



**DEPARTMENT OF VETERAN AFFAIRS
DRAFT - PHASE 2 CONTAMINATED LAND
ASSESSMENT
114 NEWDEGATE STREET
GREENSLOPES QUEENSLAND**

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ABBREVIATIONS

ACM	Asbestos Containing Material
AHD	Australian Height Datum
AF	Asbestos Fines
CoC	Chain of Custody
EMR	Environmental Management Register
FA	Fibrous Asbestos
GST	Goods and Service Tax
HA	Hand Auger
LOR	Limit of Reporting
mg/kg	milligrams per kilogram
NATA	National Association of Testing Authorities
NEPM	National Environment Protection Measure
OCP	Organochlorine Pesticide
SA	Soil Asbestos
% w/w	Percentage weight/weight

EXECUTIVE SUMMARY

The Department of Veteran Affairs commissioned Coffey to undertake a Phase 2 Contaminated Land Assessment of 114 Newdegate Street, Greenslopes, Queensland. This Phase 2 Contaminated Land Investigation follows on from, and should be read in conjunction with, the Phase 1 investigation (Coffey Ref: ENAURHOD06233AA-P01 24 September 2013).

This investigation is limited to land contamination only and does not include assessments of buildings, services and other site infrastructure.

The site at the time of investigation was operated by the Australian Red Cross and included a community hall and a closed accommodation building located on the corner of Newdegate Street and Headfort Street, Greenslopes. The site was made up of three legal properties (Lots 123, 124 and 125 on RP46047).

The objective of the Phase 2 contamination land assessment was to better characterise areas and types of contamination identified during the Phase 1 investigation and to assess the suitability of the site for intended future land use.

The Phase 2 investigation included an assessment of the following contaminants which were identified in during the Phase 1 investigation.

Asbestos Containing Materials (ACM) - materials where the asbestos fibres are bound into a matrix such as cement sheeting or vinyl tile and where the fibres cannot be readily released by hand pressure.

Fibrous Asbestos (FA) and Asbestos Fines (AF) - materials where the asbestos fibres are loose or poorly bonded/friable asbestos containing compounds.

Metals – including arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury.

Organochlorine Pesticides – first widely used group of synthetic insecticides, coming into widespread use after World War II and banned for the use within most states of Australia as termiticides in the mid 1990's.

Based on the results of this Phase 2 Contaminated Land Assessment, Coffey concludes the following.

Asbestos Containing Materials (ACM) were detected at the surface of exposed soil beneath the Main Hall building and the Accommodation building, at concentrations above the nominated investigation levels for standard residential sites, day care centres, preschools, etc. However, the detected concentrations were below the nominated investigation levels for residential sites with minimal access to soil (unit accommodation/high density residential) and commercial and industrial land uses. All other ACM field screening results indicated that concentrations of ACM were below the recommended investigation levels for all site uses. As the site was utilised for temporary unit type accommodation and commercial type purposes, the ACM results did not identify that an unacceptable exposure risk had historically occurred. As part of the Phase 2 investigation works to assess concentrations of ACM at the site, the following volumes of ACM were collected for weighing and appropriate disposal from the surface soils.

- Exposed soil beneath the Main Hall building – 5.36kg
- Accessible exposed soil surfaces beneath the Accommodation building – 7.95kg
- External exposed soil areas – 3.75kg

The removal of the ACM as part of the investigation process has reduced the total volume of ACM at the site. Based on an assumption that 70% of all ACM was removed from the surface as part of this

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investigation, the concentrations of residual ACM are considered to be below the nominated investigation levels for all site uses.

During the assessment of ACM no fibrous asbestos (FA) was identified.

Asbestos fines (AF) results from the Phase 2 investigation did not identify concentrations of AF above the nominated investigation levels for all site uses. It should be noted the Phase 2 analysis of asbestos in soil was undertaken in accordance with the relevant Australian Standards and that Phase 1 asbestos fines analyses were a basic screen for asbestos fibres only. Therefore, only the Phase 2 asbestos in soil analytical results can be used for the assessment against the nominated investigation levels.

Organochlorine pesticides (DDD/DDT/DDE and aldrin/dieldrin) were identified at concentrations above the nominated investigation levels. The DDD/DDT/DDE exceedences were identified along the southern wall of the Main Hall building and the aldrin/dieldrin exceedences were located along the southern wall and beneath of the Accommodation building. The presence of these pesticides is consistent with the use of pesticides for the control of termites and other pests. It should be noted the concentrations aldrin/dieldrin in two of the samples collected exceeded the health based investigation levels for all site uses including commercial and industrial use. The identified organochlorine pesticides were located in exposed surface soils.

The identified concentrations of organochlorine pesticides have the potential to impact both human health and the environment. The maximum concentrations of aldrin/dieldrin were identified at an order of magnitude more than the recommended health based investigation levels for commercial and industrial land use and two orders of magnitude more than the recommended health based investigation levels for standard residential use. The qualitative risk assessment identified that detected organochlorine pesticides present a 'high' risk. The organochlorine pesticide impacted material would require management to prevent complete exposure pathways or remediation to reduce the level of risk posed.

Cation exchange capacity and pH analytical results for the soil undertaken as part of the Phase 2 investigation provided for the assessment of metals against relevant environmental investigation levels for urban residential and public open spaces. From the Phase 1 and Phase 2 investigation, metal analytical results indicate that concentrations of zinc are present within the central portion of the Main Hall both under the building and immediately adjacent to the northern external wall. However, the Phase 1 investigation did not identify any regional ecosystems on the site or within 300m of the site or surface water bodies within 900m of the site. Therefore, the identified concentrations of zinc, while maintained on site, are not anticipated to present an unacceptable risk to the environment.

The remediation/management options identified include.

- Encapsulation/engineering controls of organochlorine pesticide contaminated materials on-site – Due to the concentrations of organochlorine pesticides present within the soil on-site, encapsulation would require the design and construction of an engineered containment cell. As the contamination will remain on-site, on-going management and maintenance will be required to ensure the implemented engineering controls are preventing complete exposure pathways being formed. The indicative cost to complete this remediation/management option is in the order of ~\$125,000 (excluding GST)
- Excavation and off-site disposal of contaminated soil – Excavation and off-site disposal of contaminated soil would remove the potential risks associated with the contaminated material from

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the site. The indicative cost to complete this remediation option, post the removal of the site infrastructure and buildings, is in the order of ~\$92,400 (excluding GST).

It should be noted the above remediation options assume that treatment of the contaminated material is not required to reduce leachability to allow either off-site disposal to a licensed landfill or to render the material suitable for placement within a containment cell.

Coffey would also recommend that during any excavation type works that a spotter, that is suitably qualified to identify, collect and dispose of potential ACM, be utilised to reduce perceived risks associated with residual ACM.

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1 INTRODUCTION

The Department of Veteran Affairs commissioned Coffey to undertake a Phase 2 Contaminated Land Assessment of 114 Newdegate Street, Greenslopes, Queensland. This Phase 2 Contaminated Land Investigation follows on from, and should be read in conjunction with, the Phase 1 investigation (Coffey Ref: ENAURHOD06233AA-P01 24 September 2013).

This investigation is limited to land contamination only and does not include assessments of buildings, services and other site infrastructure.

The site at the time of investigation was being vacated by the Australian Red Cross and included a community hall and a closed accommodation building located on the corner of Newdegate Street and Headfort Street, Greenslopes. The site was made up of three legal properties (Lots 123, 124 and 125 on RP46047).

1.1 Objectives

The objective of the Phase 2 Contamination Land Assessment was to better characterise areas and types of contamination identified during the Phase 1 investigation and to assess the suitability of the site for intended future land use.

1.2 Scope of Works

The scope of work completed as part of this investigation included the assessment of the following contaminants types identified during the Phase 1 investigation.

Asbestos Containing Materials (ACM) - materials where the asbestos fibres are bound into a matrix such as cement sheeting or vinyl tile greater than 7mm diameter and where the fibres cannot be readily released by hand pressure.

Fibrous Asbestos (FA) and Asbestos Fines (AF) - are loose asbestos fibres, materials containing asbestos less than 7mm in diameter or poorly bonded/friable asbestos containing compounds.

Metals – arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury.

Organochlorine Pesticides - widely used group of synthetic insecticides, coming into widespread use after World War II and banned in most Australian States for the use as termiticides in the mid 1990's.

The investigation included the following.

- Field screening of ten locations for the presence of ACM.
- Emu bob of exposed surface soils for ACM.
- Collection of soil samples from twelve locations and analysis of ten samples for asbestos fibres in soil.
- Collection and analysis of soil samples from eleven locations for both metals and organochlorine pesticides and two samples for cation exchange capacity (CEC) and pH.
- Collection and analysis of quality control samples.
- Interpretation of the data and preparation of this report.

2 METHODOLOGY

The Phase 2 investigation was undertaken in accordance with the 2013 revision of the National Environment Protection Council (NEPC 1999) National Environment Protection (Assessment of Site Contamination) Measure (NEPM), which is the adopted Queensland and Commonwealth guideline for the assessment of contaminated sites. The investigation was overseen by an individual (Matthew Chenery) that was deemed suitably qualified under the Queensland Environmental Protection Act (1994) for the assessment of contaminated sites.

2.1 Assessment of Asbestos Containing Materials

Asbestos Containing Materials (ACM) land contamination was assessed through a field screening methodologies, which estimated the percentage of asbestos within the soil for comparison to established Australian health based guidelines. The ACM assessment methodology included the following.

Soil was removed from the selected sample locations using a shovel. A 9.5L bucket was filled with representative soil from selected depths and weighed. The contents of the bucket were placed into a <7mm sieve and hand shaken. The residual contents of the sieve were then spread thinly across a board painted a bright colour and sorted through by hand.

Asbestos containing materials were visually identified, collected, weighed and recorded on the test pit log. Any visually identifiable asbestos materials were collected as a bulk sample and sent to a National Association of Testing Authorities (NATA) accredited laboratory and re-weighed and analysed.

In addition to the field screening method described above, Coffey also undertook an emu bob of the site's unsealed ground surface and collected and recorded all ACM debris. This provided better quantification of asbestos containing materials present and also provided for reducing the risk associated with asbestos containing materials being present at the surface of the site.

2.2 Fibrous Asbestos/Asbestos Fines

The following methodology was utilised for the assessment of Asbestos Fines (AF).

- Soil samples were collected by hand excavation method.
- Soil samples (approximately 1.5kg of soil) were placed in new zip lock type plastic bags and into suitable containers for transport to the laboratory.
- Quality control samples, in accordance with Australian Standards including duplicate and triplicate samples, were collected and analysed at a rate of at least 1:20.
- Collected samples were couriered to a NATA accredited laboratory for analysis of asbestos in soil.

2.3 Metals and Organochlorine Pesticides

The assessment of metals and organochlorine pesticides was undertaken in accordance with the NEPM (1999) and Coffey's standard operating procedures. The source of the metals and the organochlorine pesticides is anticipated to be associated with the application of the pesticides and releases of paints and other building products to the surface of the land. Therefore, the investigation of metals and organochlorine pesticides focused on the shallow exposed soils in the areas beneath and

surrounding the site buildings. The scope of work for the metals and organochlorine pesticides included the following.

- Soil samples were collected from the surface and 0.5mbgs or auger refusal, or within suspected lenses (based on field observations) of contamination or changes in lithology.
- The lithology encountered was logged using the Unified Soil Classification System.
- Soil samples were collected in accordance with Coffey Standard Operating procedures, which include:
 - samplers wore disposable nitrile gloves (replaced between each sample);
 - soil samples were placed in laboratory prepared sample containers suitable for the analyses to be conducted;
 - collected samples were placed in eskies with ice for temporary storage and transport to the selected laboratory; and
 - samples were transported within recommended holding times from the site to the selected laboratory under chain of custody documentation.

In addition to the analysis of samples for asbestos, organochlorine pesticides and metals, two samples were analysed for Cation Exchange Capacity (CEC) and pH to provide additional information for the interpretation of metal analytical results.

2.4 QA/QC Program

As quantification of ACM was undertaken through field screening methodologies, the QA/QC program included the repackaging of 9.5L samples and the field screen repeated by the independent laboratory. The laboratory results were compared to those obtained within the field to determine the reproducibility and suitability of the data collected within the field.

Quality assurance and quality control procedures adopted for the validation sampling of asbestos fines, fibrous asbestos, metals and organochlorine pesticides was in accordance with the Standards Australia (AS4482:2005) Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil and included the collection and analysis of duplicate samples, split samples and field rinsate samples.

Chain of Custody documentation was utilised during the collection of soil samples to document the links in the transfer of samples between the time of collection and arrival at the laboratory.

The laboratories utilised were National Association of Testing Authorities (NATA) certified for the requested analyses.

3 RESULTS

3.1 Sample Descriptions

Soil samples were collected based on the information provided by the Phase 1 investigation and from those locations that presented the highest potential risk for contamination. This judgemental sampling is in accordance with AS4482:2005. **Table A** summarises the samples collected and contaminating activities/infrastructure targeted. The location of the sample points are shown on **Figure 2**.

Table A: Soil Sample Summary

Sample No.	Activities/Infrastructure Targeted/Soil Type
Phase 1 Investigation Sample Points	
SS01	Area of salt accumulation beneath the southern building. Targeting asbestos and potential pesticide use. Clayey SILT, brown, moist, 0-50mm.
SS02	Within an unsealed area immediately below peeling paint and adjacent to timber potentially treated with pesticides and fibro cement sheeting. Silty Sand, organic matter, brown, moist, 0-50mm.
SS03	Beneath the northern building targeting asbestos and potential pesticide use. Clayey sandy SILT, dry, brown, 0-50mm.
SS04	Wheelie bin storage area and area of compost pile and stressed vegetation. Targeting pesticides and other wastes. Sandy Clay, organic matter, low plasticity, moist, brown, 0-100mm.
Phase 2 Investigation Sample Points	
HA01	Collected adjacent to a tree stump under the Main Hall building. Potential location of pesticide use.
HA02	Collected from adjacent to the inside of the southern wall of the Main Hall building. Potential location of pesticide use.
HA03	
HA04	
HA05	Collected from the eastern side of exposed soil beneath the Main Hall building to provide coverage of the exposed soil. Potential location of pesticide use.
HA06	Collected from the eastern side beneath the Accommodation building where access could be gained. Potential location of pesticide use.
HA07	Central accessible area beneath the Accommodation building. Potential location of pesticide use.
HA08	Western accessible area beneath the Accommodation building. Potential location of pesticide use.
HA09	Located in garden bed immediately adjacent to the southern external wall of the Accommodation building. Location of potential pesticide use and paint flakes.

HA10	Located in garden bed immediately adjacent to the southern external wall of the Accommodation building. Location of potential pesticide use and paint flakes.
HA11	Collected from the location of the Phase 1 sample location SS02 to allow for analysis of CEC and pH to assess metal concentrations against Environmental Investigation Levels.
SA01/A01	Immediately surrounding Accommodation building covering areas where asbestos containing materials were present at the surface.
SA02/A02	
SA03/A03	
SA04/A04	
SA05/A05	Adjacent to southern wall of Main Hall building in garden bed where fill material had been placed and asbestos containing materials identified at the surface.
SA06/A06	
SA07/A07	Exposed soil from beneath the Main Hall building where asbestos containing materials were identified at the surface and to provide delineation of Phase 1 sample location SS01.
SA08/A08	
SA09/A09	Adjacent to northern wall of Main Hall building in garden bed.
SA10/A10	
SA11	Beneath Accommodation building in accessible areas where asbestos containing materials were identified at the surface.
SA12	
SA13	

Copies of the laboratory analytical reports are contained in **Appendix A** and **Tables 1 to 4** summaries the field screening results and the laboratory analytical results. **Appendix B** contains copies of the soil bore logs for each of the sample locations.

3.2 Asbestos Containing Materials

The results of the field screening for ACM are summarised in **Table 1**. The nominated investigation levels selected for ACM have considered both the historical land uses and potential future land uses. Therefore, the nominated investigations levels for ACM include the following.

- 0.01% weight/weight (w/w) - for standard residential use, day care centres and preschools. This investigation level accounts for potential future land uses at the site.
- 0.04% w/w - for residential with minimal soil access. This investigation level accounts for the accommodation use in unit type accommodation for which the northern building has been used for and the care-takers residences.
- 0.05% w/w – commercial type land uses. This investigation level accounts for the use of the hall by community groups.

The assessment of the ACM materials included both an emu bob of the surface and hand excavation of test pits. To assess the field collected data the following assumptions were made.

- The depth of the surface inspection is assumed to be 0.01m. This accounts for the thickness of the ACM and the disturbance of the surface during brushing back of organic matter and other debris.
- The specific gravity of the in-situ soil is assumed to be 1.6.
- Due to the limitations of the field screening methodology, which is impacted by factors such as vegetation cover, limited access areas, etc, it has been assumed that approximately 70% of all asbestos containing materials were identified during field screening.
- ACMs were assumed to contain 15% asbestos fibres. This represents the maximum range of asbestos within ACM recommended by the Western Australian (2009) Guidelines for the Assessment and Management of Asbestos-Contaminated Sites in Western Australia.

Field screening results indicate that concentrations of ACM with the surface soils beneath the two buildings (Main Hall 0.0149% w/w and accommodation building 0.0303% w/w) exceeded the nominated investigation levels for standard residential use, day care centres and preschools. However, the concentrations were below the nominated investigation levels for both residential sites with minimal access to soil and commercial type land uses. The emu bob of the surface soils, collected and removed the following volumes of ACM from the site:

- Exposed soil beneath the Main Hall building – 5.36kg
- Accessible exposed soil beneath the accommodation building – 7.95kg
- External exposed soil areas – 3.75kg

With the removal of the ACM as part of the investigation, based on the assumption that 70% of all ACM within exposed areas were collected, the residual concentrations of ACM within the surface soils are assessed to be below the nominated investigation levels in all exposed surface soils.

Test pitting of the site did not identify concentrations of ACM above the nominated investigation levels to the maximum depth of investigation (0.42mbgs).

During the assessment of ACM, no friable asbestos pieces were identified.

It should be noted that although the concentrations of ACM have been determined to be below the nominated investigation levels, this does not correlate to the site being free or clear of all ACM. Due to field screening methodologies, it is estimated that 70% of all ACM was identified within the screened material. Therefore, residual ACM, although assessed to be below the nominated investigation levels, could be present within areas of exposed soils. There is also potential that ACM is present in areas sealed with concrete or where fill material has been placed such as in garden beds. The concrete surface seal and fill material, while in place, provides an adequate barrier to any underlying ACM to prevent immediate health concerns.

3.3 Fibrous Asbestos/Asbestos Fines

The results of the laboratory analysis of the ten samples assessed for asbestos fines are summarised in **Table 2**. The nominated investigation levels selected for asbestos fines and fibrous asbestos is 0.001% weight/weight (w/w) - for all site uses.

The analysis of the ten samples identified one sample with detectable concentrations of asbestos within the soil. The concentration of asbestos was below the nominated investigation levels.

It should be noted the analysis of the samples collected during the Phase 2 investigation were undertaken in accordance with the Australian Standard AS 4964-2004 as per the method recommended by the National Environmental Protection Measure (1999). The analyses conducted during the Phase 1 investigation were for preliminary screening for asbestos in soil and did not comply with the relevant standards used for quantification and assessment of risk level.

3.4 Metals

The metal laboratory analytical results are summarised in **Table 3**. The nominated investigation levels for metals in soil have considered both human health and the environment and include the following.

Table B: Metal Nominated Investigation Levels

Metal	Health-based Investigation Levels – Standard Residential Land Use (mg/kg)	Environmental Investigation Level		
		Average Concentration of Background Samples (mg/kg)	Added Contaminant Level - based on CEC of 20, pH of 6 and clay content of 1% (mg/kg)	Urban Residential and Public Open Space (mg/kg)
Arsenic	100	NA	NA	100
Cadmium	20	NE	NE	NE
Chromium	100*	34	190	224
Copper	6,000	11	190	201
Lead	300	NA	NA	1,100
Nickel	400	18	270	288
Zinc	7400	57	400	457
Mercury	10**	NE	NE	NE

* = Health based investigation level for the more toxic Chromium VI species used, however the analytical results are for total chromium.

** = Health based investigation levels for the more toxic methyl mercury used, however analytical results are for total mercury.

NE = Not established

NA = Not Applicable

The metal analytical results for both the Phase 1 and Phase 2 investigations identified two samples (SS01 and SS02) with zinc (760mg/kg and 2,000mg/kg respectively) above the nominated environmental investigation levels. The identified zinc was located beneath the central portion of the Main Hall and topographically down gradient adjacent to the Main Hall's northern external wall. The concentrations of zinc identified have the potential to impact ecosystems within an urban type environment. However, the Phase 1 investigation did not identify any regional ecosystems on the site or within 300m of the site or surface water bodies within 900m of the site. Therefore, the identified concentrations of zinc, while contained on site, are not anticipated to present an unacceptable risk to the environment.

All metal analytical results were below the health based investigation levels.

3.5 Organochlorine Pesticides

The organochlorine laboratory analytical results are summarised in **Table 4**. The nominated investigation levels for organochlorine pesticides in soil have considered both human health and the environment and include the following.

Table C: Organochlorine Pesticide Nominated Investigation Levels

Organochlorine Species	Health-based Investigation Levels – Standard Residential Land Use (mg/kg)	Environmental Investigation Level - Urban Residential and Public Open Space (mg/kg)
Chlordane	50	NE
DDT	NE	180
DDT + DDE + DDD	240	NE
Aldrin + Dieldrin	6	NE
Endrin	10	NE
Heptachlor	6	NE
Hexachlorobezene	10	NE
Methoxychlor	300	NE
Toxaphene	20	NE

NE = Not established

The analytical results identified the following above the nominated health based investigation levels.

- Chlordane - HA02 (51mg/kg) and HA03 (140mg/kg); and
- Aldrin + Dieldrin – HA07 0-0.1 (28.26), HA09 0-0.2 (55.06mg/kg) and HA10 0-0.2 (506mg/kg).

The identified concentrations of organochlorine pesticides were identified immediately adjacent to external walls and within the proximity of structural stumps. This is consistent with the use of pesticides for the control of termites and other pests. It should be noted that concentrations of aldrin and dieldrin identified within HA09 and HA10 are above the health based investigation levels for all land uses and are located at the surface of the garden beds located on the southern side of the accommodation building. The concentrations of aldrin and dieldrin within sample location HA10 are an order of magnitude greater than the health based investigation levels for commercial and industrial land uses and two orders of magnitude greater than the health based investigation levels for standard residential use.

The detected concentrations of organochlorine pesticides would restrict the use of the site without the implementation of appropriate mitigation measures or completion of remediation works. Although there are currently no established environmental investigation levels for a majority of the organochlorine species, organochlorine pesticides are bio-accumulative and the concentrations detected do represent a potential risk to the environment.

3.6 QA/QC Program

3.7 Quality Control Results

An evaluation of the quality assurance (QA) and quality control (QC) procedures and results was conducted to determine the quality of the data obtained.

With the exception of the quality control sample A05 used to assess field screening results, all laboratories used were NATA registered and all tests conducted were performed in accordance with NATA accreditation. Sample collection methods, equipment decontamination procedures, sampling preservation and holding times that were reported were consistent with the requirements of AS4482.1 (Standards Australia, 2005). The **Table D** below presents a summary of the QC samples that were analysed.

Table D: Summary of Quality Control Samples

Assessment	Primary Samples Analysed	QC Duplicates (intra-laboratory)	QC Triplicate (inter-laboratory)	Blank samples
				Rinsate
Soil	21	2	2	1
Assessment	RPDs Outside Acceptable Range ⁽¹⁾		Laboratory Control and Matrix Spike Recoveries Outside Acceptable Range ⁽²⁾	Surrogates Outside Acceptable Range ⁽³⁾
	Field	Laboratory		
Soil	9.6%	8.8%	0%	0%

RPD Relative Percent Difference.

1 Acceptance targets for laboratory duplicates are described below.

- Soil (Organics and metals): 30% for concentrations more than 10 times the LOR and 50% for concentrations less than 10 times the LOR (Standards Australia, 2005).

2 Acceptance targets for laboratory control samples and matrix spikes is generally between 70% and 130% recovery for organics and 80-120% recovery for metals (APHA, 1992).

3 Acceptance targets for surrogates are between 80% and 120% recovery for organics.

Field and laboratory relative percent differences (RPD) that were outside of the acceptance criteria are considered to be associated with the heterogeneity of metals within the soil sampled. This is reflected in both the field and laboratory duplicate samples.

There is currently no NATA certification for the field screening methodology for ACM in soil. However the independent laboratory's results for repeating the field screening on sample A10 (0.0-0.17) were consistent with the field conducted screening results, confirming that field screening methodologies were completed to the required standard.

Field and laboratory quality control results are presented in **Table E**.

Table E: Quality Control Procedure Review Summary

Requirement	Yes/No	Comments

Requirement	Yes/ No	Comments
All samples were extracted within the required holding time.	Yes	
Percentage recovery results were acceptable for all matrix spikes, matrix spike duplicates, laboratory control samples and surrogates for all analytes.	Yes	Laboratory QC conducted by both the primary and secondary laboratories was within acceptable criteria.
Laboratory internal standards, calibration blanks and mid-range calibration verifications were acceptable.	Yes	
Rinsate results for all analytes tested were all within the acceptable range (<LOR).	No ⁽¹⁾	Rinsate sample QCW01 detected a concentration of dieldrin (0.0002 mg/L). All other rinsate results were reported below the laboratories LOR.
The relative percent differences (RPDs) for analytes tested were all within the acceptable RPD range (< 50%).	No ⁽²⁾	Review of the analytical tables revealed that, of the duplicates and triplicates analysed, <10% were found to be outside the acceptable RPD range. All results outside of the acceptable range were for metals in soil
The required ratio of duplicate and triplicate sample pairs were collected.	Yes	
<p>(1) With reference to rinsate sample QCW01, containing detectable levels of deildrin (0.0002 mg/L), it is likely to be associated with carry over by the laboratory equipment post analysis of the high concentrations within the within sample HA10 or residual contamination from the field equipment used to collect the field rinsate sample. As samples collected after the highest detectable level of dieldrin were below the laboratory detection limits, it is considered unlikely that concentrations within the rinsate sample indicate cross contamination during sample collection.</p> <p>(2) Field and laboratory relative percent differences (RPD) that were outside of the acceptance criteria are considered to be associated with the heterogeneity of metals within the soil sampled. This is reflected in both the field and laboratory duplicate samples. It should be noted that all metal analytical results collected during the Phase 2 investigation were below the nominated investigation levels.</p>		

The field and laboratory QA/QC measures employed throughout the assessment have enabled the quality of field sample collection and laboratory analysis procedures to be examined. Based on the above, the data is considered to be of acceptable quality for interpretation.

Certified laboratory reports, QC acceptance targets and laboratory quality assurance (QA) data are included in **Appendix A**.

4 CONCEPTUAL SITE MODEL

This conceptual site model has been updated with the information collected during the Phase 2 investigation.

For an identifiable risk to exist, an exposure pathway must be present, which requires each of the following to be identified.

- The presence of substances that may cause harm (**Source**).
- The presence of a receptor which may be harmed (**Receptor**).
- The existence of a means of exposing a receptor to the source (**Exposure Pathway**).

Outlined below are descriptions of the source, receptors and exposure pathways associated with the site and a summary of the potentially complete exposure pathways identified. As the site has ceased operations and is currently vacant, potential receptors are considered to be restricted to potential future site uses (including community use as per zoning and residential) and surrounding land users. A diagrammatical illustration of the conceptual site model is included as **Figure 3**.

4.1 Identified Potentially Contaminated Areas (Sources)

Areas of potential on site impact identified as part of this Contaminated Land Assessment and Contaminants of Potential Concern are summarised in **Table F** below.

Table F: Summary of Areas of Environmental Concern and Contaminants of Potential Concern

Area of Potential Concern	Contaminants of Potential Concern
Exposed soil beneath and immediately surrounding the site buildings.	Metals and organochlorine pesticides.
Locations where asbestos containing material fragments are potentially present at concentrations that have the potential to cause human health impacts. These areas are considered to be limited to locations which currently have surface seals and any pockets of buried asbestos impacted that have not been identified. Exposure would require excavation works.	Asbestos.

4.2 Potential Receptors (Receptors)

It is understood that potential human exposures to contaminants at the site include:

- maintenance contractors and caretakers;
- future construction personnel;
- future land users; and
- surrounding land users.

Potential environmental receptors are not considered to be present at the site with the nearest sensitive ecosystems located ~300m to the south east (up-gradient) and ~500m to the west of the site (across gradient).

4.3 Exposure Pathways (Exposure Pathway)

4.3.1 Potential Human Exposure Pathways

Potential human exposure pathways for the site include:

- dermal contact with contaminated soil by on site personnel undertaking maintenance or other activities;
- inhalation of contaminated dust by on site personnel undertaking maintenance or other activities;
- inhalation of contaminated dust by surrounding land users; and
- ingestion of contaminated soil during or maintenance or construction works.

4.4 Complete Exposure Pathways

Table G summarises the key potentially complete exposure pathways by which receptors may be exposed to the contaminants of potential concern.

Table G: Exposure Pathway Evaluation

Potential Receptors	Exposure Route	Potentially Complete Exposure Pathways	
		Areas of Organochlorine Contamination	Locations Containing Asbestos*
Maintenance Contractors and Caretakers	Ingestion	✓	✗
	Inhalation	✓	✓
	Dermal contact	✓	✗
Future Construction Personnel	Ingestion	✓	✗
	Inhalation	✓	✓
	Dermal contact	✓	✗
Future Site Users	Ingestion	✓	✗
	Inhalation	✓	✓
	Dermal contact	✓	✗
Surrounding Land Users	Ingestion	✗	✗
	Inhalation	✓	✓
	Dermal contact	✗	✗

Notes

✓ Exposure pathway potentially complete – assessed qualitatively.

✗ Exposure pathway considered to be insignificant.

* Note that only where disturbance of existing surface seals or excavation works occur that exposure to asbestos is considered a complete exposure pathway.

5 RISK ASSESSMENT

5.1 Risk Assessment Methodology

The qualitative risk assessment has been carried out using the principles outlined in the Standards Australia (HB203:2012) Environmental Risk Management – Principles and Process. For the purpose of this qualitative risk assessment the measures of likelihood and consequence are summarised below.

Table H: Qualitative Measures of Likelihood

Level	Descriptor	Description
A	Almost certain	Is expected to occur in most circumstances
B	Likely	Will probably occur in most circumstances
C	Possible	Could occur
D	Unlikely	Could occur but not expected
E	Rare	Occurs only in exceptional circumstances

Table I: Qualitative Measures of Consequence

Level	Descriptor	Example Detail Description
1	Catastrophic	Death, toxic release off-site with detrimental effect, huge financial loss.
2	Major	Extensive injuries, loss of production capability, off-site release contained with outside assistance and little detrimental impact, major financial loss.
3	Moderate	Medical treatment required, on-site release contained with outside assistance, high financial loss.
4	Minor	First aid treatment, on-site release immediately contained, medium financial loss.
5	Insignificant	No injuries, low financial loss, negligible environmental impact.

Based on the likelihood and consequence the following risk analysis matrix has been used for this qualitative risk assessment to determine the level of risk.

Table J: Qualitative Risk Analysis Matrix: Level of risk

Likelihood	Consequence				
	Catastrophic	Major	Moderate	Minor	Insignificant
Almost certain	E	E	E	H	H
Likely	E	E	H	M	M
Possible	E	E	H	M	L
Unlikely	E	H	M	L	L
Rare	H	M	L	L	L

LEGEND:

E = Extreme risk; immediate action required.

H = High risk; senior management attention needed.

M = Moderate risk; management responsibility must be specified.

L = Low risk; manage by routine procedures.

5.2 Qualitative Risk Assessment Results

Table K summarises the results of the qualitative risk assessment for each of the identified sources and receptors with complete exposure pathways.

Table K: Qualitative Risk Assessment

Risk Dimension	Consequence Rating	Likelihood	Risk Level
Areas of Organochlorine Contamination			
Maintenance Contractors and Caretakers	Moderate	Likely	High
Future Construction Personnel	Moderate	Likely	High
Future Site Users	Moderate	Likely	High
Surrounding Land Users	Moderate	Rare	Low
Locations Containing Asbestos			
Maintenance Contractors and Caretakers	Moderate	Rare	Low
Future Construction Personnel	Moderate	Rare	Low
Future Site Users	Moderate	Rare	Low
Surrounding Land Users	Moderate	Rare	Low

5.3 Qualitative Risk Assessment Key Findings

The qualitative risk assessment identified that maintenance contractors and caretakers, future construction personnel and potential future site users have a potential high risk associated with the pesticides within the soil. Due to the potential for these receptors to disturb and to come into contact with the soil profile, the likelihood of exposure is considered to be "likely". It should also be noted the

detected concentrations of organochlorines in HA10 was an order of magnitude higher than the health based investigation levels for commercial and industrial use and was located within surface soils in an accessible location. Therefore, the potential consequence associated with the organochlorine impacted soil is considered to fall within the moderate category (medical treatment required, on-site release contained with outside assistance and/or high financial loss).

The qualitative risk assessment indicated that all other identified potential receptors had a low risk primarily due to the limited access to contaminated areas or limited potential for contaminant concentrations to present an unacceptable risk.

It should be noted the qualitative risk assessment was based on 'actual risks' and does not take into account 'perceived risks'. Current society 'perceived risks' in Australia associated with asbestos is considered to be significantly higher than the 'actual risks' presented. Therefore, any consideration of contamination management or remediation should take into account 'perceived risks'.

6 ADDITIONAL INVESTIGATION AND REMEDIATION SCOPE AND INDICATIVE COSTS

6.1 Remediation/Management Options

Based on the investigations completed to date, it is considered likely that some form of contaminant management or remediation will be required. The nature of the remediation/management works would be dependent on the nature of the future site use, cost/benefit analysis and the appetite for risk of future site operators/owners. Remediation/management options are summarised in the following table.

Table L: Remediation Management Options Summary

Remediation/Management Option	Description
<i>Organochlorine Pesticide Impacted Areas</i>	
Encapsulation/Engineering Controls of Organochlorine Pesticide Contaminated Materials On-site.	<p>Due to the concentrations of organochlorine pesticides present within the soil on-site, encapsulation would require the design and construction of an engineered containment cell and may also require the treatment of the contaminated soil to reduce the leachability of the contaminant.</p> <p>Encapsulation of contaminated materials prevents complete exposure pathways from being formed. This method minimises waste disposal to landfill and is generally considered to be a more sustainable approach.</p> <p>As the contamination will remain on-site, on-going management and maintenance will be required to ensure the implemented engineering controls are preventing complete exposure pathways being formed.</p> <p>It should also be noted that if contaminated material is maintained on site, the site may need to be listed on the Queensland Environmental Management Register and a Site Management Plan developed if the site is divested by the Commonwealth.</p>
Excavation and Off-site Disposal of Organochlorine Pesticide Contaminated Materials.	<p>Excavation and off-site disposal of contaminated soil would remove the potential risks associated with contaminated soil from the site.</p> <p>This remediation method would require the excavation of contaminated soil for placement within a stockpile and the homogenised stockpiled materials characterised and assessed for leachability to determine the suitability of the material against landfill licensed acceptance criteria. Should the leachability of the contaminant exceed the landfill's license acceptance criteria, treatment of the material prior to final disposal may be required to reduce the contaminants leachability.</p> <p>If a disposal permit for contaminated soil is required to move the contaminated material off-site, the site would need to be listed on the Queensland Environmental Management Register, however if the</p>

	remediation works render the site suitable for unrestricted use, an application to the administering authority could be made to have the site removed from the EMR on completion of the remediation works.
Asbestos	
Handpicking of Asbestos Containing Materials	During any excavation works or disturbance of soil on-site, a suitably qualified spotter could be utilised to remove any identified asbestos containing materials. This would minimise the exposure of construction and maintenance staff to asbestos containing materials and reduce the potential for future perceived risk.

6.2 Indicative Costs

6.2.1 Remediation Works

The following presents indicative remediation costs for each of the identified remediation options. It should be noted that until the organochlorine pesticide contaminated material is excavated and leachability assessed, its suitability for either encapsulation or off-site disposal without treatment is unknown. Therefore, the following cost estimates assume the contaminated material is suitable for either off-site disposal or on-site encapsulation without treatment.

Table M: Indicative Remediation/Management Costs

Remediation/Management Option - On-site Encapsulation	Indicative Cost (excluding GST)
Project Establishment and Management	~\$ 3,400
Remediation Planning and Design	~\$ 7,600
Design and Construction of Containment Cell	~\$ 75,000
Validation and Assessment Works	~\$ 18,000
Remediation and Validation Reporting	~\$ 12,000
Site Management Plan and Regulatory Liaison	~\$ 9,000
Remediation Management Option - On-site Encapsulation Total	~\$ 125,000

Remediation/Management Option - Off Site Disposal	Indicative Cost (excluding GST)
Project Establishment and Management	~\$ 3,400
Remediation Planning and Approvals	~\$ 9,000
Excavation and Disposal of Contaminated Soil	~\$ 42,000
Validation Sampling and Laboratory Analysis	~\$ 18,000
Remediation and Validation Reporting	~\$ 12,000
Regulatory Liaison and Statutory Fees	~\$ 8,000
Remediation/Management Option - Off Site Disposal Total	~\$ 92,400

The above cost estimates are based on the following assumptions.

- All above ground site infrastructure is removed prior to commencement of remediation works and all services to the site are disconnected. Costs associated with demolition and disposal of demolition wastes are not included in the above cost estimate.
- Total volume of organochlorine pesticide contaminated material is 140m³ in-situ and the specific gravity of this material is 2 or less.
- The leachability of the stockpiled contaminated material does not exceed landfill license acceptance criteria or appropriate levels for on-site encapsulation and therefore, treatment of the material to reduce leachability is not required. If treatment is required, depending on the reduction in leachability to be achieved, treatment of the material could result in approximately doubling of the above indicative remediation costs.

7 CONCLUSIONS AND RECOMMENDATIONS

The Department of Veteran Affairs commissioned Coffey to undertake a Phase 2 Contaminated Land Assessment of 114 Newdegate Street, Greenslopes, Queensland. This Phase 2 Contaminated Land Investigation follows on from, and should be read in conjunction with, the Phase 1 Contaminated Land Assessment (Coffey Ref: ENAURHOD06233AA-P01 24 September 2013).

This investigation is limited to land contamination only and does not include assessments of buildings, services and other site infrastructure.

The site at the time of investigation was being vacated by the Australian Red Cross. Site facilities and included a community hall and a closed accommodation building located on the corner of Newdegate Street and Headfort Street, Greenslopes. The site was made up of three legal properties (Lots 123, 124 and 125 on RP46047).

Based on the results of this Phase 2 Contaminated Land Assessment, Coffey concludes the following.

Asbestos Containing Materials (ACM) were detected at the surface of exposed soil beneath the Main Hall building and the Accommodation building, at concentrations above the nominated investigation levels for standard residential sites, day care centres, preschools, etc. However, the detected concentrations were below the nominated investigation levels for residential sites with minimal access to soil (unit accommodation/high density residential) and commercial and industrial land uses. All other ACM field screening results indicated that concentrations of ACM were below the recommended investigation levels for all site uses. As the site was utilised for temporary unit type accommodation and commercial type purposes, the ACM results did not identify that an unacceptable exposure risk had historically occurred. As part of the Phase 2 investigation works to assess concentrations of ACM at the site, the following volumes of ACM were collected for weighing and appropriate disposal from the surface soils.

- Exposed soil beneath the Main Hall building – 5.36kg
- Accessible exposed soil surfaces beneath the Accommodation building – 7.95kg
- External exposed soil areas – 3.75kg

The removal of the ACM as part of the investigation process has reduced the total volume of ACM at the site. Based on an assumption that 70% of all ACM was removed from the surface as part of this investigation, the concentrations of residual ACM are considered to be below the nominated investigation levels for all site uses.

During the assessment of ACM no fibrous asbestos (FA) was identified.

Asbestos fines (AF) results from the Phase 2 investigation did not identify concentrations of AF above the nominated investigation levels for all site uses. It should be noted the Phase 2 analysis of asbestos in soil was undertaken in accordance with the relevant Australian Standards and that Phase 1 asbestos fines analyses were a basic screen for asbestos fibres only. Therefore, only the Phase 2 asbestos in soil analytical results can be used for the assessment against the nominated investigation levels.

Organochlorine pesticides (DDD/DDT/DDE and aldrin/dieldrin) were identified at concentrations above the nominated investigation levels. The DDD/DDT/DDE exceedences were identified along the southern wall of the Main Hall building and the aldrin/dieldrin exceedences were located along the southern wall and beneath of the Accommodation building. The presence of these pesticides is consistent with the

use of pesticides for the control of termites and other pests. It should be noted the concentrations aldrin/dieldrin in two of the samples collected exceeded the health based investigation levels for all site uses including commercial and industrial use. The identified organochlorine pesticides were located in exposed surface soils.

The identified concentrations of organochlorine pesticides have the potential to impact both human health and the environment. The maximum concentrations of aldrin/dieldrin were identified at an order of magnitude more than the recommended health based investigation levels for commercial and industrial land use and two orders of magnitude more than the recommended health based investigation levels for standard residential use. The qualitative risk assessment identified that detected organochlorine pesticides present a 'high' risk. The organochlorine pesticide impacted material would require management to prevent complete exposure pathways or remediation to reduce the level of risk posed.

Cation exchange capacity and pH analytical results for the soil undertaken as part of the Phase 2 investigation provided for the assessment of metals against relevant environmental investigation levels for urban residential and public open spaces. The Phase 1 and Phase 2 investigation metal analytical results indicate that concentrations of zinc are present within the central portion of the Man Hall both under the building and immediately adjacent to the northern external wall. However, the Phase 1 investigation did not identify any regional ecosystems on the site or within 300m of the site or surface water bodies within 900m of the site. Therefore, the identified concentrations of zinc, while maintained on site, are not anticipated to present an unacceptable risk to the environment.

The remediation/management options identified include.

- Encapsulation/engineering controls of organochlorine pesticide contaminated materials on-site – Due to the concentrations of organochlorine pesticides present within the soil on-site, encapsulation would require the design and construction of an engineered containment cell. As the contamination will remain on-site, on-going management and maintenance will be required to ensure the implemented engineering controls are preventing complete exposure pathways being formed. The indicative cost to complete this remediation/management option is in the order of ~\$125,000 (excluding GST)
- Excavation and off-site disposal of contaminated soil – Excavation and off-site disposal of contaminated soil would remove the potential risks associated with the contaminated material from the site. The indicative cost to complete this remediation option, post the removal of the site infrastructure and buildings, is in the order of ~\$92,400 (excluding GST).

It should be noted the above remediation options assume that treatment of the contaminated material is not required to reduce leachability to allow either off-site disposal to a licensed landfill or to render the material suitable for placement within a containment cell.

Coffey would also recommend that during any excavation type works that a spotter, that is suitably qualified to identify, collect and dispose of potential ACM, be utilised to reduce perceived risks associated with residual ACM.

This report must not be reproduced except in full and must be read in conjunction with the 'Important Information about your Coffey Environmental Report'

8 REFERENCES

National Environment Protection Council (1999) (2013 revision) National Environment Protection Measure – Assessment of Site Contamination.

Standards Australia (AS4482-2005) Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil.

Standards Australia (HB203:2012) Environmental Risk Management – Principles and Process

Tables

**DRAFT - Phase 2 Contaminated Land Assessment
114 Newdegate Street Greenslopes**



TABLE 1
144 Newdgate Street Greenslopes
Asbestos Containing Material Field Screening Results

Area Reference	Description	Weight of ACM Collected (t)	Weight of ACM including 70% assumption for surface inspection (t)***	Total asbestos assuming 15% asbestos content (t)****	Sample locations with detected ACM	Est Vol of Material Inspected (m3)*	Est Total Vol Inspected (t)**	Estimated % w/w for ACM Asbestos in soil	Estimated % w/w for ACM Asbestos in surface soils post removal as part of investigation Emu Bob*****
Surface - exposed soil under main hall building	Inspection of surface soils assumed to represent 0.01m depth of inspection.	0.005360	0.007657	0.001149	NA	4.81	7.696	0.0149	0.0031
Surface - exposed soil under accomodation building	Inspection of surface soils assumed to represent 0.01m depth of inspection.	0.007950	0.011357	0.001704	NA	3.515	5.624	0.0303	0.0064
Surface - unsealed external areas	Inspection of surface soils assumed to represent 0.01m depth of inspection.	0.003750	0.005357	0.000804	NA	5.99	9.584	0.0084	0.0018
Surface soils - depth of surface soils ranged between 150mm to 300mm.	Surface horizons of soil including organic matter and disturbed soil profiles.	0.000044	0.000064	0.000010	A01, A04 and A10	-	0.1061	0.0090	-
Sub soils - depths ranged from 150mm to 420mm.	Predominantly silty material. Material with garden beds surrounding the main hall building included fill material.	0.000019	0.000027	0.000004	A06 and A10	-	0.1045	0.0038	-

Notes

- Denotes concentrations above the nominated investigation level of 0.01% w/w for standard residential use, day care centres, preschools, etc.
- Denotes concentrations above the nominated investigation level of 0.04% w/w for residential with minimal soil access.
- Denotes concentrations above the nominated investigation level of 0.05% w/w for commercial/industrial land use.

* Estimated depth of surface material inspected 0.01m.

** Soil density of 1.6 for in-situ soil.

*** 70% of all ACM identified during inspection of surface materials due to vegetation cover.

**** ACM assumed to contain 15% asbestos content (maximum of the range recommended in the W.A. (2009) guidelines).

***** Assumes that 70% of asbestos was found and removed as part of Emu Bob of site surface soils.



TABLE 2
114 Newdgate Street Greenslopes
Asbestos Fines Analytical Results

Sample Number			SS01	SS02	SS03	SS04	SA01	SA04	SA06	SA06	SA07	SA08	SA09	SA10	SA11	SA13
Sample Depth (m)			0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.3-0.4	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Sample Date			16/07/2013	16/07/2013	16/07/2013	16/07/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013
Laboratory ID			B13-JI12647	B13-JI12648	B13-JI12649	B13-JI12650	1. ASET35364	2. ASET35364	3. ASET35364	4. ASET35364	5. ASET35364	6. ASET35364	7. ASET35364	8. ASET35364	9. ASET35364	10. ASET35364
Analytes	Units	LOR														
Asbestos ID	% w/w	0.1 g/kg	Chrysotile Asbestos Detected	Chrysotile Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Chrysotile Asbestos Detected	No Asbestos Detected								
Sample Weight	g	0.1	440	143	-	-	1178	-	-	-	-	-	-	-	-	-
Fibres approximate weight	g	0.001	0.029	0.031	-	-	0.006	-	-	-	-	-	-	-	-	-
% weight/weight	%	Nominated Investigation Level (0.001%/w/w)	0.0066*	0.0217*	-	-	0.0005	-	-	-	-	-	-	-	-	-

HA = Hand Auger Bore

LOR = Limit of Reporting (= Method Detection Limit)

Nominated Investigation Levels:

(1) NEPM 1999 HILs for all land uses = 0.001% w/w.

* = Asbestos ID analysis only. Method not in accordance with relevant Australian Standards for the quantification of asbestos in soil. Numbers are guide only.

Results Values in highlighted cells exceed nominated IL (1)



TABLE 3
114 Newdgate Street Greenslopes
Metal Analytical Results

Sample Number					SS01	SS02	SS03	SS04	HA01	HA02	HA03	HA04	HA05	QC01	RPD
Sample Depth (m)					0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	Duplicate of HA05	
Sample Date					16/07/2013	16/07/2013	16/07/2013	16/07/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	0.0-0.1	
Laboratory ID					B13-JI12647	B13-JI12648	B13-JI12649	B13-JI12650	B13-Se19296	B13-Se19297	B13-Se19298	B13-Se19299	B13-Se19300	B13-Se19317	
Analytes	Units	LOR	Nominated ILs (1)	Nominated ILs (2)											
Metals															
Arsenic	mg/kg	2	100	100	32	10	16	10	9.3	14	20	14	17	21	21%
Cadmium	mg/kg	0.4	NE	20	0.7	1.4	0.4	0.6	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	-
Chromium	mg/kg	5	224	100	54	12	42	22	39	44	69	54	66	73	10%
Copper	mg/kg	5	201	6000	21	27	20	33	8.1	6.4	12	11	9.2	10	8%
Lead	mg/kg	5	1100	300	39	100	75	72	7.3	15	27	14	10	16	46%
Mercury	mg/kg	0.1	NE	10	<0.1	<0.1	<0.1	<0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-
Nickel	mg/kg	5	288	400	35	8.4	18	11	20	24	25	16	19	20	5%
Zinc	mg/kg	5	457	7400	760	2000	190	250	64	44	92	26	45	54	18%
Iron Exchange Properties															
Cation Exchange Capacity		1	NE	NE	-	-	-	-	-	-	-	-	-	-	-
pH 1:5 Aqueous Extract															
pH		0.1	NE	NE	-	-	-	-	-	-	-	-	-	-	-

HA = Hand Auger Bore

LOR = Limit of Reporting (= Method Detection Limit)

Nominated Investigation Levels:

(1) NEPM 1999 ESLs Urban residential and public open space, added contaminant levels.

(2) NEPM 1999 HILs Residential A Soil

Results Values in highlighted cells exceed nominated IL (1)

Results Values in highlighted cells exceed nominated IL (2)



TABLE 3
114 Newdgate Street Greenslopes
Metal Analytical Results

Sample Number		QC01A		RPD	HA06	HA07	HA08	HA09	HA10	HA11
Sample Depth (m)		Split Sample of			0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.2	0.0-0.2	0.0-0.1
Sample Date		HA05 0.0-0.1			25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013
Laboratory ID		98121-1			B13-Se19301	B13-Se19302	B13-Se19303	B13-Se19304	B13-Se19305	B13-Se19306
Analytes	Units									
Metals										
Arsenic	mg/kg	11	43%	22	15	10	10	19	23	
Cadmium	mg/kg	<0.4	-	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	
Chromium	mg/kg	90	31%	88	43	39	25	22	50	
Copper	mg/kg	12	26%	9.3	13	14	24	19	15	
Lead	mg/kg	20	67%	13	63	50	120	120	140	
Mercury	mg/kg	0.2	-	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	
Nickel	mg/kg	27	35%	19	15	11	8.8	8.7	13	
Zinc	mg/kg	74	49%	41	140	72	380	330	450	
Iron Exchange Property										
Cation Exchange Capacity		-		-	30	-	-	-	25	
pH 1:5 Aqueous Extract										
pH		-		-	5.8	-	-	-	6.3	

HA = Hand Auger Bore
 LOR = Limit of Reporting
Nominated Investigation
 (1) NEPM 1999 ESLs Urb
 (2) NEPM 1999 HILs Resi



TABLE 4
114 Newdgate Street Greenslopes
Organochlorine Pesticide Analytical Results

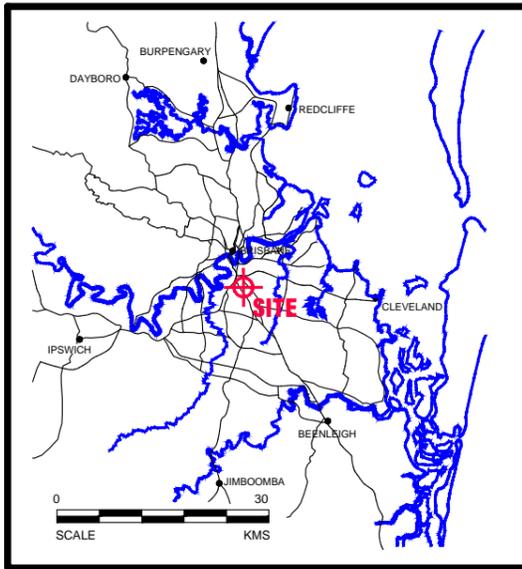
Sample Number	SS01	SS02	SS03	SS04	HA01	HA02	HA03	HA04	HA05	QC01	QC01A	HA06	HA07	HA08	HA09	HA10	HA11			
Depth (m)	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	Duplicate of HA05	Split Sample of HA05 0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.2	0.0-0.2	0.0-0.1			
Sample Collection Date	16/07/2013	16/07/2013	16/07/2013	16/07/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013			25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013	25/09/2013			
Laboratory ID	B13-J12647	B13-J12648	B13-J12649	B13-J12650	B13-Se19296	B13-Se19297	B13-Se19298	B13-Se19299	B13-Se19300	B13-Se19317		B13-Se19301	B13-Se19302	B13-Se19303	B13-Se19304	B13-Se19305	B13-Se19306			
Analytes	Units	LOR	Nominated ILs (1)																	
OCF																				
4,4'-DDE	mg/kg	0.05	NE	1.3	<0.05	0.09	<0.05	0.27	0.23	0.57	< 0.05	< 0.05	<0.05	<0.1	0.49	0.05	< 0.05	0.07	< 0.5	0.13
a-BHC	mg/kg	0.05	NE	<0.05	<0.05	<0.05	<0.05	-	-	-	-	-	<0.1	-	-	-	-	-	-	-
Aldrin	mg/kg	0.05	NE	<0.05	<0.05	<0.05	<0.05	0.07	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	0.26	< 0.05	0.06	86	< 0.05
b-BHC	mg/kg	0.05	NE	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Chlordane	mg/kg	0.1	50	0.9	20	0.3	8.2	31	51	140	4.7	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1	0.3	5.4	42
d-BHC	mg/kg	0.05	NE	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
DDD	mg/kg	0.05	NE	1.7	<0.05	<0.05	<0.05	0.08	0.09	0.18	< 0.05	< 0.05	< 0.1	0.27	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06
DDT	mg/kg	0.05	180	3.7	0.12	0.13	<0.05	1.1	0.73	1.6	0.41	0.12	0.06	<0.1	4.2	0.26	0.13	0.22	< 0.05	0.16
DDT + DDE + DDD	mg/kg	0.15	240	6.7	<0.22	<0.27	<0.15	1.45	1.05	2.35	<0.51	<0.22	<0.16	<0.3	4.96	<0.28	<0.23	<0.34	<0.55	0.35
Dieldrin	mg/kg	0.05	NE	0.07	0.2	1.7	1.1	0.14	< 0.05	0.06	< 0.05	< 0.05	< 0.1	0.82	28	0.08	55	< 20	0.39	
Aldrin + Dieldrin	mg/kg	0.1	6	<0.12	<0.25	1.81	1.15	0.21	<0.1	<0.11	<0.1	<0.1	<0.1	<0.87	28.26	<0.13	55.06	506	<0.44	
Endosulfan I	mg/kg	0.05	NE	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	mg/kg	0.05	NE	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	mg/kg	0.05	NE	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	mg/kg	0.05	10	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	0.7	< 0.05	0.93	6.5	< 0.05	< 0.05
Endrin aldehyde	mg/kg	0.05	NE	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	mg/kg	0.05	NE	<0.05	<0.05	0.07	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	0.05	0.96	< 0.05	0.58	8.5	< 0.05	< 0.05
g-BHC (Lindane)	mg/kg	0.05	NE	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	mg/kg	0.05	6	<0.05	<0.05	<0.05	<0.05	0.13	0.08	0.14	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	0.87	0.2	
Heptachlor epoxide	mg/kg	0.05	NE	<0.05	0.26	<0.05	0.24	< 0.05	0.23	0.51	0.07	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	0.06	0.11	1
Hexachlorobenzene	mg/kg	0.05	10	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	mg/kg	0.05	300	<0.05	<0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	mg/kg	0.1	20	<0.1	<0.1	<0.1	<0.1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
OPP																				
Azinphos methyl	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Boistar (Sulprofos)	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorpyrifos	mg/kg	0.2	160	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Demeton-O	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Diazinon	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorvos	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Disulfoton	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethion	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethoprop	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenitrothion	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Fensulfthion	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Fenthion	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Merphos	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl parathion	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Mevinphos (Phosdrin)	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Naled (Dibrom)	mg/kg	0.2	NE	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
Phorate	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Ronnel	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloronate	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-
Tokuthion	mg/kg	0.2	NE	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
 HA = Hand Auger Bore
 LOR = Limit of Reporting (= Method Detection Limit)
 NE = Guideline not established
^(b) Where results are derived from the summation of selected analytes, LOR can not be determined.
Nominated Investigation Level:
 (1) NEPM 1999 Health Based Investigation Levels - Residential A

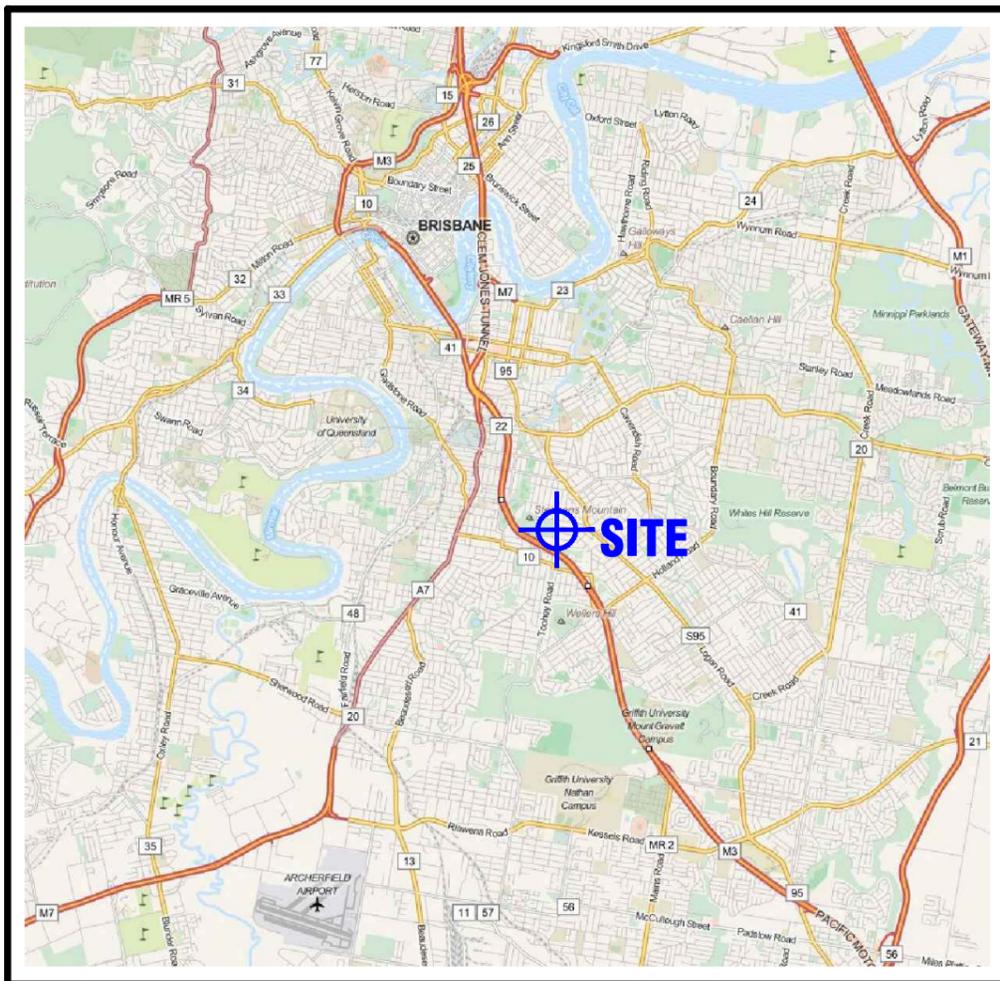
Results Values in highlighted cells exceed nominated IL (1)

Figures

**DRAFT - Phase 2 Contaminated Land Assessment
114 Newdegate Street Greenslopes**

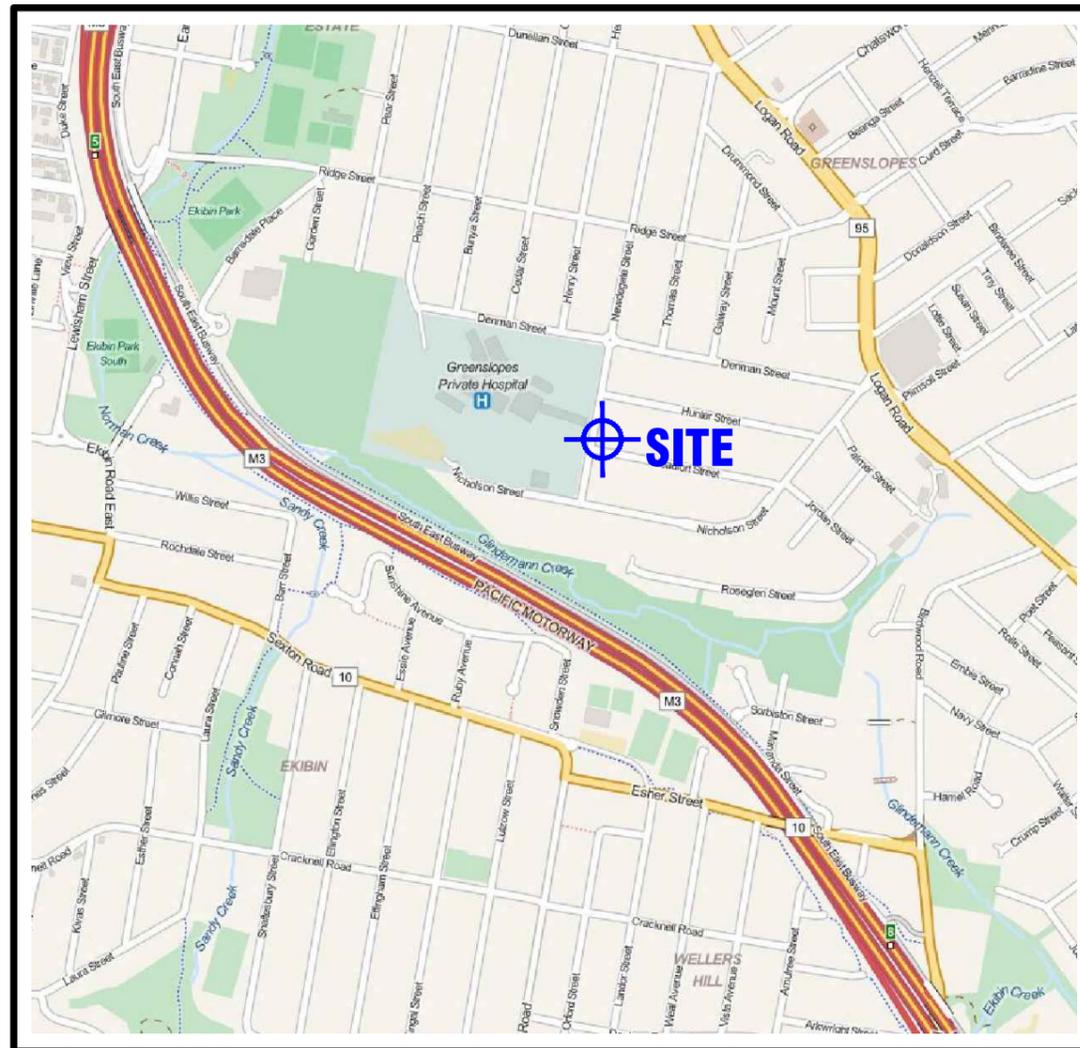


GENERAL AREA MAP



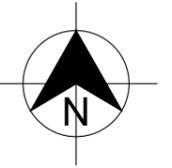
REGIONAL AREA MAP

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LOCAL AREA MAP

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Coffey Environments Australia Pty Ltd

Rev	Date	Revision Details	Drn
A	16.10.13	ISSUE	LZ

coffey Level 2, 12 Creek St
Brisbane QLD 4000
Ph: (07) 3002 0400
Fax: (07) 3002 0444

Client:
DEPARTMENT OF VETERAN AFFAIRS

Project:
PHASE 2 CONTAMINATED LAND ASSESSMENT

Location:
114 NEWDEGATE STREET
GREENSLOPES, QLD

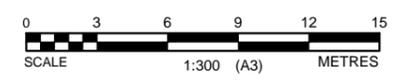
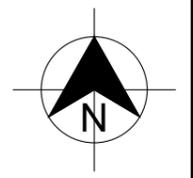
Drawing Title:
SITE LOCALITY PLAN

Drawn LZ	Date 16.10.13
Project - Drawing No. ENAUBRIS09222AA-D01	Figure No. 1
	Rev. A



LEGEND

● SAMPLE LOCATIONS



NOTE:
ALL LOCATIONS ARE APPROXIMATE.
DIMENSIONS IN METRES.

Coffey Environments Australia Pty Ltd ©

Rev	Date	Revision Details	Drn
A	16.10.13	ISSUE	LZ

coffey  Level 2, 12 Creek St
Brisbane QLD 4000
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Client:
DEPARTMENT OF VETERAN AFFAIRS

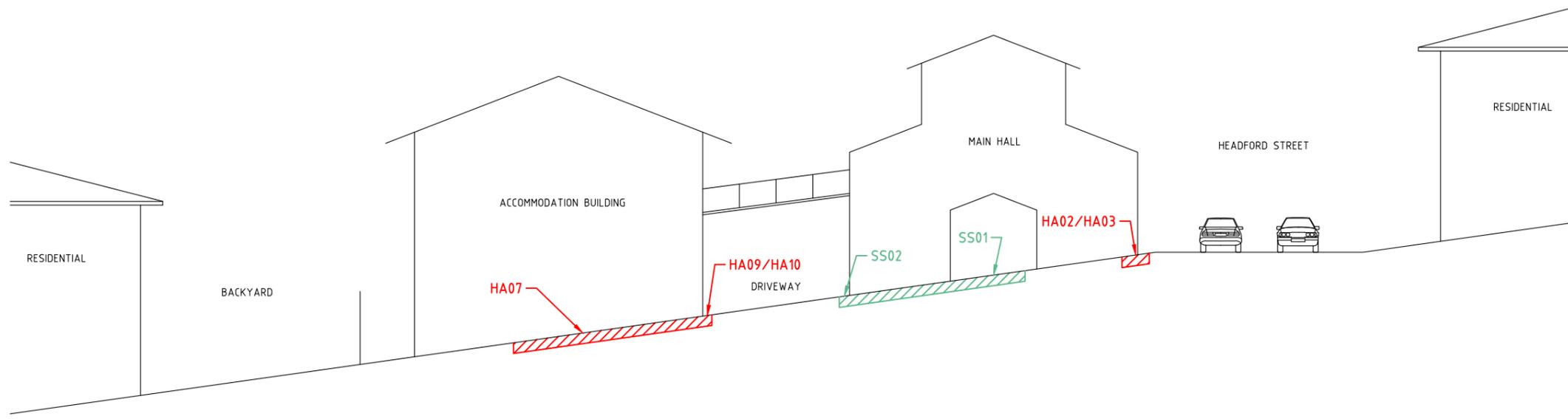
Project:
PHASE 2 CONTAMINATED LAND ASSESSMENT

Location:
114 NEWDEGATE STREET
GREENSLOPES, QLD

Drawing Title:
**SITE FEATURES/
SAMPLE LOCATION PLAN**

Drawn LZ	Date 16.10.13
Project - Drawing No. ENAUBRIS09222AA-D01	Figure No. 2 Rev. A

THIS IS ONE INTERPRETATION ONLY
OTHER INTERPRETATIONS ARE POSSIBLE.



LEGEND

-  IDENTIFIED ORGANOCHLORINE PESTICIDE CONTAMINATION
-  IDENTIFIED ZINC ABOVE EILs

THIS IS ONE INTERPRETATION ONLY
OTHER INTERPRETATIONS ARE POSSIBLE.

Coffey Environments Australia Pty Ltd

Rev	Date	Revision Details	Drm
A	16.10.13	ISSUE	LZ

coffey  Level 2, 12 Creek St
Brisbane QLD 4000
Ph: (07) 3002 0400
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Client:
DEPARTMENT OF VETERAN AFFAIRS

Project:
PHASE 2 CONTAMINATED LAND ASSESSMENT

Location:
114 NEWDEGATE STREET
GREENSLOPES, QLD

Drawing Title:
SITE CONCEPTUAL MODEL

Drawn LZ	Date 16.10.13
Project - Drawing No. ENAUBRIS09222AA-D01	Figure No. 3
	Rev. A

Appendix A

Laboratory Analytical Reports

**DRAFT - Phase 2 Contaminated Land Assessment
114 Newdegate Street Greenslopes**

Coffey Environments Pty Ltd QLD
Level 2, 12 Creek Street
Brisbane
QLD 4000

Attention: Matthew Chenery

Report 394105-S
Client Reference GREENSLOPES ENAUBRIS09222AA
Received Date Sep 25, 2013

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Client Sample ID			HA01_0.0-0.1	HA02_0.0-0.1	HA03_0.0-0.1	HA04_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			B13-Se19296	B13-Se19297	B13-Se19298	B13-Se19299
Date Sampled			Sep 25, 2013	Sep 25, 2013	Sep 25, 2013	Sep 25, 2013
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	31	51	140	4.7
4.4'-DDD	0.05	mg/kg	0.08	0.09	0.18	< 0.05
4.4'-DDE	0.05	mg/kg	0.27	0.23	0.57	< 0.05
4.4'-DDT	0.05	mg/kg	1.1	0.73	1.6	0.41
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	0.07	< 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	0.14	< 0.05	0.06	< 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	0.13	0.08	0.14	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	0.23	0.51	0.07
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchloroendate (surr.)	1	%	72	126	119	127
Tetrachloro-m-xylene (surr.)	1	%	51	131	117	105
% Moisture						
	0.1	%	8.2	5.7	6.9	11
Heavy Metals						
Arsenic	2	mg/kg	9.3	14	20	14
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	39	44	69	54
Copper	5	mg/kg	8.1	6.4	12	11
Lead	5	mg/kg	7.3	15	27	14
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	20	24	25	16
Zinc	5	mg/kg	64	44	92	26

Client Sample ID			HA05_0.0-0.1	HA06_0.0-0.1	HA07_0.0-0.1	HA08_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			B13-Se19300	B13-Se19301	B13-Se19302	B13-Se19303
Date Sampled			Sep 25, 2013	Sep 25, 2013	Sep 25, 2013	Sep 25, 2013
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	0.3	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	0.27	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	0.49	0.05	< 0.05
4.4'-DDT	0.05	mg/kg	0.12	4.2	0.26	0.13
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	0.26	< 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	0.82	28	0.08
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	0.70	< 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	0.96	< 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	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Dibutylchloroendate (surr.)	1	%	103	121	86	114
Tetrachloro-m-xylene (surr.)	1	%	107	138	138	119
Ion Exchange Properties						
pH (1:5 Aqueous extract)	0.1	units	-	-	5.8	-
% Moisture	0.1	%	9.3	2.1	11	6.6
Heavy Metals						
Cation Exchange Capacity	0.05	meq/100g	-	-	30	-
Arsenic	2	mg/kg	17	22	15	10
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	66	88	43	39
Copper	5	mg/kg	9.2	9.3	13	14
Lead	5	mg/kg	10	13	63	50
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	19	19	15	11
Zinc	5	mg/kg	45	41	140	72

Client Sample ID			HA09_0.0-0.2	HA10_0.0-0.2	HA11_0.0-0.1	SA01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			B13-Se19304	B13-Se19305	B13-Se19306	B13-Se19307
Date Sampled			Sep 25, 2013	Sep 25, 2013	Sep 25, 2013	Sep 25, 2013
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	0.3	5.4	42	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	0.06	-
4.4'-DDE	0.05	mg/kg	0.07	< 0.5	0.13	-
4.4'-DDT	0.05	mg/kg	0.22	< 0.05	0.16	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	0.06	86	< 0.05	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	55	420	0.39	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	0.93	6.5	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	0.58	8.5	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	0.87	0.20	-
Heptachlor epoxide	0.05	mg/kg	0.06	0.11	1.0	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Toxaphene	1	mg/kg	< 1	< 1	< 1	-
Dibutylchloroendate (surr.)	1	%	99	72	117	-
Tetrachloro-m-xylene (surr.)	1	%	100	51	86	-
pH (1:5 Aqueous extract)						
	0.1	units	-	-	6.3	-
% Moisture						
	0.1	%	12	3.4	22	-
Asbestos (% weight as per WA Guidelines)						
			-	-	-	See attached
Ion Exchange Properties						
Cation Exchange Capacity						
	0.05	meq/100g	-	-	25	-
Heavy Metals						
Arsenic	2	mg/kg	10	19	23	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	25	22	50	-
Copper	5	mg/kg	24	19	15	-
Lead	5	mg/kg	120	120	140	-
Mercury	0.1	mg/kg	0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	8.8	8.7	13	-
Zinc	5	mg/kg	380	330	450	-

Client Sample ID			SA04	SA06_0.0-0.1	SA06_0.3-0.4	SA07
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			B13-Se19308	B13-Se19309	B13-Se19310	B13-Se19311
Date Sampled			Sep 25, 2013	Sep 25, 2013	Sep 25, 2013	Sep 25, 2013
Test/Reference	LOR	Unit				
Asbestos (% weight as per WA Guidelines)						
			See attached	See attached	See attached	See attached

Client Sample ID			SA08	SA09	SA10	SA11_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			B13-Se19312	B13-Se19313	B13-Se19314	B13-Se19315
Date Sampled			Sep 25, 2013	Sep 25, 2013	Sep 25, 2013	Sep 25, 2013
Test/Reference	LOR	Unit				
Asbestos (% weight as per WA Guidelines)						
			See attached	See attached	See attached	See attached

Client Sample ID			SA13_0.0-0.1	QC01	QC02	A01_0.0-0.25
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			B13-Se19316	B13-Se19317	B13-Se19318	B13-Se19320
Date Sampled			Sep 25, 2013	Sep 25, 2013	Sep 25, 2013	Sep 25, 2013
Test/Reference	LOR	Unit				
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	-	0.06	-	-
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	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Dibutylchloroendate (surr.)	1	%	-	131	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	115	-	-
% Moisture						
	0.1	%	-	5.9	-	-

Client Sample ID			SA13_0.0-0.1	QC01	QC02	A01_0.0-0.25
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			B13-Se19316	B13-Se19317	B13-Se19318	B13-Se19320
Date Sampled			Sep 25, 2013	Sep 25, 2013	Sep 25, 2013	Sep 25, 2013
Test/Reference	LOR	Unit				
Asbestos			-	-	-	See attached
Asbestos (% weight as per WA Guidelines)			See attached	-	See attached	-
Heavy Metals						
Arsenic	2	mg/kg	-	21	-	-
Cadmium	0.4	mg/kg	-	< 0.4	-	-
Chromium	5	mg/kg	-	73	-	-
Copper	5	mg/kg	-	10	-	-
Lead	5	mg/kg	-	16	-	-
Mercury	0.1	mg/kg	-	< 0.1	-	-
Nickel	5	mg/kg	-	20	-	-
Zinc	5	mg/kg	-	54	-	-

Client Sample ID			A04_0.0-0.5	A06_0.2-0.42	A10_0.0-0.17
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			B13-Se19321	B13-Se19322	B13-Se19323
Date Sampled			Sep 25, 2013	Sep 25, 2013	Sep 25, 2013
Test/Reference	LOR	Unit			
Asbestos			See attached	See attached	See attached

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).

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides - Method: USEPA 8081 Organochlorine Pesticides	Melbourne	Sep 27, 2013	14 Day
pH (1:5 Aqueous extract) - Method: LM-LTM-INO-4000	Brisbane	Sep 27, 2013	7 Day
% Moisture - Method: Method 102 - ANZECC - % Moisture	Brisbane	Sep 26, 2013	14 Day
Ion Exchange Properties	Melbourne	Sep 27, 2013	
Metals M8 - Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury	Melbourne	Sep 27, 2013	28 Day

Company Name: Coffey Environments Pty Ltd QLD
Address: Level 2, 12 Creek Street
 Brisbane
 QLD 4000
Contract Job No.: GREENSLOPES ENAUBRIS09222AA

Order No.:
Report #: 394105
Phone: 07 3002 0400
Fax: 07 3002 0444

Received: Sep 25, 2013 4:30 PM
Due: Oct 3, 2013
Priority: 5 Day
Contact Name: Matthew Chenery

Eurofins | mgt Client Manager: Tammy Lakeland

Sample Detail

Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	% Moisture	Asbestos	Asbestos (% weight as per WA Guidelines)	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217													
Brisbane Laboratory - NATA Site # 20794													
Internal Laboratory													
\A01	0.0-0.1	Sep 25, 2013	Soil	B13-Se19296	X							X	X
\A02	0.0-0.1	Sep 25, 2013	Soil	B13-Se19297	X							X	X
\A03	0.0-0.1	Sep 25, 2013	Soil	B13-Se19298	X							X	X
\A04	0.0-0.1	Sep 25, 2013	Soil	B13-Se19299	X							X	X
\A05	0.0-0.1	Sep 25, 2013	Soil	B13-Se19300	X							X	X
\A06	0.0-0.1	Sep 25, 2013	Soil	B13-Se19301	X							X	X
\A07	0.0-0.1	Sep 25, 2013	Soil	B13-Se19302	X			X		X		X	X
\A08	0.0-0.1	Sep 25, 2013	Soil	B13-Se19303	X							X	X
\A09	0.0-0.2	Sep 25, 2013	Soil	B13-Se19304	X							X	X
\A10	0.0-0.2	Sep 25, 2013	Soil	B13-Se19305	X							X	X

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Sample Detail

						% Moisture	Asbestos	Asbestos (% weight as per WA Guidelines)	Cation Exchange Capacity	HOLD	pH (:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271									X			X	X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794						X				X	X			
Internal Laboratory							X	X						
11	0.0-0.1	Sep 25, 2013		Soil	B13-Se19306	X			X		X	X	X	
101		Sep 25, 2013		Soil	B13-Se19307			X						
104		Sep 25, 2013		Soil	B13-Se19308			X						
106	0.0-0.1	Sep 25, 2013		Soil	B13-Se19309			X						
106	0.3-0.4	Sep 25, 2013		Soil	B13-Se19310			X						
107		Sep 25, 2013		Soil	B13-Se19311			X						
108		Sep 25, 2013		Soil	B13-Se19312			X						
109		Sep 25, 2013		Soil	B13-Se19313			X						
110		Sep 25, 2013		Soil	B13-Se19314			X						
111	0.0-0.1	Sep 25, 2013		Soil	B13-Se19315			X						
113	0.0-0.1	Sep 25, 2013		Soil	B13-Se19316			X						

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					% Moisture	Asbestos	Asbestos (% weight as per WA Guidelines)	Cation Exchange Capacity	HOLD	pH (:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271								X			X	X	X
Sydney Laboratory - NATA Site # 18217													
Brisbane Laboratory - NATA Site # 20794					X				X	X			
Internal Laboratory						X	X						
C01		Sep 25, 2013		Soil	B13-Se19317	X					X	X	
C02		Sep 25, 2013		Soil	B13-Se19318		X						
CW01		Sep 25, 2013		Water	B13-Se19319						X		X
V1_00-0.25		Sep 25, 2013		Soil	B13-Se19320		X						
V4_00-0.5		Sep 25, 2013		Soil	B13-Se19321		X						
V6_02-0.42		Sep 25, 2013		Soil	B13-Se19322		X						
V0_00-0.17		Sep 25, 2013		Soil	B13-Se19323		X						
V01_0.3-0.35		Sep 25, 2013		Soil	B13-Se19324				X				
V05_0.4-0.5		Sep 25, 2013		Soil	B13-Se19325				X				
V09_0.4-0.47		Sep 25, 2013		Soil	B13-Se19326				X				
V10_0.3-0.35		Sep 25, 2013		Soil	B13-Se19327				X				

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Sample Detail

					% Moisture	Asbestos	Asbestos (% weight as per W/A Guidelines)	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271								X			X	X	X
Melbourne Laboratory - NATA Site # 18217													
Brisbane Laboratory - NATA Site # 20794					X				X	X			
Internal Laboratory						X	X						
A02		Sep 25, 2013		Soil					X				
A03		Sep 25, 2013		Soil					X				
A05		Sep 25, 2013		Soil					X				
A12	0.0-0.1	Sep 25, 2013		Soil					X				

Eurofins | mgt 1/21 Smallwood Place, Murrumbidgee, QLD, Australia, 4172
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Eurofins | mgt 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 PQLs are matrix dependant. Quoted PQLs 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 Acknowledgment.

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: 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 Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
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

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 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, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene 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 Arochlor 1260 in Matrix Spikes and LCS's.
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 RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Organochlorine Pesticides USEPA 8081 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	
Methoxychlor	mg/kg	< 0.05		0.05	Pass	
Toxaphene	mg/kg	< 1		1	Pass	
Method Blank						
Ion Exchange Properties Ion Exchange Properties						
Cation Exchange Capacity	meq/100g	< 0.05		0.05	Pass	
Method Blank						
Metals M8 USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury						
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						
Organochlorine Pesticides USEPA 8081 Organochlorine Pesticides						
4.4'-DDD	%	94		70-130	Pass	
4.4'-DDE	%	78		70-130	Pass	
4.4'-DDT	%	99		70-130	Pass	
a-BHC	%	112		70-130	Pass	
Aldrin	%	100		70-130	Pass	
b-BHC	%	126		70-130	Pass	
d-BHC	%	110		70-130	Pass	
Dieldrin	%	72		70-130	Pass	
Endosulfan I	%	86		70-130	Pass	
Endosulfan II	%	96		70-130	Pass	
Endosulfan sulphate	%	86		70-130	Pass	
Endrin	%	80		70-130	Pass	
Endrin aldehyde	%	89		70-130	Pass	
Endrin ketone	%	95		70-130	Pass	
g-BHC (Lindane)	%	114		70-130	Pass	
Heptachlor	%	85		70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor epoxide				%	93			70-130	Pass	
Hexachlorobenzene				%	102			70-130	Pass	
Methoxychlor				%	88			70-130	Pass	
LCS - % Recovery										
Metals M8 USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury										
Arsenic				%	108			80-120	Pass	
Cadmium				%	104			80-120	Pass	
Chromium				%	107			80-120	Pass	
Copper				%	107			80-120	Pass	
Lead				%	108			80-120	Pass	
Mercury				%	88			70-130	Pass	
Nickel				%	107			80-120	Pass	
Zinc				%	116			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Organochlorine Pesticides										
					Result 1					
4.4'-DDD	M13-Oc00765	NCP	%	88				70-130	Pass	
4.4'-DDE	M13-Oc00765	NCP	%	75				70-130	Pass	
4.4'-DDT	M13-Oc00765	NCP	%	97				70-130	Pass	
a-BHC	A13-Se20753	NCP	%	111				70-130	Pass	
Aldrin	M13-Oc00765	NCP	%	104				70-130	Pass	
b-BHC	A13-Se20753	NCP	%	119				70-130	Pass	
d-BHC	A13-Se20753	NCP	%	116				70-130	Pass	
Dieldrin	M13-Oc00765	NCP	%	71				70-130	Pass	
Endosulfan I	A13-Se20753	NCP	%	109				70-130	Pass	
Endosulfan II	A13-Se20753	NCP	%	111				70-130	Pass	
Endosulfan sulphate	A13-Se20753	NCP	%	111				70-130	Pass	
Endrin	A13-Se20753	NCP	%	116				70-130	Pass	
Endrin aldehyde	A13-Se20753	NCP	%	109				70-130	Pass	
Endrin ketone	A13-Se20753	NCP	%	127				70-130	Pass	
g-BHC (Lindane)	A13-Se20753	NCP	%	114				70-130	Pass	
Heptachlor	M13-Oc00765	NCP	%	86				70-130	Pass	
Heptachlor epoxide	A13-Se20753	NCP	%	113				70-130	Pass	
Hexachlorobenzene	A13-Se20753	NCP	%	99				70-130	Pass	
Methoxychlor	A13-Se20753	NCP	%	81				70-130	Pass	
Spike - % Recovery										
Metals M8										
					Result 1					
Arsenic	B13-Se19296	CP	%	97				75-125	Pass	
Cadmium	B13-Se19296	CP	%	101				75-125	Pass	
Copper	B13-Se19296	CP	%	101				75-125	Pass	
Lead	B13-Se19296	CP	%	92				75-125	Pass	
Mercury	B13-Se19296	CP	%	76				70-130	Pass	
Nickel	B13-Se19296	CP	%	77				75-125	Pass	
Zinc	M13-Se19944	NCP	%	119				75-125	Pass	
Spike - % Recovery										
Metals M8										
					Result 1					
Arsenic	B13-Se19306	CP	%	80				75-125	Pass	
Cadmium	B13-Se19306	CP	%	82				75-125	Pass	
Chromium	B13-Se19306	CP	%	77				75-125	Pass	
Copper	B13-Se19306	CP	%	110				75-125	Pass	
Nickel	B13-Se19306	CP	%	81				75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M13-Oc00765	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M13-Oc00765	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M13-Oc00765	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M13-Oc00765	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M13-Oc00765	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M13-Oc00765	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M13-Oc00765	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	A13-Se20753	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	A13-Se20753	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	B13-Se19296	CP	mg/kg	9.3	13	33	30%	Fail	Q15
Cadmium	B13-Se19296	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	B13-Se19296	CP	mg/kg	39	52	28	30%	Pass	
Copper	B13-Se19296	CP	mg/kg	8.1	12	36	30%	Fail	Q15
Lead	B13-Se19296	CP	mg/kg	7.3	8.6	16	30%	Pass	
Mercury	B13-Se19296	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	B13-Se19296	CP	mg/kg	20	40	65	30%	Fail	Q15
Zinc	B13-Se19296	CP	mg/kg	64	50	24	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	B13-Se19306	CP	mg/kg	23	25	8.0	30%	Pass	
Cadmium	B13-Se19306	CP	mg/kg	< 0.4	0.5	25	30%	Pass	
Chromium	B13-Se19306	CP	mg/kg	50	49	<1	30%	Pass	
Copper	B13-Se19306	CP	mg/kg	15	16	3.0	30%	Pass	
Lead	B13-Se19306	CP	mg/kg	140	150	11	30%	Pass	
Nickel	B13-Se19306	CP	mg/kg	13	15	17	30%	Pass	
Zinc	B13-Se19306	CP	mg/kg	450	460	3.0	30%	Pass	

Comments

Asbestos was analysed by ASET. NATA accreditation number 14484. Report reference ASET35364/38544/1-15

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Tammy Lakeland	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Richard Corner	Senior Analyst-Inorganic (QLD)
Stacey Jenkins	Senior Analyst-Organic (VIC)



**Michael Wright
National Technical 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

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



Our ref : ASET35364/ 38544 / 1 - 15
Your ref : 394105
NATA Accreditation No: 14484

3 October 2013

Eurofins | mgt
1/21 Smallwood Place
Murarrie QLD 4172

Attn: Ms Tammy Lakeland

Dear Tammy

Asbestos Identification

This report presents the results of fifteen samples, forwarded by Eurofins | mgt on 27 September 2013, for analysis for asbestos.

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

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

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia Guidelines for the Assessment Remediation and Management of Asbestos contaminated sites in Western Australia.

3. Results : **Sample No. 1. ASET35364 / 38544 / 1. SA01 - Se19307.**
Approx dimensions 11.6 cm x 11.2 cm x 10.4 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, paint flakes and shale.
No asbestos detected.

Sample No. 2. ASET35364 / 38544 / 2. SA04 - Se19308.
Approx dimensions 10.8 cm x 10.6 cm x 9.7 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and shale.
No asbestos detected.

Sample No. 3. ASET35364 / 38544 / 3. SA06 - 0.0 - 0.1 - Se19309.
Approx dimensions 10.6 cm x 10.2 cm x 9.6 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fibres[^], fragments of plaster, paint flakes, cement, coal like material and debris.
Chrysotile[^](Approximate weight = 0.006g) asbestos detected.
Approximate total asbestos weight in AF(Loose fibres) = 0.006g.
Approximate total weight of soil = 1178g.
Approximate w/w % = 0.0005%

Sample No. 4. ASET35364 / 38544 / 4. SA6 - 0.3 - 0.4 - Se19310.
Approx dimensions 10.8 cm x 10.3 cm x 9.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, paint flakes, glass, coal like material and debris.
No asbestos detected.



Sample No. 5. ASET35364 / 38544 / 5. SA07 - Se19311.

Approx dimensions 11.4 cm x 10.3 cm x 10.2 cm

The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster and shale.

No asbestos detected.

Sample No. 6. ASET35364 / 38544 / 6. SA08 - Se19312.

Approx dimensions 10.7 cm x 10.6 cm x 10.2 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.

No asbestos detected.

Sample No. 7. ASET35364 / 38544 / 7. SA09 - Se19313.

Approx dimensions 11.2 cm x 10.6 cm x 10.1 cm

The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of paint flakes, glass and plastic.

No asbestos detected.

Sample No. 8. ASET35364 / 38544 / 8. SA10 - Se19314.

Approx dimensions 10.5 cm x 10.3 cm x 10.2 cm

The sample consisted of a mixture of soil, stones, plant matter, fragments of plaster, paint flakes, cement, glass and debris.

No asbestos detected.

Sample No. 9. ASET35364 / 38544 / 9. SA11 - 0.0 - 0.1 - Se19315.

Approx dimensions 11.3 cm x 10.7 cm x 10.4 cm

The sample consisted of a mixture of clayish soil, stones, plant matter, fragments of plaster, cement, glass, wood and shale.

No asbestos detected.

Sample No. 10. ASET35364 / 38544 / 10. SA13 - 0.0 - 0.1 - Se19316.

Approx dimensions 11.4 cm x 10.7 cm x 10.5 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.

No asbestos detected.

Sample No. 11. ASET35364 / 38544 / 11. QC02 - Se19318.

Approx dimensions 12.4 cm x 11.3 cm x 10.7 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale.

No asbestos detected.

Sample No. 12. ASET35364 / 38544 / 12. A01 - 0.0 - 0.25 - Se19320.

Approx dimensions 4.2 cm x 3.3 cm x 0.4 cm

The sample consisted of a fragment of a fibre cement material.

Chrysotile asbestos detected.

Sample No. 13. ASET35364 / 38544 / 13. A04 - 0.0 - 0.5 - Se19321.

Approx dimensions 5.3 cm x 2.4 cm x 0.6 cm

The sample consisted of a fragment of a fibre cement material.

Chrysotile asbestos detected.

Sample No. 14. ASET35364 / 38544 / 14. A06 - 0.2 - 0.42 - Se19322.

Approx dimensions 6.7 cm x 1.2 cm x 0.45 cm

The sample consisted of a fragment of a fibre cement material.

Chrysotile asbestos detected.



Sample No. 15. ASET35364 / 38544 / 15. A10 - 0.0 - 0.17 - Se19323.

Approx dimensions 4.8 cm x 2.3 cm x 0.4 cm

The sample consisted of fragments of a fibre cement material.

Chrysotile asbestos detected.

Analysed and reported by,

A handwritten signature in black ink, appearing to read "Laxman Dias", is written over a light blue horizontal line.

**Laxman Dias. BSc
Analyst / Approved Identifier
Approved Signatory**



**This document is issued in accordance with
NATA's Accreditation requirements. Accredited
for compliance with ISO/IEC 17025.**

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation covers only the qualitative part of the results reported.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^denotes loose fibres detected in Soil/ Dust

It is assumed that all sample results indicating " No asbestos detected" have a reporting limit of less than 0.001 % w/w, unless the real value detected is indicated in the report.

Coffey Environments Pty Ltd QLD
Level 2, 12 Creek Street
Brisbane
QLD 4000

Attention: Matthew Chenery

Report 394105-W
 Client Reference GREENSLOPES ENAUBRIS09222AA
 Received Date Sep 25, 2013

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Client Sample ID			QCW01
Sample Matrix			Water
Eurofins mgt Sample No.			B13-Se19319
Date Sampled			Sep 25, 2013
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Chlordanes - Total	0.001	mg/L	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001
Dieldrin	0.0001	mg/L	0.0002
Endosulfan I	0.0001	mg/L	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001
Endrin	0.0001	mg/L	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001
Toxaphene	0.01	mg/L	< 0.01
Dibutylchloroendate (surr.)	1	%	92
Tetrachloro-m-xylene (surr.)	1	%	65
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001
Zinc (filtered)	0.001	mg/L	< 0.001

Description

Organochlorine Pesticides

- Method: USEPA 8081 Organochlorine Pesticides

Metals M8 filtered

- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury

Testing Site

Melbourne

Melbourne

Extracted

Sep 27, 2013

Sep 26, 2013

Holding Time

7 Day

28 Day

Company Name: Coffey Environments Pty Ltd QLD
Address: Level 2, 12 Creek Street
 Brisbane
 QLD 4000
Contract Job No.: GREENSLOPES ENAUBRIS09222AA

Order No.:
Report #: 394105
Phone: 07 3002 0400
Fax: 07 3002 0444

Received: Sep 25, 2013 4:30 PM
Due: Oct 3, 2013
Priority: 5 Day
Contact Name: Matthew Chenery

Eurofins | mgt Client Manager: Tammy Lakeland

Sample Detail

Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	% Moisture	Asbestos	Asbestos (% weight as per WA Guidelines)	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217													
Brisbane Laboratory - NATA Site # 20794													
Internal Laboratory													
\A01	0.0-0.1	Sep 25, 2013	Soil	B13-Se19296	X							X	X
\A02	0.0-0.1	Sep 25, 2013	Soil	B13-Se19297	X							X	X
\A03	0.0-0.1	Sep 25, 2013	Soil	B13-Se19298	X							X	X
\A04	0.0-0.1	Sep 25, 2013	Soil	B13-Se19299	X							X	X
\A05	0.0-0.1	Sep 25, 2013	Soil	B13-Se19300	X							X	X
\A06	0.0-0.1	Sep 25, 2013	Soil	B13-Se19301	X							X	X
\A07	0.0-0.1	Sep 25, 2013	Soil	B13-Se19302	X			X		X		X	X
\A08	0.0-0.1	Sep 25, 2013	Soil	B13-Se19303	X							X	X
\A09	0.0-0.2	Sep 25, 2013	Soil	B13-Se19304	X							X	X
\A10	0.0-0.2	Sep 25, 2013	Soil	B13-Se19305	X							X	X

Company Name: Coffey Environments Pty Ltd QLD
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 Brisbane
 QLD 4000
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Sample Detail

						% Moisture	Asbestos	Asbestos (% weight as per WA Guidelines)	Cation Exchange Capacity	HOLD	pH (:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted														
Melbourne Laboratory - NATA Site # 1254 & 14271									X			X	X	X
Perth Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794						X				X	X			
Internal Laboratory							X	X						
11	0.0-0.1	Sep 25, 2013		Soil	B13-Se19306	X			X		X	X	X	
101		Sep 25, 2013		Soil	B13-Se19307			X						
104		Sep 25, 2013		Soil	B13-Se19308			X						
106	0.0-0.1	Sep 25, 2013		Soil	B13-Se19309			X						
106	0.3-0.4	Sep 25, 2013		Soil	B13-Se19310			X						
107		Sep 25, 2013		Soil	B13-Se19311			X						
108		Sep 25, 2013		Soil	B13-Se19312			X						
109		Sep 25, 2013		Soil	B13-Se19313			X						
110		Sep 25, 2013		Soil	B13-Se19314			X						
111	0.0-0.1	Sep 25, 2013		Soil	B13-Se19315			X						
113	0.0-0.1	Sep 25, 2013		Soil	B13-Se19316			X						

Eurofins | mgt 1/21 Smallwood Place, Murrumbidgee, QLD, Australia, 4172
 ABN : 50 005 085 521 Telephone: +61 7 3902 4670 Facsimile: +61 7 3902 4646

Company Name: Coffey Environments Pty Ltd QLD
 Address: Level 2, 12 Creek Street
 Brisbane
 QLD 4000
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Sample Detail

Sample Detail					% Moisture	Asbestos	Asbestos (% weight as per WA Guidelines)	Cation Exchange Capacity	HOLD	pH (:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271								X			X	X	X
Sydney Laboratory - NATA Site # 18217													
Brisbane Laboratory - NATA Site # 20794					X				X	X			
Internal Laboratory						X	X						
C01	Sep 25, 2013		Soil	B13-Se19317	X						X	X	
C02	Sep 25, 2013		Soil	B13-Se19318			X						
CW01	Sep 25, 2013		Water	B13-Se19319							X		X
V1_00-0.25	Sep 25, 2013		Soil	B13-Se19320		X							
V4_00-0.5	Sep 25, 2013		Soil	B13-Se19321		X							
V6_02-0.42	Sep 25, 2013		Soil	B13-Se19322		X							
V0_00-0.17	Sep 25, 2013		Soil	B13-Se19323		X							
V01_0.3-0.35	Sep 25, 2013		Soil	B13-Se19324					X				
V05_0.4-0.5	Sep 25, 2013		Soil	B13-Se19325					X				
V09_0.4-0.47	Sep 25, 2013		Soil	B13-Se19326					X				
V10_0.3-0.35	Sep 25, 2013		Soil	B13-Se19327					X				

Sample ID	Date	Matrix	Analysis	% Moisture	Asbestos	Asbestos (% weight as per W/A Guidelines)	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
A02	Sep 25, 2013	Soil	B13-Se19328					X			X	X
A03	Sep 25, 2013	Soil	B13-Se19329					X			X	X
A05	Sep 25, 2013	Soil	B13-Se19330					X	X			
A12	0.0-0.1 Sep 25, 2013	Soil	B13-Se19331					X				

Company Name: Coffey Environments Pty Ltd QLD
Address: Level 2, 12 Creek Street
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Eurofins | mgt 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 PQLs are matrix dependant. Quoted PQLs 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 Acknowledgment.

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: 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 Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
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

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 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, Toxophene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxophene 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 Arochlor 1260 in Matrix Spikes and LCS's.
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 RPD's are calculated from raw analytical data thus it is possible to have two sets of data.

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Organochlorine Pesticides USEPA 8081 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	
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						
Metals M8 filtered USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury						
Arsenic (filtered)	mg/L	< 0.001		0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002		0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001		0.001	Pass	
Copper (filtered)	mg/L	< 0.001		0.001	Pass	
Lead (filtered)	mg/L	< 0.001		0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001		0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001		0.001	Pass	
Zinc (filtered)	mg/L	< 0.001		0.001	Pass	
LCS - % Recovery						
Organochlorine Pesticides USEPA 8081 Organochlorine Pesticides						
4.4'-DDD	%	125		70-130	Pass	
4.4'-DDE	%	120		70-130	Pass	
4.4'-DDT	%	114		70-130	Pass	
a-BHC	%	111		70-130	Pass	
Aldrin	%	120		70-130	Pass	
b-BHC	%	120		70-130	Pass	
d-BHC	%	120		70-130	Pass	
Dieldrin	%	121		70-130	Pass	
Endosulfan I	%	119		70-130	Pass	
Endosulfan II	%	121		70-130	Pass	
Endosulfan sulphate	%	125		70-130	Pass	
Endrin	%	126		70-130	Pass	
Endrin aldehyde	%	119		70-130	Pass	
Endrin ketone	%	121		70-130	Pass	
g-BHC (Lindane)	%	121		70-130	Pass	
Heptachlor	%	112		70-130	Pass	
Heptachlor epoxide	%	118		70-130	Pass	
Hexachlorobenzene	%	105		70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor			%	105			70-130	Pass	
LCS - % Recovery									
Metals M8 filtered USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury									
Arsenic (filtered)			%	112			80-120	Pass	
Cadmium (filtered)			%	97			80-120	Pass	
Chromium (filtered)			%	109			80-120	Pass	
Copper (filtered)			%	111			80-120	Pass	
Lead (filtered)			%	103			80-120	Pass	
Mercury (filtered)			%	115			70-130	Pass	
Nickel (filtered)			%	110			80-120	Pass	
Zinc (filtered)			%	104			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides									
				Result 1					
4.4'-DDD	M13-Se19368	NCP	%	119			70-130	Pass	
4.4'-DDE	M13-Se19368	NCP	%	106			70-130	Pass	
4.4'-DDT	M13-Se19368	NCP	%	93			70-130	Pass	
a-BHC	M13-Se19368	NCP	%	105			70-130	Pass	
Aldrin	M13-Se19368	NCP	%	116			70-130	Pass	
b-BHC	M13-Se19368	NCP	%	124			70-130	Pass	
d-BHC	M13-Se19368	NCP	%	118			70-130	Pass	
Dieldrin	M13-Se19368	NCP	%	104			70-130	Pass	
Endosulfan I	M13-Se19368	NCP	%	95			70-130	Pass	
Endosulfan II	M13-Se19368	NCP	%	107			70-130	Pass	
Endosulfan sulphate	M13-Se19368	NCP	%	113			70-130	Pass	
Endrin	M13-Se19368	NCP	%	122			70-130	Pass	
Endrin aldehyde	M13-Se19368	NCP	%	84			70-130	Pass	
Endrin ketone	M13-Se19368	NCP	%	109			70-130	Pass	
g-BHC (Lindane)	M13-Se19368	NCP	%	129			70-130	Pass	
Heptachlor	M13-Se19368	NCP	%	128			70-130	Pass	
Heptachlor epoxide	M13-Se19368	NCP	%	98			70-130	Pass	
Hexachlorobenzene	M13-Se19368	NCP	%	106			70-130	Pass	
Methoxychlor	M13-Se19368	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Metals M8 filtered									
				Result 1					
Arsenic (filtered)	M13-Se20980	NCP	%	82			70-130	Pass	
Cadmium (filtered)	M13-Se19694	NCP	%	86			70-130	Pass	
Chromium (filtered)	M13-Se19694	NCP	%	89			70-130	Pass	
Copper (filtered)	M13-Se19694	NCP	%	87			70-130	Pass	
Lead (filtered)	M13-Se19694	NCP	%	87			70-130	Pass	
Mercury (filtered)	B13-Se19319	CP	%	120			70-130	Pass	
Nickel (filtered)	M13-Se19694	NCP	%	87			70-130	Pass	
Zinc (filtered)	M13-Se19694	NCP	%	89			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Metals M8 filtered									
				Result 1	Result 2	RPD			
Arsenic (filtered)	M13-Se20980	NCP	mg/L	0.0053	0.0050	6.0	30%	Pass	
Cadmium (filtered)	M13-Se20980	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M13-Se20980	NCP	mg/L	0.017	0.012	38	30%	Fail	Q15
Copper (filtered)	M13-Se20980	NCP	mg/L	0.0037	0.0037	<1	30%	Pass	
Lead (filtered)	M13-Se20980	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	B13-Se19319	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M13-Se20980	NCP	mg/L	0.0079	0.0079	<1	30%	Pass	

Duplicate										
Metals M8 filtered					Result 1	Result 2	RPD			
Zinc (filtered)	M13-Se20980	NCP	mg/L		0.0055	0.0052	6.0	30%	Pass	

Comments
Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Organic samples had Teflon liners	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Tammy Lakeland	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Stacey Jenkins	Senior Analyst-Organic (VIC)


Michael Wright
National Technical 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

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

Company Name: Coffey Environments Pty Ltd QLD
Address: Level 2, 12 Creek Street
 Brisbane
 QLD 4000
Client Job No.: GREENSLOPES ENAUBRIS09222AA

Order No.:
Report #: 394105
Phone: 07 3002 0400
Fax: 07 3002 0444

Received: Sep 25, 2013 4:30 PM
Due: Oct 3, 2013
Priority: 5 Day
Contact Name: Matthew Chenery

Eurofins | mgt Client Manager: Tammy Lakeland

Sample Detail

Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	% Moisture	Asbestos	Asbestos (% weight as per W/A Guidelines)	Cation Exchange Capacity	HOLD	pH (:15 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217													
Brisbane Laboratory - NATA Site # 20794													
Internal Laboratory													
A01	0.0-0.1	Sep 25, 2013	Soil	B13-Se19296	X							X	X
A02	0.0-0.1	Sep 25, 2013	Soil	B13-Se19297	X							X	X
A03	0.0-0.1	Sep 25, 2013	Soil	B13-Se19298	X							X	X
A04	0.0-0.1	Sep 25, 2013	Soil	B13-Se19299	X							X	X
A05	0.0-0.1	Sep 25, 2013	Soil	B13-Se19300	X							X	X
A06	0.0-0.1	Sep 25, 2013	Soil	B13-Se19301	X							X	X
A07	0.0-0.1	Sep 25, 2013	Soil	B13-Se19302	X			X		X		X	X
A08	0.0-0.1	Sep 25, 2013	Soil	B13-Se19303	X							X	X
A09	0.0-0.2	Sep 25, 2013	Soil	B13-Se19304	X							X	X
A10	0.0-0.2	Sep 25, 2013	Soil	B13-Se19305	X							X	X

Company Name: Coffey Environments Pty Ltd QLD
Address: Level 2, 12 Creek Street
 Brisbane
 QLD 4000
Client Job No.: GREENSLOPES ENAUBRIS09222AA

Order No.:
Report #: 394105
Phone: 07 3002 0400
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Received: Sep 25, 2013 4:30 PM
Due: Oct 3, 2013
Priority: 5 Day
Contact Name: Matthew Chenery

Eurofins | mgt Client Manager: Tammy Lakeland

Sample Detail

					% Moisture	Asbestos	Asbestos (% weight as per W/A Guidelines)	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271								X			X	X	X
Perth Laboratory - NATA Site # 18217													
Brisbane Laboratory - NATA Site # 20794					X				X	X			
Internal Laboratory						X	X						
V11	0.0-0.1	Sep 25, 2013		Soil	B13-Se19306	X		X		X	X	X	
V01		Sep 25, 2013		Soil	B13-Se19307			X					
V04		Sep 25, 2013		Soil	B13-Se19308			X					
V06	0.0-0.1	Sep 25, 2013		Soil	B13-Se19309			X					
V06	0.3-0.4	Sep 25, 2013		Soil	B13-Se19310			X					
V07		Sep 25, 2013		Soil	B13-Se19311			X					
V08		Sep 25, 2013		Soil	B13-Se19312			X					
V09		Sep 25, 2013		Soil	B13-Se19313			X					
V10		Sep 25, 2013		Soil	B13-Se19314			X					
V11	0.0-0.1	Sep 25, 2013		Soil	B13-Se19315			X					
V13	0.0-0.1	Sep 25, 2013		Soil	B13-Se19316			X					

Company Name: Coffey Environments Pty Ltd QLD
Address: Level 2, 12 Creek Street
 Brisbane
 QLD 4000
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Sample Detail

					% Moisture	Asbestos	Asbestos (% weight as per W/A Guidelines)	Cation Exchange Capacity	HOLD	pH (:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271								X			X	X	X
Sydney Laboratory - NATA Site # 18217													
Brisbane Laboratory - NATA Site # 20794					X				X	X			
Internal Laboratory						X	X						
C01	Sep 25, 2013		Soil	B13-Se19317	X						X	X	
C02	Sep 25, 2013		Soil	B13-Se19318			X						
CW01	Sep 25, 2013		Water	B13-Se19319							X		X
V1_00-0.25	Sep 25, 2013		Soil	B13-Se19320		X							
V4_00-0.5	Sep 25, 2013		Soil	B13-Se19321		X							
V6_02-0.42	Sep 25, 2013		Soil	B13-Se19322		X							
V0_00-0.17	Sep 25, 2013		Soil	B13-Se19323		X							
V01_0.3-0.35	Sep 25, 2013		Soil	B13-Se19324					X				
V05_0.4-0.5	Sep 25, 2013		Soil	B13-Se19325					X				
V09_0.4-0.47	Sep 25, 2013		Soil	B13-Se19326					X				
V10_0.3-0.35	Sep 25, 2013		Soil	B13-Se19327					X				

e.mail : EnviroSales@eurofins.com.au
 web : www.eurofins.com.au
 085 521

Company Name: Coffey Environments Pty Ltd QLD
Address: Level 2, 12 Creek Street
 Brisbane
 QLD 4000
Client Job No.: GREENSLOPES ENAUBRIS09222AA

Order No.:
Report #: 394105
Phone: 07 3002 0400
Fax: 07 3002 0444

Received: Sep 25, 2013 4:30 PM
Due: Oct 3, 2013
Priority: 5 Day
Contact Name: Matthew Chenery

Eurofins | mgt Client Manager: Tammy Lakeland

Sample Detail

					% Moisture	Asbestos	Asbestos (% weight as per W/A Guidelines)	Cation Exchange Capacity	HOLD	pH (1:5 Aqueous extract)	Organochlorine Pesticides	Metals M8	Metals M8 filtered
Laboratory where analysis is conducted													
Melbourne Laboratory - NATA Site # 1254 & 14271								X			X	X	X
Melbourne Laboratory - NATA Site # 18217													
Brisbane Laboratory - NATA Site # 20794					X				X	X			
Internal Laboratory						X	X						
A02		Sep 25, 2013		Soil					X				
A03		Sep 25, 2013		Soil					X				
A05		Sep 25, 2013		Soil					X				
A12	0.0-0.1	Sep 25, 2013		Soil					X				

web : www.eurofins.com.au
 e.mail : EnviroSales@eurofins.com.au
 085 521

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

099513



QLD: Level 2, 12 Creek St, Brisbane QLD 4000 Tel (07) 3002 0400 Fax (07) 3002 0444
 47 Doggett St, Newstead QLD 4006 Tel (07) 3608 2500 Fax (07) 3652 2805
 SA: Worldpark, Level 1, 33 Richmond Rd, Keswick SA 5035 Tel (08) 8375 4400 Fax (08) 8375 4499
 TAS: Coffey Business Centre, 2 Melville St, Hobart TAS 7000 Tel (03) 6108 0100 Fax (03) 6108 0199
 VIC: 126 Trenerry Cres, Abbotsford VIC 3067 Tel (03) 9473 1400 Fax (03) 9473 1450
 Level 1, 23 West Fyans St, Newtown VIC 3220 Tel (03) 5215 4600 Fax (03) 5224 1368
 WA: 61 Duke St, Albany WA 6330 Tel (08) 9892 6400 Fax (08) 9892 6444
 Suite 2, 53 Burswood Rd, Burswood WA 6100 Tel (08) 9355 7100 Fax (08) 9355 7111
 Unit 6/7, 31 Dunn Bay Rd, Dunsborough WA 6281 Tel (08) 9756 9500 Fax (08) 9756 9501

ACT: 17 Torrens St, Braddon ACT 2612 Tel (02) 6162 2622 Fax (02) 6162 0494
 NSW: Level 1, 3 Rider Blvd, Rhodes NSW 2138 Tel (02) 8083 1600 Fax (02) 8765 0762
 Lot 101, 19 Warabrook Blvd, Warabrook NSW 2304 Tel (02) 4016 2300 Fax (02) 4016 2380
 118 Auburn St, Wollongong NSW 2500 Tel (02) 4201 1400 Fax (02) 4201 1401
 Level 7, 80 Mitchell St, Darwin NT 0800 Tel (08) 8901 1200 Fax (08) 8901 1299

Project No: ENSA03109111A Task No: FIELDWORK
 Project Name: GREENSCOFFY Laboratory: MLT
 Samplers Name: NEO CONSULT Project Manager: MATTHEW CHESNEY

Special Instructions: 8 Priority Metals

Lab. No.	Sample ID	Sample Location	Sample Depth	Sample Date	Time	Matrix (Soil... etc)	Container Type & Preservative*	T-A-T (Specify)	NOTES
HA01-00-01	HA01		0.0-0.1	15/9/13	AM	Soil	1G 4.0	STO	
HA02-00-01	HA02		0.5-0.55						
HA03-00-01	HA03		0.0-0.1						
HA04-00-01	HA04		0.0-0.1						
HA05-00-01	HA05		0.0-0.1						
HA06-00-01	HA06		0.4-0.5		PM				
HA07-00-01	HA07		0.0-0.1						
HA08-00-01	HA08		0.0-0.1						
HA09-00-01	HA09		0.0-0.2						
HA10-00-01	HA10		0.4-0.47						
HA11-00-01	HA11		0.0-0.2						
HA12-00-01	HA12		0.5-0.55						
HA13-00-01	HA13		0.0-0.1						

Analysis Request Section

METALS (Specify)	OCS (Specify)	LOGS (Specify)	PH	HOLD	NOTES
✓	✓	✓	✓	✓	

RECEIVED BY: Signature: [Signature] Date: 25.9.13
 Company: EUROFINSTRAT Time: 4:30PM

RECEIVED BY: Signature: [Signature] Date: _____
 Company: _____ Time: _____

Sample Receipt Advice: (Lab Use Only)
 All Samples Received in Good Condition
 All Documentation is in Proper Order
 Samples Received Properly Chilled

Lab. Ref/Batch No. 394105

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

099515



ACT: 17 Torrens St, Braddon ACT 2612 Tel (02) 6162 2622 Fax (02) 6162 0494
 Level 1, 3 Rider Blvd, Rhodes NSW 2138 Tel (02) 8083 1600 Fax (02) 8765 0762
NSW: Lot 101, 19 Warabrook Blvd, Warabrook NSW 2304 Tel (02) 4016 2300 Fax (02) 4016 2380
 118 Auburn St, Wollongong NSW 2500 Tel (02) 4201 1400 Fax (02) 4201 1401
 Level 7, 80 Mitchell St, Darwin NT 0800 Tel (08) 8901 1200 Fax (08) 8901 1299
QLD: Level 2/12 Creek St, Brisbane QLD 4000 Tel (07) 3002 0400 Fax (07) 3002 0444
 47 Doggett St, Newstead QLD 4006 Tel (07) 3608 2500 Fax (07) 3652 2805
SA: Worldpark, Level 1, 33 Richmond Rd, Keswick SA 5035 Tel (08) 8375 4400 Fax (08) 8375 4499
TAS: Coffey Business Centre, 2 Melville St, Hobart TAS 7000 Tel (03) 6108 0100 Fax (03) 6108 0199
VIC: 126 Trenerry Cres, Abbotsford VIC 3067 Tel (03) 9473 1400 Fax (03) 9473 1450
 Level 1, 23 West Fyans St, Newtown VIC 3220 Tel (03) 5215 4600 Fax (03) 5224 1368
WA: 61 Duke St, Albany WA 6330 Tel (08) 9892 6400 Fax (08) 9892 6444
 Suite 2, 53 Burswood Rd, Burswood WA 6100 Tel (08) 9355 7100 Fax (08) 9355 7111
 Unit 6/7, 31 Dunn Bay Rd, Dunsborough WA 6281 Tel (08) 9756 9500 Fax (08) 9756 9501

Project No: ENVA0601502121AA Task No: FIELD WORK K
Project Name: DVA GREENSCOPES Laboratory: MCT
Samplers Name: NED CONWAY Project Manager: MATTHEW CHEWELLY
Special Instructions:

Lab. No.	Sample ID	Sample Location	Sample Depth	Sample Date	Time	Matrix (Soil... etc)	Container Type & Preservative*	T-A-T (Specify)	NOTES
SA01	SA01	SA01	0.0-0.1	15/9/13	AM	S.1	Plastic Bag	STD	
SA02	SA02	SA02	0.0-0.1						
SA03	SA03	SA03	0.0-0.1						
SA04	SA04	SA04	0.0-0.1						
SA05	SA05	SA05	0.0-0.1						
SA06	SA06	SA06	0.0-0.1						
SA06-0.3-0.4			0.3-0.4						
SA07	SA07	SA07	0.0-0.1		PM				
SA08	SA08	SA08	0.0-0.1						
SA09	SA09	SA09	0.0-0.1						
SA10	SA10	SA10	0.0-0.1						
SA11	SA11	SA11	0.0-0.1						
SA12	SA12	SA12	0.0-0.1						
SA13	SA13	SA13	0.0-0.1						

Analysis Request Section

BTEX / TPH / Pb
 METALS (Specify)
 PAHs / PHENOLS
 OCS / OPS
 Asbestos
 Lead in Paint
 Absorbance WA
 Heavy

RELIQUISHED BY: [Signature] Date: 15/9/13
RECEIVED BY: [Signature] Date: 25-9-13
 Signature: [Signature] Company: EUROFINSMAT
 Signature: [Signature] Company: [Signature]
 Signature: [Signature] Company: [Signature]

Sample Receipt Advice: (Lab Use Only)
 All Samples Received in Good Condition ...
 All Documentation is in Proper Order
 Samples Received Properly Chilled
 Lab. Ref/Batch No. 394105

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

099516



QLD: Level 24, 12 Creek St, Brisbane QLD 4000 Tel (07) 3002 0400 Fax (07) 3002 0444
 47 Doggett St, Newstead QLD 4006 Tel (07) 3608 2500 Fax (07) 3652 2805
 SA: Worldpark, Level 1, 33 Richmond Rd, Keswick SA 5035 Tel (08) 8375 4400 Fax (08) 8375 4499
 TAS: Coffey Business Centre, 2 Melville St, Hobart TAS 7000 Tel (03) 6108 0100 Fax (03) 6108 0199
 VIC: 126 Trenerry Cres, Abbotsford VIC 3067 Tel (03) 9473 1400 Fax (03) 9473 1450
 Level 1, 23 West Fyans St, Newtown VIC 3220 Tel (03) 5215 4600 Fax (03) 5224 1368
 WA: 61 Duke St, Albany WA 6330 Tel (08) 9992 6400 Fax (08) 9992 6444
 Suite 2, 53 Burswood Rd, Burswood WA 6100 Tel (08) 9355 7100 Fax (08) 9355 7111
 Unit 6/7, 31 Dunn Bay Rd, Dunsborough WA 6281 Tel (08) 9756 9500 Fax (08) 9756 9501

Project No: EWAS090923A Task No: Fieldwork
 Project Name: DVA Greenhouses Laboratory: MGT
 Samplers Name: Ned Connolly Project Manager: Matthew Chung
 Special Instructions: - 8 Heavy Metals - Send QCOA to EnviroLab

Lab. No.	Sample ID	Sample Location	Sample Depth	Sample Date	Time	Matrix (Soil... etc)	Container Type & Preservative*	T-A-T (Specify)	NOTES
	QCO1	-	-	15/9/13	AM	Soil	IG, 10	STD	Hold
	QCO1A	-	-						Abbeles ID
	QCO2	-	-				1 Plastic Bag		Abbeles ID
	QCO3	-	-			Water	24, 1, 1N		Abbeles ID
	A01_0.0-0.15	A01	0.0-0.15			Soil	Plastic Bag		Abbeles ID
	A04_0.0-0.15	A04	0.0-0.15						Abbeles ID
	A06_0.0-0.47	A06	0.0-0.17						Abbeles ID
	A10_0.0-0.17	A10	0.0-0.17						Abbeles ID
	A07_0.0-0.17	A07	0.0-0.17						Abbeles ID

RELINQUISHED BY: [Signature] Date: 15/9/13
RECEIVED BY: [Signature] Date: 25.9.13
 Signature: _____ Company: EUROFINS-MAT Time: 4:30pm
 Signature: _____ Company: _____ Time: _____
 Signature: _____ Company: _____ Time: _____
 Signature: _____ Company: _____ Time: _____

Sample Receipt Advice: (Lab Use Only)
 All Samples Received in Good Condition
 All Documentation is in Proper Order
 Samples Received Properly Chilled
 Lab. Ref/Batch No. 394105

Sample Receipt Advice

Company name: **Coffey Environments Pty Ltd QLD**
Contact name: **Matthew Chenery**
Client job number: **GREENSLOPES ENAUBRIS09222AA**
COC number: **099513,099515,099516**
Turn around time: **5 Day**
Date/Time received: **Sep 25, 2013 4:30 PM**
Eurofins | mgt reference: **394105**

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 : 2.3 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.
 - Organic samples had Teflon liners.
 - Sample containers for volatile analysis received with zero headspace.
 - Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Sample QC01A sent to Envirolab for testing. Asbestos samples sent to ASET for Asbestos WA testing.

Contact notes

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

Tammy Lakeland on Phone : (+61) (3) 8564 5000 or by e.mail:
TammyLakeland@eurofins.com.au

Results will be delivered electronically via e.mail to Matthew Chenery - matthew_chenery@coffey.com.

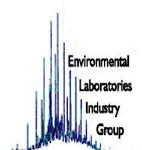
Eurofins | mgt Sample Receipt



Environmental Laboratory
Air Analysis
Water Analysis
Soil Contamination Analysis

NATA Accreditation
Stack Emission Sampling & Analysis
Trade Waste Sampling & Analysis
Groundwater Sampling & Analysis

38 Years of Environmental Analysis & Experience



CERTIFICATE OF ANALYSIS

98121

Client:

Coffey Environment Brisbane
Level 2, 12 Creek St
Brisbane
QLD 4000

Attention: Matthew Chennery

Sample log in details:

Your Reference:	<u>ENAUBRIS09222AU</u>
No. of samples:	1 Soil
Date samples received / completed instructions received	27/09/2013 / 27/09/2013

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data. Samples were analysed as received from the client. Results relate specifically to the samples as received. Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	4/10/13 / 2/10/13
Date of Preliminary Report:	None Issued

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

Results Approved By:



Jacinta Hurst
Laboratory Manager

Organochlorine Pesticides in soil	UNITS	98121-1
Our Reference:	-----	QC01A
Your Reference	-----	25/09/2013
Date Sampled		Soil
Type of sample		
Date extracted	-	30/09/2013
Date analysed	-	30/09/2013
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Surrogate TCMX	%	91

Acid Extractable metals in soil		
Our Reference:	UNITS	98121-1
Your Reference	-----	QC01A
Date Sampled	-----	25/09/2013
Type of sample		Soil
Date digested	-	30/09/2013
Date analysed	-	01/10/2013
Arsenic	mg/kg	11
Cadmium	mg/kg	<0.4
Chromium	mg/kg	90
Copper	mg/kg	12
Lead	mg/kg	20
Mercury	mg/kg	0.2
Nickel	mg/kg	27
Zinc	mg/kg	74

Moisture		
Our Reference:	UNITS	98121-1
Your Reference	-----	QC01A
Date Sampled	-----	25/09/2013
Type of sample		Soil
Date prepared	-	30/09/2013
Date analysed	-	1/10/2013
Moisture	%	11

Method ID	Methodology Summary
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

Client Reference: ENAUBRIS09222AU

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			30/09/2013	[NT]	[NT]	LCS-2	30/09/2013
Date analysed	-			30/09/2013	[NT]	[NT]	LCS-2	30/09/2013
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	71%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	70%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	68%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	68%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	65%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	72%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	66%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	61%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	80%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-2	68%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	91	[NT]	[NT]	LCS-2	91%

Client Reference: ENAUBRIS09222AU

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			30/09/2013	[NT]	[NT]	LCS-1	30/09/2013
Date analysed	-			30/09/2013	[NT]	[NT]	LCS-1	01/10/2013
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-1	101%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-1	104%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	104%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	103%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	100%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-1	87%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	104%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	103%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank				
Moisture								
Date prepared	-			[NT]				
Date analysed	-			[NT]				
Moisture	%	0.1	Inorg-008	[NT]				

Report Comments:

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

INS: Insufficient sample for this test PQL: Practical Quantitation Limit NT: Not tested
 NA: Test not required RPD: Relative Percent Difference NA: Test not required
 <: Less than >: Greater than LCS: Laboratory Control Sample

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

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

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

099516



ACT: 17 Torrens St, Braddon ACT 2612 Tel (02) 6162 2622 Fax (02) 6162 0494
NSW: Level 1, 3 Rider Blvd, Rhodes NSW 2138 Tel (02) 8083 1600 Fax (02) 8765 0762
 Lot 101, 19 Warabrook Blvd, Warabrook NSW 2304 Tel (02) 4016 2300 Fax (02) 4016 2380
 118 Auburn St, Wollongong NSW 2500 Tel (02) 4201 1400 Fax (02) 4201 1401
NT: Level 7, 80 Mitchell St, Darwin NT 0800 Tel (08) 8901 1200 Fax (08) 8901 1299

QLD: Level 2/ 12 Creek St, Brisbane QLD 4000 Tel (07) 3002 0400 Fax (07) 3002 0444
 47 Doggett St, Newstead QLD 4006 Tel (07) 3608 2500 Fax (07) 3852 2805
SA: Worldpark, Level 1, 33 Richmond Rd, Keswick SA 5035 Tel (08) 8375 4400 Fax (08) 8375 4499
TAS: Coffey Business Centre, 2 Melville St, Hobart TAS 7000 Tel (03) 6108 0100 Fax (03) 6108 0199
VIC: 126 Trenerry Cres, Abbotstord VIC 3067 Tel (03) 9473 1400 Fax (03) 9473 1450
 Level 1, 23 West Fyans St, Newtown VIC 3220 Tel (03) 5215 4600 Fax (03) 5224 1368
WA: 61 Duke St, Albany WA 6330 Tel (08) 9892 6400 Fax (08) 9892 6444
 Suite 2, 53 Burswood Rd, Burswood WA 6100 Tel (08) 9355 7100 Fax (08) 9355 7111
 Unit 6/7, 31 Dunn Bay Rd, Dunsborough WA 6281 Tel (08) 9756 9500 Fax (08) 9756 9501

Project No: EWAUSEB0922 AA
Task No: Fieldwork
Project Name: DVA Greenslopes
Laboratory: MGT
Samplers Name: Ned Connolly
Project Manager: Matthew Chung
Special Instructions:
 - 8 Priority Metals
 - Send QCOA to EnviroLab

Analysis Request Section

METALS (Specify) Priority
 OCs PCBs
 Asbestos ID
 Asbestos WA
 Holo

Lab. No.	Sample ID	Sample Location	Sample Depth	Sample Date	Time	Matrix (Soil ... etc)	Container Type & Preservative*	T-A-T (Specify)	NOTES
	QCO1	-	-	25-9-13	AM	Soil	16 L	STD	
	QCO2	-	-				Plastic Bag		
	QCO1	-	-		PM	Water	2L, 1L, 1L		
	A01_0.0-0.25	A01	0.0-0.25			Soil	Plastic Bag		
	A04_0.0-0.15	A04	0.0-0.15						
	A06_0.2-0.47	A06	0.2-0.47						
	A10_0.0-0.17	A10	0.0-0.17						

EnviroLab
 26-9-13
 8am
 EnviroLab Services
 12 Ashley St
 Chatswood NSW 2067
 Ph: (02) 9970 6200
Job No: 98121
Date Received: 27/09
Time Received: 8:30
Received by: [Signature]
Temp: Cool/Ambient
Condition: Good

RELINQUISHED BY:
 Signature: [Signature]
 Date: 25/9/13
 Company: [Signature]

RECEIVED BY:
 Signature: [Signature]
 Date: 25-9-13
 Company: EUROFINNS-MAT
 Signature: [Signature]
 Date: 26/9/13
 Company: ENVIROLAB
 Time: 10:30 AM

Sample Receipt Advice (Lab Use Only)
 All Samples Received in Good Condition ...
 All Documentation is in Proper Order
 Samples Received Properly Chilled
 Lab. Ref/Batch No.

* Container Type & Preservation Codes: P - Plastic, G - Solvent Washed Acid Rinsed Glass Bottle, V - Vial, N - Nitric Acid Preserved
 C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice

Appendix B

Soil Logs

**DRAFT - Phase 2 Contaminated Land Assessment
114 Newdegate Street Greenslopes**

Date: 02/10/2013

Job #: CER1309271256.1

Certificate of Analysis

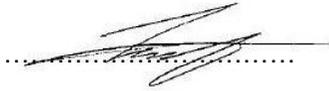
Laboratory Report

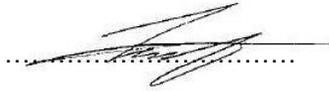
Client:	Coffey	Sampled By:	Ned Connolly
Client Contact:	Matthew Chenery	# of Samples Submitted:	2
Telephone:	(07) 7002 0400	Sampling Date:	26/09/13
Email:	matthew.chenery@coffey.com	Date Received:	27/09/13
Project:	ENAUBRIS09111AA	Identification Date:	01/10/13
Site Location:	DVA Greenslopes		

Scope Microscope examination for the presence of asbestos

Methodology Samples are examined with reference to the procedure outlined in the Western Australia *Recommended Procedures for Laboratory Analysis of Asbestos in Soil* and in accordance with In-House Procedure QP-931-001

This report supersedes report CER1309271256

Approved Identifier: Tim Trembath 

Report Approved by: Tim Trembath 

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia – May 2009*.

For the purpose of this report, the following classifications have been used:

ACM Asbestos containing material
AF Asbestos fines
FA Fibrous asbestos

Note: Limit of reporting is 0.01g/kg

Date: 02/10/2013

Job #: CER1309271256.1

Table 1 - Results of sample examination using polarised light microscopy (PLM) including Dispersion Staining

Sample Details				> 7mm ACM Results		AF / FA Results				
Sample Id. Number	Sample Location / Reference	Sample Description	Total Weight of Sample (g)	Weight of ACM >7mm Detected (g)	Form	Weight of ACM 2-7mm Detected (g)	Form	Weight of <2mm Sub-Sample (g)	Weight of ACM <2mm Detected (g)	Form
QCO2A	-	NHS	1498.63	NA	-	<LOR	CHR (FCS)	148.42	<LOR	-
A10_0.00-0.17	-	NHS	9.0kg	7.16	CHR (FCS)	NA	-	NA	NA	-

Detection Notes

QCO2A was found to contain ACM in the 2-7mm fraction below the reporting limit 0.01g/kg

Table 2 – Acronyms used in results

Acronym	Description
<LOR	<i>Below limit of reporting of 0.01g/kg</i>
NHS	<i>Non homogeneous soil sample</i>
Bulk	<i>Bulk sample fragments</i>
FCS	<i>Fibre cement sheeting</i>
FM	<i>Fibrous material</i>
FF	<i>Free fibres</i>
CHR	<i>Chrysotile (white asbestos) fibres detected</i>
AMO	<i>Amosite (brown / grey asbestos) fibres detected</i>
CRO	<i>Crocidolite (blue asbestos) fibres detected</i>
UMF	<i>Unidentified mineral fibres detected</i>