (logged)	0.515			95% Critical H Value (KM-Log)	1.993		
90				KM Standard Error of Mean (logged)	0.121						
91											
92	DL/2 Statistics										
93				DL/2 Normal				DL/2 Log-Transformed			
94				Mean in Original Scale	0.542			Mean in Log Scale	-1.047		
95				SD in Original Scale	0.707			SD in Log Scale	0.785		
96				95% t UCL (Assumes normality)	0.789			95% H-Stat UCL	0.693		
97	DL/2 is not a recommended method, provided for comparisons and historical reasons										
98											
99	Nonparametric Distribution Free UCL Statistics										
100	Detected Data appear Normal Distributed at 5% Significance Level										
101											
102	Suggested UCL to Use										
103				95% KM (t) UCL	0.995			95% KM (Percentile Bootstrap) UCL	N/A		
104	Warning: One or more Recommended UCL(s) not available!										
105											
106	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
107	Recommendations are based upon data size, data distribution, and skewness.										
108	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
109	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
110											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:49:14 AM
From File	WorkSheet_q.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TRHC10-C16

General Statistics

Total Number of Observations	24	Number of Distinct Observations	4
Number of Detects	3	Number of Non-Detects	21
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	60	Minimum Non-Detect	50
Maximum Detect	110	Maximum Non-Detect	50
Variance Detects	628	Percent Non-Detects	87.5%
Mean Detects	84	SD Detects	25.06
Median Detects	82	CV Detects	0.298
Skewness Detects	0.357	Kurtosis Detects	N/A
Mean of Logged Detects	4.401	SD of Logged Detects	0.303

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.995	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.198	Lilliefors GOF Test
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	54.25	Standard Error of Mean	3.343
SD	13.37	95% KM (BCA) UCL	N/A
95% KM (t) UCL	59.98	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	59.75	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	64.28	95% KM Chebyshev UCL	68.82
97.5% KM Chebyshev UCL	75.12	99% KM Chebyshev UCL	87.51

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	16.67	k star (bias corrected MLE)	N/A
Theta hat (MLE)	5.04	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	99.99	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	16.46	nu hat (KM)	790.2
		Adjusted Level of Significance (β)	0.0392
Approximate Chi Square Value (790.21, α)	726	Adjusted Chi Square Value (790.21, β)	721.7

56	95% Gamma Approximate KM-UCL (use when n>=50)					59.05	95% Gamma Adjusted KM-UCL (use when n<50)					59.4
57												
58	Lognormal GOF Test on Detected Observations Only											
59	Shapiro Wilk Test Statistic					1	Shapiro Wilk GOF Test					
60	5% Shapiro Wilk Critical Value					0.767	Detected Data appear Lognormal at 5% Significance Level					
61	Lilliefors Test Statistic					0.177	Lilliefors GOF Test					
62	5% Lilliefors Critical Value					0.512	Detected Data appear Lognormal at 5% Significance Level					
63	Detected Data appear Lognormal at 5% Significance Level											
64												
65	Lognormal ROS Statistics Using Imputed Non-Detects											
66	Mean in Original Scale					23.97	Mean in Log Scale					2.69
67	SD in Original Scale					26.52	SD in Log Scale					1.018
68	95% t UCL (assumes normality of ROS data)					33.25	95% Percentile Bootstrap UCL					32.79
69	95% BCA Bootstrap UCL					36.1	95% Bootstrap t UCL					39.12
70	95% H-UCL (Log ROS)					42.61						
71												
72	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed											
73	KM Mean (logged)					3.973	95% H-UCL (KM -Log)					57.82
74	KM SD (logged)					0.184	95% Critical H Value (KM-Log)					1.758
75	KM Standard Error of Mean (logged)					0.0459						
76												
77	DL/2 Statistics											
78	DL/2 Normal						DL/2 Log-Transformed					
79	Mean in Original Scale					32.38	Mean in Log Scale					3.367
80	SD in Original Scale					21.26	SD in Log Scale					0.409
81	95% t UCL (Assumes normality)					39.81	95% H-Stat UCL					37.07
82	DL/2 is not a recommended method, provided for comparisons and historical reasons											
83												
84	Nonparametric Distribution Free UCL Statistics											
85	Detected Data appear Normal Distributed at 5% Significance Level											
86												
87	Suggested UCL to Use											
88	95% KM (t) UCL					59.98	95% KM (Percentile Bootstrap) UCL					N/A
89	Warning: One or more Recommended UCL(s) not available!											
90												
91	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
92	Recommendations are based upon data size, data distribution, and skewness.											
93	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
94	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
95												

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:51:18 AM
From File	WorkSheet_r.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Total PAHs

General Statistics

Total Number of Observations	24	Number of Distinct Observations	6
Number of Detects	5	Number of Non-Detects	19
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	0.6	Minimum Non-Detect	0.5
Maximum Detect	12.6	Maximum Non-Detect	0.5
Variance Detects	28.03	Percent Non-Detects	79.17%
Mean Detects	7.82	SD Detects	5.295
Median Detects	10.8	CV Detects	0.677
Skewness Detects	-0.74	Kurtosis Detects	-2.073
Mean of Logged Detects	1.632	SD of Logged Detects	1.292

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.854	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.313	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.025	Standard Error of Mean	0.839
SD	3.676	95% KM (BCA) UCL	3.296
95% KM (t) UCL	3.463	95% KM (Percentile Bootstrap) UCL	3.333
95% KM (z) UCL	3.405	95% KM Bootstrap t UCL	3.134
90% KM Chebyshev UCL	4.541	95% KM Chebyshev UCL	5.681
97.5% KM Chebyshev UCL	7.263	99% KM Chebyshev UCL	10.37

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.583	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.688	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.351	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.363	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.32	k star (bias corrected MLE)	0.661
Theta hat (MLE)	5.923	Theta star (bias corrected MLE)	11.82
nu hat (MLE)	13.2	nu star (bias corrected)	6.615
MLE Mean (bias corrected)	7.82	MLE Sd (bias corrected)	9.615

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.304	nu hat (KM)	14.57
Approximate Chi Square Value (14.57, α)	6.963	Adjusted Chi Square Value (14.57, β)	6.595
95% Gamma Approximate KM-UCL (use when n>=50)	4.237	95% Gamma Adjusted KM-UCL (use when n<50)	4.474

56											
57	Gamma ROS Statistics using Imputed Non-Detects										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62				Minimum	0.01			Mean	1.657		
63				Maximum	12.6			Median	0.01		
64				SD	3.913			CV	2.361		
65				k hat (MLE)	0.201			k star (bias corrected MLE)	0.204		
66				Theta hat (MLE)	8.225			Theta star (bias corrected MLE)	8.121		
67				nu hat (MLE)	9.671			nu star (bias corrected)	9.796		
68				MLE Mean (bias corrected)	1.657			MLE Sd (bias corrected)	3.669		
69								Adjusted Level of Significance (β)	0.0392		
70				Approximate Chi Square Value (9.80, α)	3.815			Adjusted Chi Square Value (9.80, β)	3.555		
71				95% Gamma Approximate UCL (use when n>=50)	4.256			95% Gamma Adjusted UCL (use when n<50)	4.566		
72											
73	Lognormal GOF Test on Detected Observations Only										
74				Shapiro Wilk Test Statistic	0.783			Shapiro Wilk GOF Test			
75				5% Shapiro Wilk Critical Value	0.762			Detected Data appear Lognormal at 5% Significance Level			
76				Lilliefors Test Statistic	0.318			Lilliefors GOF Test			
77				5% Lilliefors Critical Value	0.396			Detected Data appear Lognormal at 5% Significance Level			
78	Detected Data appear Lognormal at 5% Significance Level										
79											
80	Lognormal ROS Statistics Using Imputed Non-Detects										
81				Mean in Original Scale	1.744			Mean in Log Scale	-2.26		
82				SD in Original Scale	3.879			SD in Log Scale	2.781		
83				95% t UCL (assumes normality of ROS data)	3.101			95% Percentile Bootstrap UCL	3.125		
84				95% BCA Bootstrap UCL	3.534			95% Bootstrap t UCL	3.687		
85				95% H-UCL (Log ROS)	116.9						
86											
87	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
88				KM Mean (logged)	-0.209			95% H-UCL (KM -Log)	2.651		
89				KM SD (logged)	1.082			95% Critical H Value (KM-Log)	2.652		
90				KM Standard Error of Mean (logged)	0.247						
91											
92	DL/2 Statistics										
93	DL/2 Normal							DL/2 Log-Transformed			
94				Mean in Original Scale	1.827			Mean in Log Scale	-0.757		
95				SD in Original Scale	3.839			SD in Log Scale	1.363		
96				95% t UCL (Assumes normality)	3.17			95% H-Stat UCL	2.837		
97	DL/2 is not a recommended method, provided for comparisons and historical reasons										
98											
99	Nonparametric Distribution Free UCL Statistics										
100	Detected Data appear Normal Distributed at 5% Significance Level										
101											
102	Suggested UCL to Use										
103				95% KM (t) UCL	3.463			95% KM (Percentile Bootstrap) UCL	3.333		
104											
105	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
106	Recommendations are based upon data size, data distribution, and skewness.										
107	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
108	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
109											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:55:57 AM
From File	WorkSheet_s.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TRH C16-C34

General Statistics

Total Number of Observations	23	Number of Distinct Observations	7
Number of Detects	6	Number of Non-Detects	17
Number of Distinct Detects	6	Number of Distinct Non-Detects	1
Minimum Detect	110	Minimum Non-Detect	100
Maximum Detect	540	Maximum Non-Detect	100
Variance Detects	26430	Percent Non-Detects	73.91%
Mean Detects	235	SD Detects	162.6
Median Detects	175	CV Detects	0.692
Skewness Detects	1.719	Kurtosis Detects	2.878
Mean of Logged Detects	5.296	SD of Logged Detects	0.597

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.8	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.299	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	135.2	Standard Error of Mean	21.98
SD	96.23	95% KM (BCA) UCL	171.3
95% KM (t) UCL	173	95% KM (Percentile Bootstrap) UCL	173.5
95% KM (z) UCL	171.4	95% KM Bootstrap t UCL	229
90% KM Chebyshev UCL	201.2	95% KM Chebyshev UCL	231
97.5% KM Chebyshev UCL	272.5	99% KM Chebyshev UCL	353.9

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.421	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.701	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.272	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.334	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.22	k star (bias corrected MLE)	1.721
Theta hat (MLE)	72.97	Theta star (bias corrected MLE)	136.5
nu hat (MLE)	38.64	nu star (bias corrected)	20.66
MLE Mean (bias corrected)	235	MLE Sd (bias corrected)	179.1

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.975	nu hat (KM)	90.83
Approximate Chi Square Value (90.83, α)	69.85	Adjusted Chi Square Value (90.83, β)	68.52
95% Gamma Approximate KM-UCL (use when n>=50)	175.8	95% Gamma Adjusted KM-UCL (use when n<50)	179.2

56											
57	Gamma ROS Statistics using Imputed Non-Detects										
58	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
59	GROS may not be used when kstar of detected data is small such as < 0.1										
60	For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
61	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
62				Minimum	0.01			Mean	61.31		
63				Maximum	540			Median	0.01		
64				SD	130.9			CV	2.135		
65				k hat (MLE)	0.128			k star (bias corrected MLE)	0.14		
66				Theta hat (MLE)	478.8			Theta star (bias corrected MLE)	436.9		
67				nu hat (MLE)	5.891			nu star (bias corrected)	6.456		
68				MLE Mean (bias corrected)	61.31			MLE Sd (bias corrected)	163.7		
69								Adjusted Level of Significance (β)	0.0389		
70				Approximate Chi Square Value (6.46, α)	1.877			Adjusted Chi Square Value (6.46, β)	1.704		
71				95% Gamma Approximate UCL (use when n>=50)	210.9			95% Gamma Adjusted UCL (use when n<50)	232.3		
72											
73	Lognormal GOF Test on Detected Observations Only										
74				Shapiro Wilk Test Statistic	0.914			Shapiro Wilk GOF Test			
75				5% Shapiro Wilk Critical Value	0.788			Detected Data appear Lognormal at 5% Significance Level			
76				Lilliefors Test Statistic	0.235			Lilliefors GOF Test			
77				5% Lilliefors Critical Value	0.362			Detected Data appear Lognormal at 5% Significance Level			
78	Detected Data appear Lognormal at 5% Significance Level										
79											
80	Lognormal ROS Statistics Using Imputed Non-Detects										
81				Mean in Original Scale	79.43			Mean in Log Scale	3.448		
82				SD in Original Scale	123.4			SD in Log Scale	1.447		
83				95% t UCL (assumes normality of ROS data)	123.6			95% Percentile Bootstrap UCL	121.7		
84				95% BCA Bootstrap UCL	137.7			95% Bootstrap t UCL	174.6		
85				95% H-UCL (Log ROS)	238						
86											
87	UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
88				KM Mean (logged)	4.785			95% H-UCL (KM -Log)	154		
89				KM SD (logged)	0.412			95% Critical H Value (KM-Log)	1.901		
90				KM Standard Error of Mean (logged)	0.094						
91											
92	DL/2 Statistics										
93				DL/2 Normal				DL/2 Log-Transformed			
94				Mean in Original Scale	98.26			Mean in Log Scale	4.273		
95				SD in Original Scale	113.6			SD in Log Scale	0.684		
96				95% t UCL (Assumes normality)	138.9			95% H-Stat UCL	124		
97	DL/2 is not a recommended method, provided for comparisons and historical reasons										
98											
99	Nonparametric Distribution Free UCL Statistics										
100	Detected Data appear Normal Distributed at 5% Significance Level										
101											
102	Suggested UCL to Use										
103				95% KM (t) UCL	173			95% KM (Percentile Bootstrap) UCL	173.5		
104											
105	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
106	Recommendations are based upon data size, data distribution, and skewness.										
107	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).										
108	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
109											

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	25/10/2016 11:58:00 AM
From File	WorkSheet_t.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TRH C34-C40

General Statistics

Total Number of Observations	24	Number of Distinct Observations	3
Number of Detects	2	Number of Non-Detects	22
Number of Distinct Detects	2	Number of Distinct Non-Detects	1
Minimum Detect	220	Minimum Non-Detect	100
Maximum Detect	1200	Maximum Non-Detect	100
Variance Detects	480200	Percent Non-Detects	91.67%
Mean Detects	710	SD Detects	693
Median Detects	710	CV Detects	0.976
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	6.242	SD of Logged Detects	1.2

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	150.8	Standard Error of Mean	63.53
SD	220.1	95% KM (BCA) UCL	N/A
95% KM (t) UCL	259.7	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	255.3	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	341.4	95% KM Chebyshev UCL	427.8
97.5% KM Chebyshev UCL	547.6	99% KM Chebyshev UCL	782.9

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.694	k star (bias corrected MLE)	N/A
Theta hat (MLE)	419.2	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	6.774	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.47	nu hat (KM)	22.55
		Adjusted Level of Significance (β)	0.0392
Approximate Chi Square Value (22.55, α)	12.75	Adjusted Chi Square Value (22.55, β)	12.23
95% Gamma Approximate KM-UCL (use when n>=50)	266.7	95% Gamma Adjusted KM-UCL (use when n<50)	278

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

	A	B	C	D	E	F	G	H	I	J	K	L
56												
57	Lognormal ROS Statistics Using Imputed Non-Detects											
58					Mean in Original Scale	60.8				Mean in Log Scale		-2.968
59					SD in Original Scale	246.7				SD in Log Scale		4.908
60				95% t UCL (assumes normality of ROS data)		147.1				95% Percentile Bootstrap UCL		159.8
61					95% BCA Bootstrap UCL	220.9				95% Bootstrap t UCL		3262
62					95% H-UCL (Log ROS)	1.156E+8						
63												
64	DL/2 Statistics											
65	DL/2 Normal						DL/2 Log-Transformed					
66					Mean in Original Scale	105				Mean in Log Scale		4.106
67					SD in Original Scale	235.8				SD in Log Scale		0.704
68					95% t UCL (Assumes normality)	187.5				95% H-Stat UCL		107.1
69	DL/2 is not a recommended method, provided for comparisons and historical reasons											
70												
71	Nonparametric Distribution Free UCL Statistics											
72	Data do not follow a Discernible Distribution at 5% Significance Level											
73												
74	Suggested UCL to Use											
75					95% KM (BCA) UCL	N/A						
76	Warning: One or more Recommended UCL(s) not available!											
77												
78	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
79	Recommendations are based upon data size, data distribution, and skewness.											
80	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
81	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
82												

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