idealgeotech
a division of idealcorp

Report on

Preliminary Contamination Assessment

Prepared for: SGCH

Address: Lot 502 & 503 (9-11) Edgeworth Place, Cartwright

Job No: 20849

Date: March 2016

Accredited for compliance
With ISO/IEC 17025
NATA Accreditation No. 19226

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References

EXECUTIVE SUMMARY

This executive summary presents a synopsis of the Stage 1 Preliminary Contamination Report for Lot 502 & 503, 9-11 Edgeworth Place, Cartwright.

The object of the Stage 1 Preliminary Contamination Report was to ascertain whether the site presents a risk to human health and/or the environment arising from any past/present activities at the site or neighbouring properties. The scope of work included a documentary review of historical records, a site walkover, preliminary laboratory testing and the preparation of this report.

The only obvious potential sources of contamination arise from the following;

- Existing houses and garages that may contain asbestos or were used to store chemicals.

No history of dangerous manufacturing on site utilizing heavy chemicals was documented. No history of heavy chemicals storage was documented.

A search of the NSW EPA Contaminated Land Management record of notices yielded no previous record of contamination.

Search of Protection of the Environment Operations Public Register (POEO) revealed no licensed and delicensed premises in the vicinity (200m) of the subject site.

The results of the chemical analyses indicate that the site does not present a risk to human health or the environment in a 'resiendential with garden/accessible soil' ('A') setting and is considered suitable for the proposed development.

1.0 INTRODUCTION

Ideal Geotech have undertaken a Stage 1 Preliminary Contamination Report with limited testing and analysis as requested by Saint George Community Housing at Lot 502 & 503, 9-11 Edgeworth Place, Cartwright. It is understood the existing residential dwellings will be demolished and a three storey apartment complex will be constructed.

2.0 SCOPE OF WORK

The following scope of work was conducted:

- Desktop Study of the following to assist in identification of potential contamination issues:
  - Data from Environment Protection Authority
  - Data from the Protection of the Environment Operations Public Register (POEO)
  - Council records/ development and building applications
  - Council property files
  - Current and past zoning of the land
- Review of soils and geological maps
- Site walkover
- Chemical analysis of soil samples by a NATA accredited laboratory
- Preparation of a Stage 1 Preliminary Contamination Report.

3.0 SITE DESCRIPTION

The subject site is rectangular in shape and approximately 1150m^2 in area and is legally defined as Lot 502 and 503. The site is bounded by Hoxten Park Road to the south, Edgworth Place to the north and neighboring resdiential properties to the east and west..

The site is currently occupied by two houses and two garages with awnings. The site is located on flat terrain and vegetation consists of grass cover and some small trees within the property of 11 Edgeworth Place.

4.0 SITE HISTORY

Lots 502 and 503, 9-11 Edgeworth Place are situated in a residential area as aerial photographs and titles indicate. Limited historical information exists in public registry however, the land had its first schedule to Saint George Community Housing from the deposited plan of Liverpool Council, Parish of St Luke and County of Cumberland, DP236840.

4.1 Geology

Reference to the Penrith 1:100,000 geological map (Geological series sheet 9030) indicates that the site is underlain by Quaternary deposits consisting of medium grained sand, silt and clay.

4.2 Aerial Photographs

Aerial Photographs from 1942, 1951, 1971 and 1986 were obtained from the NSW Department of Lands office and Google Earth used to view the site from 2004 to 2015. The aerial photographs were reviewed to assess the likely past uses of the site. The findings are summarised below and a copy of historical photographs can be found in Appendix B.

1942 –The site is situated within a paddock. Some scattered trees are present on the site.

1951 – The site and surroundaing area has been developed with residential dwellings with the site containing two houses on two separate blocks. Industrial buildings have been built on the southern side of Hoxton Park Road.

1971 – The site has undergone very little change as visible from the previous aerial photograph in 1951 apart from the addition of some more industrial buildings on the southern side of Hoxton Park Road.

1986 – Little change present since the previous aerial photograph in 1971. Again there are some more industrial buildings on the southern side of Hoxton Park Road.

2004-2015 – The site has been unchanged since the photograph taken in 1986.

In summary, the aerial photographs reveal that the site was initially situated within a farming paddock evident from the photograph in 1942. The photographs taken in 1951 indicates the site has now been occupied by two houses. The site has remained largly unchanged from the photograph in 1951 to the date of the site inspection in 2016.

4.3 Historic Land Titles

Historic title deed searched were undertaken on the site, the results of the searches are summarised in the tables below and a copy of search results are included in Appendix A.

Table 1 – Lot 502 & 503 DP236840

Date of acquisition and held term	Registed proprietor(s) & occupations where available	Reference of title at acquisition
9th of August 1968	Deposited Plan, Local Government of Liverpool, Parish of St Luke County, County of Cumberland	DP236840
9th of August 1968	Saint George Community Housing	AJ839756

4.4 Search of Contaminated Land Management Register (NSW EPA)

A search of the NSW EPA Contaminated Land Management record of notices for the Parramatta City Council area indicated that the site has had no previous contamination reported.

4.5 Search of Protection of the Environment Operations Public Register (POEO) of Licensed and Delicensed Premises

A search of the POEO public register of licensed and delicensed premises (DECC) indicated that no licensed or delicensed premises were located within the immediate surrounding area of the site (within 200m).

5.0 SITE WALKOVER AND SURROUNDING ENVIRONMENT

A site investigation was conducted on 17th February 2016. The field observations are summarised in Table 2 below.

Table 2 – Summary of Field Observations

Parameter	Observation
Visible observations on soil contamination	No visible evidence of contamination was observed. No staining of the soils or odours was documented.
Signs of plant stress	None observed.
Presence of drums or waste materials	None observed. No visible indicators of underground fuel tanks (bowsers or venting pipes). A small amount of scrap concrete and bricks were observed.
Presence of fill	Minimal fill was observed within the site.
Quality of surface waters	No visible evidence of contamination was observed nor were any odours detected.
Flood potential	Not evident.
Relevant sensitive environments	None observed.

6.0 SUMMARY OF POTENTIAL SOURCES OF CONTAMINATION

The potential for the site to be contaminated from on-site sources and off site sources was considered by Ideal Geotech. Based on the findings of our site inspection and site history review the following actual or potential contamination sources were identified.

1. Fuel, oil, asbestos sheeting, lead based paints and pesticides may have been stored within the garages at some point.

2. The house construction may include asbestos and lead based paints.

No history of dangerous manufacturing utilizing heavy chemicals was documented.

No history of heavy chemicals storage was documented.

Properties bordering the site are residential and not considered to have posed a risk for potential contamination to the site.

7.0 SAMPLING METHODOLOGY

Limited sampling and analysis was undertaken in order to assess the nature, location and likely distribution of any contamination present at the subject site, and also any potential risk posed to human health or the environment. Test results were compared to the relevant New South Wales Environment Protection Authority (NSW EPA) criteria.

Each sample location (refer to Figure 1) was excavated utilizing hand tools to a depth of 0.1 to 0.2m below ground surface. The sample was collected from the hole using a stainless steel trowel, which had been decontaminated prior to use to prevent cross contamination occurring.

The samples were placed in 250g laboratory prepared glass jars which were capped using Teflon-sealed screw caps and then placed in a chilled container. The sample jars were transported to our Smithfield office and placed in a refrigerator.

The following day the samples were forwarded to SGS environmental for analysis along with a Chain of Custody which was subsequently returned to confirm the receipt of all samples.

8.0 LABORATORY CHEMICAL TESTING RESULTS

It should be appreciated that the assessment was preliminary in nature and was very limited in scope. Chemical testing was carried out on soil samples using SGS laboratory services. SGS holds accreditation with the National Association of Testing Authorities, Australia (NATA). The initial testing of the soil was undertaken as a broad scale preliminary assessment.

All testing was undertaken within the terms of their accreditation. Copies of the testing laboratory reports are shown in Appendix C. The results of laboratory testing are summarised in the following tables.

Table 3 - Heavy Metal Test Results

		Heavy Metals (mg/kg)							
Sample No.	Depth (m)	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury
E1	0.2	<3	0.4	9.0	22	35	5.6	92	0.03
E2	0.1	4	<0.3	8.7	13	38	5.4	59	0.02
E3	0.2	5	<0.3	12	17	22	8.3	37	0.01
E4	0.1	3	<0.3	8.8	11	11	5.4	44	0.02
E5	0.2	<3	<0.3	8.3	11	10	3.3	27	0.01
E6	0.1	<3	<0.3	8.1	12	9	3.2	27	0.02
LOR		3	0.3	0.3	0.5	1	0.5	0.5	0.01
NEPM Health Investigation Level HILs (A)		100	20	100	6000	300	400	7400	40

LOR Limit of Reporting

Table 4 - Organochlorine Pesticides (OCP) & Organophosphate Pesticides (OPP) Test Results

		OCP (mg/kg)						OPP (mg/kg)		
Sample No.	Depth (m)	Aldrin+ Dieldrin	Endrin	Heptachl-or	DDD+ DDE+ DDT	DDT	Chlord-ane	Diazinon	Ethion	Chlorp-yrifos
E1	0.2	<0.3	<0.2	<0.1	<0.3	<0.1	<0.2	<0.5	<0.2	<0.2
E2	0.1	<0.3	<0.2	<0.1	<0.3	<0.1	<0.2	<0.5	<0.2	<0.2
E3	0.2	<0.3	<0.2	<0.1	<0.3	<0.1	<0.2	<0.5	<0.2	<0.2
E4	0.1	<0.3	<0.2	<0.1	<0.3	<0.1	<0.2	<0.5	<0.2	<0.2
E5	0.2	<0.3	<0.2	<0.1	<0.3	<0.1	<0.2	<0.5	<0.2	<0.2
E6	0.1	<0.3	<0.2	<0.1	<0.3	<0.1	<0.2	<0.5	<0.2	<0.2
LOR		0.3	0.2	0.1	0.3	0.1	0.2	0.5	0.2	0.2
NEPM HILs A for low density residential areas		6	10	6	240	NC	50	NC	NC	160

NC No Criteria
LOR Limit of Reporting

Table 5 - Polynuclear Aromatic Hydrocarbons (PAH) and PCB Test Results

Sample No.	Depth (m)	PAH (mg/kg)			PCB
		Total	B(a)P	B(a)P TEQ (Upper)	Total
E1	0.2	<0.8	<0.1	<0.3	<1
E2	0.1	<0.8	<0.1	<0.3	<1
E3	0.2	<0.8	<0.1	<0.3	<1
E4	0.1	<0.8	<0.1	<0.3	<1
E5	0.2	<0.8	<0.1	<0.3	<1
E6	0.1	<0.8	<0.1	<0.3	<1
LOR		0.8	0.1	0.3	1
NEPM HILs A for low density residential areas		300	NC	3	1

NC No Criteria
LOR Limit of Reporting

Table 6 - Total Petroleum Hydrocarbon (TPH) and BTEX Test Results

Sample No.	Depth (m)	TRH (mg/kg)				BTEX (mg/kg)			
		C10-C14	C15-C28	C29-C36	Total	Benzene	Toluene	Ethyl Benzene	Total Xylenes
E1	0.2	<20	<45	<45	<210	<0.1	<0.1	<0.1	<0.3
E2	0.1	<20	<45	<45	<210	<0.1	<0.1	<0.1	<0.3
E3	0.2	<20	<45	<45	<210	<0.1	<0.1	<0.1	<0.3
E4	0.1	<20	<45	<45	<210	<0.1	<0.1	<0.1	<0.3
E5	0.2	<20	<45	<45	<210	<0.1	<0.1	<0.1	<0.3
E6	0.1	<20	<45	<45	<210	<0.1	<0.1	<0.1	<0.3
LOR		20	45	45	210	0.1	0.1	0.1	0.3
NSW EPA (DECC) Threshold Concentrations 2009 ('Guidelines for Assessing Service Station Sites')		NC	NC	NC	10000	10	135	185	95

NC No Criteria
LOR Limit of Reporting

Table 7 - Asbestos Test Results

Sample No.	Depth (m)	Asbestos Detected	Type of Asbestos
E1	0.2	No Asbestos Found	NA
E2	0.1	No Asbestos Found	NA
E3	0.2	No Asbestos Found	NA
E4	0.1	No Asbestos Found	NA
E5	0.2	No Asbestos Found	NA
E6	0.1	No Asbestos Found	NA

9.0 DISCUSSION OF CONTAMINATION RESULTS

9.1 Heavy Metals

The heavy metal concentrations, presented in Table 3, were less than the relecvent assessment criteria adopted, and therefore the chemical analyses indicate that areas tested are not contaminated with heavy metals.

9.2 Organochlorine Pesticides (OCP) and Organophosphorus Pesticides (OPP)

The OCP and OPP concentrations, presented in Table 4, were less than the relevant assessment criteria adopted, and therefore the chemical analyses indicate that the areas tested are not contaminated with OCP or OPP.

9.3 Polycyclic Aromatic Hydrocarbons (PAH) and Polychlorinated Biphenyl (PCB)

The PAH and PCB concentrations, presented in Table 5, were less than the relevant assessment criteria adopted, and therefore the chemical analyses indicate that the site is not contaminated with PAH or PCB.

9.4 Total Petrolium Hydrocarbons (TPH) and BTEX

The TPH and BTEX concentrations, presented in Table 6, were less than the relecvent assessment criteria adopted, and therefore the chemical analysis indicate that areas tested are not contaminated with TPH or BTEX.

9.1 Asbestos

The presence of asbestos, presented in Table 7, were found to be nill, and therefore the chemical analyses indicate that areas tested are not contaminated with asbestos.

10.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions of this Contamination Report are as follows:

The only obvious potential sources of contamination arise from the following;

1. Fuel, oil, asbestos sheeting, lead based paints and pesticides may have been stored within the garages at some point.

2. The house construction may include asbestos and lead based paints.

No history of dangerous manufacturing on site utilizing heavy chemicals was documented. No history of heavy chemicals storage was documented.

A search of the NSW EPA Contaminated Land Management record of notices indicates that the site has had no previous contamination reported.

Search of Protection of the Environment Operations Public Register (POEO) revealed no licensed and delicensed premises in the vicinity (200m) of the subject site.

The results of the chemical analyses indicate that the site does not present a risk to human health or the environment in a 'resiendential with garden/accessible soil' ('A') setting and is considered suitable for the sites proposed development.

This report is a Stage 1 Preliminary Contamination Assessment with laboratory testing undertaken. Whilst the study indicated the site to be free of contamination, it is possible that contaminated soils may be present between sampling locations. Further sampling and chemical testing should be undertaken once demolition of the existing dwellings and garages has been undertaken.

For and on behalf of
Ideal Geotech

Murali Pami
Geotechnician

For and on behalf of
Ideal Geotech

D. Dwyer
Geotechnical Engineer

REFERENCES:

Contaminated Sites – Guidelines for Assessing Service Stations. NSW Environment Protection Authority (EPA) 1994

Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites. NSW Environment Protection Authority (EPA) 2000.

Contaminated Sites – Sampling Design Guidelines. NSW Environment Protection Authority (EPA) 1995

Managing Land Contamination: Planning Guidelines SEPP55 – Remediation of Land - Department of Urban Affairs and Planning and Environment Protection Authority (DUAP and EPA) 1998.

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

APPENDIX A

HISTORIC LAND TITLES

Land and Property Information Division

ABN: 84 104 377 806
GPO BOX 15
Sydney NSW 2001
DX 17 SYDNEY Telephone: 1300 052 637

NSW GOVERNMENT Land & Property Information

A division of the Department of Finance & Services

TITLE SEARCH

Title Reference: 503/236840

```
      LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH
      ------------------------------------------------------------


FOLIO: 503/236840
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          SEARCH DATE       TIME             EDITION NO    DATE
          -----------       ----             ----------    ----
          18/2/2016        10:21 AM              6       23/9/2015


LAND
----
LOT 503 IN DEPOSITED PLAN 236840
   AT HOXTON PARK GREEN VALLEY
   LOCAL GOVERNMENT AREA LIVERPOOL
   PARISH OF ST LUKE   COUNTY OF CUMBERLAND
   TITLE DIAGRAM DP236840

FIRST SCHEDULE
--------------
ST GEORGE COMMUNITY HOUSING LIMITED                    (T AJ839756)

SECOND SCHEDULE (0 NOTIFICATIONS)
---------------
NIL

NOTATIONS
---------
UNREGISTERED DEALINGS: NIL

        ***  END OF SEARCH  ***
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PRINTED ON 18/2/2016

** ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE CERTIFICATE OF TITLE.*
WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER.

Land and Property Information Division

ABN: 84 104 377 806
GPO BOX 15
Sydney NSW 2001
DX 17 SYDNEY Telephone: 1300 052 637

NSW GOVERNMENT Land & Property Information

A division of the Department of Finance & Services

TITLE SEARCH

Title Reference: 502/236840

```
      LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH
      ------------------------------------------------------------


FOLIO: 502/236840
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          SEARCH DATE       TIME             EDITION NO    DATE
          -----------       ----             ----------    ----
          18/2/2016        10:21 AM              6       23/9/2015


LAND
----
LOT 502 IN DEPOSITED PLAN 236840
   AT HOXTON PARK GREEN VALLEY
   LOCAL GOVERNMENT AREA LIVERPOOL
   PARISH OF ST LUKE   COUNTY OF CUMBERLAND
   TITLE DIAGRAM DP236840

FIRST SCHEDULE
--------------
ST GEORGE COMMUNITY HOUSING LIMITED                    (T AJ839796)

SECOND SCHEDULE (0 NOTIFICATIONS)
---------------
NIL

NOTATIONS
---------
UNREGISTERED DEALINGS: NIL

        ***  END OF SEARCH  ***
```

PRINTED ON 18/2/2016

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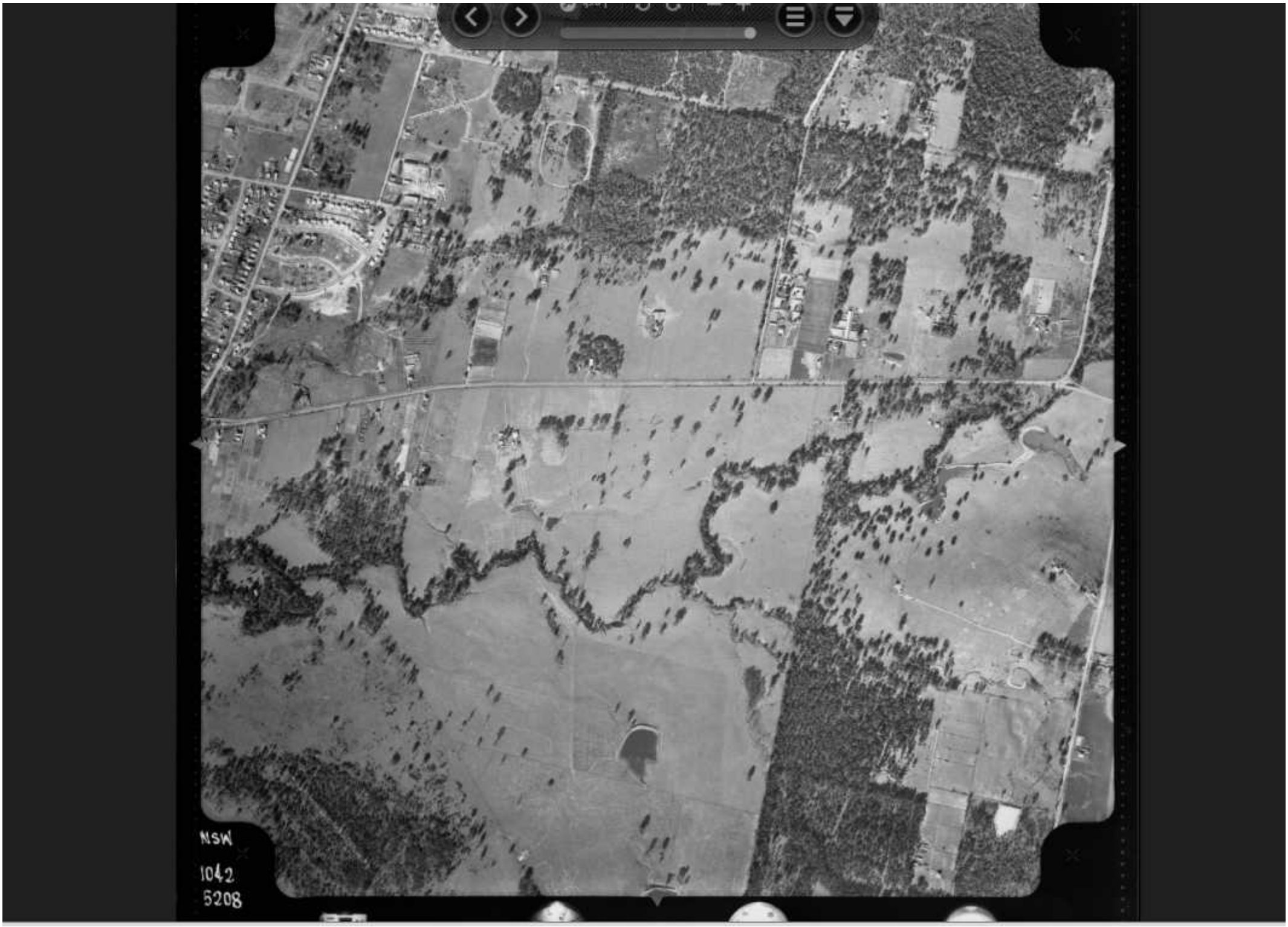
APPENDIX B

AERIAL PHOTOGRAPHS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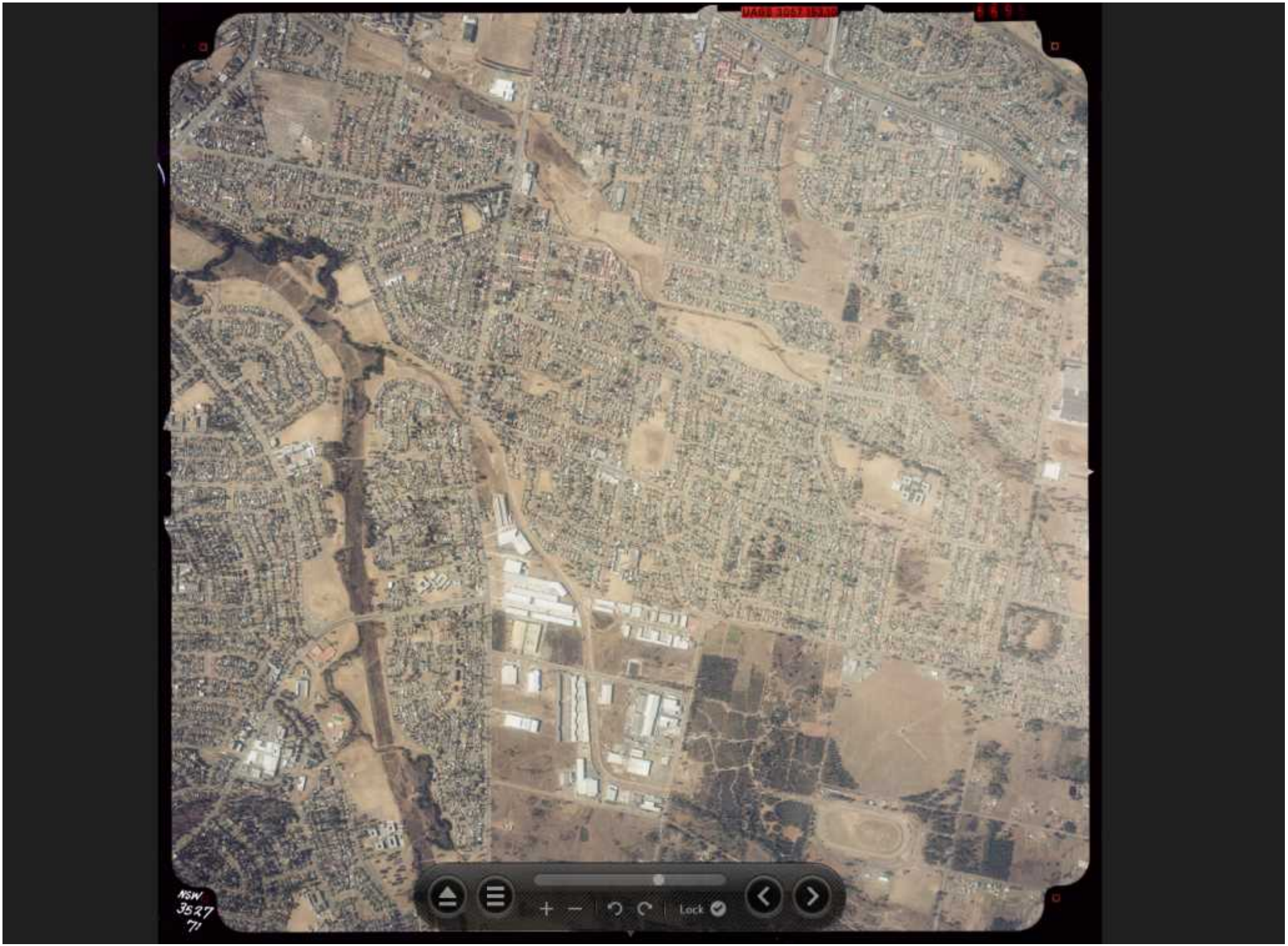
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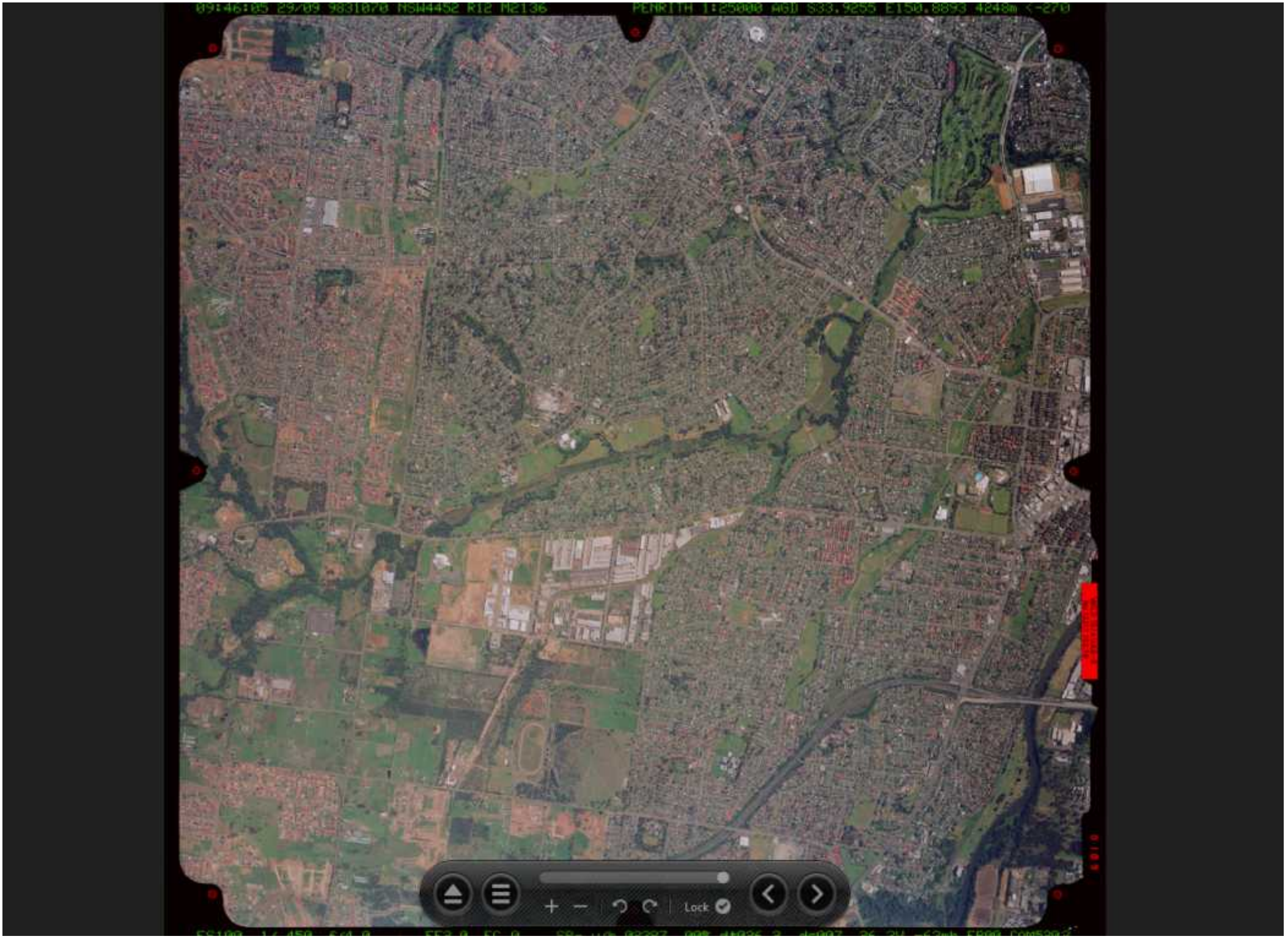
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APPENDIX C

LABORATORY TEST RESULTS

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Kelly Wardle	Manager	Huong Crawford
Client	IDEALCORP PTY LTD	Laboratory	SGS Alexandria Environmental
Address	16-18 Sammut Street SMITHFIELD NSW 2164	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	61 2 97255522	Telephone	+61 2 8594 0400
Facsimile	61 2 87866300	Facsimile	+61 2 8594 0499
Email	accounts@idealcorp.com.au	Email	au.environmental.sydney@sgs.com
Project	**20849**	SGS Reference	**SE149201 R0**
Order Number	(Not specified)	Date Received	18 Feb 2016
Samples	6	Date Reported	25 Feb 2016

COMMENTS

Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all samples using trace analysis technique.
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam .

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Huong Crawford
Production Manager

Kamrul Ahsan
Senior Chemist

Ravee Sivasubramaniam
Asbestos Analyst/Hygiene Team Leader

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE149201.001 Soil 17 Feb 2016 E1 - 0.2m	SE149201.002 Soil 17 Feb 2016 E2 - 0.1m	SE149201.003 Soil 17 Feb 2016 E3 - 0.2m	SE149201.004 Soil 17 Feb 2016 E4 - 0.1m
VOC's in Soil Method: AN433/AN434 Tested: 19/2/2016						
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**82**	**82**	**83**	**87**
d4-1,2-dichloroethane (Surrogate)	%	-	**96**	**98**	**98**	**102**
d8-toluene (Surrogate)	%	-	**116**	**101**	**107**	**110**
Bromofluorobenzene (Surrogate)	%	-	**78**	**77**	**81**	**82**
Totals						
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 Tested: 19/2/2016						
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**82**	**82**	**83**	**87**
d4-1,2-dichloroethane (Surrogate)	%	-	**96**	**98**	**98**	**102**
d8-toluene (Surrogate)	%	-	**116**	**101**	**107**	**110**
Bromofluorobenzene (Surrogate)	%	-	**78**	**77**	**81**	**82**
VPH F Bands						
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 22/2/2016						
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	<210
TRH F Bands						
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 22/2/2016						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Parameter	Units	LOR	Sample Number: SE149201.001 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E1 - 0.2m	SE149201.002 Soil 17 Feb 2016 E2 - 0.1m	SE149201.003 Soil 17 Feb 2016 E3 - 0.2m	SE149201.004 Soil 17 Feb 2016 E4 - 0.1m
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 22/2/2016 (continued)						
Fluoranthene	mg/kg	0.1	<0.1	**0.1**	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	**0.1**	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	**74**	**84**	**80**	**76**
2-fluorobiphenyl (Surrogate)	%	-	**72**	**76**	**74**	**74**
d14-p-terphenyl (Surrogate)	%	-	**92**	**84**	**86**	**88**
OC Pesticides in Soil Method: AN400/AN420 Tested: 22/2/2016						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE149201.001 Soil 17 Feb 2016 E1 - 0.2m	SE149201.002 Soil 17 Feb 2016 E2 - 0.1m	SE149201.003 Soil 17 Feb 2016 E3 - 0.2m	SE149201.004 Soil 17 Feb 2016 E4 - 0.1m
OC Pesticides in Soil Method: AN400/AN420 Tested: 22/2/2016 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		**98**	**107**	**105**	**107**
OP Pesticides in Soil Method: AN400/AN420 Tested: 22/2/2016							
Dichlorvos	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		**72**	**76**	**74**	**74**
d14-p-terphenyl (Surrogate)	%	-		**92**	**84**	**86**	**88**
PCBs in Soil Method: AN400/AN420 Tested: 22/2/2016							
Arochlor 1016	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1		<1	<1	<1	<1
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		**98**	**107**	**105**	**107**
Total Recoverable Metals in Soil by ICPOES Method: AN040/AN320 Tested: 23/2/2016							
Arsenic, As	mg/kg	3		<3	**4**	**5**	**3**
Cadmium, Cd	mg/kg	0.3		**0.4**	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3		**9.0**	**8.7**	**12**	**8.8**
Copper, Cu	mg/kg	0.5		**22**	**13**	**17**	**11**
Lead, Pb	mg/kg	1		**35**	**38**	**22**	**30**
Nickel, Ni	mg/kg	0.5		**5.6**	**5.4**	**8.3**	**5.4**
Zinc, Zn	mg/kg	0.5		**92**	**59**	**37**	**44**
Mercury in Soil Method: AN312 Tested: 23/2/2016							
Mercury	mg/kg	0.01		**0.03**	**0.02**	**0.01**	**0.02**

Parameter	Units	LOR	Sample Number: SE149201.001 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E1 - 0.2m	SE149201.002 Soil 17 Feb 2016 E2 - 0.1m	SE149201.003 Soil 17 Feb 2016 E3 - 0.2m	SE149201.004 Soil 17 Feb 2016 E4 - 0.1m
Moisture Content Method: AN002 Tested: 19/2/2016						
% Moisture	%w/w	0.5	**11**	**12**	**9.6**	**6.3**
Fibre Identification in soil Method: AN602 Tested: 24/2/2016						
FibreID						
Asbestos Detected	No unit	-	No	No	No	No
SemiQuant						
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01

Parameter	Units	LOR	Sample Number: SE149201.005 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E5 - 0.2m	Sample Number: SE149201.006 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E6 - 0.1m
VOC's in Soil Method: AN433/AN434 Tested: 19/2/2016				
Monocyclic Aromatic Hydrocarbons				
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Polycyclic VOCs				
Naphthalene	mg/kg	0.1	<0.1	<0.1
Surrogates				
Dibromofluoromethane (Surrogate)	%	-	**83**	**87**
d4-1,2-dichloroethane (Surrogate)	%	-	**98**	**104**
d8-toluene (Surrogate)	%	-	**107**	**103**
Bromofluorobenzene (Surrogate)	%	-	**79**	**75**
Totals				
Total Xylenes*	mg/kg	0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 Tested: 19/2/2016				
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20
Surrogates				
Dibromofluoromethane (Surrogate)	%	-	**83**	**87**
d4-1,2-dichloroethane (Surrogate)	%	-	**98**	**104**
d8-toluene (Surrogate)	%	-	**107**	**103**
Bromofluorobenzene (Surrogate)	%	-	**79**	**75**
VPH F Bands				
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 22/2/2016				
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH C10-C36 Total	mg/kg	110	<110	<110
TRH C10-C40 Total	mg/kg	210	<210	<210
TRH F Bands				
TRH >C10-C16 (F2)	mg/kg	25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 22/2/2016				
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1

Parameter	Units	LOR	Sample Number: SE149201.005 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E5 - 0.2m	Sample Number: SE149201.006 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E6 - 0.1m
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 22/2/2016 (continued)				
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8
Surrogates				
d5-nitrobenzene (Surrogate)	%	-	**76**	**80**
2-fluorobiphenyl (Surrogate)	%	-	**74**	**72**
d14-p-terphenyl (Surrogate)	%	-	**88**	**84**
OC Pesticides in Soil Method: AN400/AN420 Tested: 22/2/2016				
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1

Parameter	Units	LOR	Sample Number: SE149201.005 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E5 - 0.2m	Sample Number: SE149201.006 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E6 - 0.1m
OC Pesticides in Soil Method: AN400/AN420 Tested: 22/2/2016 (continued)				
Surrogates				
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**102**	**102**
OP Pesticides in Soil Method: AN400/AN420 Tested: 22/2/2016				
Dichlorvos	mg/kg	0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2
Surrogates				
2-fluorobiphenyl (Surrogate)	%	-	**74**	**72**
d14-p-terphenyl (Surrogate)	%	-	**88**	**84**
PCBs in Soil Method: AN400/AN420 Tested: 22/2/2016				
Arochlor 1016	mg/kg	0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1
Surrogates				
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**102**	**102**
Total Recoverable Metals in Soil by ICPOES Method: AN040/AN320 Tested: 23/2/2016				
Arsenic, As	mg/kg	3	<3	<3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	**8.3**	**8.1**
Copper, Cu	mg/kg	0.5	**11**	**12**
Lead, Pb	mg/kg	1	**10**	**9**
Nickel, Ni	mg/kg	0.5	**3.3**	**3.2**
Zinc, Zn	mg/kg	0.5	**27**	**27**
Mercury in Soil Method: AN312 Tested: 23/2/2016				
Mercury	mg/kg	0.01	**0.01**	**0.02**

Parameter	Units	LOR	Sample Number: SE149201.005 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E5 - 0.2m	Sample Number: SE149201.006 Sample Matrix: Soil Sample Date: 17 Feb 2016 Sample Name: E6 - 0.1m
Moisture Content Method: AN002 Tested: 19/2/2016				
% Moisture	%w/w	0.5	**15**	**12**
Fibre Identification in soil Method: AN602 Tested: 24/2/2016				
FibreID				
Asbestos Detected	No unit	-	No	No
SemiQuant				
Estimated Fibres*	%w/w	0.01	<0.01	<0.01

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil **Method: ME-(AU)-[ENV]AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB095667	mg/kg	0.01	<0.01	0%	103%	92%

Moisture Content **Method: ME-(AU)-[ENV]AN002**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB095454	%w/w	0.5	0 - 3%

OC Pesticides in Soil **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Hexachlorobenzene (HCB)	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Alpha BHC	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Lindane	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Heptachlor	LB095544	mg/kg	0.1	<0.1	NVL	98%	98%
Aldrin	LB095544	mg/kg	0.1	<0.1	NVL	98%	79%
Beta BHC	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Delta BHC	LB095544	mg/kg	0.1	<0.1	NVL	92%	93%
Heptachlor epoxide	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
o,p'-DDE	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Alpha Endosulfan	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
Gamma Chlordane	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Alpha Chlordane	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
trans-Nonachlor	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
p,p'-DDE	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Dieldrin	LB095544	mg/kg	0.2	<0.2	NVL	91%	94%
Endrin	LB095544	mg/kg	0.2	<0.2	NVL	95%	99%
o,p'-DDD	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
o,p'-DDT	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Beta Endosulfan	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
p,p'-DDD	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
p,p'-DDT	LB095544	mg/kg	0.1	<0.1	NVL	76%	77%
Endosulfan sulphate	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Endrin Aldehyde	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Methoxychlor	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Endrin Ketone	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Isodrin	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA
Mirex	LB095544	mg/kg	0.1	<0.1	NVL	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB095544	%	-	97%	NVL	92%	97%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Soil **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dichlorvos	LB095544	mg/kg	0.5	<0.5	0%	74%	72%
Dimethoate	LB095544	mg/kg	0.5	<0.5	0%	NA	NA
Diazinon (Dimpylate)	LB095544	mg/kg	0.5	<0.5	0%	83%	89%
Fenitrothion	LB095544	mg/kg	0.2	<0.2	0%	NA	NA
Malathion	LB095544	mg/kg	0.2	<0.2	0%	NA	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB095544	mg/kg	0.2	<0.2	0%	78%	96%
Parathion-ethyl (Parathion)	LB095544	mg/kg	0.2	<0.2	0%	NA	NA
Bromophos Ethyl	LB095544	mg/kg	0.2	<0.2	0%	NA	NA
Methidathion	LB095544	mg/kg	0.5	<0.5	0%	NA	NA
Ethion	LB095544	mg/kg	0.2	<0.2	0%	71%	77%
Azinphos-methyl (Guthion)	LB095544	mg/kg	0.2	<0.2	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2-fluorobiphenyl (Surrogate)	LB095544	%	-	76%	0%	74%	70%
d14-p-terphenyl (Surrogate)	LB095544	%	-	86%	2%	82%	84%

PAH (Polynuclear Aromatic Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB095544	mg/kg	0.1	<0.1	0%	93%	89%
2-methylnaphthalene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
1-methylnaphthalene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
Acenaphthylene	LB095544	mg/kg	0.1	<0.1	0%	95%	92%
Acenaphthene	LB095544	mg/kg	0.1	<0.1	0%	92%	87%
Fluorene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
Phenanthrene	LB095544	mg/kg	0.1	<0.1	0%	92%	86%
Anthracene	LB095544	mg/kg	0.1	<0.1	0%	99%	94%
Fluoranthene	LB095544	mg/kg	0.1	<0.1	0%	97%	98%
Pyrene	LB095544	mg/kg	0.1	<0.1	0%	91%	88%
Benzo(a)anthracene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
Chrysene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(b&j)fluoranthene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(k)fluoranthene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(a)pyrene	LB095544	mg/kg	0.1	<0.1	0%	97%	84%
Indeno(1,2,3-cd)pyrene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
Dibenzo(a&h)anthracene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(ghi)perylene	LB095544	mg/kg	0.1	<0.1	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=0	LB095544	TEQ	0.2	<0.2	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR	LB095544	TEQ (mg/kg)	0.3	<0.3	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	LB095544	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
Total PAH (18)	LB095544	mg/kg	0.8	<0.8	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d5-nitrobenzene (Surrogate)	LB095544	%	-	78%	0 - 3%	82%	76%
2-fluorobiphenyl (Surrogate)	LB095544	%	-	76%	0%	74%	70%
d14-p-terphenyl (Surrogate)	LB095544	%	-	86%	0 - 2%	82%	84%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

PCBs in Soil Method: ME-(AU)-[ENV]AN400/AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arochlor 1016	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
Arochlor 1221	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
Arochlor 1232	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
Arochlor 1242	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
Arochlor 1248	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
Arochlor 1254	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
Arochlor 1260	LB095544	mg/kg	0.2	<0.2	NVL	94%	97%
Arochlor 1262	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
Arochlor 1268	LB095544	mg/kg	0.2	<0.2	NVL	NA	NA
Total PCBs (Arochlors)	LB095544	mg/kg	1	<1	NVL	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB095544	%	-	97%	NVL	94%	95%

Total Recoverable Metals in Soil by ICPOES Method: ME-(AU)-[ENV]AN040/AN320

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB095667	mg/kg	3	<3	13%	96%	76%
Cadmium, Cd	LB095667	mg/kg	0.3	<0.3	2%	100%	85%
Chromium, Cr	LB095667	mg/kg	0.3	<0.3	6%	99%	87%
Copper, Cu	LB095667	mg/kg	0.5	<0.5	7%	101%	92%
Lead, Pb	LB095667	mg/kg	1	<1	10%	98%	81%
Nickel, Ni	LB095667	mg/kg	0.5	<0.5	24%	99%	85%
Zinc, Zn	LB095667	mg/kg	0.5	<0.5	23%	99%	89%

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C10-C14	LB095544	mg/kg	20	<20	0%	100%	100%
TRH C15-C28	LB095544	mg/kg	45	<45	0%	95%	73%
TRH C29-C36	LB095544	mg/kg	45	<45	0%	83%	93%
TRH C37-C40	LB095544	mg/kg	100	<100	0%	NA	NA
TRH C10-C36 Total	LB095544	mg/kg	110	<110	0%	NA	NA
TRH C10-C40 Total	LB095544	mg/kg	210	<210	0%	NA	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH >C10-C16 (F2)	LB095544	mg/kg	25	<25	0%	98%	93%
TRH >C10-C16 (F2) - Naphthalene	LB095544	mg/kg	25	<25	0%	NA	NA
TRH >C16-C34 (F3)	LB095544	mg/kg	90	<90	0%	93%	78%
TRH >C34-C40 (F4)	LB095544	mg/kg	120	<120	0%	85%	NA

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB095467	mg/kg	0.1	<0.1	0%	70%	66%
Toluene	LB095467	mg/kg	0.1	<0.1	0%	85%	89%
Ethylbenzene	LB095467	mg/kg	0.1	<0.1	0%	76%	84%
m/p-xylene	LB095467	mg/kg	0.2	<0.2	0%	78%	86%
o-xylene	LB095467	mg/kg	0.1	<0.1	0%	79%	88%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB095467	mg/kg	0.1	<0.1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dibromofluoromethane (Surrogate)	LB095467	%	-	100%	10 - 20%	82%	77%
d4-1,2-dichloroethane (Surrogate)	LB095467	%	-	108%	8 - 15%	89%	87%
d8-toluene (Surrogate)	LB095467	%	-	112%	0 - 23%	96%	93%
Bromofluorobenzene (Surrogate)	LB095467	%	-	70%	7 - 12%	89%	90%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Xylenes*	LB095467	mg/kg	0.3	<0.3	0%	NA	NA
Total BTEX	LB095467	mg/kg	0.6	<0.6	0%	NA	NA

Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C10	LB095467	mg/kg	25	<25	0%	92%	89%
TRH C6-C9	LB095467	mg/kg	20	<20	0%	73%	70%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dibromofluoromethane (Surrogate)	LB095467	%	-	100%	10 - 20%	82%	77%
d4-1,2-dichloroethane (Surrogate)	LB095467	%	-	108%	8 - 15%	89%	87%
d8-toluene (Surrogate)	LB095467	%	-	112%	0 - 23%	96%	93%
Bromofluorobenzene (Surrogate)	LB095467	%	-	70%	7 - 12%	89%	90%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene (F0)	LB095467	mg/kg	0.1	<0.1	0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB095467	mg/kg	25	<25	0%	129%	103%

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN400	OC and OP Pesticides by GC-ECD: The determination of organochlorine (OC) and organophosphorus (OP) pesticides and polychlorinated biphenyls (PCBs) in soils, sludges and groundwater. (Based on USEPA methods 3510, 3550, 8140 and 8080.)
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Petroleum Hydrocarbons (TPH) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433/AN434	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN433/AN434/AN410	VOCs and C6-C9/C6-C10 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf).
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
		NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here : http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

STATEMENT OF QA/QC PERFORMANCE

SE149201 R0

CLIENT DETAILS

Contact	Kelly Wardle
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Address	16-18 Sammut Street SMITHFIELD NSW 2164
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Email	accounts@idealcorp.com.au
Project	**20849**
Order Number	(Not specified)
Samples	6

LABORATORY DETAILS

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SGS Reference	**SE149201 R0**
Date Received	18 Feb 2016
Date Reported	25 Feb 2016

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	6 Soils	Type of documentation received	COC
Date documentation received	18/2/2016	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	8.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

HOLDING TIME SUMMARY

SE149201 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Fibre Identification in soil

Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095767	17 Feb 2016	18 Feb 2016	16 Feb 2017	24 Feb 2016	16 Feb 2017	25 Feb 2016
E2 - 0.1m	SE149201.002	LB095767	17 Feb 2016	18 Feb 2016	16 Feb 2017	24 Feb 2016	16 Feb 2017	25 Feb 2016
E3 - 0.2m	SE149201.003	LB095767	17 Feb 2016	18 Feb 2016	16 Feb 2017	24 Feb 2016	16 Feb 2017	25 Feb 2016
E4 - 0.1m	SE149201.004	LB095767	17 Feb 2016	18 Feb 2016	16 Feb 2017	24 Feb 2016	16 Feb 2017	25 Feb 2016
E5 - 0.2m	SE149201.005	LB095767	17 Feb 2016	18 Feb 2016	16 Feb 2017	24 Feb 2016	16 Feb 2017	25 Feb 2016
E6 - 0.1m	SE149201.006	LB095767	17 Feb 2016	18 Feb 2016	16 Feb 2017	24 Feb 2016	16 Feb 2017	25 Feb 2016

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095667	17 Feb 2016	18 Feb 2016	16 Mar 2016	23 Feb 2016	16 Mar 2016	24 Feb 2016
E2 - 0.1m	SE149201.002	LB095667	17 Feb 2016	18 Feb 2016	16 Mar 2016	23 Feb 2016	16 Mar 2016	24 Feb 2016
E3 - 0.2m	SE149201.003	LB095667	17 Feb 2016	18 Feb 2016	16 Mar 2016	23 Feb 2016	16 Mar 2016	24 Feb 2016
E4 - 0.1m	SE149201.004	LB095667	17 Feb 2016	18 Feb 2016	16 Mar 2016	23 Feb 2016	16 Mar 2016	24 Feb 2016
E5 - 0.2m	SE149201.005	LB095667	17 Feb 2016	18 Feb 2016	16 Mar 2016	23 Feb 2016	16 Mar 2016	24 Feb 2016
E6 - 0.1m	SE149201.006	LB095667	17 Feb 2016	18 Feb 2016	16 Mar 2016	23 Feb 2016	16 Mar 2016	24 Feb 2016

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095454	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	24 Feb 2016	24 Feb 2016
E2 - 0.1m	SE149201.002	LB095454	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	24 Feb 2016	24 Feb 2016
E3 - 0.2m	SE149201.003	LB095454	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	24 Feb 2016	24 Feb 2016
E4 - 0.1m	SE149201.004	LB095454	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	24 Feb 2016	24 Feb 2016
E5 - 0.2m	SE149201.005	LB095454	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	24 Feb 2016	24 Feb 2016
E6 - 0.1m	SE149201.006	LB095454	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	24 Feb 2016	24 Feb 2016

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E2 - 0.1m	SE149201.002	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E3 - 0.2m	SE149201.003	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E4 - 0.1m	SE149201.004	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E5 - 0.2m	SE149201.005	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E6 - 0.1m	SE149201.006	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E2 - 0.1m	SE149201.002	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E3 - 0.2m	SE149201.003	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E4 - 0.1m	SE149201.004	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E5 - 0.2m	SE149201.005	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E6 - 0.1m	SE149201.006	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E2 - 0.1m	SE149201.002	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E3 - 0.2m	SE149201.003	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E4 - 0.1m	SE149201.004	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E5 - 0.2m	SE149201.005	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E6 - 0.1m	SE149201.006	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E2 - 0.1m	SE149201.002	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E3 - 0.2m	SE149201.003	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E4 - 0.1m	SE149201.004	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E5 - 0.2m	SE149201.005	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E6 - 0.1m	SE149201.006	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016

Total Recoverable Metals in Soil by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref

HOLDING TIME SUMMARY

SE149201 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS “Field Sampling Guide for Containers and Holding Time” (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Total Recoverable Metals in Soil by ICPOES (continued)

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095667	17 Feb 2016	18 Feb 2016	15 Aug 2016	23 Feb 2016	15 Aug 2016	25 Feb 2016
E2 - 0.1m	SE149201.002	LB095667	17 Feb 2016	18 Feb 2016	15 Aug 2016	23 Feb 2016	15 Aug 2016	25 Feb 2016
E3 - 0.2m	SE149201.003	LB095667	17 Feb 2016	18 Feb 2016	15 Aug 2016	23 Feb 2016	15 Aug 2016	25 Feb 2016
E4 - 0.1m	SE149201.004	LB095667	17 Feb 2016	18 Feb 2016	15 Aug 2016	23 Feb 2016	15 Aug 2016	25 Feb 2016
E5 - 0.2m	SE149201.005	LB095667	17 Feb 2016	18 Feb 2016	15 Aug 2016	23 Feb 2016	15 Aug 2016	25 Feb 2016
E6 - 0.1m	SE149201.006	LB095667	17 Feb 2016	18 Feb 2016	15 Aug 2016	23 Feb 2016	15 Aug 2016	25 Feb 2016

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E2 - 0.1m	SE149201.002	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E3 - 0.2m	SE149201.003	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E4 - 0.1m	SE149201.004	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E5 - 0.2m	SE149201.005	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016
E6 - 0.1m	SE149201.006	LB095544	17 Feb 2016	18 Feb 2016	02 Mar 2016	22 Feb 2016	02 Apr 2016	24 Feb 2016

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E2 - 0.1m	SE149201.002	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E3 - 0.2m	SE149201.003	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E4 - 0.1m	SE149201.004	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E5 - 0.2m	SE149201.005	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E6 - 0.1m	SE149201.006	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
E1 - 0.2m	SE149201.001	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E2 - 0.1m	SE149201.002	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E3 - 0.2m	SE149201.003	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E4 - 0.1m	SE149201.004	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E5 - 0.2m	SE149201.005	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016
E6 - 0.1m	SE149201.006	LB095467	17 Feb 2016	18 Feb 2016	02 Mar 2016	19 Feb 2016	30 Mar 2016	23 Feb 2016

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	98
	E2 - 0.1m	SE149201.002	%	60 - 130%	107
	E3 - 0.2m	SE149201.003	%	60 - 130%	105
	E4 - 0.1m	SE149201.004	%	60 - 130%	107
	E5 - 0.2m	SE149201.005	%	60 - 130%	102
	E6 - 0.1m	SE149201.006	%	60 - 130%	102

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	72
	E2 - 0.1m	SE149201.002	%	60 - 130%	76
	E3 - 0.2m	SE149201.003	%	60 - 130%	74
	E4 - 0.1m	SE149201.004	%	60 - 130%	74
	E5 - 0.2m	SE149201.005	%	60 - 130%	74
	E6 - 0.1m	SE149201.006	%	60 - 130%	72
d14-p-terphenyl (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	92
	E2 - 0.1m	SE149201.002	%	60 - 130%	84
	E3 - 0.2m	SE149201.003	%	60 - 130%	86
	E4 - 0.1m	SE149201.004	%	60 - 130%	88
	E5 - 0.2m	SE149201.005	%	60 - 130%	88
	E6 - 0.1m	SE149201.006	%	60 - 130%	84

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	E1 - 0.2m	SE149201.001	%	70 - 130%	72
	E2 - 0.1m	SE149201.002	%	70 - 130%	76
	E3 - 0.2m	SE149201.003	%	70 - 130%	74
	E4 - 0.1m	SE149201.004	%	70 - 130%	74
	E5 - 0.2m	SE149201.005	%	70 - 130%	74
	E6 - 0.1m	SE149201.006	%	70 - 130%	72
d14-p-terphenyl (Surrogate)	E1 - 0.2m	SE149201.001	%	70 - 130%	92
	E2 - 0.1m	SE149201.002	%	70 - 130%	84
	E3 - 0.2m	SE149201.003	%	70 - 130%	86
	E4 - 0.1m	SE149201.004	%	70 - 130%	88
	E5 - 0.2m	SE149201.005	%	70 - 130%	88
	E6 - 0.1m	SE149201.006	%	70 - 130%	84
d5-nitrobenzene (Surrogate)	E1 - 0.2m	SE149201.001	%	70 - 130%	74
	E2 - 0.1m	SE149201.002	%	70 - 130%	84
	E3 - 0.2m	SE149201.003	%	70 - 130%	80
	E4 - 0.1m	SE149201.004	%	70 - 130%	76
	E5 - 0.2m	SE149201.005	%	70 - 130%	76
	E6 - 0.1m	SE149201.006	%	70 - 130%	80

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	98
	E2 - 0.1m	SE149201.002	%	60 - 130%	107
	E3 - 0.2m	SE149201.003	%	60 - 130%	105
	E4 - 0.1m	SE149201.004	%	60 - 130%	107
	E5 - 0.2m	SE149201.005	%	60 - 130%	102
	E6 - 0.1m	SE149201.006	%	60 - 130%	102

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	78
	E2 - 0.1m	SE149201.002	%	60 - 130%	77
	E3 - 0.2m	SE149201.003	%	60 - 130%	81
	E4 - 0.1m	SE149201.004	%	60 - 130%	82
	E5 - 0.2m	SE149201.005	%	60 - 130%	79
	E6 - 0.1m	SE149201.006	%	60 - 130%	75
d4-1,2-dichloroethane (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	96
	E2 - 0.1m	SE149201.002	%	60 - 130%	98
	E3 - 0.2m	SE149201.003	%	60 - 130%	98

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	E4 - 0.1m	SE149201.004	%	60 - 130%	102
	E5 - 0.2m	SE149201.005	%	60 - 130%	98
	E6 - 0.1m	SE149201.006	%	60 - 130%	104
d8-toluene (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	116
	E2 - 0.1m	SE149201.002	%	60 - 130%	101
	E3 - 0.2m	SE149201.003	%	60 - 130%	107
	E4 - 0.1m	SE149201.004	%	60 - 130%	110
	E5 - 0.2m	SE149201.005	%	60 - 130%	107
	E6 - 0.1m	SE149201.006	%	60 - 130%	103
Dibromofluoromethane (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	82
	E2 - 0.1m	SE149201.002	%	60 - 130%	82
	E3 - 0.2m	SE149201.003	%	60 - 130%	83
	E4 - 0.1m	SE149201.004	%	60 - 130%	87
	E5 - 0.2m	SE149201.005	%	60 - 130%	83
	E6 - 0.1m	SE149201.006	%	60 - 130%	87

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	78
	E2 - 0.1m	SE149201.002	%	60 - 130%	77
	E3 - 0.2m	SE149201.003	%	60 - 130%	81
	E4 - 0.1m	SE149201.004	%	60 - 130%	82
	E5 - 0.2m	SE149201.005	%	60 - 130%	79
	E6 - 0.1m	SE149201.006	%	60 - 130%	75
d4-1,2-dichloroethane (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	96
	E2 - 0.1m	SE149201.002	%	60 - 130%	98
	E3 - 0.2m	SE149201.003	%	60 - 130%	98
	E4 - 0.1m	SE149201.004	%	60 - 130%	102
	E5 - 0.2m	SE149201.005	%	60 - 130%	98
	E6 - 0.1m	SE149201.006	%	60 - 130%	104
d8-toluene (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	116
	E2 - 0.1m	SE149201.002	%	60 - 130%	101
	E3 - 0.2m	SE149201.003	%	60 - 130%	107
	E4 - 0.1m	SE149201.004	%	60 - 130%	110
	E5 - 0.2m	SE149201.005	%	60 - 130%	107
	E6 - 0.1m	SE149201.006	%	60 - 130%	103
Dibromofluoromethane (Surrogate)	E1 - 0.2m	SE149201.001	%	60 - 130%	82
	E2 - 0.1m	SE149201.002	%	60 - 130%	82
	E3 - 0.2m	SE149201.003	%	60 - 130%	83
	E4 - 0.1m	SE149201.004	%	60 - 130%	87
	E5 - 0.2m	SE149201.005	%	60 - 130%	83
	E6 - 0.1m	SE149201.006	%	60 - 130%	87

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB095667.001	Mercury	mg/kg	0.01	<0.01

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB095544.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	97

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB095544.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	76
		d14-p-terphenyl (Surrogate)	%	-	86

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB095544.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB095544.001		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	78
		2-fluorobiphenyl (Surrogate)	%	-	76
		d14-p-terphenyl (Surrogate)	%	-	86

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB095544.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	97

Total Recoverable Metals in Soil by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number		Parameter	Units	LOR	Result
LB095667.001		Arsenic, As	mg/kg	3	<3
		Cadmium, Cd	mg/kg	0.3	<0.3
		Chromium, Cr	mg/kg	0.3	<0.3
		Copper, Cu	mg/kg	0.5	<0.5
		Lead, Pb	mg/kg	1	<1
		Nickel, Ni	mg/kg	0.5	<0.5
		Zinc, Zn	mg/kg	0.5	<0.5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result
LB095544.001		TRH C10-C14	mg/kg	20	<20
		TRH C15-C28	mg/kg	45	<45
		TRH C29-C36	mg/kg	45	<45
		TRH C37-C40	mg/kg	100	<100
		TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB095467.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	100
		d4-1,2-dichloroethane (Surrogate)	%	-	108
		d8-toluene (Surrogate)	%	-	112
		Bromofluorobenzene (Surrogate)	%	-	70
	Totals	Total BTEX	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB095467.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	100
		d4-1,2-dichloroethane (Surrogate)	%	-	108
		d8-toluene (Surrogate)	%	-	112

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149198.006	LB095667.014	Mercury	mg/kg	0.01	0.01993719730.0208062252		200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149201.004	LB095454.011	% Moisture	%w/w	0.5	6.3	6.2	46	0
SE149210.008	LB095454.022	% Moisture	%w/w	0.5	28	27	34	3
SE149211.001	LB095454.025	% Moisture	%w/w	0.5	19.12114014289.619500594		35	3

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149201.003	LB095544.026		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.16	30	1
SE149253.025	LB095544.029		Hexachlorobenzene (HCB)	mg/kg	0.1	NVL	NVL	NVL	NVL
			Alpha BHC	mg/kg	0.1	NVL	NVL	NVL	NVL
			Lindane	mg/kg	0.1	NVL	NVL	NVL	NVL
			Heptachlor	mg/kg	0.1	NVL	NVL	NVL	NVL
			Aldrin	mg/kg	0.1	NVL	NVL	NVL	NVL
			Beta BHC	mg/kg	0.1	NVL	NVL	NVL	NVL
			Delta BHC	mg/kg	0.1	NVL	NVL	NVL	NVL
			Heptachlor epoxide	mg/kg	0.1	NVL	NVL	NVL	NVL
			o,p'-DDE	mg/kg	0.1	NVL	NVL	NVL	NVL
			Alpha Endosulfan	mg/kg	0.2	NVL	NVL	NVL	NVL
			Gamma Chlordane	mg/kg	0.1	NVL	NVL	NVL	NVL
			Alpha Chlordane	mg/kg	0.1	NVL	NVL	NVL	NVL
			trans-Nonachlor	mg/kg	0.1	NVL	NVL	NVL	NVL
			p,p'-DDE	mg/kg	0.1	NVL	NVL	NVL	NVL
			Dieldrin	mg/kg	0.2	NVL	NVL	NVL	NVL
			Endrin	mg/kg	0.2	NVL	NVL	NVL	NVL
			o,p'-DDD	mg/kg	0.1	NVL	NVL	NVL	NVL
			o,p'-DDT	mg/kg	0.1	NVL	NVL	NVL	NVL
			Beta Endosulfan	mg/kg	0.2	NVL	NVL	NVL	NVL
			p,p'-DDD	mg/kg	0.1	NVL	NVL	NVL	NVL
			p,p'-DDT	mg/kg	0.1	NVL	NVL	NVL	NVL

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149253.025	LB095544.029		Endosulfan sulphate	mg/kg	0.1	NVL	NVL	NVL	NVL
			Endrin Aldehyde	mg/kg	0.1	NVL	NVL	NVL	NVL
			Methoxychlor	mg/kg	0.1	NVL	NVL	NVL	NVL
			Endrin Ketone	mg/kg	0.1	NVL	NVL	NVL	NVL
			Isodrin	mg/kg	0.1	NVL	NVL	NVL	NVL
			Mirex	mg/kg	0.1	NVL	NVL	NVL	NVL
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	NVL	NVL	NVL	NVL

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149201.003	LB095544.026		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149201.003	LB095544.026		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	3
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
SE149253.003	LB095544.028		Naphthalene	mg/kg	0.1	0	0	200	0
			2-methylnaphthalene	mg/kg	0.1	0	0	200	0
			1-methylnaphthalene	mg/kg	0.1	0	0	200	0
			Acenaphthylene	mg/kg	0.1	0	0	200	0
			Acenaphthene	mg/kg	0.1	0	0	200	0
			Fluorene	mg/kg	0.1	0	0	200	0
			Phenanthrene	mg/kg	0.1	0.01	0	200	0
			Anthracene	mg/kg	0.1	0	0	200	0
			Fluoranthene	mg/kg	0.1	0	0	200	0
			Pyrene	mg/kg	0.1	0	0	200	0
			Benzo(a)anthracene	mg/kg	0.1	0.01	0.01	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149253.003	LB095544.028		Chrysene	mg/kg	0.1	0.01	0.01	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	0	0	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	0	0	200	0
			Benzo(a)pyrene	mg/kg	0.1	0	0	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0	0	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	0	0	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0	0	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ	0.2	0	0	200	0
				TEQ (mg/kg)	0.2	0	0	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	0.242	0.242	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	0.121	0.121	175	0
			Total PAH (18)	mg/kg	0.8	0	0	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.39	0.39	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.41	0.41	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.53	0.53	30	0

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149201.003	LB095544.026		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	1
SE149253.025	LB095544.027		Arochlor 1016	mg/kg	0.2	NVL	NVL	NVL	NVL
			Arochlor 1221	mg/kg	0.2	NVL	NVL	NVL	NVL
			Arochlor 1232	mg/kg	0.2	NVL	NVL	NVL	NVL
			Arochlor 1242	mg/kg	0.2	NVL	NVL	NVL	NVL
			Arochlor 1248	mg/kg	0.2	NVL	NVL	NVL	NVL
			Arochlor 1254	mg/kg	0.2	NVL	NVL	NVL	NVL
			Arochlor 1260	mg/kg	0.2	NVL	NVL	NVL	NVL
			Arochlor 1262	mg/kg	0.2	NVL	NVL	NVL	NVL
			Arochlor 1268	mg/kg	0.2	NVL	NVL	NVL	NVL
			Total PCBs (Arochlors)	mg/kg	1	NVL	NVL	NVL	NVL
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	NVL	NVL	NVL	NVL

Total Recoverable Metals in Soil by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149198.006	LB095667.014	Arsenic, As	mg/kg	3	3.77078001994	2.2837050873	55	13
		Cadmium, Cd	mg/kg	0.3	0.50170727020	.5132045825	89	2
		Chromium, Cr	mg/kg	0.3	15.948704915	45.015663873	33	6
		Copper, Cu	mg/kg	0.5	34.683020709	82.419829126	31	7
		Lead, Pb	mg/kg	1	21.466509419	29.326549553	35	10
		Nickel, Ni	mg/kg	0.5	8.55297068	186.7395837087	37	24
		Zinc, Zn	mg/kg	0.5	56.238146715	44.710160097	34	23

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149201.003	LB095544.025		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149201.003	LB095544.025	TRH F Bands	TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE149253.003	LB095544.027		TRH C10-C14	mg/kg	20	0	0	200	0
			TRH C15-C28	mg/kg	45	0	0	200	0
			TRH C29-C36	mg/kg	45	0	0	200	0
			TRH C37-C40	mg/kg	100	0	0	200	0
			TRH C10-C36 Total	mg/kg	110	0	0	200	0
			TRH C10-C40 Total	mg/kg	210	0	0	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	0	0	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	0	0	200	0
			TRH >C16-C34 (F3)	mg/kg	90	0	0	200	0
			TRH >C34-C40 (F4)	mg/kg	120	0	0	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149199.001	LB095467.015	Monocyclic	Benzene	mg/kg	0.1	0	0	200	0
		Aromatic	Toluene	mg/kg	0.1	0.01	0.01	200	0
			Ethylbenzene	mg/kg	0.1	0	0	200	0
			m/p-xylene	mg/kg	0.2	0	0	200	0
			o-xylene	mg/kg	0.1	0	0	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	0	0	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.13	3.72	50	10
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.84	4.46	50	8
			d8-toluene (Surrogate)	mg/kg	-	4.78	6.02	50	23
			Bromofluorobenzene (Surrogate)	mg/kg	-	3.89	3.78	50	3
		Totals	Total Xylenes*	mg/kg	0.3	0	0	200	0
			Total BTEX	mg/kg	0.6	0.01	0.01	200	0
SE149201.006	LB095467.029	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.4	3.8	50	14
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.2	4.5	50	15
			d8-toluene (Surrogate)	mg/kg	-	5.2	5.2	50	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	3.8	4.2	50	12
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE149202.001	LB095467.030	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.1	5.0	50	20
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	6.0	50	19
			d8-toluene (Surrogate)	mg/kg	-	5.2	5.8	50	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	3.9	4.1	50	7
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149199.001	LB095467.015		TRH C6-C10	mg/kg	25	0	0	200	0
			TRH C6-C9	mg/kg	20	0	0	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.13	3.72	30	10
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.84	4.46	30	8
			d8-toluene (Surrogate)	mg/kg	-	4.78	6.02	30	23
			Bromofluorobenzene (Surrogate)	mg/kg	-	3.89	3.78	30	3
		VPH F Bands	Benzene (F0)	mg/kg	0.1	0	0	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	-0.01	-0.01	200	0
SE149201.006	LB095467.029		TRH C6-C10	mg/kg	25	<25	<25	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE149201.006	LB095467.029		TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.4	3.8	30	14
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.2	4.5	30	15
			d8-toluene (Surrogate)	mg/kg	-	5.2	5.2	30	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	3.8	4.2	30	12
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE149202.001	LB095467.030		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.1	5.0	30	20
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	6.0	30	19
			d8-toluene (Surrogate)	mg/kg	-	5.2	5.8	30	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	3.9	4.1	30	7
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB095667.002	Mercury	mg/kg	0.01	0.21	0.2	70 - 130	103

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB095544.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	98
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	98
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	92
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	91
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	95
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	76
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	40 - 130	92

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB095544.002		Dichlorvos	mg/kg	0.5	1.5	2	60 - 140	74
		Diazinon (Dimpylate)	mg/kg	0.5	1.7	2	60 - 140	83
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.6	2	60 - 140	78
		Ethion	mg/kg	0.2	1.4	2	60 - 140	71
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	74
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	82

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB095544.002		Naphthalene	mg/kg	0.1	3.7	4	60 - 140	93
		Acenaphthylene	mg/kg	0.1	3.8	4	60 - 140	95
		Acenaphthene	mg/kg	0.1	3.7	4	60 - 140	92
		Phenanthrene	mg/kg	0.1	3.7	4	60 - 140	92
		Anthracene	mg/kg	0.1	3.9	4	60 - 140	99
		Fluoranthene	mg/kg	0.1	3.9	4	60 - 140	97
		Pyrene	mg/kg	0.1	3.6	4	60 - 140	91
		Benzo(a)pyrene	mg/kg	0.1	3.9	4	60 - 140	97
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	82
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	74
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	82

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB095544.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	94

Total Recoverable Metals in Soil by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB095667.002	Arsenic, As	mg/kg	3	48	50	80 - 120	96
	Cadmium, Cd	mg/kg	0.3	50	50	80 - 120	100
	Chromium, Cr	mg/kg	0.3	49	50	80 - 120	99
	Copper, Cu	mg/kg	0.5	51	50	80 - 120	101
	Lead, Pb	mg/kg	1	49	50	80 - 120	98
	Nickel, Ni	mg/kg	0.5	50	50	80 - 120	99
	Zinc, Zn	mg/kg	0.5	50	50	80 - 120	99

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB095544.002		TRH C10-C14	mg/kg	20	40	40	60 - 140	100
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	95
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	83
	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	39	40	60 - 140	98
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	93
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	85

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number	Parameter	Units	LOR

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB095467.002	Monocyclic	Benzene	mg/kg	0.1	2.0	2.9	60 - 140	70
	Aromatic	Toluene	mg/kg	0.1	2.5	2.9	60 - 140	85
		Ethylbenzene	mg/kg	0.1	2.2	2.9	60 - 140	76
		m/p-xylene	mg/kg	0.2	4.5	5.8	60 - 140	78
		o-xylene	mg/kg	0.1	2.3	2.9	60 - 140	79
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.1	5	60 - 140	82
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.5	5	60 - 140	89
		d8-toluene (Surrogate)	mg/kg	-	4.8	5	60 - 140	96
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.5	5	60 - 140	89

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB095467.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	92
		TRH C6-C9	mg/kg	20	<20	23.2	60 - 140	73
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.1	5	60 - 140	82
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.5	5	60 - 140	89
		d8-toluene (Surrogate)	mg/kg	-	4.8	5	60 - 140	96
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.5	5	60 - 140	89
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	129

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149184.039	LB095667.004	Mercury	mg/kg	0.01	0.19	0.00994450067	0.2	92

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149257.010	LB095544.025		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	98
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	79
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	93
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	94
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	99
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	-	-
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	77
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.14	-	97

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149257.009	LB095544.025		Dichlorvos	mg/kg	0.5	1.4	<0.5	2	72
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Diazinon (Dimpylate)	mg/kg	0.5	1.8	<0.5	2	89
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.0	<0.2	2	96
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.6	<0.2	2	77
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	70
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	84

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149257.009	LB095544.025	Naphthalene	mg/kg	0.1	3.6	<0.1	4	89
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	3.7	<0.1	4	92
		Acenaphthene	mg/kg	0.1	3.5	<0.1	4	87
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	3.6	0.1	4	86
		Anthracene	mg/kg	0.1	3.8	<0.1	4	94
		Fluoranthene	mg/kg	0.1	4.3	0.4	4	98

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149257.009	LB095544.025		Pyrene	mg/kg	0.1	4.0	0.5	4	88
			Benzo(a)anthracene	mg/kg	0.1	0.2	0.2	-	-
			Chrysene	mg/kg	0.1	0.2	0.2	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.3	0.3	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	0.1	0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	3.6	0.3	4	84
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.1	-	-
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	0.1	0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ	0.2	3.6	0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	3.8	0.4	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	3.7	0.4	-	-
			Total PAH (18)	mg/kg	0.8	31	2.3	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	-	76
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	70
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	84

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149257.010	LB095544.025		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	97
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	-	95

Total Recoverable Metals in Soil by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149184.039	LB095667.004	Arsenic, As	mg/kg	3	40	2.18044140087	50	76
		Cadmium, Cd	mg/kg	0.3	42	0.11910029549	50	85
		Chromium, Cr	mg/kg	0.3	57	12.9844588805	50	87
		Copper, Cu	mg/kg	0.5	50	4.19988289555	50	92
		Lead, Pb	mg/kg	1	50	10.0411752657	50	81
		Nickel, Ni	mg/kg	0.5	46	3.69992729831	50	85
		Zinc, Zn	mg/kg	0.5	63	18.6327456222	50	89

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149257.009	LB095544.026		TRH C10-C14	mg/kg	20	45	<20	40	100
			TRH C15-C28	mg/kg	45	120	88	40	73
			TRH C29-C36	mg/kg	45	62	<45	40	93
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	220	120	-	-
			TRH C10-C40 Total	mg/kg	210	220	<210	-	-
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	49	<25	40	93
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	49	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	140	110	40	78
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149180.001	LB095467.004	Monocyclic	Benzene	mg/kg	0.1	1.9	0	2.9	66
		Aromatic	Toluene	mg/kg	0.1	2.6	0.01	2.9	89
			Ethylbenzene	mg/kg	0.1	2.4	0	2.9	84
			m/p-xylene	mg/kg	0.2	5.0	0.01	5.8	86
			o-xylene	mg/kg	0.1	2.6	0	2.9	88
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	0	-	-
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.9	4.48	-	77

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149180.001	LB095467.004	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.3	4.88	-	87
			d8-toluene (Surrogate)	mg/kg	-	4.6	5.07	-	93
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.5	4.49	-	90
		Totals	Total Xylenes*	mg/kg	0.3	7.5	0.01	-	-
			Total BTEX	mg/kg	0.6	14	0.02	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE149180.001	LB095467.004		TRH C6-C10	mg/kg	25	<25	0	24.65	89
			TRH C6-C9	mg/kg	20	<20	0	23.2	70
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.9	4.48	-	77
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.3	4.88	-	87
			d8-toluene (Surrogate)	mg/kg	-	4.6	5.07	-	93
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.5	4.49	-	90
		VPH F	Benzene (F0)	mg/kg	0.1	1.9	0	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	-0.02	7.25	103

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

QC Sample	Sample Number	Parameter	Units	LOR

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover tthe performance of this service.
-	Sample not analysed for this analyte.

IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

APPENDIX D

SAMPLING LOCATIONS

Figure 1 – Sampling Location Plan

9-11 Edgeworth Place, Cartwright