

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

89239



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Project No: 6B01CON24303AC

Task No:

Project Name: SICEEP

Laboratory: SGS

Samplers Name: Adriana Corcoran Mothe

Project Manager: Matthew Locke

Special Instructions: Please keep all remaining soil after completion of analyses. Remaining soil is required to be stored for 36 months by Coffey. Please advise Coffey when remaining soil samples are ready for pick-up by Coffey.

Lab No.	Sample ID	Sample Location	Sample Depth	Sample Date	Time	Matrix (Soil, etc)	Container Type & Preservative*	T-A-T (Specify)	Analysis Request Section	NOTES
	TS9			1-05-12		Soil	3x1.5 Lys	5days	BTEX / TPH	
	ACC					Soil	1g, 10m, 2x5 Lys		METALS	
15	BH2-Substrate	BH2	0.5-0.4		14:43	Soil	1g, 10m, 2x5 Lys		PAHs	
	BH2-0.5-0.6		0.5-0.6		14:50				OCs / OPs	
16	BH2-1.5-1.7		1.5-1.7		15:01				Asbestos	
	BH2-3.0-3.4		3.0-3.4		15:47				VOC	
	BH2-4.4-4.5		4.4-4.5		16:00				SVOC	
									As Screen - Field pH/EC	

RELINQUISHED BY:

RECEIVED BY:

Signature: _____ Date: _____
 Company: _____ Time: _____
 Signature: _____ Date: _____
 Company: _____ Time: _____

Sample Receipt Advice: (Lab Use Only)

All Samples Received in Good Condition ☒
 All Documentation is in Proper Order ☒
 Samples Received Properly Chilled ☒
 Lab. Ref/Batch No. SE 107862

CLIENT DETAILS

Contact **Matthew Locke**
 Client **Coffey Geotechnics Pty Ltd**
 Address **Unit 8, 12 Mars Road
Lane Cove NSW 2066**

Telephone **02 9911 1099**
 Facsimile **02 9911 1002**
 Email **matthew_locke@coffey.com**

Project **GEOTLCOV24303AC - SICEEP**
 Order Number **89234,236--239**
 Samples **16**

LABORATORY DETAILS

Manager **Huong Crawford**
 Laboratory **SGS Alexandria Environmental**
 Address **Unit 16, 33 Maddox St
Alexandria NSW 2015**

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 Facsimile **+61 2 8594 0499**
 Email **au.environmental.sydney@sgs.com**

SGS Reference **SE107862 R0**
 Report Number **0000027837**
 Date Reported **09 May 2012**
 Date Received **02 May 2012**

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
 Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

No respirable fibres detected using trace analysis technique.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES



Andy Sutton
Organics Chemist



Dong Liang
Inorganics Metals Team Leader



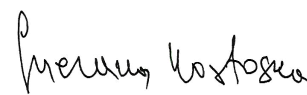
Huong Crawford
Laboratory Manager



Ly Kim Ha
Organics Supervisor



Ravee Sivasubramaniam
Hygienist



Snezana Kostoska
Inorganics Chemist

Parameter	Units	LOR	Sample Number	SE107862.001	SE107862.002	SE107862.003	SE107862.004	SE107862.005
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	30 Apr 2012	30 Apr 2012	30 Apr 2012	30 Apr 2012	30 Apr 2012
			Sample Name	NBH10_0.4-0.5	NBH10_1.4-1.6	NBH10_2.8-3	BH6_0.5-0.6	BH6_3.0-3.4

VOC's in Soil Method: AN433/AN434

Monocyclic Aromatic Hydrocarbons

Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<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	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Surrogates

Dibromofluoromethane (Surrogate)	%	-	93	93	92	91	92
d4-1,2-dichloroethane (Surrogate)	%	-	99	100	100	100	101
d8-toluene (Surrogate)	%	-	101	101	103	101	102
Bromofluorobenzene (Surrogate)	%	-	82	77	80	82	81

Totals

Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	-	0	0	0	0	0

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
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Surrogates

Trifluorotoluene (Surrogate)	%	-	87	84	87	98	92
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	50	570	68	90	<50	57
TRH C29-C36	mg/kg	50	320	<50	<50	<50	<50

Surrogates

TRH (Surrogate)	%	-	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.1	0.3	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	0.9	<0.1	<0.1	0.1	<0.1
Acenaphthene	mg/kg	0.1	0.4	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	0.6	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	13	1.0	0.9	0.1	0.5
Anthracene	mg/kg	0.1	3.4	0.4	0.3	<0.1	0.2
Fluoranthene	mg/kg	0.1	17	1.5	1.2	0.4	1.1
Pyrene	mg/kg	0.1	16	1.5	1.3	0.4	1.1
Benzo(a)anthracene	mg/kg	0.1	9.2	1.0	0.8	0.2	0.6
Chrysene	mg/kg	0.1	6.0	0.7	0.6	0.2	0.5
Benzo(b)fluoranthene	mg/kg	0.1	9.3	1.2	1.0	0.3	0.8
Benzo(k)fluoranthene	mg/kg	0.1	3.1	0.4	0.3	0.1	0.3
Benzo(a)pyrene	mg/kg	0.1	6.5	0.8	0.7	0.2	0.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	3.5	0.4	0.4	0.1	0.4
Dibenzo(a,h)anthracene	mg/kg	0.1	1.0	0.1	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	3.9	0.5	0.4	0.1	0.4
Total PAH (Vic EPA)	mg/kg	0.8	93	9.5	7.8	2.2	6.6

Parameter	Units	LOR	Sample Number	SE107862.001	SE107862.002	SE107862.003	SE107862.004	SE107862.005
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	30 Apr 2012	30 Apr 2012	30 Apr 2012	30 Apr 2012	30 Apr 2012
			Sample Name	NBH10_0.4-0.5	NBH10_1.4-1.6	NBH10_2.8-3	BH6_0.5-0.6	BH6_3.0-3.4

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)

Surrogates

d5-nitrobenzene (Surrogate)	%	-	119	117	116	113	103
2-fluorobiphenyl (Surrogate)	%	-	118	109	107	102	101
d14-p-terphenyl (Surrogate)	%	-	119	119	118	117	114

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320

Arsenic, As	mg/kg	3	20	7	6	3	8
Cadmium, Cd	mg/kg	0.3	3.9	0.3	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	17	18	64	6.9	7.4
Copper, Cu	mg/kg	0.5	320	27	31	27	7.8
Lead, Pb	mg/kg	1	550	63	82	44	11
Nickel, Ni	mg/kg	0.5	29	5.9	6.7	18	5.1
Zinc, Zn	mg/kg	0.5	890	70	81	80	23

Mercury in Soil Method: AN312

Mercury	mg/kg	0.05	0.83	0.21	0.22	0.08	0.06
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Field pH for Acid Sulphate Soil Method: AN104

PHf	pH Units	-	-	-	-	-	-
PHfox	pH Units	-	-	-	-	-	-
Reaction*	No unit	-	-	-	-	-	-
pH Difference*	pH Units	-10	-	-	-	-	-

Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	No	-	-	No	-
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SemiQuant

Estimated Fibres	%w/w	0.01	<0.01	-	-	<0.01	-
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Moisture Content Method: AN002

% Moisture	%	0.5	13	14	15	8.4	15
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Parameter	Units	LOR	Sample Number	SE107862.006	SE107862.007	SE107862.008	SE107862.009	SE107862.010
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	30 Apr 2012	30 Apr 2012	30 Apr 2012	30 Apr 2012	01 May 2012
			Sample Name	DUP17	BH4_Surface	BH4_0.5-0.6	BH4_3.0-3.4	BH5_0.5-0.6

VOC's in Soil Method: AN433/AN434

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

Surrogates

Dibromofluoromethane (Surrogate)	%	-	92	-	92	92	92
d4-1,2-dichloroethane (Surrogate)	%	-	100	-	100	100	100
d8-toluene (Surrogate)	%	-	102	-	101	101	103
Bromofluorobenzene (Surrogate)	%	-	82	-	79	83	82

Totals

Total Xylenes*	mg/kg	0.3	<0.3	-	<0.3	<0.3	<0.3
Total BTEx*	mg/kg	-	0	-	0	0	0

Parameter	Units	LOR	Sample Number	SE107862.006	SE107862.007	SE107862.008	SE107862.009	SE107862.010
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	30 Apr 2012	30 Apr 2012	30 Apr 2012	30 Apr 2012	01 May 2012
			Sample Name	DUP17	BH4_Surface	BH4_0.5-0.6	BH4_3.0-3.4	BH5_0.5-0.6

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	<20	-	<20	<20	<20
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Surrogates

Trifluorotoluene (Surrogate)	%	-	94	-	89	72	92
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	<20	-	<20	<20	<20
TRH C15-C28	mg/kg	50	<50	-	<50	<50	<50
TRH C29-C36	mg/kg	50	<50	-	<50	<50	<50

Surrogates

TRH (Surrogate)	%	-	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.1	<0.1	-	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	-	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	-	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	-	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.2	-	0.4	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	-	0.2	<0.1	<0.1
Fluoranthene	mg/kg	0.1	1.0	-	1.4	<0.1	<0.1
Pyrene	mg/kg	0.1	1.1	-	1.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	0.6	-	0.6	<0.1	<0.1
Chrysene	mg/kg	0.1	0.5	-	0.6	<0.1	<0.1
Benzo(b)fluoranthene	mg/kg	0.1	0.6	-	0.6	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	0.3	-	0.3	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	0.5	-	0.5	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.3	-	0.3	<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	0.3	-	0.3	<0.1	<0.1
Total PAH (Vic EPA)	mg/kg	0.8	5.4	-	6.3	<0.8	<0.8

Surrogates

d5-nitrobenzene (Surrogate)	%	-	100	-	96	106	104
2-fluorobiphenyl (Surrogate)	%	-	108	-	98	84	94
d14-p-terphenyl (Surrogate)	%	-	114	-	112	94	116

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320

Arsenic, As	mg/kg	3	7	-	8	11	5
Cadmium, Cd	mg/kg	0.3	0.3	-	0.4	0.5	0.5
Chromium, Cr	mg/kg	0.3	8.0	-	7.3	20	18
Copper, Cu	mg/kg	0.5	41	-	38	5.5	42
Lead, Pb	mg/kg	1	40	-	45	16	29
Nickel, Ni	mg/kg	0.5	6.0	-	5.8	1.0	39
Zinc, Zn	mg/kg	0.5	110	-	140	9.3	48

Mercury in Soil Method: AN312

Mercury	mg/kg	0.05	0.07	-	0.11	<0.05	<0.05
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Sample Number	SE107862.006	SE107862.007	SE107862.008	SE107862.009	SE107862.010
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	30 Apr 2012	30 Apr 2012	30 Apr 2012	30 Apr 2012	01 May 2012
Sample Name	DUP17	BH4_Surface	BH4_0.5-0.6	BH4_3.0-3.4	BH5_0.5-0.6
Parameter	Units	LOR			

Field pH for Acid Sulphate Soil Method: AN104

PHf	pH Units	-	-	-	-	-	-
PHfox	pH Units	-	-	-	-	-	-
Reaction*	No unit	-	-	-	-	-	-
pH Difference*	pH Units	-10	-	-	-	-	-

Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	-	No	No	-	No
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SemiQuant

Estimated Fibres	%w/w	0.01	-	<0.01	<0.01	-	<0.01
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Moisture Content Method: AN002

% Moisture	%	0.5	9.6	-	10	24	9.5
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Sample Number	SE107862.011	SE107862.012	SE107862.013	SE107862.014	SE107862.015
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	01 May 2012	01 May 2012	01 May 2012	01 May 2012	01 May 2012
Sample Name	BH5_1.5-1.9	BH5_4.5-4.9	BH13_0.5-0.6	BH13_1.4-1.5	BH2_Surface
Parameter	Units	LOR			

VOC's in Soil Method: AN433/AN434

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

Surrogates

Dibromofluoromethane (Surrogate)	%	-	91	-	93	92	92
d4-1,2-dichloroethane (Surrogate)	%	-	100	-	102	102	101
d8-toluene (Surrogate)	%	-	101	-	102	103	102
Bromofluorobenzene (Surrogate)	%	-	78	-	78	82	81

Totals

Total Xylenes*	mg/kg	0.3	<0.3	-	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	-	0	-	0	0	0

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	<20	-	<20	<20	<20
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Surrogates

Trifluorotoluene (Surrogate)	%	-	83	-	94	86	95
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	-

Parameter	Units	LOR	Sample Number	SE107862.011	SE107862.012	SE107862.013	SE107862.014	SE107862.015
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	01 May 2012	01 May 2012	01 May 2012	01 May 2012	01 May 2012
			Sample Name	BH5_1.5-1.9	BH5_4.5-4.9	BH13_0.5-0.6	BH13_1.4-1.5	BH2_Surface

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	<20	-	<20	<20	<20
TRH C15-C28	mg/kg	50	<50	-	<50	170	160
TRH C29-C36	mg/kg	50	<50	-	<50	140	230

Surrogates

TRH (Surrogate)	%	-	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.1	<0.1	-	<0.1	1.4	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	-	<0.1	1.3	<0.1
Acenaphthene	mg/kg	0.1	<0.1	-	<0.1	0.6	<0.1
Fluorene	mg/kg	0.1	<0.1	-	<0.1	1.8	<0.1
Phenanthrene	mg/kg	0.1	<0.1	-	<0.1	10	<0.1
Anthracene	mg/kg	0.1	<0.1	-	<0.1	3.0	<0.1
Fluoranthene	mg/kg	0.1	<0.1	-	0.1	11	<0.1
Pyrene	mg/kg	0.1	<0.1	-	0.1	9.5	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	-	<0.1	5.6	<0.1
Chrysene	mg/kg	0.1	<0.1	-	<0.1	3.8	<0.1
Benzo(b)fluoranthene	mg/kg	0.1	<0.1	-	<0.1	4.8	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	-	<0.1	1.8	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	-	<0.1	4.2	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	-	<0.1	1.8	<0.1
Dibenzo(a,h)anthracene	mg/kg	0.1	<0.1	-	<0.1	0.5	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	-	<0.1	2.0	<0.1
Total PAH (Vic EPA)	mg/kg	0.8	<0.8	-	<0.8	63	<0.8

Surrogates

d5-nitrobenzene (Surrogate)	%	-	104	-	104	94	104
2-fluorobiphenyl (Surrogate)	%	-	100	-	100	100	106
d14-p-terphenyl (Surrogate)	%	-	116	-	116	98	110

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320

Arsenic, As	mg/kg	3	<3	-	<3	8	<3
Cadmium, Cd	mg/kg	0.3	<0.3	-	<0.3	1.3	<0.3
Chromium, Cr	mg/kg	0.3	7.5	-	7.4	9.2	9.2
Copper, Cu	mg/kg	0.5	1.4	-	26	38	45
Lead, Pb	mg/kg	1	3	-	14	52	5
Nickel, Ni	mg/kg	0.5	0.6	-	46	11	7.6
Zinc, Zn	mg/kg	0.5	2.8	-	52	120	29

Mercury in Soil Method: AN312

Mercury	mg/kg	0.05	<0.05	-	<0.05	0.10	<0.05
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Field pH for Acid Sulphate Soil Method: AN104

PHf	pH Units	-	-	8.2	-	-	-
PHfox	pH Units	-	-	3.1	-	-	-
Reaction*	No unit	-	-	XXX	-	-	-
pH Difference*	pH Units	-10	-	5.2	-	-	-

Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	-	-	No	-	No
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SemiQuant

Estimated Fibres	%w/w	0.01	-	-	<0.01	-	<0.01
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Moisture Content Method: AN002

Sample Number	SE107862.011	SE107862.012	SE107862.013	SE107862.014	SE107862.015
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	01 May 2012	01 May 2012	01 May 2012	01 May 2012	01 May 2012
Sample Name	BH5_1.5-1.9	BH5_4.5-4.9	BH13_0.5-0.6	BH13_1.4-1.5	BH2_Surface
Parameter	Units	LOR			

Moisture Content Method: AN002 (continued)

% Moisture	%	0.5	9.9	27	18	9.2	5.0
------------	---	-----	------------	-----------	-----------	------------	------------

	Sample Number	SE107862.016
	Sample Matrix	Soil
	Sample Date	01 May 2012
	Sample Name	BH2_1.5-1.7
Parameter	Units	LOR

VOC's in Soil Method: AN433/AN434

Monocyclic Aromatic Hydrocarbons

Benzene	mg/kg	0.1	<0.1
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

Surrogates

Dibromofluoromethane (Surrogate)	%	-	90
d4-1,2-dichloroethane (Surrogate)	%	-	101
d8-toluene (Surrogate)	%	-	102
Bromofluorobenzene (Surrogate)	%	-	79

Totals

Total Xylenes*	mg/kg	0.3	<0.3
Total BTEX*	mg/kg	-	0

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	<20
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Surrogates

Trifluorotoluene (Surrogate)	%	-	89
Dibromofluoromethane (Surrogate)	%	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-
d8-toluene (Surrogate)	%	-	-
Bromofluorobenzene (Surrogate)	%	-	-

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	50	<50
TRH C29-C36	mg/kg	50	<50

Surrogates

TRH (Surrogate)	%	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1
Pyrene	mg/kg	0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b)fluoranthene	mg/kg	0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1

		Sample Number	SE107862.016
		Sample Matrix	Soil
		Sample Date	01 May 2012
		Sample Name	BH2_1.5-1.7
Parameter	Units	LOR	

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)

Benzo(a)pyrene	mg/kg	0.1	<0.1
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 (Vic EPA)	mg/kg	0.8	<0.8

Surrogates

d5-nitrobenzene (Surrogate)	%	-	106
2-fluorobiphenyl (Surrogate)	%	-	96
d14-p-terphenyl (Surrogate)	%	-	114

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320

Arsenic, As	mg/kg	3	4
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.3	1.7
Copper, Cu	mg/kg	0.5	<0.5
Lead, Pb	mg/kg	1	<1
Nickel, Ni	mg/kg	0.5	0.7
Zinc, Zn	mg/kg	0.5	2.2

Mercury in Soil Method: AN312

Mercury	mg/kg	0.05	<0.05
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Field pH for Acid Sulphate Soil Method: AN104

PHf	pH Units	-	-
PHfox	pH Units	-	-
Reaction*	No unit	-	-
pH Difference*	pH Units	-10	-

Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	-
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SemiQuant

Estimated Fibres	%w/w	0.01	-
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ANALYTICAL REPORT

SE107862 R0

		Sample Number	SE107862.016
		Sample Matrix	Soil
		Sample Date	01 May 2012
		Sample Name	BH2_1.5-1.7
Parameter	Units	LOR	

Moisture Content Method: AN002

% Moisture	%	0.5	2.4
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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.

Field pH for Acid Sulphate Soil Method: ME-(AU)-[ENV]AN104

Parameter	QC Reference	Units	LOR	LCS %Recovery
PHf	LB019668	pH Units	-	NA
PHfox	LB019668	pH Units	-	NA

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB019688	mg/kg	0.05	<0.05	3 - 24%	110%	109%
	LB019727	mg/kg	0.05	<0.05	0 - 3%	109%	93%

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB019512	mg/kg	0.1	<0.1	0 - 6%	110%	105%
Acenaphthylene	LB019512	mg/kg	0.1	<0.1	0%	120%	110%
Acenaphthene	LB019512	mg/kg	0.1	<0.1	0 - 5%	112%	102%
Fluorene	LB019512	mg/kg	0.1	<0.1	0 - 4%	NA	NA
Phenanthrene	LB019512	mg/kg	0.1	<0.1	0 - 4%	99%	136%
Anthracene	LB019512	mg/kg	0.1	<0.1	0 - 4%	105%	109%
Fluoranthene	LB019512	mg/kg	0.1	<0.1	0 - 3%	114%	139%
Pyrene	LB019512	mg/kg	0.1	<0.1	0 - 4%	112%	137%
Benzo(a)anthracene	LB019512	mg/kg	0.1	<0.1	0 - 3%	NA	NA
Chrysene	LB019512	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(b)fluoranthene	LB019512	mg/kg	0.1	<0.1	0 - 2%	NA	NA
Benzo(k)fluoranthene	LB019512	mg/kg	0.1	<0.1	0 - 14%	NA	NA
Benzo(a)pyrene	LB019512	mg/kg	0.1	<0.1	0 - 12%	122%	106%
Indeno(1,2,3-cd)pyrene	LB019512	mg/kg	0.1	<0.1	0 - 12%	NA	NA
Dibenzo(a&h)anthracene	LB019512	mg/kg	0.1	<0.1	0 - 11%	NA	NA
Benzo(ghi)perylene	LB019512	mg/kg	0.1	<0.1	0 - 12%	NA	NA
Total PAH (Vic EPA)	LB019512	mg/kg	0.8	<0.8	0 - 5%	NVL	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d5-nitrobenzene (Surrogate)	LB019512	%	-	106%	2 - 3%	106%	90%
2-fluorobiphenyl (Surrogate)	LB019512	%	-	108%	0 - 2%	106%	86%
d14-p-terphenyl (Surrogate)	LB019512	%	-	116%	0 - 2%	86%	92%

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: ME-(AU)-[ENV]AN040/AN320

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB019680	mg/kg	3	<3	2 - 5%	97%	76%
	LB019723	mg/kg	3	<3	0 - 5%	97%	
Cadmium, Cd	LB019680	mg/kg	0.3	<0.3	0%	96%	79%
	LB019723	mg/kg	0.3	<0.3	0 - 15%	95%	
Chromium, Cr	LB019680	mg/kg	0.3	<0.3	1 - 12%	96%	77%
	LB019723	mg/kg	0.3	<0.3	1 - 14%	96%	
Copper, Cu	LB019680	mg/kg	0.5	<0.5	0 - 3%	96%	78%
	LB019723	mg/kg	0.5	<0.5	0 - 3%	97%	
Lead, Pb	LB019680	mg/kg	1	<1	19 - 145%	96%	70%
	LB019723	mg/kg	1	<1	0 - 5%	96%	
Nickel, Ni	LB019680	mg/kg	0.5	<0.5	11 - 12%	99%	78%
	LB019723	mg/kg	0.5	<0.5	1 - 8%	98%	
Zinc, Zn	LB019680	mg/kg	0.5	<0.5	2 - 121%	98%	77%
	LB019723	mg/kg	0.5	<0.5	1 - 3%	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.

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	LB019512	mg/kg	20	<20	0%	103%	105%
TRH C15-C28	LB019512	mg/kg	50	<50	0 - 3%	98%	113%
TRH C29-C36	LB019512	mg/kg	50	<50	0 - 4%	78%	105%

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	LB019503	mg/kg	0.1	<0.1	0%	97%	88%
Toluene	LB019503	mg/kg	0.1	<0.1	0%	93%	86%
Ethylbenzene	LB019503	mg/kg	0.1	<0.1	0%	90%	84%
m/p-xylene	LB019503	mg/kg	0.2	<0.2	0%	95%	88%
o-xylene	LB019503	mg/kg	0.1	<0.1	0%	91%	83%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dibromofluoromethane (Surrogate)	LB019503	%	-	97%	0 - 2%	97%	99%
d4-1,2-dichloroethane (Surrogate)	LB019503	%	-	105%	0 - 1%	102%	102%
d8-toluene (Surrogate)	LB019503	%	-	101%	0%	100%	100%
Bromofluorobenzene (Surrogate)	LB019503	%	-	98%	1 - 2%	99%	99%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Xylenes*	LB019503	mg/kg	0.3	<0.3	0%	NA	NA
Total BTEX*	LB019503	mg/kg	-	0	NA	NA	NA

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
TRH C6-C9	LB019503	mg/kg	20	<20	0%	138%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Trifluorotoluene (Surrogate)	LB019503	%	-	83%	10%	101%

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.
AN088	Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700.
AN104	pHF is determined on an extract of approximately 2g of as received sample in approximately 10 mL of deionised water with pH determined after standing 30 minutes.
AN104	pHFox is determined on an extract of approximately 2g of as received sample with a few mLs of 30% hydrogen peroxide (adjusted to pH 4.5 to 5.5) with the extract reaction being rated from slight to extreme, with pH determined after reaction is complete and extract has cooled. Referenced to ASS Laboratory Methods Guidelines, method 23Af-Bf, 2004.
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
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.
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 elluent 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, dependant 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).
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.
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.

METHOD

AN602

METHODOLOGY SUMMARY

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."

FOOTNOTES

IS Insufficient sample for analysis.
 LNR Sample listed, but not received.
 * This analysis is not covered by the scope of accreditation.
 ^ Performed by outside laboratory.
 LOR Limit of Reporting
 ↑↓ Raised or Lowered Limit of Reporting

QFH QC result is above the upper tolerance
 QFL QC result is below the lower tolerance
 - The sample was not analysed for this analyte
 NVL Not Validated

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

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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Project **GEOTLCOV24303AC - SICEEP**
Order Number **89234,236--239**
Samples 16

LABORATORY DETAILS

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SGS Reference SE107862 R0
Report Number 0000027840
Date Reported 09/05/2012 17:50:53
Date Received 02 May 2012

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

No respirable fibres detected using trace analysis technique.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES



Andy Sutton
Organics Chemist



Dong Liang
Inorganics Metals Team Leader



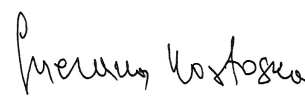
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Ravee Sivasubramaniam
Hygienist



Snezana Kostoska
Inorganics Chemist

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w
SE107862.001	NBH10_0.4-0.5	Soil	63g Soil,rocks	30 Apr 2012	No Asbestos Found Organic Fibres Detected	<0.01
SE107862.004	BH6_0.5-0.6	Soil	53g Soil,rocks	30 Apr 2012	No Asbestos Found	<0.01
SE107862.007	BH4_Surface	Soil	76g Soil,rocks	30 Apr 2012	No Asbestos Found Organic Fibres Detected	<0.01
SE107862.008	BH4_0.5-0.6	Soil	42g Soil,rocks	30 Apr 2012	No Asbestos Found Organic Fibres Detected	<0.01
SE107862.010	BH5_0.5-0.6	Soil	48g Soil,rocks	01 May 2012	No Asbestos Found Organic Fibres Detected	<0.01
SE107862.013	BH13_0.5-0.6	Soil	73g Soil,rocks	01 May 2012	No Asbestos Found Organic Fibres Detected	<0.01
SE107862.015	BH2_Surface	Soil	76g Soil,rocks	01 May 2012	No Asbestos Found	<0.01

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	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."

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	Not Accredited
Amphiboles	-	Amosite and/or Crocidolite			

This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Sampled by the client.

Where reported: 'Asbestos Detected': Asbestos detected by polarized light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarized light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarized light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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STATEMENT OF QA/QC PERFORMANCE

SE107862 R0

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Project **GEOTLCOV24303AC - SICEEP**
Order Number **89234,236--239**
Samples **16**

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SGS Reference **SE107862 R0**
Report Number **0000027838**
Date Reported **09 May 2012**

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' 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 with the exception of the following:

Duplicate	Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest	2 items
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SAMPLE SUMMARY

Sample counts by matrix	16 Soils	Type of documentation received	COC
Date documentation received	03/05/2012 @ 9:59am	Samples received in good order	No
Samples received without headspace	Yes	Sample temperature upon receipt	3.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

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)-ENVJAN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH10_0.4-0.5	SE107862.001	LB019761	30 Apr 2012	02 May 2012	30 Apr 2013	09 May 2012	30 Apr 2013	09 May 2012
BH6_0.5-0.6	SE107862.004	LB019761	30 Apr 2012	02 May 2012	30 Apr 2013	09 May 2012	30 Apr 2013	09 May 2012
BH4_Surface	SE107862.007	LB019761	30 Apr 2012	02 May 2012	30 Apr 2013	09 May 2012	30 Apr 2013	09 May 2012
BH4_0.5-0.6	SE107862.008	LB019761	30 Apr 2012	02 May 2012	30 Apr 2013	09 May 2012	30 Apr 2013	09 May 2012
BH5_0.5-0.6	SE107862.010	LB019761	01 May 2012	02 May 2012	01 May 2013	09 May 2012	01 May 2013	09 May 2012
BH13_0.5-0.6	SE107862.013	LB019761	01 May 2012	02 May 2012	01 May 2013	09 May 2012	01 May 2013	09 May 2012
BH2_Surface	SE107862.015	LB019761	01 May 2012	02 May 2012	01 May 2013	09 May 2012	01 May 2013	09 May 2012

Field pH for Acid Sulphate Soil

Method: ME-(AU)-ENVJAN104

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH5_4.5-4.9	SE107862.012	LB019668	01 May 2012	02 May 2012	29 May 2012	08 May 2012	29 May 2012	08 May 2012

Mercury in Soil

Method: ME-(AU)-ENVJAN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH10_0.4-0.5	SE107862.001	LB019688	30 Apr 2012	02 May 2012	28 May 2012	08 May 2012	28 May 2012	09 May 2012
NBH10_1.4-1.6	SE107862.002	LB019688	30 Apr 2012	02 May 2012	28 May 2012	08 May 2012	28 May 2012	09 May 2012
NBH10_2.8-3	SE107862.003	LB019688	30 Apr 2012	02 May 2012	28 May 2012	08 May 2012	28 May 2012	09 May 2012
BH6_0.5-0.6	SE107862.004	LB019688	30 Apr 2012	02 May 2012	28 May 2012	08 May 2012	28 May 2012	09 May 2012
BH6_3.0-3.4	SE107862.005	LB019688	30 Apr 2012	02 May 2012	28 May 2012	08 May 2012	28 May 2012	09 May 2012
DUP17	SE107862.006	LB019688	30 Apr 2012	02 May 2012	28 May 2012	08 May 2012	28 May 2012	09 May 2012
BH4_0.5-0.6	SE107862.008	LB019688	30 Apr 2012	02 May 2012	28 May 2012	08 May 2012	28 May 2012	09 May 2012
BH4_3.0-3.4	SE107862.009	LB019688	30 Apr 2012	02 May 2012	28 May 2012	08 May 2012	28 May 2012	09 May 2012
BH5_0.5-0.6	SE107862.010	LB019688	01 May 2012	02 May 2012	29 May 2012	08 May 2012	29 May 2012	09 May 2012
BH5_1.5-1.9	SE107862.011	LB019688	01 May 2012	02 May 2012	29 May 2012	08 May 2012	29 May 2012	09 May 2012
BH13_0.5-0.6	SE107862.013	LB019688	01 May 2012	02 May 2012	29 May 2012	08 May 2012	29 May 2012	09 May 2012
BH13_1.4-1.5	SE107862.014	LB019688	01 May 2012	02 May 2012	29 May 2012	08 May 2012	29 May 2012	09 May 2012
BH2_Surface	SE107862.015	LB019727	01 May 2012	02 May 2012	29 May 2012	09 May 2012	29 May 2012	09 May 2012
BH2_1.5-1.7	SE107862.016	LB019727	01 May 2012	02 May 2012	29 May 2012	09 May 2012	29 May 2012	09 May 2012

Moisture Content

Method: ME-(AU)-ENVJAN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH10_0.4-0.5	SE107862.001	LB019547	30 Apr 2012	02 May 2012	14 May 2012	07 May 2012	12 May 2012	09 May 2012
NBH10_1.4-1.6	SE107862.002	LB019547	30 Apr 2012	02 May 2012	14 May 2012	07 May 2012	12 May 2012	09 May 2012
NBH10_2.8-3	SE107862.003	LB019547	30 Apr 2012	02 May 2012	14 May 2012	07 May 2012	12 May 2012	09 May 2012
BH6_0.5-0.6	SE107862.004	LB019547	30 Apr 2012	02 May 2012	14 May 2012	07 May 2012	12 May 2012	09 May 2012
BH6_3.0-3.4	SE107862.005	LB019547	30 Apr 2012	02 May 2012	14 May 2012	07 May 2012	12 May 2012	09 May 2012
DUP17	SE107862.006	LB019547	30 Apr 2012	02 May 2012	14 May 2012	07 May 2012	12 May 2012	09 May 2012
BH4_0.5-0.6	SE107862.008	LB019547	30 Apr 2012	02 May 2012	14 May 2012	07 May 2012	12 May 2012	09 May 2012
BH4_3.0-3.4	SE107862.009	LB019547	30 Apr 2012	02 May 2012	14 May 2012	07 May 2012	12 May 2012	09 May 2012
BH5_0.5-0.6	SE107862.010	LB019547	01 May 2012	02 May 2012	15 May 2012	07 May 2012	12 May 2012	09 May 2012
BH5_1.5-1.9	SE107862.011	LB019547	01 May 2012	02 May 2012	15 May 2012	07 May 2012	12 May 2012	09 May 2012
BH5_4.5-4.9	SE107862.012	LB019547	01 May 2012	02 May 2012	15 May 2012	07 May 2012	12 May 2012	09 May 2012
BH13_0.5-0.6	SE107862.013	LB019547	01 May 2012	02 May 2012	15 May 2012	07 May 2012	12 May 2012	09 May 2012
BH13_1.4-1.5	SE107862.014	LB019547	01 May 2012	02 May 2012	15 May 2012	07 May 2012	12 May 2012	09 May 2012
BH2_Surface	SE107862.015	LB019547	01 May 2012	02 May 2012	15 May 2012	07 May 2012	12 May 2012	09 May 2012
BH2_1.5-1.7	SE107862.016	LB019547	01 May 2012	02 May 2012	15 May 2012	07 May 2012	12 May 2012	09 May 2012

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH10_0.4-0.5	SE107862.001	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
NBH10_1.4-1.6	SE107862.002	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
NBH10_2.8-3	SE107862.003	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH6_0.5-0.6	SE107862.004	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH6_3.0-3.4	SE107862.005	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
DUP17	SE107862.006	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH4_0.5-0.6	SE107862.008	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH4_3.0-3.4	SE107862.009	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH5_0.5-0.6	SE107862.010	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH5_1.5-1.9	SE107862.011	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH13_0.5-0.6	SE107862.013	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH13_1.4-1.5	SE107862.014	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012

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.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH2_Surface	SE107862.015	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH2_1.5-1.7	SE107862.016	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH10_0.4-0.5	SE107862.001	LB019680	30 Apr 2012	02 May 2012	27 Oct 2012	08 May 2012	27 Oct 2012	09 May 2012
NBH10_1.4-1.6	SE107862.002	LB019680	30 Apr 2012	02 May 2012	27 Oct 2012	08 May 2012	27 Oct 2012	09 May 2012
NBH10_2.8-3	SE107862.003	LB019680	30 Apr 2012	02 May 2012	27 Oct 2012	08 May 2012	27 Oct 2012	09 May 2012
BH6_0.5-0.6	SE107862.004	LB019680	30 Apr 2012	02 May 2012	27 Oct 2012	08 May 2012	27 Oct 2012	09 May 2012
BH6_3.0-3.4	SE107862.005	LB019723	30 Apr 2012	02 May 2012	27 Oct 2012	09 May 2012	27 Oct 2012	09 May 2012
DUP17	SE107862.006	LB019723	30 Apr 2012	02 May 2012	27 Oct 2012	09 May 2012	27 Oct 2012	09 May 2012
BH4_0.5-0.6	SE107862.008	LB019723	30 Apr 2012	02 May 2012	27 Oct 2012	09 May 2012	27 Oct 2012	09 May 2012
BH4_3.0-3.4	SE107862.009	LB019723	30 Apr 2012	02 May 2012	27 Oct 2012	09 May 2012	27 Oct 2012	09 May 2012
BH5_0.5-0.6	SE107862.010	LB019723	01 May 2012	02 May 2012	28 Oct 2012	09 May 2012	28 Oct 2012	09 May 2012
BH5_1.5-1.9	SE107862.011	LB019723	01 May 2012	02 May 2012	28 Oct 2012	09 May 2012	28 Oct 2012	09 May 2012
BH13_0.5-0.6	SE107862.013	LB019723	01 May 2012	02 May 2012	28 Oct 2012	09 May 2012	28 Oct 2012	09 May 2012
BH13_1.4-1.5	SE107862.014	LB019723	01 May 2012	02 May 2012	28 Oct 2012	09 May 2012	28 Oct 2012	09 May 2012
BH2_Surface	SE107862.015	LB019723	01 May 2012	02 May 2012	28 Oct 2012	09 May 2012	28 Oct 2012	09 May 2012
BH2_1.5-1.7	SE107862.016	LB019723	01 May 2012	02 May 2012	28 Oct 2012	09 May 2012	28 Oct 2012	09 May 2012

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
NBH10_0.4-0.5	SE107862.001	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
NBH10_1.4-1.6	SE107862.002	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
NBH10_2.8-3	SE107862.003	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH6_0.5-0.6	SE107862.004	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH6_3.0-3.4	SE107862.005	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
DUP17	SE107862.006	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH4_0.5-0.6	SE107862.008	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH4_3.0-3.4	SE107862.009	LB019512	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH5_0.5-0.6	SE107862.010	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH5_1.5-1.9	SE107862.011	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH13_0.5-0.6	SE107862.013	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH13_1.4-1.5	SE107862.014	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH2_Surface	SE107862.015	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012
BH2_1.5-1.7	SE107862.016	LB019512	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	09 May 2012

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH10_0.4-0.5	SE107862.001	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	07 May 2012
NBH10_1.4-1.6	SE107862.002	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	07 May 2012
NBH10_2.8-3	SE107862.003	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH6_0.5-0.6	SE107862.004	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH6_3.0-3.4	SE107862.005	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	07 May 2012
DUP17	SE107862.006	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH4_0.5-0.6	SE107862.008	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH4_3.0-3.4	SE107862.009	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH5_0.5-0.6	SE107862.010	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH5_1.5-1.9	SE107862.011	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH13_0.5-0.6	SE107862.013	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH13_1.4-1.5	SE107862.014	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH2_Surface	SE107862.015	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	07 May 2012
BH2_1.5-1.7	SE107862.016	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	07 May 2012

Volatile Petroleum Hydrocarbons in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH10_0.4-0.5	SE107862.001	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	08 May 2012
NBH10_1.4-1.6	SE107862.002	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	08 May 2012
NBH10_2.8-3	SE107862.003	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	08 May 2012
BH6_0.5-0.6	SE107862.004	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	08 May 2012
BH6_3.0-3.4	SE107862.005	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	08 May 2012
DUP17	SE107862.006	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	08 May 2012

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.

Volatile Petroleum Hydrocarbons in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH4_0.5-0.6	SE107862.008	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	08 May 2012
BH4_3.0-3.4	SE107862.009	LB019503	30 Apr 2012	02 May 2012	14 May 2012	04 May 2012	13 Jun 2012	08 May 2012
BH5_0.5-0.6	SE107862.010	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	08 May 2012
BH5_1.5-1.9	SE107862.011	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	08 May 2012
BH13_0.5-0.6	SE107862.013	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	08 May 2012
BH13_1.4-1.5	SE107862.014	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	08 May 2012
BH2_Surface	SE107862.015	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	08 May 2012
BH2_1.5-1.7	SE107862.016	LB019503	01 May 2012	02 May 2012	15 May 2012	04 May 2012	13 Jun 2012	08 May 2012

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	NBH10_0.4-0.5	SE107862.001	%	60 - 130%	118
	NBH10_1.4-1.6	SE107862.002	%	60 - 130%	109
	NBH10_2.8-3	SE107862.003	%	60 - 130%	107
	BH6_0.5-0.6	SE107862.004	%	60 - 130%	102
	BH6_3.0-3.4	SE107862.005	%	60 - 130%	101
	DUP17	SE107862.006	%	60 - 130%	108
	BH4_0.5-0.6	SE107862.008	%	60 - 130%	98
	BH4_3.0-3.4	SE107862.009	%	60 - 130%	84
	BH5_0.5-0.6	SE107862.010	%	60 - 130%	94
	BH5_1.5-1.9	SE107862.011	%	60 - 130%	100
	BH13_0.5-0.6	SE107862.013	%	60 - 130%	100
	BH13_1.4-1.5	SE107862.014	%	60 - 130%	100
	BH2_Surface	SE107862.015	%	60 - 130%	106
	BH2_1.5-1.7	SE107862.016	%	60 - 130%	96
d14-p-terphenyl (Surrogate)	NBH10_0.4-0.5	SE107862.001	%	60 - 130%	119
	NBH10_1.4-1.6	SE107862.002	%	60 - 130%	119
	NBH10_2.8-3	SE107862.003	%	60 - 130%	118
	BH6_0.5-0.6	SE107862.004	%	60 - 130%	117
	BH6_3.0-3.4	SE107862.005	%	60 - 130%	114
	DUP17	SE107862.006	%	60 - 130%	114
	BH4_0.5-0.6	SE107862.008	%	60 - 130%	112
	BH4_3.0-3.4	SE107862.009	%	60 - 130%	94
	BH5_0.5-0.6	SE107862.010	%	60 - 130%	116
	BH5_1.5-1.9	SE107862.011	%	60 - 130%	116
	BH13_0.5-0.6	SE107862.013	%	60 - 130%	116
	BH13_1.4-1.5	SE107862.014	%	60 - 130%	98
	BH2_Surface	SE107862.015	%	60 - 130%	110
	BH2_1.5-1.7	SE107862.016	%	60 - 130%	114
d5-nitrobenzene (Surrogate)	NBH10_0.4-0.5	SE107862.001	%	60 - 130%	119
	NBH10_1.4-1.6	SE107862.002	%	60 - 130%	117
	NBH10_2.8-3	SE107862.003	%	60 - 130%	116
	BH6_0.5-0.6	SE107862.004	%	60 - 130%	113
	BH6_3.0-3.4	SE107862.005	%	60 - 130%	103
	DUP17	SE107862.006	%	60 - 130%	100
	BH4_0.5-0.6	SE107862.008	%	60 - 130%	96
	BH4_3.0-3.4	SE107862.009	%	60 - 130%	106
	BH5_0.5-0.6	SE107862.010	%	60 - 130%	104
	BH5_1.5-1.9	SE107862.011	%	60 - 130%	104
	BH13_0.5-0.6	SE107862.013	%	60 - 130%	104
	BH13_1.4-1.5	SE107862.014	%	60 - 130%	94
	BH2_Surface	SE107862.015	%	60 - 130%	104
	BH2_1.5-1.7	SE107862.016	%	60 - 130%	106

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	NBH10_0.4-0.5	SE107862.001	%	60 - 130%	82
	NBH10_1.4-1.6	SE107862.002	%	60 - 130%	77
	NBH10_2.8-3	SE107862.003	%	60 - 130%	80
	BH6_0.5-0.6	SE107862.004	%	60 - 130%	82
	BH6_3.0-3.4	SE107862.005	%	60 - 130%	81
	DUP17	SE107862.006	%	60 - 130%	82
	BH4_0.5-0.6	SE107862.008	%	60 - 130%	79
	BH4_3.0-3.4	SE107862.009	%	60 - 130%	83
	BH5_0.5-0.6	SE107862.010	%	60 - 130%	82
	BH5_1.5-1.9	SE107862.011	%	60 - 130%	78
	BH13_0.5-0.6	SE107862.013	%	60 - 130%	78
	BH13_1.4-1.5	SE107862.014	%	60 - 130%	82
	BH2_Surface	SE107862.015	%	60 - 130%	81
	BH2_1.5-1.7	SE107862.016	%	60 - 130%	79
d4-1,2-dichloroethane (Surrogate)	NBH10_0.4-0.5	SE107862.001	%	60 - 130%	99
	NBH10_1.4-1.6	SE107862.002	%	60 - 130%	100

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 identifier 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)	NBH10_2.8-3	SE107862.003	%	60 - 130%	100
	BH6_0.5-0.6	SE107862.004	%	60 - 130%	100
	BH6_3.0-3.4	SE107862.005	%	60 - 130%	101
	DUP17	SE107862.006	%	60 - 130%	100
	BH4_0.5-0.6	SE107862.008	%	60 - 130%	100
	BH4_3.0-3.4	SE107862.009	%	60 - 130%	100
	BH5_0.5-0.6	SE107862.010	%	60 - 130%	100
	BH5_1.5-1.9	SE107862.011	%	60 - 130%	100
	BH13_0.5-0.6	SE107862.013	%	60 - 130%	102
	BH13_1.4-1.5	SE107862.014	%	60 - 130%	102
	BH2_Surface	SE107862.015	%	60 - 130%	101
	BH2_1.5-1.7	SE107862.016	%	60 - 130%	101
	NBH10_0.4-0.5	SE107862.001	%	60 - 130%	101
	NBH10_1.4-1.6	SE107862.002	%	60 - 130%	101
d8-toluene (Surrogate)	NBH10_2.8-3	SE107862.003	%	60 - 130%	103
	BH6_0.5-0.6	SE107862.004	%	60 - 130%	101
	BH6_3.0-3.4	SE107862.005	%	60 - 130%	102
	DUP17	SE107862.006	%	60 - 130%	102
	BH4_0.5-0.6	SE107862.008	%	60 - 130%	101
	BH4_3.0-3.4	SE107862.009	%	60 - 130%	101
	BH5_0.5-0.6	SE107862.010	%	60 - 130%	103
	BH5_1.5-1.9	SE107862.011	%	60 - 130%	101
	BH13_0.5-0.6	SE107862.013	%	60 - 130%	102
	BH13_1.4-1.5	SE107862.014	%	60 - 130%	103
	BH2_Surface	SE107862.015	%	60 - 130%	102
	BH2_1.5-1.7	SE107862.016	%	60 - 130%	102
	NBH10_0.4-0.5	SE107862.001	%	60 - 130%	93
	NBH10_1.4-1.6	SE107862.002	%	60 - 130%	93
Dibromofluoromethane (Surrogate)	NBH10_2.8-3	SE107862.003	%	60 - 130%	92
	BH6_0.5-0.6	SE107862.004	%	60 - 130%	91
	BH6_3.0-3.4	SE107862.005	%	60 - 130%	92
	DUP17	SE107862.006	%	60 - 130%	92
	BH4_0.5-0.6	SE107862.008	%	60 - 130%	92
	BH4_3.0-3.4	SE107862.009	%	60 - 130%	92
	BH5_0.5-0.6	SE107862.010	%	60 - 130%	92
	BH5_1.5-1.9	SE107862.011	%	60 - 130%	91
	BH13_0.5-0.6	SE107862.013	%	60 - 130%	93
	BH13_1.4-1.5	SE107862.014	%	60 - 130%	92
	BH2_Surface	SE107862.015	%	60 - 130%	92
	BH2_1.5-1.7	SE107862.016	%	60 - 130%	90

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Trifluorotoluene (Surrogate)	NBH10_0.4-0.5	SE107862.001	%	60 - 130%	87
	NBH10_1.4-1.6	SE107862.002	%	60 - 130%	84
	NBH10_2.8-3	SE107862.003	%	60 - 130%	87
	BH6_0.5-0.6	SE107862.004	%	60 - 130%	98
	BH6_3.0-3.4	SE107862.005	%	60 - 130%	92
	DUP17	SE107862.006	%	60 - 130%	94
	BH4_0.5-0.6	SE107862.008	%	60 - 130%	89
	BH4_3.0-3.4	SE107862.009	%	60 - 130%	72
	BH5_0.5-0.6	SE107862.010	%	60 - 130%	92
	BH5_1.5-1.9	SE107862.011	%	60 - 130%	83
	BH13_0.5-0.6	SE107862.013	%	60 - 130%	94
	BH13_1.4-1.5	SE107862.014	%	60 - 130%	86
	BH2_Surface	SE107862.015	%	60 - 130%	95
	BH2_1.5-1.7	SE107862.016	%	60 - 130%	89

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
LB019688.001	Mercury	mg/kg	0.05	<0.05
LB019727.001	Mercury	mg/kg	0.05	<0.05

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB019512.001	Naphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	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
Surrogates	d5-nitrobenzene (Surrogate)	%	-	106
	2-fluorobiphenyl (Surrogate)	%	-	108
	d14-p-terphenyl (Surrogate)	%	-	116

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

Sample Number	Parameter	Units	LOR	Result
LB019680.001	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
LB019723.001	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
LB019512.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	50	<50
	TRH C29-C36	mg/kg	50	<50

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB019503.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		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
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	97
		d4-1,2-dichloroethane (Surrogate)	%	-	105
		d8-toluene (Surrogate)	%	-	101
		Bromofluorobenzene (Surrogate)	%	-	98
	Totals	Total BTEX*	mg/kg	-	0

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR
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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.

Volatile Petroleum Hydrocarbons in Soil (continued)

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

Sample Number	Parameter	Units	LOR	Result
LB019503.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	%	-	83

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier 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 %
SE107862.003	LB019688.014	Mercury	mg/kg	0.05	0.22	0.23	52	3
SE107862.014	LB019688.024	Mercury	mg/kg	0.05	0.10	0.08	84	24
SE107871.004	LB019727.014	Mercury	mg/kg	0.05	0.01115952380	0.0116760018	200	0
SE107871.013	LB019727.024	Mercury	mg/kg	0.05	0.07921662630	0.0813922979	92	3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE107862.001	LB019512.004	Naphthalene	mg/kg	0.1	0.3	0.3	62	6
		Acenaphthylene	mg/kg	0.1	0.9	0.9	42	0
		Acenaphthene	mg/kg	0.1	0.4	0.4	56	5
		Fluorene	mg/kg	0.1	0.6	0.6	48	4
		Phenanthrene	mg/kg	0.1	13	13	31	4
		Anthracene	mg/kg	0.1	3.4	3.3	33	4
		Fluoranthene	mg/kg	0.1	17	16	31	3
		Pyrene	mg/kg	0.1	16	15	31	4
		Benzo(a)anthracene	mg/kg	0.1	9.2	8.9	31	3
		Chrysene	mg/kg	0.1	6.0	6.0	32	0
		Benzo(b)fluoranthene	mg/kg	0.1	9.3	9.1	31	2
		Benzo(k)fluoranthene	mg/kg	0.1	3.1	2.7	34	14
		Benzo(a)pyrene	mg/kg	0.1	6.5	5.8	32	12
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	3.5	3.1	33	12
		Dibenzo(a&h)anthracene	mg/kg	0.1	1.0	0.9	41	11
		Benzo(ghi)perylene	mg/kg	0.1	3.9	3.4	33	12
		Surrogates	Total PAH (Vic EPA)	mg/kg	0.8	93	88	31
d5-nitrobenzene (Surrogate)	%		-	119.0	115.0	30	3	
2-fluorobiphenyl (Surrogate)	%		-	118.0	116.0	30	2	
d14-p-terphenyl (Surrogate)	%		-	119.0	121.0	30	2	
SE107862.016	LB019512.019	Naphthalene	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)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
		Surrogates	Total PAH (Vic EPA)	mg/kg	0.8	<0.8	<0.8	200
d5-nitrobenzene (Surrogate)	%		-	106.0	104.0	30	2	
2-fluorobiphenyl (Surrogate)	%		-	96.0	96.0	30	0	
d14-p-terphenyl (Surrogate)	%		-	114.0	114.0	30	0	

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE107707.060	LB019680.014	Arsenic, As	mg/kg	3	4.11184032894	0.0315425710	104	2
		Cadmium, Cd	mg/kg	0.3	0.10393907430	0.1146975878	200	0
		Chromium, Cr	mg/kg	0.3	7.68978712428	6.513336876	34	12
		Copper, Cu	mg/kg	0.5	2.92123221782	9.238614902	47	0
		Lead, Pb	mg/kg	1	33.54179523538	4839017677	33	145 @
		Nickel, Ni	mg/kg	0.5	4.67406574025	1964032781	40	11
		Zinc, Zn	mg/kg	0.5	37.26992796369	1109464085	32	121 @
SE107862.004	LB019680.024	Arsenic, As	mg/kg	3	3	4	116	5
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	150	0
		Chromium, Cr	mg/kg	0.3	6.9	7.0	34	1
		Copper, Cu	mg/kg	0.5	27	27	32	3
		Lead, Pb	mg/kg	1	44	36	32	19

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (continued)

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE107862.004	LB019680.024	Nickel, Ni	mg/kg	0.5	18	20	33	12
		Zinc, Zn	mg/kg	0.5	80	79	31	2
SE107862.016	LB019723.014	Arsenic, As	mg/kg	3	4	4	105	5
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.3	1.7	1.7	48	1
		Copper, Cu	mg/kg	0.5	<0.5	<0.5	148	0
		Lead, Pb	mg/kg	1	<1	<1	152	0
		Nickel, Ni	mg/kg	0.5	0.7	0.7	103	8
		Zinc, Zn	mg/kg	0.5	2.2	2.2	52	1
SE107871.005	LB019723.024	Arsenic, As	mg/kg	3	1.6410082454	1.5226654658	200	0
		Cadmium, Cd	mg/kg	0.3	0.4347232369	0.3740905559	104	15
		Chromium, Cr	mg/kg	0.3	5.8327766760	5.0706805820	36	14
		Copper, Cu	mg/kg	0.5	22.928052047	22.3314526382	32	3
		Lead, Pb	mg/kg	1	51.4009845879	50.049701561	32	5
		Nickel, Ni	mg/kg	0.5	9.5034530146	9.4048703821	35	1
		Zinc, Zn	mg/kg	0.5	70.1574209372	55.60323514	31	3

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE107862.001	LB019512.004	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	50	570	550	39	3
		TRH C29-C36	mg/kg	50	320	300	46	4
SE107862.016	LB019512.019	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	50	<50	<50	200	0
		TRH C29-C36	mg/kg	50	<50	<50	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %		
SE107773A.002	LB019503.009	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			
		Surrogates	Dibromofluoromethane (Surrogate)	%	-	98.0	99.0	50	1		
			d4-1,2-dichloroethane (Surrogate)	%	-	101.0	102.0	50	1		
			d8-toluene (Surrogate)	%	-	101.0	101.0	50	0		
			Bromofluorobenzene (Surrogate)	%	-	98.0	100.0	50	2		
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0		
			Total BTEX*	mg/kg	-	0	0	200	NA		
		SE107862.005	LB019503.015	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
					Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200
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			
Surrogates	Dibromofluoromethane (Surrogate)			%	-	92.0	92.0	50	0		
	d4-1,2-dichloroethane (Surrogate)			%	-	101.0	100.0	50	1		
	d8-toluene (Surrogate)			%	-	102.0	102.0	50	0		
	Bromofluorobenzene (Surrogate)			%	-	81.0	80.0	50	1		
Totals	Total Xylenes*			mg/kg	0.3	<0.3	<0.3	200	0		
	Total BTEX*			mg/kg	-	0	0	200	NA		
SE107862.016	LB019503.025			Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
					Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200
		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			
		Surrogates	Dibromofluoromethane (Surrogate)	%	-	90.0	88.0	50	2		
			d4-1,2-dichloroethane (Surrogate)	%	-	101.0	101.0	50	0		
			d8-toluene (Surrogate)	%	-	102.0	102.0	50	0		
			Bromofluorobenzene (Surrogate)	%	-	79.0	80.0	50	1		
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0		
			Total BTEX*	mg/kg	-	0	0	200	NA		

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE107862.005	LB019503.014	TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	%	-	92	102	30	10
SE107862.016	LB019503.024	TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	%	-	89	98	30	10

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 %
LB019688.002	Mercury	mg/kg	0.05	0.22	0.2	70 - 130	110
LB019727.002	Mercury	mg/kg	0.05	0.22	0.2	70 - 130	109

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019512.002	Naphthalene	mg/kg	0.1	4.4	4	60 - 140	110
	Acenaphthylene	mg/kg	0.1	4.8	4	60 - 140	120
	Acenaphthene	mg/kg	0.1	4.5	4	60 - 140	112
	Phenanthrene	mg/kg	0.1	4.0	4	60 - 140	99
	Anthracene	mg/kg	0.1	4.2	4	60 - 140	105
	Fluoranthene	mg/kg	0.1	4.6	4	60 - 140	114
	Pyrene	mg/kg	0.1	4.5	4	60 - 140	112
	Benzo(a)pyrene	mg/kg	0.1	4.9	4	60 - 140	122
	d5-nitrobenzene (Surrogate)	%	-	106.0	100	60 - 140	106
	2-fluorobiphenyl (Surrogate)	%	-	106.0	100	60 - 140	106
Surrogates	d14-p-terphenyl (Surrogate)	%	-	86.0	100	60 - 140	86

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019680.002	Arsenic, As	mg/kg	3	49	50	80 - 120	97
	Cadmium, Cd	mg/kg	0.3	48	50	80 - 120	96
	Chromium, Cr	mg/kg	0.3	48	50	80 - 120	96
	Copper, Cu	mg/kg	0.5	48	50	80 - 120	96
	Lead, Pb	mg/kg	1	48	50	80 - 120	96
	Nickel, Ni	mg/kg	0.5	50	50	80 - 120	99
LB019723.002	Zinc, Zn	mg/kg	0.5	49	50	80 - 120	98
	Arsenic, As	mg/kg	3	48	50	80 - 120	97
	Cadmium, Cd	mg/kg	0.3	48	50	80 - 120	95
	Chromium, Cr	mg/kg	0.3	48	50	80 - 120	96
	Copper, Cu	mg/kg	0.5	48	50	80 - 120	97
	Lead, Pb	mg/kg	1	48	50	80 - 120	96
	Nickel, Ni	mg/kg	0.5	49	50	80 - 120	98
	Zinc, Zn	mg/kg	0.5	49	50	80 - 120	97

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019512.002	TRH C10-C14	mg/kg	20	41	40	60 - 140	103
	TRH C15-C28	mg/kg	50	<50	40	60 - 140	98
	TRH C29-C36	mg/kg	50	<50	40	60 - 140	78

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB019503.002	Monocyclic	Benzene	mg/kg	0.1	2.9	3	60 - 140	97	
		Aromatic	Toluene	mg/kg	0.1	2.8	3	60 - 140	93
		Ethylbenzene	mg/kg	0.1	2.7	3	60 - 140	90	
		m/p-xylene	mg/kg	0.2	5.6	5.9	60 - 140	95	
		o-xylene	mg/kg	0.1	2.6	2.9	60 - 140	91	
	Surrogates	Dibromofluoromethane (Surrogate)		%	-	97.0	100	60 - 140	97
		d4-1,2-dichloroethane (Surrogate)		%	-	102.0	100	60 - 140	102
		d8-toluene (Surrogate)		%	-	100.0	100	60 - 140	100
		Bromofluorobenzene (Surrogate)		%	-	99.0	100	60 - 140	99

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019503.002	TRH C6-C9	mg/kg	20	34	24.4	60 - 140	138

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 identifier 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%
SE107707.056	LB019688.004	Mercury	mg/kg	0.05	0.26	0.04075177304	0.2	109
SE107862.015	LB019727.004	Mercury	mg/kg	0.05	0.19	<0.05	0.2	93

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE107862.003	LB019512.007	Naphthalene	mg/kg	0.1	4.2	<0.1	4	105
		Acenaphthylene	mg/kg	0.1	4.4	<0.1	4	110
		Acenaphthene	mg/kg	0.1	4.1	<0.1	4	102
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	6.3	0.9	4	136
		Anthracene	mg/kg	0.1	4.7	0.3	4	109
		Fluoranthene	mg/kg	0.1	6.8	1.2	4	139
		Pyrene	mg/kg	0.1	6.8	1.3	4	137
		Benzo(a)anthracene	mg/kg	0.1	<0.1	0.8	-	-
		Chrysene	mg/kg	0.1	<0.1	0.6	-	-
		Benzo(b)fluoranthene	mg/kg	0.1	<0.1	1.0	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.3	-	-
		Benzo(a)pyrene	mg/kg	0.1	4.9	0.7	4	106
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.4	-	-
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	0.1	-	-
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	0.4	-	-
		Total PAH (Vic EPA)	mg/kg	0.8	42	7.8	-	-
		Surrogates						
		d5-nitrobenzene (Surrogate)	%	-	90.0	116.0	100	90
		2-fluorobiphenyl (Surrogate)	%	-	86.0	107.0	100	86
		d14-p-terphenyl (Surrogate)	%	-	92.0	118.0	100	92

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE107707.051	LB019680.004	Arsenic, As	mg/kg	3	42	4.01078032648	50	76
		Cadmium, Cd	mg/kg	0.3	40	0.13176421334	50	79
		Chromium, Cr	mg/kg	0.3	51	13.02247748381	50	77
		Copper, Cu	mg/kg	0.5	47	7.88771742189	50	78
		Lead, Pb	mg/kg	1	47	11.58364551085	50	70
		Nickel, Ni	mg/kg	0.5	48	8.95525682521	50	78
		Zinc, Zn	mg/kg	0.5	59	19.98849704475	50	77

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE107862.002	LB019512.006	TRH C10-C14	mg/kg	20	42	<20	40	105
		TRH C15-C28	mg/kg	50	110	68	40	113
		TRH C29-C36	mg/kg	50	<50	<50	40	105

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE107772A.001	LB019503.004	Monocyclic	Benzene	mg/kg	0.1	2.7	<0.1	3	88
		Aromatic	Toluene	mg/kg	0.1	2.6	<0.1	3	86
			Ethylbenzene	mg/kg	0.1	2.5	<0.1	3	84
			m/p-xylene	mg/kg	0.2	5.2	<0.2	5.9	88
			o-xylene	mg/kg	0.1	2.4	<0.1	2.9	83
			Surrogates	Dibromofluoromethane (Surrogate)	%	-	99.0	97.0	100
		d4-1,2-dichloroethane (Surrogate)		%	-	102.0	95.0	100	102
		d8-toluene (Surrogate)		%	-	100.0	100.0	100	100
		Bromofluorobenzene (Surrogate)		%	-	99.0	101.0	100	99
		Totals	Total Xylenes*	mg/kg	0.3	7.6	<0.3	-	-
			Total BTEX*	mg/kg	-	15	0	-	-

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

- * Non-accredited analysis.
- Sample not analysed for this analyte.
- ^ Analysis performed by external laboratory.

- 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.
- † Refer to Analytical Report comments for further information.

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Chain of Custody

Laboratory Quotation / Order No:

Job No: GEOTLCOV24303AC

No: 20887

Sheet 1 of 1

Dispatch to: S&S
(Address & Phone No)
Unit 16, 33 MADDON St, ALEXANDRIA NSW 2015

Sampled by: JWR
Jocelyn WILSON

Consigning Officer:
Date Dispatched:

Attention:

Project Manager:
(report results to)
MATTHEW LOCKE
(matthew.locke@coffey.com)

Courier Service:
Consignment Note No:

Relinquished by:

COFFEY GEOTECHNICS
8/12 MARS ROAD, LANE COVE

Date: 08/05/12
Time:

Received by:

8/5/12

Date: 8/5/12
Time: 1.10 p

Comments	Sample Matrix	Container Type and Preservative	Sample No.	Date Sampled	Analyses Required							Sample Condition on Receipt								
					PAHs	TPHs	MAHs = BTEX	Metals: 8	VHC	VOC	SVOC		Asbestos							
NBH3		Jar + 1 bag	0.08 - 0.1M	4/5/2012																
NBH3		Jar + 1 bag	0.3 - 0.5M	4/5/2012																
NBH3		Jar + 1 bag	1.5 - 1.95M	4/5/2012																
NBH3		Jar + 1 bag	3.0 - 3.45	4/5/2012																
NBH3		Jar + 1 bag	4.5 - 4.95	4/5/2012																
NBH3		Jar	6.0 - 6.45	4/5/2012																
NBH3		Jar + 1 bag	7.5 - 7.95	4/5/2012																
Dup Z		Jar																		

Special Laboratory Instructions: SAMPLES TO BE HELD AT LAB. DO NOT DISPOSE WITHOUT CONSULTING COFFEY PM

Detection Limits:

Turnaround Required: STANDARDS.

Copies: WHITE: Sign on release. YELLOW: If dispatched to Interstate Lab, Lab to sign on receipt and fax back to Coffey. BLUE: To be returned with results.

JOB NUMBER MUST BE
REFERENCED ON ALL
SUBSEQUENT PAGES

CLIENT DETAILS

Contact Dan Butterworth
Client Coffey Geotechnics Pty Ltd
Address 8/12 Mars Road
LANE COVE NSW 2066

Telephone 02 9911 1099
Facsimile 02 9911 1002
Email dan_butterworth@coffey.com

Project **GEOTLCOV24303AC**
Order Number **20887**
Samples 3

LABORATORY DETAILS

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Laboratory SGS Alexandria Environmental
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Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

SGS Reference SE108042 R0
Report Number 0000028498
Date Reported 15 May 2012

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

No respirable fibres detected using trace analysis technique.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

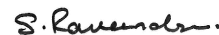
SIGNATORIES



Andy Sutton
Organics Chemist



Huong Crawford
Laboratory Manager



Ravee Sivasubramaniam
Hygienist

Parameter	Sample Number		001	002	003
	Sample Matrix		Soil	Soil	Soil
	Sample Date		04 May 2012	04 May 2012	04 May 2012
	Sample Name		NBH3	NBH3	NBH3
			0.3-0.5	1.5-1.95	4.5-4.95
	Units	LOR			

VOC's in Soil Method: AN433/AN434

Monocyclic Aromatic Hydrocarbons

Benzene	mg/kg	0.10	<0.1	<0.1	<0.1
Toluene	mg/kg	0.10	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.10	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.20	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.10	<0.1	<0.1	<0.1

Surrogates

Dibromofluoromethane (Surrogate)	%	-	94.0	95.0	95.0
d4-1,2-dichloroethane (Surrogate)	%	-	99.0	99.0	100.0
d8-toluene (Surrogate)	%	-	98.0	98.0	99.0
Bromofluorobenzene (Surrogate)	%	-	95.0	95.0	98.0

Totals

Total Xylenes*	mg/kg	0.30	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	-	0	0	0

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	<20	<20	<20
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Surrogates

Trifluorotoluene (Surrogate)	%	-	79.0	76.0	67.0
Dibromofluoromethane (Surrogate)	mg/kg	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	mg/kg	-	-	-	-
d8-toluene (Surrogate)	mg/kg	-	-	-	-
Bromofluorobenzene (Surrogate)	mg/kg	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	<20	<20	<20
TRH C15-C28	mg/kg	50	<50	<50	<50
TRH C29-C36	mg/kg	50	<50	<50	<50

Surrogates

TRH (Surrogate)	%	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.10	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.10	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.10	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.10	<0.1	<0.1	<0.1

Parameter	Sample Number		001	002	003
	Sample Matrix		Soil	Soil	Soil
	Sample Date		04 May 2012	04 May 2012	04 May 2012
	Sample Name		NBH3	NBH3	NBH3
	Units		LOR	0.3-0.5	1.5-1.95
				4.5-4.95	

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)

Phenanthrene	mg/kg	0.10	0.1	<0.1	0.1
Anthracene	mg/kg	0.10	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.10	0.2	<0.1	0.1
Pyrene	mg/kg	0.10	0.3	<0.1	0.1
Benzo(a)anthracene	mg/kg	0.10	0.1	<0.1	<0.1
Chrysene	mg/kg	0.10	0.1	<0.1	<0.1
Benzo(b)fluoranthene	mg/kg	0.10	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.10	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.10	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.10	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.10	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.10	<0.1	<0.1	<0.1
Total PAH (Vic EPA)	mg/kg	0.80	0.8	<0.8	<0.8

Surrogates

d5-nitrobenzene (Surrogate)	%	-	112.0	113.0	115.0
2-fluorobiphenyl (Surrogate)	%	-	105.0	102.0	107.0
d14-p-terphenyl (Surrogate)	%	-	106.0	110.0	114.0

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320

Arsenic, As	mg/kg	3.0	<3	<3	3
Cadmium, Cd	mg/kg	0.30	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.30	10	8.0	7.9
Copper, Cu	mg/kg	0.50	27	2.9	9.9
Nickel, Ni	mg/kg	0.50	35	0.8	4.6
Lead, Pb	mg/kg	1.0	11	7	6
Zinc, Zn	mg/kg	0.50	35	13	15

Mercury in Soil Method: AN312

Mercury	mg/kg	0.050	<0.05	0.12	0.15
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Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	No	No	-
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SemiQuant

Estimated Fibres	%w/w	0.010	<0.01	<0.01	-
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Moisture Content Method: AN002

Parameter	Sample Number		001	002	003
	Sample Matrix		Soil	Soil	Soil
	Sample Date		04 May 2012	04 May 2012	04 May 2012
	Sample Name		NBH3	NBH3	NBH3
	Units		0.3-0.5	1.5-1.95	4.5-4.95
	LOR				

Moisture Content Method: AN002 (continued)

% Moisture	%	0.50	7.3	9.6	20
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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	LB019953	mg/kg	0.050	<0.05	0%	106%	105%

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Naphthalene	LB019762	mg/kg	0.10	<0.1	0%	86%
Acenaphthylene	LB019762	mg/kg	0.10	<0.1	0%	89%
Acenaphthene	LB019762	mg/kg	0.10	<0.1	0%	86%
Fluorene	LB019762	mg/kg	0.10	<0.1	0%	NA
Phenanthrene	LB019762	mg/kg	0.10	<0.1	0%	90%
Anthracene	LB019762	mg/kg	0.10	<0.1	0%	95%
Fluoranthene	LB019762	mg/kg	0.10	<0.1	0%	91%
Pyrene	LB019762	mg/kg	0.10	<0.1	0%	94%
Benzo(a)anthracene	LB019762	mg/kg	0.10	<0.1	0%	NA
Chrysene	LB019762	mg/kg	0.10	<0.1	0%	NA
Benzo(b)fluoranthene	LB019762	mg/kg	0.10	<0.1	0%	NA
Benzo(k)fluoranthene	LB019762	mg/kg	0.10	<0.1	0%	NA
Benzo(a)pyrene	LB019762	mg/kg	0.10	<0.1	0%	87%
Indeno(1,2,3-cd)pyrene	LB019762	mg/kg	0.10	<0.1	0%	NA
Dibenzo(a&h)anthracene	LB019762	mg/kg	0.10	<0.1	0%	NA
Benzo(ghi)perylene	LB019762	mg/kg	0.10	<0.1	0%	NA
Total PAH (Vic EPA)	LB019762	mg/kg	0.80	<0.8	0%	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB019762	%	-	104.0	0 - 3%	85%
2-fluorobiphenyl (Surrogate)	LB019762	%	-	96.0	0 - 5%	92%
d14-p-terphenyl (Surrogate)	LB019762	%	-	112.0	0%	111%

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: ME-(AU)-[ENV]AN040/AN320

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB019951	mg/kg	3.0	<3	0%	97%	90%
Cadmium, Cd	LB019951	mg/kg	0.30	<0.3	0 - 6%	96%	
Chromium, Cr	LB019951	mg/kg	0.30	<0.3	2 - 9%	95%	
Copper, Cu	LB019951	mg/kg	0.50	<0.5	5 - 29%	97%	
Nickel, Ni	LB019951	mg/kg	0.50	<0.5	4 - 15%	96%	
Lead, Pb	LB019951	mg/kg	1.0	<1	0 - 1%	97%	
Zinc, Zn	LB019951	mg/kg	0.50	<0.5	0 - 10%	96%	

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	LB019762	mg/kg	20	<20	0%	98%	95%
TRH C15-C28	LB019762	mg/kg	50	<50	0%	95%	90%
TRH C29-C36	LB019762	mg/kg	50	<50	0%	93%	100%

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	LB019772	mg/kg	0.10	<0.1	0%	80%	108%
Toluene	LB019772	mg/kg	0.10	<0.1	0%	73%	103%
Ethylbenzene	LB019772	mg/kg	0.10	<0.1	0%	72%	107%
m/p-xylene	LB019772	mg/kg	0.20	<0.2	0%	74%	113%
o-xylene	LB019772	mg/kg	0.10	<0.1	0%	67%	103%

Surrogates

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 (continued)

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dibromofluoromethane (Surrogate)	LB019772	%	-	101.0	1%	100%	92%
d4-1,2-dichloroethane (Surrogate)	LB019772	%	-	105.0	0 - 2%	106%	99%
d8-toluene (Surrogate)	LB019772	%	-	97.0	1%	98%	99%
Bromofluorobenzene (Surrogate)	LB019772	%	-	78.0	2%	85%	88%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Xylenes*	LB019772	mg/kg	0.30	<0.3	0%	NA	NA
Total BTEX*	LB019772	mg/kg	-	0	NA	NA	NA

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C9	LB019772	mg/kg	20	<20	0%	117%	133%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Trifluorotoluene (Surrogate)	LB019772	%	-	97.0	2 - 4%	69%	95%

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.
AN088	Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700.
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
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.
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 elluent 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, dependant 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).
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.
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	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."

FOOTNOTES

IS	Insufficient sample for analysis.	QFH	QC result is above the upper tolerance
LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	This analysis is not covered by the scope of accreditation.	NA	The sample was not analysed for this analyte
^	Performed by outside laboratory.		
LOR	Limit of Reporting		
↑↓	Raised or Lowered Limit of Reporting		

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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ANALYTICAL REPORT



CLIENT DETAILS

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Project **GEOTLCOV24303AC**
Order Number **20887**
Samples 3

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SGS Reference SE108042 R0
Report Number 0000028496
Date Reported 15/05/2012 16:45:15
Date Received 08 May 2012

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

No respirable fibres detected using trace analysis technique.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

Andy Sutton
Organics Chemist

Huong Crawford
Laboratory Manager

Ravee Sivasubramaniam
Hygienist



ANALYTICAL REPORT

SE108042 R0

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w
SE108042.001	NBH3 0.3-0.5	Soil	69g Soil,rocks	04 May 2012	No Asbestos Found Organic Fibres Detected	<0.01
SE108042.002	NBH3 1.5-1.95	Soil	58g Soil,rocks	04 May 2012	No Asbestos Found Organic Fibres Detected	<0.01

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** 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."

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	Not Accredited
Amphiboles	-	Amosite and/or Crocidolite			

This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Sampled by the client.

Where reported: 'Asbestos Detected': Asbestos detected by polarized light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarized light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarized light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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STATEMENT OF QA/QC PERFORMANCE

SE108042 R0

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Project **GEOTLCOV24303AC**
Order Number **20887**
Samples 3

LABORATORY DETAILS

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SGS Reference SE108042 R0
Report Number 0000028508
Date Reported 15 May 2012

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' 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.

SAMPLE SUMMARY

Sample counts by matrix	3 Soils	Type of documentation received	COC
Date documentation received	8/5/2012	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	2.7°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		

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
NBH3 0.3-0.5	SE108042.001	LB020062	04 May 2012	08 May 2012	04 May 2013	15 May 2012	04 May 2013	15 May 2012
NBH3 1.5-1.95	SE108042.002	LB020062	04 May 2012	08 May 2012	04 May 2013	15 May 2012	04 May 2013	15 May 2012

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH3 0.3-0.5	SE108042.001	LB019953	04 May 2012	08 May 2012	01 Jun 2012	14 May 2012	01 Jun 2012	14 May 2012
NBH3 1.5-1.95	SE108042.002	LB019953	04 May 2012	08 May 2012	01 Jun 2012	14 May 2012	01 Jun 2012	14 May 2012
NBH3 4.5-4.95	SE108042.003	LB019953	04 May 2012	08 May 2012	01 Jun 2012	14 May 2012	01 Jun 2012	14 May 2012

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH3 0.3-0.5	SE108042.001	LB019887	04 May 2012	08 May 2012	18 May 2012	11 May 2012	16 May 2012	11 May 2012
NBH3 1.5-1.95	SE108042.002	LB019887	04 May 2012	08 May 2012	18 May 2012	11 May 2012	16 May 2012	11 May 2012
NBH3 4.5-4.95	SE108042.003	LB019887	04 May 2012	08 May 2012	18 May 2012	11 May 2012	16 May 2012	11 May 2012

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
NBH3 0.3-0.5	SE108042.001	LB019762	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	10 May 2012
NBH3 1.5-1.95	SE108042.002	LB019762	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	10 May 2012
NBH3 4.5-4.95	SE108042.003	LB019762	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	10 May 2012

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH3 0.3-0.5	SE108042.001	LB019951	04 May 2012	08 May 2012	31 Oct 2012	14 May 2012	31 Oct 2012	14 May 2012
NBH3 1.5-1.95	SE108042.002	LB019951	04 May 2012	08 May 2012	31 Oct 2012	14 May 2012	31 Oct 2012	14 May 2012
NBH3 4.5-4.95	SE108042.003	LB019951	04 May 2012	08 May 2012	31 Oct 2012	14 May 2012	31 Oct 2012	14 May 2012

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
NBH3 0.3-0.5	SE108042.001	LB019762	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	15 May 2012
NBH3 1.5-1.95	SE108042.002	LB019762	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	15 May 2012
NBH3 4.5-4.95	SE108042.003	LB019762	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	15 May 2012

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH3 0.3-0.5	SE108042.001	LB019772	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	09 May 2012
NBH3 1.5-1.95	SE108042.002	LB019772	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	09 May 2012
NBH3 4.5-4.95	SE108042.003	LB019772	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	09 May 2012

Volatile Petroleum Hydrocarbons in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
NBH3 0.3-0.5	SE108042.001	LB019772	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	10 May 2012
NBH3 1.5-1.95	SE108042.002	LB019772	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	10 May 2012
NBH3 4.5-4.95	SE108042.003	LB019772	04 May 2012	08 May 2012	18 May 2012	09 May 2012	18 Jun 2012	10 May 2012

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	NBH3 0.3-0.5	SE108042.001	%	60 - 130%	105
	NBH3 1.5-1.95	SE108042.002	%	60 - 130%	102
	NBH3 4.5-4.95	SE108042.003	%	60 - 130%	107
d14-p-terphenyl (Surrogate)	NBH3 0.3-0.5	SE108042.001	%	60 - 130%	106
	NBH3 1.5-1.95	SE108042.002	%	60 - 130%	110
	NBH3 4.5-4.95	SE108042.003	%	60 - 130%	114
d5-nitrobenzene (Surrogate)	NBH3 0.3-0.5	SE108042.001	%	60 - 130%	112
	NBH3 1.5-1.95	SE108042.002	%	60 - 130%	113
	NBH3 4.5-4.95	SE108042.003	%	60 - 130%	115

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	NBH3 0.3-0.5	SE108042.001	%	60 - 130%	95
	NBH3 1.5-1.95	SE108042.002	%	60 - 130%	95
	NBH3 4.5-4.95	SE108042.003	%	60 - 130%	98
d4-1,2-dichloroethane (Surrogate)	NBH3 0.3-0.5	SE108042.001	%	60 - 130%	99
	NBH3 1.5-1.95	SE108042.002	%	60 - 130%	99
	NBH3 4.5-4.95	SE108042.003	%	60 - 130%	100
d8-toluene (Surrogate)	NBH3 0.3-0.5	SE108042.001	%	60 - 130%	98
	NBH3 1.5-1.95	SE108042.002	%	60 - 130%	98
	NBH3 4.5-4.95	SE108042.003	%	60 - 130%	99
Dibromofluoromethane (Surrogate)	NBH3 0.3-0.5	SE108042.001	%	60 - 130%	94
	NBH3 1.5-1.95	SE108042.002	%	60 - 130%	95
	NBH3 4.5-4.95	SE108042.003	%	60 - 130%	95

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Trifluorotoluene (Surrogate)	NBH3 0.3-0.5	SE108042.001	%	60 - 130%	79
	NBH3 1.5-1.95	SE108042.002	%	60 - 130%	76
	NBH3 4.5-4.95	SE108042.003	%	60 - 130%	67

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
LB019953.001	Mercury	mg/kg	0.05	<0.05

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB019762.001	Naphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	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
	Surrogates			
	d5-nitrobenzene (Surrogate)	%	-	104
	2-fluorobiphenyl (Surrogate)	%	-	96
	d14-p-terphenyl (Surrogate)	%	-	112

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

Sample Number	Parameter	Units	LOR	Result
LB019951.001	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
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	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
LB019762.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	50	<50
	TRH C29-C36	mg/kg	50	<50

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB019772.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		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
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	101
		d4-1,2-dichloroethane (Surrogate)	%	-	105
		d8-toluene (Surrogate)	%	-	97
		Bromofluorobenzene (Surrogate)	%	-	78
	Totals	Total BTEX*	mg/kg	-	0

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB019772.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	Trifluorotoluene (Surrogate)	%	-

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier 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 %
SE108081.001	LB019953.008	Mercury	mg/kg	0.05	0.0066	0.0062010309	200	0

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE107978.001	LB019762.004	Naphthalene	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)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
		Total PAH (Vic EPA)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates						
SE107978.021	LB019762.013	d5-nitrobenzene (Surrogate)	%	-	73.0	73.0	30	0
		2-fluorobiphenyl (Surrogate)	%	-	79.0	79.0	30	0
		d14-p-terphenyl (Surrogate)	%	-	113.0	113.0	30	0
		Naphthalene	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
SE108081.001	LB019951.019	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)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
		Total PAH (Vic EPA)	mg/kg	0.8	<0.8	<0.8	200	0
SE108030.020	LB019951.014	Surrogates						
		d5-nitrobenzene (Surrogate)	%	-	77.0	75.0	30	3
		2-fluorobiphenyl (Surrogate)	%	-	89.0	85.0	30	5
		d14-p-terphenyl (Surrogate)	%	-	117.0	117.0	30	0

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE108030.020	LB019951.014	Arsenic, As	mg/kg	3	<3	<3	200	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.3	10	10	33	2
		Copper, Cu	mg/kg	0.5	4.3	5.8	40	29
		Nickel, Ni	mg/kg	0.5	0.7	0.8	95	15
		Lead, Pb	mg/kg	1	9	9	41	1
		Zinc, Zn	mg/kg	0.5	2.8	3.2	47	10
SE108081.001	LB019951.019	Arsenic, As	mg/kg	3	0.8254143632	1.0057322857	200	0
		Cadmium, Cd	mg/kg	0.3	0.32512818390	0.3449378809	120	6
		Chromium, Cr	mg/kg	0.3	10.4375754718	1.4073230952	33	9
		Copper, Cu	mg/kg	0.5	12.99143632075	0.0579428571	31	5
		Nickel, Ni	mg/kg	0.5	9.43621957549	7.768676190	35	4

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (continued)

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE108081.001	LB019951.019	Lead, Pb	mg/kg	1	10.56557995280	5637780952	39	0
		Zinc, Zn	mg/kg	0.5	76.70168160377	0369428571	31	0

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE107978.001	LB019762.004	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	50	<50	<50	200	0
		TRH C29-C36	mg/kg	50	<50	<50	200	0
SE107978.021	LB019762.014	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	50	<50	<50	200	0
		TRH C29-C36	mg/kg	50	<50	<50	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE107978.010	LB019772.009	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
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	95.0	96.0	50	1	
		d4-1,2-dichloroethane (Surrogate)	%	-	103.0	105.0	50	2	
		d8-toluene (Surrogate)	%	-	98.0	99.0	50	1	
		Bromofluorobenzene (Surrogate)	%	-	90.0	88.0	50	2	
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
	Total BTEX*		mg/kg	-	0	0	200	NA	
	SE107978.030	LB019772.020	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200
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
Surrogates		Dibromofluoromethane (Surrogate)	%	-	92.0	93.0	50	1	
		d4-1,2-dichloroethane (Surrogate)	%	-	103.0	103.0	50	0	
		d8-toluene (Surrogate)	%	-	98.0	99.0	50	1	
		Bromofluorobenzene (Surrogate)	%	-	90.0	88.0	50	2	
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
Total BTEX*			mg/kg	-	0	0	200	NA	

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE107978.010	LB019772.009	TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	Trifluorotoluene (Surrogate)	%	-	70	73	30	4
SE107978.030	LB019772.020	TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	Trifluorotoluene (Surrogate)	%	-	65	66	30	2
SE108093.001	LB019772.026	TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	Trifluorotoluene (Surrogate)	%	-	77	74	30	4

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 %
LB019953.002	Mercury	mg/kg	0.05	0.21	0.2	70 - 130	106

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019762.002	Naphthalene	mg/kg	0.1	3.4	4	60 - 140	86
	Acenaphthylene	mg/kg	0.1	3.6	4	60 - 140	89
	Acenaphthene	mg/kg	0.1	3.4	4	60 - 140	86
	Phenanthrene	mg/kg	0.1	3.6	4	60 - 140	90
	Anthracene	mg/kg	0.1	3.8	4	60 - 140	95
	Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	91
	Pyrene	mg/kg	0.1	3.8	4	60 - 140	94
	Benzo(a)pyrene	mg/kg	0.1	3.5	4	60 - 140	87
	Surrogates						
	d5-nitrobenzene (Surrogate)	%	-	85.0	100	60 - 140	85
	2-fluorobiphenyl (Surrogate)	%	-	92.0	100	60 - 140	92
	d14-p-terphenyl (Surrogate)	%	-	111.0	100	60 - 140	111

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019951.002	Arsenic, As	mg/kg	3	48	50	80 - 120	97
	Cadmium, Cd	mg/kg	0.3	48	50	80 - 120	96
	Chromium, Cr	mg/kg	0.3	48	50	80 - 120	95
	Copper, Cu	mg/kg	0.5	49	50	80 - 120	97
	Nickel, Ni	mg/kg	0.5	48	50	80 - 120	96
	Lead, Pb	mg/kg	1	49	50	80 - 120	97
	Zinc, Zn	mg/kg	0.5	48	50	80 - 120	96

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019762.002	TRH C10-C14	mg/kg	20	39	40	60 - 140	98
	TRH C15-C28	mg/kg	50	<50	40	60 - 140	95
	TRH C29-C36	mg/kg	50	<50	40	60 - 140	93

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019772.002	Monocyclic	Benzene	mg/kg	0.1	2.4	3	60 - 140	80
		Aromatic	Toluene	mg/kg	0.1	2.2	3	60 - 140
		Ethylbenzene	mg/kg	0.1	2.2	3	60 - 140	72
		m/p-xylene	mg/kg	0.2	4.4	5.9	60 - 140	74
		o-xylene	mg/kg	0.1	1.9	2.9	60 - 140	67
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	100.0	100	60 - 140	100
		d4-1,2-dichloroethane (Surrogate)	%	-	106.0	100	60 - 140	106
		d8-toluene (Surrogate)	%	-	98.0	100	60 - 140	98
		Bromofluorobenzene (Surrogate)	%	-	85.0	100	60 - 140	85

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019772.002	TRH C6-C9	mg/kg	20	29	24.4	60 - 140	117

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 identifier 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%
SE108042.001	LB019953.004	Mercury	mg/kg	0.05	0.23	<0.05	0.2	105

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE108030.011	LB019951.004	Lead, Pb	mg/kg	1	45	<1	50	90

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE107978.005	LB019762.006	TRH C10-C14	mg/kg	20	38	<20	40	95
		TRH C15-C28	mg/kg	50	<50	<50	40	90
		TRH C29-C36	mg/kg	50	<50	<50	40	100

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE107978.001	LB019772.004	Monocyclic	Benzene	mg/kg	0.1	3.2	<0.1	3	108
			Aromatic	Toluene	mg/kg	0.1	3.1	<0.1	3
		Ethylbenzene		mg/kg	0.1	3.2	<0.1	3	107
		m/p-xylene		mg/kg	0.2	6.6	<0.2	5.9	113
		o-xylene		mg/kg	0.1	3.0	<0.1	2.9	103
		Surrogates		Dibromofluoromethane (Surrogate)	%	-	92.0	91.0	100
			d4-1,2-dichloroethane (Surrogate)	%	-	99.0	97.0	100	99
			d8-toluene (Surrogate)	%	-	99.0	98.0	100	99
			Bromofluorobenzene (Surrogate)	%	-	88.0	87.0	100	88
		Totals	Total Xylenes*	mg/kg	0.3	9.6	<0.3	-	-
			Total BTEX*	mg/kg	-	19	0	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE107978.001	LB019772.005	TRH C6-C9	mg/kg	20	33	<20	24.4	133
		Surrogates	Trifluorotoluene (Surrogate)	%	-	95.0	92	-

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

- * Non-accredited analysis.
- Sample not analysed for this analyte.
- ^ Analysis performed by external laboratory.

- 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.

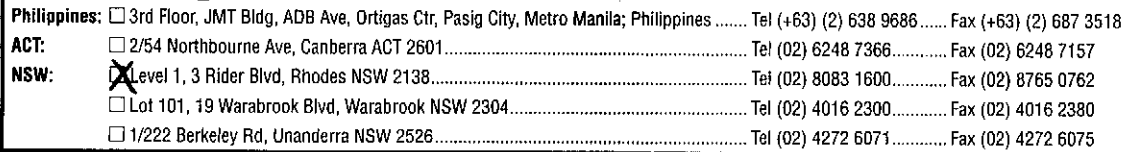
- ① At least 2 of 3 surrogates are within acceptance criteria.
- ② RPD failed acceptance criteria due to sample heterogeneity.
- ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
- ④ Recovery failed acceptance criteria due to matrix interference.
- ⑤ Recovery failed acceptance criteria 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.
- † Refer to Analytical Report comments for further information.

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92343



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Task No:

Laboratory: EnviroLab

Project Manager: Matthew Locke/Sandra

Special Instructions: Please keep remaining soil after analyses. Soil required to be stored for 36 months. Call Coffey to arrange pick-up of remaining soil.

Analysis Request Section

Lab. No.	Sample ID	Sample Location	Sample Depth	Sample Date	Time	Matrix (Soil ... etc)	Container Type & Preservative*	T-A-T (Specify)	BTEX	METAL	PAHs	OCs	NOTES
1	04UP4A	-	-	2004.12	-	Soil	1gar + 1.1e brack	8 days Flamora					EnviroLab Services 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910 6200 Job No: 72124 Date Received: 23.04.12 Time Received: 17.30 Received by: J.D. Wu Temp: <u>Cool</u> Ambient Cooling: Ice <u>Cool</u> Security: <u>Intact</u> None

RELINQUISHED BY:

RECEIVED BY:

Sample Receipt Advice: (Lab Use Only)

Signature:	Date:
Company:	Time:
Signature:	Date:
Company:	Time:

Signature: <i>J. A. L. L.</i>	Date: <i>23.04.12</i>
Company: <i>EL</i>	Time: <i>17.30.</i>
Signature:	Date:
Company:	Time:

All Samples Received in Good Condition . . . ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

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



Envirolab Services Pty Ltd
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www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS

72127

Client:

Coffey Environment

Level 1, 3 Rider Blvd

Rhodes

NSW 2138

Attention: Matt Locke / Sara S

Sample log in details:

Your Reference:

GEOTLCOV24303AC, SICEEP

No. of samples:

1 soil

Date samples received / completed instructions received

23/04/12

/ 23/04/12

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:

1/05/12

/

1/05/12

Date of Preliminary Report:

Not issued

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Tests not covered by NATA are denoted with *.

Results Approved By:

Rhian Morgan
Reporting Supervisor

Nick Sarlamis
Inorganics Supervisor

vTRH & BTEX in Soil		
Our Reference:	UNITS	72127-1
Your Reference	-----	DUP4A
Date Sampled	-----	20/04/2012
Type of sample		Soil
Date extracted	-	24/04/2012
Date analysed	-	25/04/2012
vTRH C ₆ - C ₉	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	95

sTRH in Soil (C10-C36)		
Our Reference:	UNITS	72127-1
Your Reference	-----	DUP4A
Date Sampled	-----	20/04/2012
Type of sample		Soil
Date extracted	-	24/04/2012
Date analysed	-	25/04/2012
TRHC ₁₀ - C ₁₄	mg/kg	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100
Surrogate o-Terphenyl	%	94

PAHs in Soil		
Our Reference:	UNITS	72127-1
Your Reference	-----	DUP4A
Date Sampled	-----	20/04/2012
Type of sample		Soil
Date extracted	-	24/04/2012
Date analysed	-	25/04/2012
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Surrogate <i>p</i> -Terphenyl-d ₁₄	%	99

Acid Extractable metals in soil		
Our Reference:	UNITS	72127-1
Your Reference	-----	DUP4A
Date Sampled	-----	20/04/2012
Type of sample		Soil
Date digested	-	24/04/2012
Date analysed	-	24/04/2012
Arsenic	mg/kg	9
Cadmium	mg/kg	<0.5
Chromium	mg/kg	12
Copper	mg/kg	8
Lead	mg/kg	15
Mercury	mg/kg	<0.1
Nickel	mg/kg	2
Zinc	mg/kg	4

Total Phenolics in Soil		
Our Reference:	UNITS	72127-1
Your Reference	-----	DUP4A
Date Sampled	-----	20/04/2012
Type of sample		Soil
Date extracted	-	30/04/2012
Date analysed	-	30/04/2012
Total Phenolics (as Phenol)	mg/kg	<5

Moisture		
Our Reference:	UNITS	72127-1
Your Reference	-----	DUP4A
Date Sampled	-----	20/04/2012
Type of sample		Soil
Date prepared	-	24/04/12
Date analysed	-	26/04/12
Moisture	%	20

MethodID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-030	Total Phenolics - determined colorimetrically following distillation, based upon APHA 21st ED 5530 D.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

Client Reference: GEOTLCOV24303AC, SICEEP

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH & BTEX in Soil						Base II Duplicate II %RPD		
Date extracted	-			24/04/2012	[NT]	[NT]	LCS-3	24/04/2012
Date analysed	-			25/04/2012	[NT]	[NT]	LCS-3	25/04/2012
vTRHC ₆ - C ₉	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-3	110%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-3	118%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-3	109%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-3	103%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-3	109%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-3	110%
Surrogate aaa-Trifluorotoluene	%		Org-016	102	[NT]	[NT]	LCS-3	111%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sTRH in Soil (C10-C36)						Base II Duplicate II %RPD		
Date extracted	-			24/04/2012	[NT]	[NT]	LCS-3	24/04/2012
Date analysed	-			26/04/2012	[NT]	[NT]	LCS-3	26/04/2012
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-3	87%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-3	107%
TRHC ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-3	98%
Surrogate o-Terphenyl	%		Org-003	95	[NT]	[NT]	LCS-3	74%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			24/04/2012	[NT]	[NT]	LCS-2	24/04/2012
Date analysed	-			25/04/2012	[NT]	[NT]	LCS-2	25/04/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	124%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	119%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	116%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	112%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	116%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	132%

Client Reference: GEOTLCOV24303AC, SICEEP

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-2	130%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	88	[NT]	[NT]	LCS-2	109%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			24/04/2012	[NT]	[NT]	LCS-1	24/04/2012
Date analysed	-			24/04/2012	[NT]	[NT]	LCS-1	24/04/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-1	93%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	[NT]	[NT]	LCS-1	101%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	98%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	99%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	96%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-1	110%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	98%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	96%

Client Reference: GEOTLCOV24303AC, SICEEP

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Total Phenolics in Soil						Base II Duplicate II %RPD		
Date extracted	-			30/04/2012	[NT]	[NT]	LCS-1	30/04/2012
Date analysed	-			30/04/2012	[NT]	[NT]	LCS-1	30/04/2012
Total Phenolics (as Phenol)	mg/kg	5	Inorg-030	<5	[NT]	[NT]	LCS-1	104%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank				
Moisture								
Date prepared	-			[NT]				
Date analysed	-			[NT]				
Moisture	%	0.1	Inorg-008	[NT]				

Report Comments:

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

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

Quality Control Definitions

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

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

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

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

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

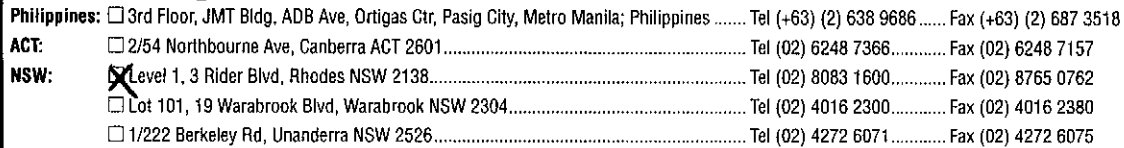
Laboratory Acceptance Criteria

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

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

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

92345



QLD:	☐ 47 Doggett St, Newstead QLD 4006	Tel (07) 3608 2500	Fax (07) 3852 2805
SA:	☐ Level 1, 2-3 Greenhill Rd, Wayville SA 5034	Tel (08) 7221 3500	Fax (08) 8172 1968
TAS:	☐ Coffey Business Centre, 2 Melville St, Hobart TAS 7000	Tel (03) 6108 0100	Fax (03) 6108 0199
VIC:	☐ 126 Trenerry Cres, Abbotsford VIC 3067	Tel (03) 9473 1400	Fax (03) 9473 1450
	☐ Level 1, 23 West Fyans St, Newtown VIC 3220	Tel (03) 5215 4600	Fax (03) 5224 1368
WA:	☐ 61 Duke St, Albany WA 6330	Tel (08) 9892 6400	Fax (08) 9892 6444
	☐ Suite 2, 53 Burswood Rd, Burswood WA 6100	Tel (08) 9355 7100	Fax (08) 9355 7111
	☐ Suite 3 & 4, 236 Naturaliste Tce, Dunsborough WA 6281	Tel (08) 9756 7869	Fax (08) 9756 8878

Task No:

Laboratory: Enviro lab

Project Manager: Matthew Locke

Special Instructions: All remaining soil to be stored for 36 months.
After completion of analyses, please contact Matthew Locke to arrange pick-up of soil samples.

BTEX / TPH	
METALS	
PAHs	
OCs / OPS	

Lab. No.	Sample ID	Sample Location	Sample Depth	Sample Date	Time	Matrix (Soil ... etc)	Container Type & Preservative*	T-A-T (Specify)	BTEX	METAL	PAHs	OCs	NOTES
1	DUP6A	-	-	23.04.12	-	Soil	1 jar free	5 days					
2	DUP8A	-	-		-								


EnviroLab Services
 12 Ashley St
 CH: swood NSW 2067
 Ph: (02) 9910 6200

Job No: **72306**
 Date Received: **27/4/12**
 Time Received: **13:55**
 Received by: **PT**
 Temp: **66**/Ambient
 Cooling: Ice/Icebag
 Security: **Int** Broken/None

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

Job No: 72306

Date Received: 27/4/12
Time Received: 13:45
Received by: PT
Temp: 66.0 Ambient
Cooling: Ice/Coolant
Security: Int Broken/None

RECEIVED BY:

Signature: <i>[Signature]</i>	Date: 27/04/12
Company: COFFEY	Time: 12.40
Signature:	Date:
Company:	Time:

Signature: PT	Date: 27/4/12
Company: ELL	Time: 13:55
Signature:	Date:
Company:	Time:

All Samples Received in Good Condition . . . ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

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



Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS

72306

Client:

Coffey Environment

Level 1, 3 Rider Blvd

Rhodes

NSW 2138

Attention: Matthew Locke

Sample log in details:

Your Reference:

GEOTLCOV24303AC, SICEEP

No. of samples:

2 Soils

Date samples received / completed instructions received

27/4/2012 / 27/4/2012

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:

4/05/12 / 2/05/12

Date of Preliminary Report:

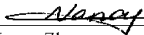
Not issued

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Tests not covered by NATA are denoted with *.

Results Approved By:


Nancy Zhang
Chemist


Rhian Morgan
Reporting Supervisor

vTRH & BTEX in Soil		
Our Reference:	UNITS	72306-2
Your Reference	-----	Dup 8A
Date Sampled	-----	23/04/2012
Type of sample		Soil
Date extracted	-	30/04/2012
Date analysed	-	01/05/2012
vTRH C ₆ - C ₉	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	99

sTRH in Soil (C10-C36)		
Our Reference:	UNITS	72306-2
Your Reference	-----	Dup 8A
Date Sampled	-----	23/04/2012
Type of sample		Soil
Date extracted	-	30/04/2012
Date analysed	-	01/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100
Surrogate o-Terphenyl	%	111

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	72306-2 Dup 8A 23/04/2012 Soil
Date extracted	-	30/04/2012
Date analysed	-	01/05/2012
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.1
Pyrene	mg/kg	0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	0.11
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Surrogate <i>p</i> -Terphenyl-d ₁₄	%	88

Acid Extractable metals in soil		
Our Reference:	UNITS	72306-2
Your Reference	-----	Dup 8A
Date Sampled	-----	23/04/2012
Type of sample		Soil
Date digested	-	30/04/2012
Date analysed	-	30/04/2012
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.5
Chromium	mg/kg	16
Copper	mg/kg	50
Lead	mg/kg	51
Mercury	mg/kg	0.1
Nickel	mg/kg	15
Zinc	mg/kg	110

Moisture		
Our Reference:	UNITS	72306-2
Your Reference	-----	Dup 8A
Date Sampled	-----	23/04/2012
Type of sample		Soil
Date prepared	-	30/04/2012
Date analysed	-	01/05/2012
Moisture	%	8.8

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

Client Reference: GEOTLCOV24303AC, SICEEP

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH & BTEX in Soil						Base II Duplicate II %RPD		
Date extracted	-			30/04/2012	[NT]	[NT]	LCS-5	30/04/2012
Date analysed	-			01/05/2012	[NT]	[NT]	LCS-5	01/05/2012
vTRHC ₆ - C ₉	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-5	103%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-5	107%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-5	105%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-5	102%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-5	101%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-5	104%
Surrogate aaa-Trifluorotoluene	%		Org-016	105	[NT]	[NT]	LCS-5	106%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sTRH in Soil (C10-C36)						Base II Duplicate II %RPD		
Date extracted	-			30/04/2012	[NT]	[NT]	LCS-5	30/04/2012
Date analysed	-			01/05/2012	[NT]	[NT]	LCS-5	01/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-5	81%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-5	100%
TRHC ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-5	95%
Surrogate o-Terphenyl	%		Org-003	105	[NT]	[NT]	LCS-5	81%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			30/04/2012	[NT]	[NT]	LCS-5	30/04/2012
Date analysed	-			01/05/2012	[NT]	[NT]	LCS-5	01/05/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-5	113%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-5	135%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-5	110%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-5	87%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-5	91%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-5	135%

Client Reference: GEOTLCOV24303AC, SICEEP

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-5	102%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	81	[NT]	[NT]	LCS-5	118%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			30/04/2012	[NT]	[NT]	LCS-1	30/04/2012
Date analysed	-			30/04/2012	[NT]	[NT]	LCS-1	30/04/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-1	93%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	[NT]	[NT]	LCS-1	98%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	93%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	93%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	92%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-1	121%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	94%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	94%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank
Moisture				
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

Report Comments:

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

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

Quality Control Definitions

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

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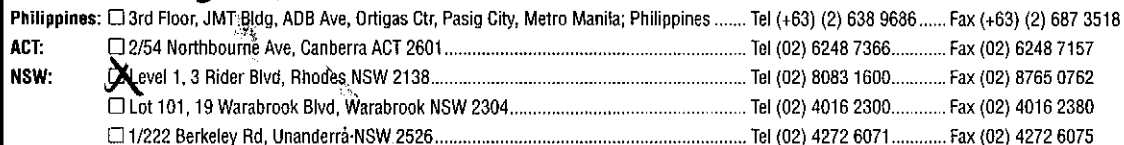
Laboratory Acceptance Criteria

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92350



QLD:	☐ 47 Doggett St, Newstead QLD 4006	Tel (07) 3608 2500	Fax (07) 3852 2805
SA:	☐ Level 1, 2-3 Greenhill Rd, Wayville SA 5034	Tel (08) 7221 3500	Fax (08) 8172 1968
TAS:	☐ Coffey Business Centre, 2 Melville St, Hobart TAS 7000	Tel (03) 6108 0100	Fax (03) 6108 0199
VIC:	☐ 126 Trenerry Cres, Abbotsford VIC 3067	Tel (03) 9473 1400	Fax (03) 9473 1450
	☐ Level 1, 23 West Fyans St, Newtown VIC 3220	Tel (03) 5215 4600	Fax (03) 5224 1368
WA:	☐ 61 Duke St, Albany WA 6330	Tel (08) 9892 6400	Fax (08) 9892 6444
	☐ Suite 2, 53 Burswood Rd, Burswood WA 6100	Tel (08) 9355 7100	Fax (08) 9355 7111
	☐ Suite 3 & 4, 236 Naturaliste Tce, Dunsborough WA 6281	Tel (08) 9756 7869	Fax (08) 9756 8878

Project No: GEDTLCOV24303AC	Task No:
Project Name: SICEEP	Laboratory: EnviroLab
Samplers Name: Adriana Corona Mothe	Project Manager: Matthew Locke
Special Instructions: Please keep all remaining soil after analyses completion. Remaining soil to be pick-up by Colley & to be stored for 36 months	

Analysis Request Section

Lab. No.	Sample ID	Sample Location	Sample Depth	Sample Date	Time	Matrix (Soil ... etc)	Container Type & Preservative*	T-A-T (Specify)	BTEX	METAL	PAHs	OCs	NOTES
1	DUP 12A	—	—	27-04-12	—	Soil	Var	5 days					EnviroLab Services 12 Ashley St Chatswood NSW 2067 Ph: (02) 9910 6200 ENVIROLAB Job No: 7 Date Received: 2/5/12 Time Received: 14:00 Received by: P.T. Temp: Cool/Ambient Cooling: Ice/Coolant Security: Intact/Broken/None
2	DUP 15A	—	—	27-04-12	—	Soil	Var	5 days					

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

Job No: 7 2527
Date Received: 2/5/12
Time Received: 14:00
Received by: P.T.
Temp: OK/Ambient
Cooling: call/call
Security: In/Broken/None

RELINQUISHED BY:

RECEIVED BY:

Sample Receipt Advice: *(Lab Use Only)*

Signature:	Date:
Company:	Time:
Signature:	Date:
Company:	Time:

Signature: PT	Date: 2/5/12
Company: ELS	Time: 14:00
Signature:	Date:
Company:	Time:

All Samples Received in Good Condition . . . ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

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



Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS

72527

Client:

Coffey Environment

Level 1, 3 Rider Blvd

Rhodes

NSW 2138

Attention: Matthew Locke

Sample log in details:

Your Reference:

GEOTLCOV24303AC, SICEEP

No. of samples:

2 Soils

Date samples received / completed instructions received

02/05/12

/ 02/05/12

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:

9/05/12

/ 7/05/12

Date of Preliminary Report:

Not issued

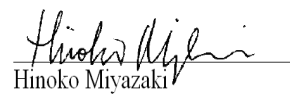
NATA accreditation number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025.

Tests not covered by NATA are denoted with *.

Results Approved By:


Jacinta Hurst
Laboratory Manager


Hinoko Miyazaki
Chemist


Alex MacLean
Chemist



Envirolab Reference: 72527

Revision No: R 00

Page 1 of 11

vTRH & BTEX in Soil			
Our Reference:	UNITS	72527-1	72527-2
Your Reference	-----	DUP 12A	DUP 15A
Date Sampled	-----	27/04/2012	27/04/2012
Type of sample		Soil	Soil
Date extracted	-	03/05/2012	03/05/2012
Date analysed	-	04/05/2012	04/05/2012
vTRH C ₆ - C ₉	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	109	92

sTRH in Soil (C10-C36)			
Our Reference:	UNITS	72527-1	72527-2
Your Reference	-----	DUP 12A	DUP 15A
Date Sampled	-----	27/04/2012	27/04/2012
Type of sample		Soil	Soil
Date extracted	-	03/05/2012	03/05/2012
Date analysed	-	05/05/2012	05/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	110
Surrogate o-Terphenyl	%	102	87

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	72527-1 DUP 12A 27/04/2012 Soil	72527-2 DUP 15A 27/04/2012 Soil
Date extracted	-	03/05/2012	03/05/2012
Date analysed	-	05/05/2012	05/05/2012
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	0.1
Fluorene	mg/kg	0.1	0.1
Phenanthrene	mg/kg	1.3	1.8
Anthracene	mg/kg	0.4	0.4
Fluoranthene	mg/kg	1.3	2.8
Pyrene	mg/kg	1.1	2.6
Benzo(a)anthracene	mg/kg	0.5	1
Chrysene	mg/kg	0.7	1.0
Benzo(b+k)fluoranthene	mg/kg	1.0	1.4
Benzo(a)pyrene	mg/kg	0.72	0.99
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	0.6
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1
Benzo(g,h,i)perylene	mg/kg	0.4	0.7
Surrogate p-Terphenyl-d ₁₄	%	79	95

Acid Extractable metals in soil			
Our Reference:	UNITS	72527-1	72527-2
Your Reference	-----	DUP 12A	DUP 15A
Date Sampled	-----	27/04/2012	27/04/2012
Type of sample		Soil	Soil
Date digested	-	03/05/2012	03/05/2012
Date analysed	-	03/05/2012	03/05/2012
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.5	<0.5
Chromium	mg/kg	8	21
Copper	mg/kg	26	64
Lead	mg/kg	38	17
Mercury	mg/kg	0.2	<0.1
Nickel	mg/kg	21	10
Zinc	mg/kg	58	34

Moisture			
Our Reference:	UNITS	72527-1	72527-2
Your Reference	-----	DUP 12A	DUP 15A
Date Sampled	-----	27/04/2012	27/04/2012
Type of sample		Soil	Soil
Date prepared	-	3/05/2012	3/05/2012
Date analysed	-	4/05/2012	4/05/2012
Moisture	%	10	19

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

Client Reference: GEOTLCOV24303AC, SICEEP

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH & BTEX in Soil						Base II Duplicate II %RPD		
Date extracted	-			03/05/2012	[NT]	[NT]	LCS-4	03/05/2012
Date analysed	-			04/05/2012	[NT]	[NT]	LCS-4	04/05/2012
vTRHC ₆ - C ₉	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-4	98%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-4	106%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-4	98%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-4	90%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-4	98%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-4	98%
Surrogate aaa-Trifluorotoluene	%		Org-016	122	[NT]	[NT]	LCS-4	108%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sTRH in Soil (C10-C36)						Base II Duplicate II %RPD		
Date extracted	-			03/05/2012	[NT]	[NT]	LCS-4	03/05/2012
Date analysed	-			05/05/2012	[NT]	[NT]	LCS-4	05/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-4	92%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	105%
TRHC ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	100%
Surrogate o-Terphenyl	%		Org-003	101	[NT]	[NT]	LCS-4	110%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			03/05/2012	[NT]	[NT]	LCS-4	03/05/2012
Date analysed	-			05/05/2012	[NT]	[NT]	LCS-4	05/05/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	93%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	92%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	99%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	87%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	93%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-4	110%

Client Reference: GEOTLCOV24303AC, SICEEP

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-4	113%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	108	[NT]	[NT]	LCS-4	101%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			03/05/2012	[NT]	[NT]	LCS-2	03/05/2012
Date analysed	-			03/05/2012	[NT]	[NT]	LCS-2	03/05/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-2	95%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	[NT]	[NT]	LCS-2	100%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	100%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	103%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	97%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-2	106%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	100%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-2	99%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank
Moisture				
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

Report Comments:

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

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
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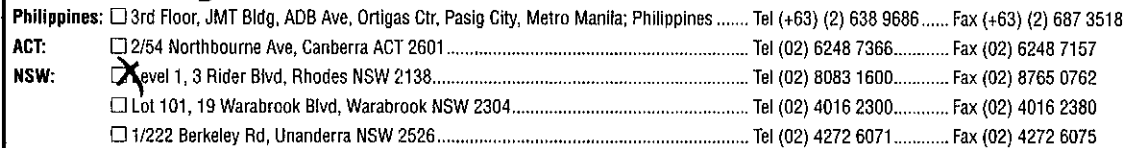
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92347



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	☐ Suite 3 & 4, 236 Naturaliste Tce, Dunsborough WA 6281.....	Tel (08) 9756 7869.....	Fax (08) 9756 8878

Task No:

Laboratory: Envirolab

Project Manager: Matthew Locke

Special Instructions: Please keep ALL soil after analyses. Remaining soil sample required for storage during 36 months. Please advise Coffey when remaining soil available for pick-up.

Analysis Request Section

[illegible]

BTX / TPH
METALS
PAHs / PCBs
OCs / OPs
Asbestos
VHC
VOC
SVOC
ASS Screening
Chlor. Hydrocarbons

NOTES

EnviroLab Services
12 Ashley St
Cherrywood NSW 2067
Ph: (02) 9910 9200

Job No: 72307

Date Received: 27/4/12
Time Received: 13:45
Received by: P.T.
Temp: Cool/Ambient
Cooling: Ice/Cooler
Security: Intact/Broken/None

RELINQUISHED BY:

RECEIVED BY:

Sample Receipt Advice: (Lab Use Only)

Signature: <i>[Signature]</i>	Date: 27/07/12
Company: COFFEY	Time: 12.40
Signature:	Date:
Company:	Time:

Signature: PT	Date: 27/4/12
Company: ELS	Time: 13:55
Signature:	Date:
Company:	Time:

All Samples Received in Good Condition . . . ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

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



Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS

72307

Client:

Coffey Environment
Level 1, 3 Rider Blvd
Rhodes
NSW 2138

Attention: Matthew Locke

Sample log in details:

Your Reference:	<u>GEOTLCOV24303AC, SICEEP</u>
No. of samples:	1 Soil
Date samples received / completed instructions received	27/4/2012 / 27/4/2012

Analysis Details:

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

Please refer to the last page of this report for any comments relating to the results.

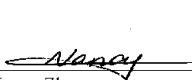
Report Details:

Date results requested by: / Issue Date:	4/05/12 / 3/05/12
Date of Preliminary Report:	Not issued

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Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:


Nancy Zhang
Chemist


Rhian Morgan
Reporting Supervisor

vTRH & BTEX in Soil		
Our Reference:	UNITS	72307-1
Your Reference	-----	Dup 10A
Date Sampled	-----	24/04/2012
Type of sample		Soil
Date extracted	-	30/04/2012
Date analysed	-	01/05/2012
vTRH C ₆ - C ₉	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	105

sTRH in Soil (C10-C36)		
Our Reference:	UNITS	72307-1
Your Reference	-----	Dup 10A
Date Sampled	-----	24/04/2012
Type of sample		Soil
Date extracted	-	30/04/2012
Date analysed	-	01/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100
Surrogate o-Terphenyl	%	105

PAHs in Soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	72307-1 Dup 10A 24/04/2012 Soil
Date extracted	-	30/04/2012
Date analysed	-	02/05/2012
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.2
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.5
Pyrene	mg/kg	0.5
Benzo(a)anthracene	mg/kg	0.3
Chrysene	mg/kg	0.3
Benzo(b+k)fluoranthene	mg/kg	0.5
Benzo(a)pyrene	mg/kg	0.33
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2
Surrogate <i>p</i> -Terphenyl-d ₁₄	%	110

Acid Extractable metals in soil		
Our Reference:	UNITS	72307-1
Your Reference	-----	Dup 10A
Date Sampled	-----	24/04/2012
Type of sample		Soil
Date digested	-	30/04/2012
Date analysed	-	30/04/2012
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.5
Chromium	mg/kg	12
Copper	mg/kg	31
Lead	mg/kg	42
Mercury	mg/kg	0.2
Nickel	mg/kg	8
Zinc	mg/kg	87

Moisture		
Our Reference:	UNITS	72307-1
Your Reference	-----	Dup 10A
Date Sampled	-----	24/04/2012
Type of sample		Soil
Date prepared	-	30/04/2012
Date analysed	-	01/05/2012
Moisture	%	7.2

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

Client Reference: GEOTLCOV24303AC, SICEEP

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH & BTEX in Soil						Base II Duplicate II %RPD		
Date extracted	-			30/04/2012	[NT]	[NT]	LCS-2	30/04/2012
Date analysed	-			01/05/2012	[NT]	[NT]	LCS-2	01/05/2012
vTRHC ₆ - C ₉	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-2	111%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-2	113%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-2	110%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-2	107%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-2	112%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-2	116%
Surrogate aaa-Trifluorotoluene	%		Org-016	111	[NT]	[NT]	LCS-2	107%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sTRH in Soil (C10-C36)						Base II Duplicate II %RPD		
Date extracted	-			30/04/2012	[NT]	[NT]	LCS-2	30/04/2012
Date analysed	-			01/05/2012	[NT]	[NT]	LCS-2	01/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-2	83%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	103%
TRHC ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	95%
Surrogate o-Terphenyl	%		Org-003	104	[NT]	[NT]	LCS-2	77%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			30/04/2012	[NT]	[NT]	LCS-2	30/04/2012
Date analysed	-			02/05/2012	[NT]	[NT]	LCS-2	02/05/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	102%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	133%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	119%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	116%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	123%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	LCS-2	125%

Client Reference: GEOTLCOV24303AC, SICEEP

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	[NT]	[NT]	LCS-2	122%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	99	[NT]	[NT]	LCS-2	98%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			30/04/2012	[NT]	[NT]	LCS-3	30/04/2012
Date analysed	-			30/04/2012	[NT]	[NT]	LCS-3	30/04/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-3	96%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	[NT]	[NT]	LCS-3	102%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	96%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	96%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	96%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-3	103%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	97%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	98%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank
Moisture				
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

Report Comments:

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

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

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

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

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

Groundwater Chemical Test Certificates and Chain of Custody Documentation



CLIENT DETAILS

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Project **GEOTLCOV24303AC - SECEEP**
 Order Number **89108**
 Samples **9**

LABORATORY DETAILS

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SGS Reference **SE108118 R0**
 Report Number **0000028896**
 Date Reported **17 May 2012**
 Date Received **10 May 2012**

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
 Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

VOC/VPH - The Limit of Reporting (LOR) has been raised due to interferences from the sample matrix.

For trace metals, LOR was raised by a dilution of 10 for #1,3-8 due to sample matrix interferences

SIGNATORIES



Andy Sutton
Organics Chemist



Dong Liang
Inorganics Metals Team Leader



Huong Crawford
Laboratory Manager



Ly Kim Ha
Organics Supervisor

Parameter	Units	LOR	Sample Number	SE108118.001	SE108118.002	SE108118.003	SE108118.004	SE108118.005
			Sample Matrix	Water	Water	Water	Water	Water
			Sample Date	09 May 2012	09 May 2012	09 May 2012	09 May 2012	09 May 2012
			Sample Name	MW16	MW20	MW8	MW30	MW25

VOCs in Water Method: AN433/AN434

Fumigants

2,2-dichloropropane	µg/L	0.5	-	-	-	<0.5	-
1,2-dichloropropane	µg/L	0.5	-	-	-	<0.5	-
cis-1,3-dichloropropene	µg/L	0.5	-	-	-	<0.5	-
trans-1,3-dichloropropene	µg/L	0.5	-	-	-	<0.5	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-	-	<0.5	-

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-	-	<5	-
Chloromethane	µg/L	5	-	-	-	<5	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-	-	<0.3	-
Bromomethane	µg/L	10	-	-	-	<10	-
Chloroethane	µg/L	5	-	-	-	<5	-
Trichlorofluoromethane	µg/L	1	-	-	-	<1	-
Iodomethane	µg/L	5	-	-	-	<5	-
1,1-dichloroethene	µg/L	0.5	-	-	-	<0.5	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-	-	<5	-
Allyl chloride	µg/L	2	-	-	-	<2	-
trans-1,2-dichloroethene	µg/L	0.5	-	-	-	<0.5	-
1,1-dichloroethane	µg/L	0.5	-	-	-	<0.5	-
cis-1,2-dichloroethene	µg/L	0.5	-	-	-	<0.5	-
Bromochloromethane	µg/L	0.5	-	-	-	<0.5	-
1,2-dichloroethane	µg/L	0.5	-	-	-	<0.5	-
1,1,1-trichloroethane	µg/L	0.5	-	-	-	<0.5	-
1,1-dichloropropene	µg/L	0.5	-	-	-	<0.5	-
Carbon tetrachloride	µg/L	0.5	-	-	-	<0.5	-
Dibromomethane	µg/L	0.5	-	-	-	<0.5	-
Trichloroethene (Trichloroethylene, TCE)	µg/L	0.5	-	-	-	<0.5	-
1,1,2-trichloroethane	µg/L	0.5	-	-	-	<0.5	-
1,3-dichloropropane	µg/L	0.5	-	-	-	<0.5	-
Tetrachloroethene (Perchloroethylene, PCE)	µg/L	0.5	-	-	-	<0.5	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-	-	<0.5	-
cis-1,4-dichloro-2-butene	µg/L	1	-	-	-	<1	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-	-	<0.5	-
1,2,3-trichloropropane	µg/L	0.5	-	-	-	<0.5	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-	-	<1	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-	-	<0.5	-
Hexachlorobutadiene	µg/L	0.5	-	-	-	<0.5	-

Parameter	Units	LOR	Sample Number	SE108118.001	SE108118.002	SE108118.003	SE108118.004	SE108118.005
			Sample Matrix	Water	Water	Water	Water	Water
			Sample Date	09 May 2012	09 May 2012	09 May 2012	09 May 2012	09 May 2012
			Sample Name	MW16	MW20	MW8	MW30	MW25

VOCs in Water Method: AN433/AN434 (continued)

Halogenated Aromatics

Chlorobenzene	µg/L	0.5	-	-	-	<0.5	-
Bromobenzene	µg/L	0.5	-	-	-	<0.5	-
2-chlorotoluene	µg/L	0.5	-	-	-	<0.5	-
4-chlorotoluene	µg/L	0.5	-	-	-	<0.5	-
1,3-dichlorobenzene	µg/L	0.5	-	-	-	<0.5	-
1,4-dichlorobenzene	µg/L	0.3	-	-	-	<0.3	-
1,2-dichlorobenzene	µg/L	0.5	-	-	-	<0.5	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-	-	<0.5	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-	-	<0.5	-

Monocyclic Aromatic Hydrocarbons

Benzene	µg/L	0.5	<0.5	<0.5	<5.0†	<0.5	<5.0†
Toluene	µg/L	0.5	<0.5	<0.5	<5.0†	<0.5	<5.0†
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<5.0†	<0.5	<5.0†
m/p-xylene	µg/L	1	<1	<1	<10†	<1	<10†
o-xylene	µg/L	0.5	<0.5	<0.5	<5.0†	<0.5	<5.0†
Styrene (Vinyl benzene)	µg/L	0.5	-	-	-	<0.5	-
Isopropylbenzene (Cumene)	µg/L	0.5	-	-	-	<0.5	-
n-propylbenzene	µg/L	0.5	-	-	-	<0.5	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-	-	<0.5	-
tert-butylbenzene	µg/L	0.5	-	-	-	<0.5	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-	-	<0.5	-
sec-butylbenzene	µg/L	0.5	-	-	-	<0.5	-
p-isopropyltoluene	µg/L	0.5	-	-	-	<0.5	-
n-butylbenzene	µg/L	0.5	-	-	-	<0.5	-

Nitrogenous Compounds

Acrylonitrile	µg/L	0.5	-	-	-	<0.5	-
2-nitropropane	µg/L	100	-	-	-	<100	-

Oxygenated Compounds

Acetone (2-propanone)	µg/L	10	-	-	-	<10	-
MIBE (Methyl-tert-butyl ether)	µg/L	2	-	-	-	<2	-
Vinyl acetate	µg/L	10	-	-	-	<10	-
MEK (2-butanone)	µg/L	10	-	-	-	<10	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-	-	<5	-
2-hexanone (MBK)	µg/L	5	-	-	-	<5	-

Parameter	Units	LOR	Sample Number	SE108118.001	SE108118.002	SE108118.003	SE108118.004	SE108118.005
			Sample Matrix	Water	Water	Water	Water	Water
			Sample Date	09 May 2012	09 May 2012	09 May 2012	09 May 2012	09 May 2012
			Sample Name	MW16	MW20	MW8	MW30	MW25

VOCs in Water Method: AN433/AN434 (continued)

Polycyclic VOCs

Naphthalene	µg/L	0.5	-	-	-	<0.5	-
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Sulphonated Compounds

Carbon disulfide	µg/L	2	-	-	-	<2	-
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	109	116	114	118	112
d4-1,2-dichloroethane (Surrogate)	%	-	115	113	114	116	113
d8-toluene (Surrogate)	%	-	97	96	98	93	99
Bromofluorobenzene (Surrogate)	%	-	114	112	103	104	101

Totals

Total Xylenes	µg/L	1.5	<1.5	<1.5	<15 †	<1.5	<15 †
Total BTEX	µg/L	3	<3	<3	<30 †	<3	<30 †
Total VOC	µg/L	10	-	-	-	-	-

Trihalomethanes

Chloroform (THM)	µg/L	0.5	-	-	-	<0.5	-
Bromodichloromethane (THM)	µg/L	0.5	-	-	-	<0.5	-
Dibromochloromethane (THM)	µg/L	0.5	-	-	-	<0.5	-
Bromoform (THM)	µg/L	0.5	-	-	-	<0.5	-

Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434

TRH C6-C9	µg/L	40	<40	<40	<400 †	<40	<400 †
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Surrogates

Trifluorotoluene (Surrogate)	%	-	101	99	100	100	101
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE108118.001 Water 09 May 2012 MW16	SE108118.002 Water 09 May 2012 MW20	SE108118.003 Water 09 May 2012 MW8	SE108118.004 Water 09 May 2012 MW30	SE108118.005 Water 09 May 2012 MW25
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TRH (Total Recoverable Hydrocarbons) in Water Method: AN403

TRH C10-C14	µg/L	100	<100	<100	<100	<100	<100	<100
TRH C15-C28	µg/L	200	<200	<200	<200	<200	<200	<200
TRH C29-C36	µg/L	200	<200	<200	<200	<200	<200	<200

Surrogates

TRH (Surrogate)	%	-	-	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420

Naphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4
Anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2
Pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total PAH (Vic EPA 16)*	µg/L	1	<1	<1	<1	<1	<1	<1

Surrogates

d5-nitrobenzene (Surrogate)	%	-	90	89	79	75	111
2-fluorobiphenyl (Surrogate)	%	-	105	98	80	75	111
d14-p-terphenyl (Surrogate)	%	-	126	113	89	70	124

OC Pesticides in Water Method: AN400/AN420

Alpha BHC	µg/L	0.1	-	-	-	<0.1	-
Hexachlorobenzene (HCB)	µg/L	0.1	-	-	-	<0.1	-
Beta BHC	µg/L	0.1	-	-	-	<0.1	-
Lindane (gamma BHC)	µg/L	0.1	-	-	-	<0.1	-
Delta BHC	µg/L	0.1	-	-	-	<0.1	-
Heptachlor	µg/L	0.1	-	-	-	<0.1	-
Aldrin	µg/L	0.1	-	-	-	<0.1	-
Heptachlor epoxide	µg/L	0.1	-	-	-	<0.1	-
Gamma Chlordane	µg/L	0.1	-	-	-	<0.1	-
Alpha Chlordane	µg/L	0.1	-	-	-	<0.1	-
Alpha Endosulfan	µg/L	0.1	-	-	-	<0.1	-
o,p'-DDE	µg/L	0.1	-	-	-	<0.1	-
p,p'-DDE	µg/L	0.1	-	-	-	<0.1	-
Dieldrin	µg/L	0.1	-	-	-	<0.1	-
Endrin	µg/L	0.1	-	-	-	<0.1	-
Beta Endosulfan	µg/L	0.1	-	-	-	<0.1	-
o,p'-DDD	µg/L	0.1	-	-	-	<0.1	-
p,p'-DDD	µg/L	0.1	-	-	-	<0.1	-
Endosulfan sulphate	µg/L	0.1	-	-	-	<0.1	-
o,p'-DDT	µg/L	0.1	-	-	-	<0.1	-
p,p'-DDT	µg/L	0.1	-	-	-	<0.1	-
Endrin ketone	µg/L	0.1	-	-	-	<0.1	-
Methoxychlor	µg/L	0.1	-	-	-	<0.1	-
trans-Nonachlor	µg/L	0.1	-	-	-	<0.1	-
Endrin aldehyde	µg/L	0.1	-	-	-	<0.1	-



ANALYTICAL REPORT

SE108118 R0

	Sample Number	SE108118.001	SE108118.002	SE108118.003	SE108118.004	SE108118.005
	Sample Matrix	Water	Water	Water	Water	Water
	Sample Date	09 May 2012	09 May 2012	09 May 2012	09 May 2012	09 May 2012
	Sample Name	MW16	MW20	MW8	MW30	MW25
Parameter	Units	LOR				

OC Pesticides in Water Method: AN400/AN420 (continued)

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	-	-	114	-
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OP Pesticides in Water Method: AN400/AN420

Dichlorvos	µg/L	0.5	-	-	-	<0.5	-
Dimethoate	µg/L	0.5	-	-	-	<0.5	-
Diazinon (Dimpylate)	µg/L	0.5	-	-	-	<0.5	-
Fenitrothion	µg/L	0.2	-	-	-	<0.2	-
Malathion	µg/L	0.2	-	-	-	<0.2	-
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	-	-	-	<0.2	-
Parathion-ethyl (Parathion)	µg/L	0.2	-	-	-	<0.2	-
Bromophos Ethyl	µg/L	0.2	-	-	-	<0.2	-
Methidathion	µg/L	0.5	-	-	-	<0.5	-
Ethion	µg/L	0.2	-	-	-	<0.2	-
Azinphos-methyl	µg/L	0.2	-	-	-	<0.2	-

Surrogates

2-fluorobiphenyl (Surrogate)	%	-	-	-	-	75	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	70	-

PCBs in Water Method: AN400/AN420

Arochlor 1016	µg/L	1	-	-	-	<1	-
Arochlor 1221	µg/L	1	-	-	-	<1	-
Arochlor 1232	µg/L	1	-	-	-	<1	-
Arochlor 1242	µg/L	1	-	-	-	<1	-
Arochlor 1248	µg/L	1	-	-	-	<1	-
Arochlor 1254	µg/L	1	-	-	-	<1	-
Arochlor 1260	µg/L	1	-	-	-	<1	-
Arochlor 1262	µg/L	1	-	-	-	<1	-
Arochlor 1268	µg/L	1	-	-	-	<1	-
Total Arochlors*	µg/L	5	-	-	-	<5	-

Sample Number	SE108118.001	SE108118.002	SE108118.003	SE108118.004	SE108118.005
Sample Matrix	Water	Water	Water	Water	Water
Sample Date	09 May 2012	09 May 2012	09 May 2012	09 May 2012	09 May 2012
Sample Name	MW16	MW20	MW8	MW30	MW25
Parameter	Units	LOR			

PCBs in Water Method: AN400/AN420 (continued)

Surrogates

Tetrachloro-m-xylene (Surrogate)	%	-	-	-	-	114	-
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pH in water Method: AN101

pH	pH Units	-	6.8	7.1	7.3	7.4	7.0
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Total Dissolved Solids (TDS) in water Method: AN113

Total Dissolved Solids Dried at 180°C	mg/L	10	30400	447	24700	19700	18900
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Trace Metals (Dissolved) in Water by ICPMS Method: AN318

Arsenic, As	µg/L	1	<2 †	<2 †	<2 †	<2 †	<2 †
Cadmium, Cd	µg/L	0.1	<1.0 †	<1.0 †	<1.0 †	<1.0 †	<1.0 †
Chromium, Cr	µg/L	1	<10 †	<10 †	<10 †	<10 †	<10 †
Copper, Cu	µg/L	1	3	<1	5	1	<1
Lead, Pb	µg/L	1	<1	<1	<1	<1	<1
Nickel, Ni	µg/L	1	<10 †	<10 †	<10 †	<10 †	<10 †
Zinc, Zn	µg/L	1	19	5	34	20	11

Mercury (dissolved) in Water Method: AN311/AN312

Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
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Sample Number	SE108118.006	SE108118.007	SE108118.008	SE108118.009
Sample Matrix	Water	Water	Water	Water
Sample Date	09 May 2012	09 May 2012	09 May 2012	09 May 2012
Sample Name	MW5	MW13	QC1	TS
Parameter	Units	LOR		

VOCs in Water Method: AN433/AN434

Fumigants

2,2-dichloropropane	µg/L	0.5	-	-	-	-
1,2-dichloropropane	µg/L	0.5	-	-	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	-	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	-	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-	-	-

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-	-	-
Chloromethane	µg/L	5	-	-	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-	-	-
Bromomethane	µg/L	10	-	-	-	-
Chloroethane	µg/L	5	-	-	-	-
Trichlorofluoromethane	µg/L	1	-	-	-	-
Iodomethane	µg/L	5	-	-	-	-
1,1-dichloroethene	µg/L	0.5	-	-	-	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-	-	-
Allyl chloride	µg/L	2	-	-	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	-	-	-
1,1-dichloroethane	µg/L	0.5	-	-	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	-	-	-
Bromochloromethane	µg/L	0.5	-	-	-	-
1,2-dichloroethane	µg/L	0.5	-	-	-	-
1,1,1-trichloroethane	µg/L	0.5	-	-	-	-
1,1-dichloropropene	µg/L	0.5	-	-	-	-
Carbon tetrachloride	µg/L	0.5	-	-	-	-
Dibromomethane	µg/L	0.5	-	-	-	-
Trichloroethene (Trichloroethylene, TCE)	µg/L	0.5	-	-	-	-
1,1,2-trichloroethane	µg/L	0.5	-	-	-	-

			Sample Number	SE108118.006	SE108118.007	SE108118.008	SE108118.009
			Sample Matrix	Water	Water	Water	Water
			Sample Date	09 May 2012	09 May 2012	09 May 2012	09 May 2012
			Sample Name	MW5	MW13	QC1	TS
Parameter	Units	LOR					

VOCs in Water Method: AN433/AN434 (continued)

1,3-dichloropropane	µg/L	0.5	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-	-	-
cis-1,4-dichloro-2-butene	µg/L	1	-	-	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-	-	-
1,2,3-trichloropropane	µg/L	0.5	-	-	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-	-	-
Hexachlorobutadiene	µg/L	0.5	-	-	-	-

Halogenated Aromatics

Chlorobenzene	µg/L	0.5	-	-	-	-
Bromobenzene	µg/L	0.5	-	-	-	-
2-chlorotoluene	µg/L	0.5	-	-	-	-
4-chlorotoluene	µg/L	0.5	-	-	-	-
1,3-dichlorobenzene	µg/L	0.5	-	-	-	-
1,4-dichlorobenzene	µg/L	0.3	-	-	-	-
1,2-dichlorobenzene	µg/L	0.5	-	-	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-	-	-

Parameter	Units	LOR	Sample Number	SE108118.006	SE108118.007	SE108118.008	SE108118.009
			Sample Matrix	Water	Water	Water	Water
			Sample Date	09 May 2012	09 May 2012	09 May 2012	09 May 2012
			Sample Name	MW5	MW13	QC1	TS

VOCs in Water Method: AN433/AN434 (continued)

Monocyclic Aromatic Hydrocarbons

Benzene	µg/L	0.5	<5.0 †	<0.5	<0.5	[100%]
Toluene	µg/L	0.5	<5.0 †	<0.5	<0.5	[106%]
Ethylbenzene	µg/L	0.5	<5.0 †	<0.5	<0.5	[105%]
m/p-xylene	µg/L	1	<10 †	<1	<1	[102%]
o-xylene	µg/L	0.5	<5.0 †	<0.5	<0.5	[102%]
Styrene (Vinyl benzene)	µg/L	0.5	-	-	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	-	-	-	-
n-propylbenzene	µg/L	0.5	-	-	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-	-	-
tert-butylbenzene	µg/L	0.5	-	-	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-	-	-
sec-butylbenzene	µg/L	0.5	-	-	-	-
p-isopropyltoluene	µg/L	0.5	-	-	-	-
n-butylbenzene	µg/L	0.5	-	-	-	-

Nitrogenous Compounds

Acrylonitrile	µg/L	0.5	-	-	-	-
2-nitropropane	µg/L	100	-	-	-	-

Oxygenated Compounds

Acetone (2-propanone)	µg/L	10	-	-	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	-	-	-	-
Vinyl acetate	µg/L	10	-	-	-	-
MEK (2-butanone)	µg/L	10	-	-	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-	-	-
2-hexanone (MBK)	µg/L	5	-	-	-	-

Polycyclic VOCs

Naphthalene	µg/L	0.5	-	-	-	-
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Sulphonated Compounds

Carbon disulfide	µg/L	2	-	-	-	-
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	110	120	117	102
d4-1,2-dichloroethane (Surrogate)	%	-	113	119	119	102
d8-toluene (Surrogate)	%	-	99	95	97	100
Bromofluorobenzene (Surrogate)	%	-	102	110	119	103

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE108118.006 Water 09 May 2012 MW5	SE108118.007 Water 09 May 2012 MW13	SE108118.008 Water 09 May 2012 QC1	SE108118.009 Water 09 May 2012 TS
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VOCs in Water Method: AN433/AN434 (continued)

Totals

Total Xylenes	µg/L	1.5	<15 †	<1.5	<1.5	-
Total BTEX	µg/L	3	<30 †	<3	<3	-
Total VOC	µg/L	10	-	-	-	-

Trihalomethanes

Chloroform (THM)	µg/L	0.5	-	-	-	-
Bromodichloromethane (THM)	µg/L	0.5	-	-	-	-
Dibromochloromethane (THM)	µg/L	0.5	-	-	-	-
Bromoform (THM)	µg/L	0.5	-	-	-	-

Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434

TRH C6-C9	µg/L	40	<400 †	<40	<40	-
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Surrogates

Trifluorotoluene (Surrogate)	%	-	99	98	99	-
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403

TRH C10-C14	µg/L	100	<100	<100	<100	-
TRH C15-C28	µg/L	200	<200	<200	<200	-
TRH C29-C36	µg/L	200	<200	<200	<200	-

Surrogates

TRH (Surrogate)	%	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420

Naphthalene	µg/L	0.1	<0.1	0.1	<0.1	-
Acenaphthylene	µg/L	0.1	<0.1	<0.1	<0.1	-
Acenaphthene	µg/L	0.1	<0.1	0.3	<0.1	-
Fluorene	µg/L	0.1	<0.1	<0.1	<0.1	-
Phenanthrene	µg/L	0.1	<0.1	0.3	<0.1	-
Anthracene	µg/L	0.1	<0.1	<0.1	<0.1	-
Fluoranthene	µg/L	0.1	<0.1	0.2	<0.1	-
Pyrene	µg/L	0.1	<0.1	0.2	<0.1	-
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	-
Chrysene	µg/L	0.1	<0.1	<0.1	<0.1	-
Benzo(b)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	-
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	-
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	-
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	-
Dibenzo(a,h)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	-
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	<0.1	-
Total PAH (Vic EPA 16)*	µg/L	1	<1	1	<1	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE108118.006 Water 09 May 2012 MW5	SE108118.007 Water 09 May 2012 MW13	SE108118.008 Water 09 May 2012 QC1	SE108118.009 Water 09 May 2012 TS
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PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420 (continued)

Surrogates

d5-nitrobenzene (Surrogate)	%	-	86	117	117	-
2-fluorobiphenyl (Surrogate)	%	-	82	114	111	-
d14-p-terphenyl (Surrogate)	%	-	108	119	122	-

OC Pesticides in Water Method: AN400/AN420

Alpha BHC	µg/L	0.1	-	-	-	-
Hexachlorobenzene (HCB)	µg/L	0.1	-	-	-	-
Beta BHC	µg/L	0.1	-	-	-	-
Lindane (gamma BHC)	µg/L	0.1	-	-	-	-
Delta BHC	µg/L	0.1	-	-	-	-
Heptachlor	µg/L	0.1	-	-	-	-
Aldrin	µg/L	0.1	-	-	-	-
Heptachlor epoxide	µg/L	0.1	-	-	-	-
Gamma Chlordane	µg/L	0.1	-	-	-	-
Alpha Chlordane	µg/L	0.1	-	-	-	-
Alpha Endosulfan	µg/L	0.1	-	-	-	-
o,p'-DDE	µg/L	0.1	-	-	-	-
p,p'-DDE	µg/L	0.1	-	-	-	-
Dieldrin	µg/L	0.1	-	-	-	-
Endrin	µg/L	0.1	-	-	-	-
Beta Endosulfan	µg/L	0.1	-	-	-	-
o,p'-DDD	µg/L	0.1	-	-	-	-
p,p'-DDD	µg/L	0.1	-	-	-	-
Endosulfan sulphate	µg/L	0.1	-	-	-	-
o,p'-DDT	µg/L	0.1	-	-	-	-
p,p'-DDT	µg/L	0.1	-	-	-	-
Endrin ketone	µg/L	0.1	-	-	-	-
Methoxychlor	µg/L	0.1	-	-	-	-
trans-Nonachlor	µg/L	0.1	-	-	-	-
Endrin aldehyde	µg/L	0.1	-	-	-	-

Surrogates

Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	-	-	-
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OP Pesticides in Water Method: AN400/AN420

Dichlorvos	µg/L	0.5	-	-	-	-
Dimethoate	µg/L	0.5	-	-	-	-
Diazinon (Dimpylate)	µg/L	0.5	-	-	-	-
Fenitrothion	µg/L	0.2	-	-	-	-
Malathion	µg/L	0.2	-	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	-	-	-	-
Parathion-ethyl (Parathion)	µg/L	0.2	-	-	-	-
Bromophos Ethyl	µg/L	0.2	-	-	-	-
Methidathion	µg/L	0.5	-	-	-	-
Ethion	µg/L	0.2	-	-	-	-
Azinphos-methyl	µg/L	0.2	-	-	-	-

Surrogates

2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-

		Sample Number	SE108118.006	SE108118.007	SE108118.008	SE108118.009
		Sample Matrix	Water	Water	Water	Water
		Sample Date	09 May 2012	09 May 2012	09 May 2012	09 May 2012
		Sample Name	MW5	MW13	QC1	TS
Parameter	Units	LOR				

PCBs in Water Method: AN400/AN420

Arochlor 1016	µg/L	1	-	-	-	-
Arochlor 1221	µg/L	1	-	-	-	-
Arochlor 1232	µg/L	1	-	-	-	-
Arochlor 1242	µg/L	1	-	-	-	-
Arochlor 1248	µg/L	1	-	-	-	-
Arochlor 1254	µg/L	1	-	-	-	-
Arochlor 1260	µg/L	1	-	-	-	-
Arochlor 1262	µg/L	1	-	-	-	-
Arochlor 1268	µg/L	1	-	-	-	-
Total Arochlors*	µg/L	5	-	-	-	-

Surrogates

Tetrachloro-m-xylene (Surrogate)	%	-	-	-	-	-
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pH in water Method: AN101

pH	pH Units	-	7.1	7.1	7.5	-
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Total Dissolved Solids (TDS) in water Method: AN113

Total Dissolved Solids Dried at 180°C	mg/L	10	18400	14800	27500	-
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Trace Metals (Dissolved) in Water by ICPMS Method: AN318

Arsenic, As	µg/L	1	<2 †	<2 †	<2 †	-
Cadmium, Cd	µg/L	0.1	<1.0 †	<1.0 †	<1.0 †	-
Chromium, Cr	µg/L	1	<10 †	<10 †	<10 †	-
Copper, Cu	µg/L	1	2	1	5	-
Lead, Pb	µg/L	1	<1	<1	<1	-
Nickel, Ni	µg/L	1	<10 †	<10 †	<10 †	-
Zinc, Zn	µg/L	1	43	39	27	-

Mercury (dissolved) in Water Method: AN311/AN312

Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	-
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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 (dissolved) in Water Method: ME-(AU)-[ENV]AN311/AN312

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB019994	mg/L	0.0001	<0.0001	0%	106%	103%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Alpha BHC	LB019935	µg/L	0.1	<0.1	NA
Hexachlorobenzene (HCB)	LB019935	µg/L	0.1	<0.1	NA
Beta BHC	LB019935	µg/L	0.1	<0.1	NA
Lindane (gamma BHC)	LB019935	µg/L	0.1	<0.1	NA
Delta BHC	LB019935	µg/L	0.1	<0.1	95%
Heptachlor	LB019935	µg/L	0.1	<0.1	100%
Aldrin	LB019935	µg/L	0.1	<0.1	105%
Heptachlor epoxide	LB019935	µg/L	0.1	<0.1	NA
Gamma Chlordane	LB019935	µg/L	0.1	<0.1	NA
Alpha Chlordane	LB019935	µg/L	0.1	<0.1	NA
Alpha Endosulfan	LB019935	µg/L	0.1	<0.1	NA
o,p'-DDE	LB019935	µg/L	0.1	<0.1	NA
p,p'-DDE	LB019935	µg/L	0.1	<0.1	NA
Dieldrin	LB019935	µg/L	0.1	<0.1	100%
Endrin	LB019935	µg/L	0.1	<0.1	105%
Beta Endosulfan	LB019935	µg/L	0.1	<0.1	NA
o,p'-DDD	LB019935	µg/L	0.1	<0.1	NA
p,p'-DDD	LB019935	µg/L	0.1	<0.1	NA
Endosulfan sulphate	LB019935	µg/L	0.1	<0.1	NA
o,p'-DDT	LB019935	µg/L	0.1	<0.1	NA
p,p'-DDT	LB019935	µg/L	0.1	<0.1	95%
Endrin ketone	LB019935	µg/L	0.1	<0.1	NA
Methoxychlor	LB019935	µg/L	0.1	<0.1	NA
trans-Nonachlor	LB019935	µg/L	0.1	<0.1	NA
Endrin aldehyde	LB019935	µg/L	0.1	<0.1	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB019935	%	-	93%	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 Water Method: ME-(AU)-[ENV]AN400/AN420

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dichlorvos	LB019935	µg/L	0.5	<0.5	93%
Dimethoate	LB019935	µg/L	0.5	<0.5	NA
Diazinon (Dimpylate)	LB019935	µg/L	0.5	<0.5	95%
Fenitrothion	LB019935	µg/L	0.2	<0.2	NA
Malathion	LB019935	µg/L	0.2	<0.2	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB019935	µg/L	0.2	<0.2	118%
Parathion-ethyl (Parathion)	LB019935	µg/L	0.2	<0.2	NA
Bromophos Ethyl	LB019935	µg/L	0.2	<0.2	NA
Methidathion	LB019935	µg/L	0.5	<0.5	NA
Ethion	LB019935	µg/L	0.2	<0.2	93%
Azinphos-methyl	LB019935	µg/L	0.2	<0.2	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
2-fluorobiphenyl (Surrogate)	LB019935	%	-	106%	101%
d14-p-terphenyl (Surrogate)	LB019935	%	-	88%	81%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB019935	µg/L	0.1	<0.1	88%
Acenaphthylene	LB019935	µg/L	0.1	<0.1	93%
Acenaphthene	LB019935	µg/L	0.1	<0.1	93%
Fluorene	LB019935	µg/L	0.1	<0.1	NA
Phenanthrene	LB019935	µg/L	0.1	<0.1	95%
Anthracene	LB019935	µg/L	0.1	<0.1	93%
Fluoranthene	LB019935	µg/L	0.1	<0.1	88%
Pyrene	LB019935	µg/L	0.1	<0.1	93%
Benzo(a)anthracene	LB019935	µg/L	0.1	<0.1	NA
Chrysene	LB019935	µg/L	0.1	<0.1	NA
Benzo(b)fluoranthene	LB019935	µg/L	0.1	<0.1	NA
Benzo(k)fluoranthene	LB019935	µg/L	0.1	<0.1	NA
Benzo(a)pyrene	LB019935	µg/L	0.1	<0.1	88%
Indeno(1,2,3-cd)pyrene	LB019935	µg/L	0.1	<0.1	NA
Dibenzo(a&h)anthracene	LB019935	µg/L	0.1	<0.1	NA
Benzo(ghi)perylene	LB019935	µg/L	0.1	<0.1	NA
Total PAH (Vic EPA 16)*	LB019935	µg/L	1	<1	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB019935	%	-	102%	101%
2-fluorobiphenyl (Surrogate)	LB019935	%	-	97%	99%
d14-p-terphenyl (Surrogate)	LB019935	%	-	112%	96%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arochlor 1016	LB019935	µg/L	1	<1	NA
Arochlor 1221	LB019935	µg/L	1	<1	NA
Arochlor 1232	LB019935	µg/L	1	<1	NA
Arochlor 1242	LB019935	µg/L	1	<1	NA
Arochlor 1248	LB019935	µg/L	1	<1	NA
Arochlor 1254	LB019935	µg/L	1	<1	NA
Arochlor 1260	LB019935	µg/L	1	<1	94%
Arochlor 1262	LB019935	µg/L	1	<1	NA
Arochlor 1268	LB019935	µg/L	1	<1	NA
Total Arochlors*	LB019935	µg/L	5	<5	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Tetrachloro-m-xylene (Surrogate)	LB019935	%	-	93%	95%

pH in water Method: ME-(AU)-[ENV]AN101

Parameter	QC Reference	Units	LOR	DUP %RPD	LCS %Recovery
pH	LB019927	pH Units	-	0%	99%

Total Dissolved Solids (TDS) in water Method: ME-(AU)-[ENV]AN113

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Total Dissolved Solids Dried at 180°C	LB020198	mg/L	10	<10	0%	NA

Trace Metals (Dissolved) in Water by ICPMS Method: ME-(AU)-[ENV]AN318

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB019919	µg/L	1	<1	0%	93%	99%
Cadmium, Cd	LB019919	µg/L	0.1	<0.1	0%	93%	94%
Chromium, Cr	LB019919	µg/L	1	<1	0%	100%	101%
Copper, Cu	LB019919	µg/L	1	<1	4 - 21%	102%	96%
Lead, Pb	LB019919	µg/L	1	<1	0%	93%	92%
Nickel, Ni	LB019919	µg/L	1	<1	0%	100%	98%
Zinc, Zn	LB019919	µg/L	1	<1	2 - 3%	103%	103%

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.

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C10-C14	LB019935	µg/L	100	<100	105%
TRH C15-C28	LB019935	µg/L	200	<200	103%
TRH C29-C36	LB019935	µg/L	200	<200	103%

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

Fumigants

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
2,2-dichloropropane	LB019934	µg/L	0.5	<0.5	NA	NA
1,2-dichloropropane	LB019934	µg/L	0.5	<0.5	NA	NA
cis-1,3-dichloropropene	LB019934	µg/L	0.5	<0.5	NA	NA
trans-1,3-dichloropropene	LB019934	µg/L	0.5	<0.5	NA	NA
1,2-dibromoethane (EDB)	LB019934	µg/L	0.5	<0.5	NA	NA

Halogenated Aliphatics

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Dichlorodifluoromethane (CFC-12)	LB019934	µg/L	5	<5	NA	NA
Chloromethane	LB019934	µg/L	5	<5	NA	NA
Vinyl chloride (Chloroethene)	LB019934	µg/L	0.3	<0.3	NA	NA
Bromomethane	LB019934	µg/L	10	<10	NA	NA
Chloroethane	LB019934	µg/L	5	<5	NA	NA
Trichlorofluoromethane	LB019934	µg/L	1	<1	NA	NA
Iodomethane	LB019934	µg/L	5	<5	NA	NA
1,1-dichloroethene	LB019934	µg/L	0.5	<0.5	116%	111%
Dichloromethane (Methylene chloride)	LB019934	µg/L	5	<5	NA	NA
Allyl chloride	LB019934	µg/L	2	<2	NA	NA
trans-1,2-dichloroethene	LB019934	µg/L	0.5	<0.5	NA	NA
1,1-dichloroethane	LB019934	µg/L	0.5	<0.5	NA	NA
cis-1,2-dichloroethene	LB019934	µg/L	0.5	<0.5	NA	NA
Bromochloromethane	LB019934	µg/L	0.5	<0.5	NA	NA
1,2-dichloroethane	LB019934	µg/L	0.5	<0.5	97%	109%
1,1,1-trichloroethane	LB019934	µg/L	0.5	<0.5	NA	NA
1,1-dichloropropene	LB019934	µg/L	0.5	<0.5	NA	NA
Carbon tetrachloride	LB019934	µg/L	0.5	<0.5	NA	NA
Dibromomethane	LB019934	µg/L	0.5	<0.5	NA	NA
Trichloroethene (Trichloroethylene,TCE)	LB019934	µg/L	0.5	<0.5	98%	109%
1,1,2-trichloroethane	LB019934	µg/L	0.5	<0.5	NA	NA
1,3-dichloropropane	LB019934	µg/L	0.5	<0.5	NA	NA
Tetrachloroethene (Perchloroethylene,PCE)	LB019934	µg/L	0.5	<0.5	NA	NA
1,1,1,2-tetrachloroethane	LB019934	µg/L	0.5	<0.5	NA	NA
cis-1,4-dichloro-2-butene	LB019934	µg/L	1	<1	NA	NA
1,1,2,2-tetrachloroethane	LB019934	µg/L	0.5	<0.5	NA	NA
1,2,3-trichloropropane	LB019934	µg/L	0.5	<0.5	NA	NA
trans-1,4-dichloro-2-butene	LB019934	µg/L	1	<1	NA	NA
1,2-dibromo-3-chloropropane	LB019934	µg/L	0.5	<0.5	NA	NA
Hexachlorobutadiene	LB019934	µg/L	0.5	<0.5	NA	NA

Halogenated Aromatics

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Chlorobenzene	LB019934	µg/L	0.5	<0.5	96%	101%
Bromobenzene	LB019934	µg/L	0.5	<0.5	NA	NA
2-chlorotoluene	LB019934	µg/L	0.5	<0.5	NA	NA
4-chlorotoluene	LB019934	µg/L	0.5	<0.5	NA	NA
1,3-dichlorobenzene	LB019934	µg/L	0.5	<0.5	NA	NA
1,4-dichlorobenzene	LB019934	µg/L	0.3	<0.3	NA	NA
1,2-dichlorobenzene	LB019934	µg/L	0.5	<0.5	NA	NA

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.

VOCs in Water Method: ME-(AU)-[ENV]AN433/AN434 (continued)

				MB	LCS %Recovery	MS %Recovery
1,2,4-trichlorobenzene	LB019934	µg/L	0.5	<0.5	NA	NA
1,2,3-trichlorobenzene	LB019934	µg/L	0.5	<0.5	NA	NA

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB019934	µg/L	0.5	<0.5	0%	103%	105%
Toluene	LB019934	µg/L	0.5	<0.5	0%	95%	105%
Ethylbenzene	LB019934	µg/L	0.5	<0.5	0%	99%	100%
m/p-xylene	LB019934	µg/L	1	<1	0%	99%	100%
o-xylene	LB019934	µg/L	0.5	<0.5	0%	100%	100%
Styrene (Vinyl benzene)	LB019934	µg/L	0.5	<0.5		NA	NA
Isopropylbenzene (Cumene)	LB019934	µg/L	0.5	<0.5		NA	NA
n-propylbenzene	LB019934	µg/L	0.5	<0.5		NA	NA
1,3,5-trimethylbenzene	LB019934	µg/L	0.5	<0.5		NA	NA
tert-butylbenzene	LB019934	µg/L	0.5	<0.5		NA	NA
1,2,4-trimethylbenzene	LB019934	µg/L	0.5	<0.5		NA	NA
sec-butylbenzene	LB019934	µg/L	0.5	<0.5		NA	NA
p-isopropyltoluene	LB019934	µg/L	0.5	<0.5		NA	NA
n-butylbenzene	LB019934	µg/L	0.5	<0.5		NA	NA

Nitrogenous Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Acrylonitrile	LB019934	µg/L	0.5	<0.5	NA	NA

Oxygenated Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Acetone (2-propanone)	LB019934	µg/L	10	<10	NA	NA
MtBE (Methyl-tert-butyl ether)	LB019934	µg/L	2	<1	NA	NA
Vinyl acetate	LB019934	µg/L	10	<10	NA	NA
MEK (2-butanone)	LB019934	µg/L	10	<10	NA	NA
MIBK (4-methyl-2-pentanone)	LB019934	µg/L	5	<5	NA	NA
2-hexanone (MBK)	LB019934	µg/L	5	<5	NA	NA

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Naphthalene	LB019934	µg/L	0.5	<0.5	NA	NA

Sulphonated Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Carbon disulfide	LB019934	µg/L	2	<2	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dibromofluoromethane (Surrogate)	LB019934	%	-	107%	26%	94%	99%
d4-1,2-dichloroethane (Surrogate)	LB019934	%	-	112%	46%	95%	104%
d8-toluene (Surrogate)	LB019934	%	-	97%	23%	96%	100%
Bromofluorobenzene (Surrogate)	LB019934	%	-	116%	41%	103%	101%

Trihalomethanes

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Chloroform (THM)	LB019934	µg/L	0.5	<0.5	98%	104%
Bromodichloromethane (THM)	LB019934	µg/L	0.5	<0.5	NA	NA
Dibromochloromethane (THM)	LB019934	µg/L	0.5	<0.5	NA	NA

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.

VOCs in Water Method: ME-(AU)-[ENV]AN433/AN434 (continued)

				MB	LCS %Recovery	MS %Recovery
Bromoform (THM)	LB019934	µg/L	0.5	<0.5	NA	NA

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C9	LB019934	µg/L	40	<40	0%	115%	90%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Trifluorotoluene (Surrogate)	LB019934	%	-	99%	14%	95%	98%

METHOD

METHODOLOGY SUMMARY

AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN113	Total Dissolved Solids: A well-mixed filtered sample of known volume is evaporated to dryness at 180°C and the residue weighed. Approximate methods for correlating chemical analysis with dissolved solids are available. Reference APHA 2540 C.
AN311/AN312	Mercury by Cold Vapour AAS in Waters: 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.
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
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.
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, dependant 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.

FOOTNOTES

IS	Insufficient sample for analysis.	QFH	QC result is above the upper tolerance
LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	This analysis is not covered by the scope of accreditation.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated
LOR	Limit of Reporting		
↑↓	Raised or Lowered Limit of Reporting		

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

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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STATEMENT OF QA/QC PERFORMANCE

SE108118 R0

CLIENT DETAILS

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Project **GEOTLCOV24303AC - SECEEP**
Order Number **89108**
Samples **9**

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SGS Reference **SE108118 R0**
Report Number **0000028897**
Date Reported **17 May 2012**

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' 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 with the exception of the following:

Duplicate

VOCs in Water

2 items

SAMPLE SUMMARY

Sample counts by matrix	9 Waters	Type of documentation received	COC
Date documentation received	11/5/2012	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.6°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

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.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019994	09 May 2012	10 May 2012	06 Jun 2012	14 May 2012	06 Jun 2012	14 May 2012
MW20	SE108118.002	LB019994	09 May 2012	10 May 2012	06 Jun 2012	14 May 2012	06 Jun 2012	14 May 2012
MW8	SE108118.003	LB019994	09 May 2012	10 May 2012	06 Jun 2012	14 May 2012	06 Jun 2012	14 May 2012
MW30	SE108118.004	LB019994	09 May 2012	10 May 2012	06 Jun 2012	14 May 2012	06 Jun 2012	14 May 2012
MW25	SE108118.005	LB019994	09 May 2012	10 May 2012	06 Jun 2012	14 May 2012	06 Jun 2012	14 May 2012
MW5	SE108118.006	LB019994	09 May 2012	10 May 2012	06 Jun 2012	14 May 2012	06 Jun 2012	14 May 2012
MW13	SE108118.007	LB019994	09 May 2012	10 May 2012	06 Jun 2012	14 May 2012	06 Jun 2012	14 May 2012
QC1	SE108118.008	LB019994	09 May 2012	10 May 2012	06 Jun 2012	14 May 2012	06 Jun 2012	14 May 2012

OC Pesticides in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW20	SE108118.002	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW8	SE108118.003	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW30	SE108118.004	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW25	SE108118.005	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW5	SE108118.006	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW13	SE108118.007	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
QC1	SE108118.008	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012

OP Pesticides in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW20	SE108118.002	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW8	SE108118.003	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW30	SE108118.004	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW25	SE108118.005	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW5	SE108118.006	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW13	SE108118.007	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
QC1	SE108118.008	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW20	SE108118.002	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW8	SE108118.003	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW30	SE108118.004	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW25	SE108118.005	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW5	SE108118.006	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW13	SE108118.007	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
QC1	SE108118.008	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012

PCBs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW20	SE108118.002	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW8	SE108118.003	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW30	SE108118.004	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW25	SE108118.005	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW5	SE108118.006	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW13	SE108118.007	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
QC1	SE108118.008	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019927	09 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012
MW20	SE108118.002	LB019927	09 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012
MW8	SE108118.003	LB019927	09 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012
MW30	SE108118.004	LB019927	09 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012
MW25	SE108118.005	LB019927	09 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012
MW5	SE108118.006	LB019927	09 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012
MW13	SE108118.007	LB019927	09 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012

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.

pH in water (continued)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QC1	SE108118.008	LB019927	09 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012	10 May 2012

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB020198	09 May 2012	10 May 2012	16 May 2012	16 May 2012	16 May 2012	16 May 2012
MW20	SE108118.002	LB020198	09 May 2012	10 May 2012	16 May 2012	16 May 2012	16 May 2012	16 May 2012
MW8	SE108118.003	LB020198	09 May 2012	10 May 2012	16 May 2012	16 May 2012	16 May 2012	16 May 2012
MW30	SE108118.004	LB020198	09 May 2012	10 May 2012	16 May 2012	16 May 2012	16 May 2012	16 May 2012
MW25	SE108118.005	LB020198	09 May 2012	10 May 2012	16 May 2012	16 May 2012	16 May 2012	16 May 2012
MW5	SE108118.006	LB020198	09 May 2012	10 May 2012	16 May 2012	16 May 2012	16 May 2012	16 May 2012
MW13	SE108118.007	LB020198	09 May 2012	10 May 2012	16 May 2012	16 May 2012	16 May 2012	16 May 2012
QC1	SE108118.008	LB020198	09 May 2012	10 May 2012	16 May 2012	16 May 2012	16 May 2012	16 May 2012

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019919	09 May 2012	10 May 2012	05 Nov 2012	11 May 2012	05 Nov 2012	15 May 2012
MW20	SE108118.002	LB019919	09 May 2012	10 May 2012	05 Nov 2012	11 May 2012	05 Nov 2012	15 May 2012
MW8	SE108118.003	LB019919	09 May 2012	10 May 2012	05 Nov 2012	11 May 2012	05 Nov 2012	15 May 2012
MW30	SE108118.004	LB019919	09 May 2012	10 May 2012	05 Nov 2012	11 May 2012	05 Nov 2012	15 May 2012
MW25	SE108118.005	LB019919	09 May 2012	10 May 2012	05 Nov 2012	11 May 2012	05 Nov 2012	15 May 2012
MW5	SE108118.006	LB019919	09 May 2012	10 May 2012	05 Nov 2012	11 May 2012	05 Nov 2012	15 May 2012
MW13	SE108118.007	LB019919	09 May 2012	10 May 2012	05 Nov 2012	11 May 2012	05 Nov 2012	15 May 2012
QC1	SE108118.008	LB019919	09 May 2012	10 May 2012	05 Nov 2012	11 May 2012	05 Nov 2012	15 May 2012

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW20	SE108118.002	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW8	SE108118.003	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW30	SE108118.004	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW25	SE108118.005	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW5	SE108118.006	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
MW13	SE108118.007	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012
QC1	SE108118.008	LB019935	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	17 May 2012

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW20	SE108118.002	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW8	SE108118.003	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW30	SE108118.004	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW25	SE108118.005	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW5	SE108118.006	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW13	SE108118.007	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
QC1	SE108118.008	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
TS	SE108118.009	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012

Volatile Petroleum Hydrocarbons in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
MW16	SE108118.001	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW20	SE108118.002	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW8	SE108118.003	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW30	SE108118.004	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW25	SE108118.005	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW5	SE108118.006	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
MW13	SE108118.007	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
QC1	SE108118.008	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	14 May 2012
TS	SE108118.009	LB019934	09 May 2012	10 May 2012	16 May 2012	11 May 2012	20 Jun 2012	16 May 2012

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	MW30	SE108118.004	%	40 - 130%	114

OP Pesticides in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	MW30	SE108118.004	%	40 - 130%	75
d14-p-terphenyl (Surrogate)	MW30	SE108118.004	%	40 - 130%	70

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	MW16	SE108118.001	%	40 - 130%	105
	MW20	SE108118.002	%	40 - 130%	98
	MW8	SE108118.003	%	40 - 130%	80
	MW30	SE108118.004	%	40 - 130%	75
	MW25	SE108118.005	%	40 - 130%	111
	MW5	SE108118.006	%	40 - 130%	82
	MW13	SE108118.007	%	40 - 130%	114
d14-p-terphenyl (Surrogate)	QC1	SE108118.008	%	40 - 130%	111
	MW16	SE108118.001	%	40 - 130%	126
	MW20	SE108118.002	%	40 - 130%	113
	MW8	SE108118.003	%	40 - 130%	89
	MW30	SE108118.004	%	40 - 130%	70
	MW25	SE108118.005	%	40 - 130%	124
	MW5	SE108118.006	%	40 - 130%	108
d5-nitrobenzene (Surrogate)	MW13	SE108118.007	%	40 - 130%	119
	QC1	SE108118.008	%	40 - 130%	122
	MW16	SE108118.001	%	40 - 130%	90
	MW20	SE108118.002	%	40 - 130%	89
	MW8	SE108118.003	%	40 - 130%	79
	MW30	SE108118.004	%	40 - 130%	75
	MW25	SE108118.005	%	40 - 130%	111
	MW5	SE108118.006	%	40 - 130%	86
	MW13	SE108118.007	%	40 - 130%	117
	QC1	SE108118.008	%	40 - 130%	117

PCBs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (Surrogate)	MW30	SE108118.004	%	40 - 130%	114

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	MW16	SE108118.001	%	60 - 130%	114
	MW20	SE108118.002	%	60 - 130%	112
	MW8	SE108118.003	%	60 - 130%	103
	MW30	SE108118.004	%	60 - 130%	104
	MW25	SE108118.005	%	60 - 130%	101
	MW5	SE108118.006	%	60 - 130%	102
	MW13	SE108118.007	%	60 - 130%	110
	QC1	SE108118.008	%	60 - 130%	119
	TS	SE108118.009	%	60 - 130%	103
d4-1,2-dichloroethane (Surrogate)	MW16	SE108118.001	%	40 - 130%	115
	MW20	SE108118.002	%	40 - 130%	113
	MW8	SE108118.003	%	40 - 130%	114
	MW30	SE108118.004	%	40 - 130%	116
	MW25	SE108118.005	%	40 - 130%	113
	MW5	SE108118.006	%	40 - 130%	113
	MW13	SE108118.007	%	40 - 130%	119
	QC1	SE108118.008	%	40 - 130%	119
	TS	SE108118.009	%	40 - 130%	102
d8-toluene (Surrogate)	MW16	SE108118.001	%	60 - 130%	97
	MW20	SE108118.002	%	60 - 130%	96

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOCs In Water (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	MW8	SE108118.003	%	60 - 130%	98
	MW30	SE108118.004	%	60 - 130%	93
	MW25	SE108118.005	%	60 - 130%	99
	MW5	SE108118.006	%	60 - 130%	99
	MW13	SE108118.007	%	60 - 130%	95
	QC1	SE108118.008	%	60 - 130%	97
Dibromofluoromethane (Surrogate)	TS	SE108118.009	%	60 - 130%	100
	MW16	SE108118.001	%	60 - 130%	109
	MW20	SE108118.002	%	60 - 130%	116
	MW8	SE108118.003	%	60 - 130%	114
	MW30	SE108118.004	%	60 - 130%	118
	MW25	SE108118.005	%	60 - 130%	112
	MW5	SE108118.006	%	60 - 130%	110
	MW13	SE108118.007	%	60 - 130%	120
	QC1	SE108118.008	%	60 - 130%	117
	TS	SE108118.009	%	60 - 130%	102

Volatile Petroleum Hydrocarbons in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Trifluorotoluene (Surrogate)	MW16	SE108118.001	%	40 - 130%	101
	MW20	SE108118.002	%	40 - 130%	99
	MW8	SE108118.003	%	40 - 130%	100
	MW30	SE108118.004	%	40 - 130%	100
	MW25	SE108118.005	%	40 - 130%	101
	MW5	SE108118.006	%	40 - 130%	99
	MW13	SE108118.007	%	40 - 130%	98
	QC1	SE108118.008	%	40 - 130%	99

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 (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Number	Parameter	Units	LOR	Result
LB019994.001	Mercury	mg/L	0.0001	<0.0001

OC Pesticides in Water

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

Sample Number	Parameter	Units	LOR	Result
LB019935.001	Alpha BHC	µg/L	0.1	<0.1
	Hexachlorobenzene (HCB)	µg/L	0.1	<0.1
	Beta BHC	µg/L	0.1	<0.1
	Lindane (gamma BHC)	µg/L	0.1	<0.1
	Delta BHC	µg/L	0.1	<0.1
	Heptachlor	µg/L	0.1	<0.1
	Aldrin	µg/L	0.1	<0.1
	Heptachlor epoxide	µg/L	0.1	<0.1
	Gamma Chlordane	µg/L	0.1	<0.1
	Alpha Chlordane	µg/L	0.1	<0.1
	Alpha Endosulfan	µg/L	0.1	<0.1
	p,p'-DDE	µg/L	0.1	<0.1
	Dieldrin	µg/L	0.1	<0.1
	Endrin	µg/L	0.1	<0.1
	Beta Endosulfan	µg/L	0.1	<0.1
	p,p'-DDD	µg/L	0.1	<0.1
	Endosulfan sulphate	µg/L	0.1	<0.1
	p,p'-DDT	µg/L	0.1	<0.1
Surrogates	Endrin ketone	µg/L	0.1	<0.1
	Methoxychlor	µg/L	0.1	<0.1
	Endrin aldehyde	µg/L	0.1	<0.1
	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	93

OP Pesticides in Water

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

Sample Number	Parameter	Units	LOR	Result
LB019935.001	Dichlorvos	µg/L	0.5	<0.5
	Dimethoate	µg/L	0.5	<0.5
	Diazinon (Dimpylate)	µg/L	0.5	<0.5
	Fenitrothion	µg/L	0.2	<0.2
	Malathion	µg/L	0.2	<0.2
	Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2
	Parathion-ethyl (Parathion)	µg/L	0.2	<0.2
	Bromophos Ethyl	µg/L	0.2	<0.2
	Methidathion	µg/L	0.5	<0.5
	Ethion	µg/L	0.2	<0.2
	Azinphos-methyl	µg/L	0.2	<0.2
Surrogates	2-fluorobiphenyl (Surrogate)	%	-	106
	d14-p-terphenyl (Surrogate)	%	-	88

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number	Parameter	Units	LOR	Result
LB019935.001	Naphthalene	µg/L	0.1	<0.1
	Acenaphthylene	µg/L	0.1	<0.1
	Acenaphthene	µg/L	0.1	<0.1
	Fluorene	µg/L	0.1	<0.1
	Phenanthrene	µg/L	0.1	<0.1
	Anthracene	µg/L	0.1	<0.1
	Fluoranthene	µg/L	0.1	<0.1
	Pyrene	µg/L	0.1	<0.1
	Benzo(a)anthracene	µg/L	0.1	<0.1
	Chrysene	µg/L	0.1	<0.1
	Benzo(a)pyrene	µg/L	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
	Dibenzo(a,h)anthracene	µg/L	0.1	<0.1
	Benzo(ghi)perylene	µg/L	0.1	<0.1
Surrogates	d5-nitrobenzene (Surrogate)	%	-	102

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 Water (continued)

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

Sample Number	Parameter	Units	LOR	Result
LB019935.001	2-fluorobiphenyl (Surrogate)	%	-	97
	d14-p-terphenyl (Surrogate)	%	-	112

PCBs in Water

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

Sample Number	Parameter	Units	LOR	Result
LB019935.001	Arochlor 1016	µg/L	1	<1
	Arochlor 1221	µg/L	1	<1
	Arochlor 1232	µg/L	1	<1
	Arochlor 1242	µg/L	1	<1
	Arochlor 1248	µg/L	1	<1
	Arochlor 1254	µg/L	1	<1
	Arochlor 1260	µg/L	1	<1
	Arochlor 1262	µg/L	1	<1
	Arochlor 1268	µg/L	1	<1

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Number	Parameter	Units	LOR	Result
LB020198.001	Total Dissolved Solids Dried at 180°C	mg/L	10	<10

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB019919.001	Arsenic, As	µg/L	1	<1
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Zinc, Zn	µg/L	1	<1

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number	Parameter	Units	LOR	Result
LB019935.001	TRH C10-C14	µg/L	100	<100
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200

Volatile Petroleum Hydrocarbons in Water

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

Sample Number	Parameter	Units	LOR	Result
LB019934.001	TRH C6-C9	µg/L	40	<40
LB019934.001	Surrogates	%	-	99
	Trifluorotoluene (Surrogate)	%	-	99

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE108118.003	LB019994.014	Mercury	µg/L	0.0001	<0.0001	<0.0001	187	0
SE108150.010	LB019994.021	Mercury	µg/L	0.0001	-0.0422	-0.0392	138	0

pH in water

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE108118.008	LB019927.010	pH	pH Units	-	7.5	7.5	16	0

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE108118.008	LB020198.011	Total Dissolved Solids Dried at 180°C	mg/L	10	27500	27400	15	0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE108118.006	LB019919.014	Arsenic, As	µg/L	1	<2	<2	69	0
		Cadmium, Cd	µg/L	0.1	<1.0	<1.0	86	0
		Chromium, Cr	µg/L	1	<10	<10	200	0
		Copper, Cu	µg/L	1	2	2	68	21
		Lead, Pb	µg/L	1	<1	<1	200	0
		Nickel, Ni	µg/L	1	<10	<10	59	0
		Zinc, Zn	µg/L	1	43	44	17	2
SE108118.008	LB019919.017	Arsenic, As	µg/L	1	<2	<2	98	0
		Cadmium, Cd	µg/L	0.1	<1.0	<1.0	63	0
		Chromium, Cr	µg/L	1	<10	<10	200	0
		Copper, Cu	µg/L	1	5	5	35	4
		Lead, Pb	µg/L	1	<1	<1	200	0
		Nickel, Ni	µg/L	1	<10	<10	49	0
		Zinc, Zn	µg/L	1	27	28	19	3

VOCs in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE108118.001	LB019934.015	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
			Aromatic	Toluene	µg/L	0.5	<0.5	<0.5	200
		Surrogates	Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
	Dibromofluoromethane (Surrogate)		µg/L	-	109.0	84.0	30	26	
	d4-1,2-dichloroethane (Surrogate)		µg/L	-	115.0	72.0	30	46 ↑	
	d8-toluene (Surrogate)		µg/L	-	97.0	122.0	30	23	
	Bromofluorobenzene (Surrogate)		µg/L	-	114.0	75.0	30	41 ↑	

Volatile Petroleum Hydrocarbons in Water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE108118.001	LB019934.015	TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	%	-	101.0	88.0	30	14

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 (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019994.002	Mercury	mg/L	0.0001	0.0085	0.008	80 - 120	106

OC Pesticides in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019935.002	Delta BHC	µg/L	0.1	0.2	0.2	60 - 140	95
	Heptachlor	µg/L	0.1	0.2	0.2	60 - 140	100
	Aldrin	µg/L	0.1	0.2	0.2	60 - 140	105
	Dieldrin	µg/L	0.1	0.2	0.2	60 - 140	100
	Endrin	µg/L	0.1	0.2	0.2	60 - 140	105
	p,p'-DDT	µg/L	0.1	0.2	0.2	60 - 140	95
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	97	100	60 - 140	97

OP Pesticides in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019935.002	Dichlorvos	µg/L	0.5	<0.5	0.4	60 - 140	93
	Diazinon (Dimpylate)	µg/L	0.5	<0.5	0.4	60 - 140	95
	Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	0.5	0.4	60 - 140	118
	Ethion	µg/L	0.2	0.4	0.4	60 - 140	93
	Surrogates						
	2-fluorobiphenyl (Surrogate)	%	-	101.0	100	60 - 140	101
	d14-p-terphenyl (Surrogate)	%	-	81.0	100	60 - 140	81

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019935.002	Naphthalene	µg/L	0.1	35	40	60 - 140	88
	Acenaphthylene	µg/L	0.1	37	40	60 - 140	93
	Acenaphthene	µg/L	0.1	37	40	60 - 140	93
	Phenanthrene	µg/L	0.1	38	40	60 - 140	95
	Anthracene	µg/L	0.1	37	40	60 - 140	93
	Fluoranthene	µg/L	0.1	35	40	60 - 140	88
	Pyrene	µg/L	0.1	37	40	60 - 140	93
	Benzo(a)pyrene	µg/L	0.1	35	40	60 - 140	88
	Surrogates						
	d5-nitrobenzene (Surrogate)	%	-	101.0	100	60 - 140	101
	2-fluorobiphenyl (Surrogate)	%	-	99.0	100	60 - 140	99
	d14-p-terphenyl (Surrogate)	%	-	96.0	100	60 - 140	96

PCBs in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019935.002	Arochlor 1260	µg/L	1	<1	0.5	60 - 140	94
Surrogates	Tetrachloro-m-xylene (Surrogate)	%	-	95.0	100	60 - 140	95

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019927.001	pH	pH Units	-	7.4	7.415	98 - 102	99

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019919.002	Arsenic, As	µg/L	1	19	20	80 - 120	93
	Cadmium, Cd	µg/L	0.1	19	20	80 - 120	93
	Chromium, Cr	µg/L	1	20	20	80 - 120	100
	Copper, Cu	µg/L	1	20	20	80 - 120	102
	Lead, Pb	µg/L	1	19	20	80 - 120	93
	Nickel, Ni	µg/L	1	20	20	80 - 120	100
	Zinc, Zn	µg/L	1	21	20	80 - 120	103

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019935.002	TRH C10-C14	µg/L	100	1300	1200	60 - 140	105
	TRH C15-C28	µg/L	200	1200	1200	60 - 140	103
	TRH C29-C36	µg/L	200	1200	1200	60 - 140	103

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.

VOCs in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019934.002	Halogenated	1,1-dichloroethene	µg/L	0.5	53	45.45	60 - 140
	Aliphatics	1,2-dichloroethane	µg/L	0.5	44	45.45	60 - 140
		Trichloroethene (Trichloroethylene, TCE)	µg/L	0.5	45	45.45	60 - 140
	Halogenated	Chlorobenzene	µg/L	0.5	43	45.45	60 - 140
	Monocyclic	Benzene	µg/L	0.5	47	45.45	60 - 140
	Aromatic	Toluene	µg/L	0.5	43	45.45	60 - 140
		Ethylbenzene	µg/L	0.5	45	45.45	60 - 140
		m/p-xylene	µg/L	1	90	90.9	60 - 140
		o-xylene	µg/L	0.5	45	45.45	60 - 140
	Trihalomethan	Chloroform (THM)	µg/L	0.5	45	45.45	60 - 140

Volatile Petroleum Hydrocarbons in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB019934.002	TRH C6-C9	µg/L	40	950	827	60 - 140	115

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE107944.001	LB019994.004	Mercury	mg/L	0.0001	0.0082	-0.0102	0.008	103

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE108099.001	LB019919.004	Arsenic, As	µg/L	1	21	2	20	99
		Cadmium, Cd	µg/L	0.1	19	<0.1	20	94
		Chromium, Cr	µg/L	1	20	<1	20	101
		Copper, Cu	µg/L	1	23	4	20	96
		Lead, Pb	µg/L	1	19	<1	20	92
		Nickel, Ni	µg/L	1	20	<1	20	98
		Zinc, Zn	µg/L	1	25	4	20	103

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%	
SE108118.004	LB019934.019	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5	<0.5	-	-	
			1,2-dichloropropane	µg/L	0.5	<0.5	<0.5	-	-	
			cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	-	-	
			trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	-	-	
			1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5	-	-	
		Halogenated	Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5	-	-	
			Aliphatics	Chloromethane	µg/L	5	<5	<5	-	-
				Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3	-	-
				Bromomethane	µg/L	10	<10	<10	-	-
				Chloroethane	µg/L	5	<5	<5	-	-
				Trichlorofluoromethane	µg/L	1	<1	<1	-	-
				Iodomethane	µg/L	5	<5	<5	-	-
				1,1-dichloroethene	µg/L	0.5	50	<0.5	45.45	111
				Dichloromethane (Methylene chloride)	µg/L	5	<5	<5	-	-
				Allyl chloride	µg/L	2	<2	<2	-	-
		trans-1,2-dichloroethene		µg/L	0.5	<0.5	<0.5	-	-	
		1,1-dichloroethane	µg/L	0.5	<0.5	<0.5	-	-		
		cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	-	-		
		Bromochloromethane	µg/L	0.5	<0.5	<0.5	-	-		
		1,2-dichloroethane	µg/L	0.5	50	<0.5	45.45	109		
		1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5	-	-		
		1,1-dichloropropene	µg/L	0.5	<0.5	<0.5	-	-		
		Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	-	-		
		Dibromomethane	µg/L	0.5	<0.5	<0.5	-	-		
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	50	<0.5	45.45	109		
		1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5	-	-		
		1,3-dichloropropane	µg/L	0.5	<0.5	<0.5	-	-		
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5	-	-		
		1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	-	-		
		cis-1,4-dichloro-2-butene	µg/L	1	<1	<1	-	-		
		1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	-	-		
		1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5	-	-		
		trans-1,4-dichloro-2-butene	µg/L	1	<1	<1	-	-		
		1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5	-	-		
		Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5	-	-		
		Halogenated	Aromatics	Chlorobenzene	µg/L	0.5	46	<0.5	45.45	101
				Bromobenzene	µg/L	0.5	<0.5	<0.5	-	-
				2-chlorotoluene	µg/L	0.5	<0.5	<0.5	-	-
				4-chlorotoluene	µg/L	0.5	<0.5	<0.5	-	-
				1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5	-	-
				1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3	-	-
				1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5	-	-
				1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5	-	-
				1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5	-	-
				Monocyclic	Benzene	µg/L	0.5	48	<0.5	45.45

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOCs in Water (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE108118.004	LB019934.019	Monocyclic	Toluene	µg/L	0.5	48	<0.5	45.45	105
			Aromatic	Ethylbenzene	µg/L	0.5	45	<0.5	45.45
		m/p-xylene	µg/L	1	91	<1	90.9	100	
		o-xylene	µg/L	0.5	46	<0.5	45.45	100	
		Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5	-	-	
		Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	-	-	
		n-propylbenzene	µg/L	0.5	<0.5	<0.5	-	-	
		1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5	-	-	
		tert-butylbenzene	µg/L	0.5	<0.5	<0.5	-	-	
		1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5	-	-	
		sec-butylbenzene	µg/L	0.5	<0.5	<0.5	-	-	
		p-isopropyltoluene	µg/L	0.5	<0.5	<0.5	-	-	
		n-butylbenzene	µg/L	0.5	<0.5	<0.5	-	-	
		Nitrogenous	Acrylonitrile	µg/L	0.5	<0.5	<0.5	-	-
			Oxygenated	Acetone (2-propanone)	µg/L	10	<10	<10	-
		Compounds	MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	<2	-	-
			Vinyl acetate	µg/L	10	<10	<10	-	-
			MEK (2-butanone)	µg/L	10	<10	<10	-	-
			MIBK (4-methyl-2-pentanone)	µg/L	5	<5	<5	-	-
			2-hexanone (MBK)	µg/L	5	<5	<5	-	-
		Polycyclic	Naphthalene	µg/L	0.5	<0.5	<0.5	-	-
		Sulphonated	Carbon disulfide	µg/L	2	<2	<2	-	-
		Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	99.0	118.0	-	99
			d4-1,2-dichloroethane (Surrogate)	µg/L	-	104.0	116.0	-	104
			d8-toluene (Surrogate)	µg/L	-	100.0	93.0	-	100
			Bromofluorobenzene (Surrogate)	µg/L	-	101.0	104.0	-	101
			Trihalomethanes	Chloroform (THM)	µg/L	0.5	47	<0.5	45.45
		Bromodichloromethane (THM)		µg/L	0.5	<0.5	<0.5	-	-
		Dibromochloromethane (THM)		µg/L	0.5	<0.5	<0.5	-	-
		Bromoform (THM)		µg/L	0.5	<0.5	<0.5	-	-

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE108118.002	LB019934.017	TRH C6-C9	µg/L	40	750	<40	827	90
		Surrogates	%	-	98.0	99.0	-	98

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

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 identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

- * Non-accredited analysis.
- Sample not analysed for this analyte.
- ^ Analysis performed by external laboratory.

- 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.
- † Refer to Analytical Report comments for further information.

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Soil Leachate Chemical Test Certificates and Chain of Custody Documentation



ANALYTICAL REPORT



CLIENT DETAILS

Contact **Matthew Locke**
Client **Coffey Geotechnics Pty Ltd**
Address **Unit 8, 12 Mars Road
Lane Cove NSW 2066**

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Project **GEOTLCOV24303AC - SICEEP-Additional**
Order Number **92348-349**
Samples **1**

LABORATORY DETAILS

Manager **Huong Crawford**
Laboratory **SGS Alexandria Environmental**
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SGS Reference **SE107819A R0**
Report Number **0000029279**
Date Reported **21 May 2012**
Date Received **02 May 2012**

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

SIGNATORIES

Andy Sutton
Organics Chemist

Huong Crawford
Laboratory Manager



ANALYTICAL REPORT

SE107819A R0

		Sample Number	SE107819A.016
		Sample Matrix	Soil
		Sample Date	27 Apr 2012
		Sample Name	BH8_0.1-0.2
Parameter	Units	LOR	

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC Method: AN006

pH 1:20	pH Units	-	9.6
pH 1:20 plus HCL	pH Units	-	1.8
Extraction Solution Used	No unit	-	1
Mass of Sample Used*	g	-	50
Volume of Extraction Solution Used*	mL	-	1000
pH TCLP after 18 hours	pH Units	-	5.1

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract Method: AN420

Naphthalene	µg/L	0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1
Fluorene	µg/L	0.1	<0.1
Phenanthrene	µg/L	0.1	0.1
Anthracene	µg/L	0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1
Pyrene	µg/L	0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (Vic EPA 16)*	µg/L	1	<1

Surrogates

d5-nitrobenzene (Surrogate)	%	-	111
2-fluorobiphenyl (Surrogate)	%	-	95
d14-p-terphenyl (Surrogate)	%	-	109



ANALYTICAL REPORT

SE107819A R0

Sample Number SE107819A.016
Sample Matrix Soil
Sample Date 27 Apr 2012
Sample Name BH8_0.1-0.2

Parameter Units LOR

Metals in Soil (TCLP) by ICPOES Method: AN320/AN321

Arsenic, As	mg/L	0.05	<0.05
Cadmium, Cd	mg/L	0.005	<0.005
Chromium, Cr	mg/L	0.005	<0.005
Copper, Cu	mg/L	0.01	0.012
Lead, Pb	mg/L	0.02	<0.02
Nickel, Ni	mg/L	0.01	0.30
Zinc, Zn	mg/L	0.01	0.07

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.

Metals in Soil (TCLP) by ICPOES Method: ME-(AU)-[ENV]AN320/AN321

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arsenic, As	LB020180	mg/L	0.05	<0.05	97%
Cadmium, Cd	LB020180	mg/L	0.005	<0.005	99%
Chromium, Cr	LB020180	mg/L	0.005	<0.005	97%
Copper, Cu	LB020180	mg/L	0.01	<0.01	97%
Lead, Pb	LB020180	mg/L	0.02	<0.02	98%
Nickel, Ni	LB020180	mg/L	0.01	<0.01	100%
Zinc, Zn	LB020180	mg/L	0.01	<0.01	99%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB020063	µg/L	0.1	<0.1	100%
Acenaphthylene	LB020063	µg/L	0.1	<0.1	106%
Acenaphthene	LB020063	µg/L	0.1	<0.1	92%
Fluorene	LB020063	µg/L	0.1	<0.1	NA
Phenanthrene	LB020063	µg/L	0.1	<0.1	101%
Anthracene	LB020063	µg/L	0.1	<0.1	85%
Fluoranthene	LB020063	µg/L	0.1	<0.1	103%
Pyrene	LB020063	µg/L	0.1	<0.1	106%
Benzo(a)anthracene	LB020063	µg/L	0.1	<0.1	NA
Chrysene	LB020063	µg/L	0.1	<0.1	NA
Benzo(b)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(k)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(a)pyrene	LB020063	µg/L	0.1	<0.1	83%
Indeno(1,2,3-cd)pyrene	LB020063	µg/L	0.1	<0.1	NA
Dibenzo(a&h)anthracene	LB020063	µg/L	0.1	<0.1	NA
Benzo(ghi)perylene	LB020063	µg/L	0.1	<0.1	NA
Total PAH (Vic EPA 16)*	LB020063	µg/L	1	<1	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB020063	%	-	108%	97%
2-fluorobiphenyl (Surrogate)	LB020063	%	-	112%	106%
d14-p-terphenyl (Surrogate)	LB020063	%	-	119%	111%

METHOD

METHODOLOGY SUMMARY

AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05 .
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05 .
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN320/AN321	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components.
AN320/AN321	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements. Reference APHA 3120 B.
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).

FOOTNOTES

IS	Insufficient sample for analysis.	QFH	QC result is above the upper tolerance
LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	This analysis is not covered by the scope of accreditation.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated
LOR	Limit of Reporting		
↑↓	Raised or Lowered Limit of Reporting		

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

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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ANALYTICAL REPORT



CLIENT DETAILS

Contact **Matthew Locke**
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Address **Unit 8, 12 Mars Road
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Facsimile **02 9911 1002**
Email **matthew_locke@coffey.com**

Project **GEOTLCOV24303AC - SICEEP-Additional**
Order Number **81300**
Samples **1**

LABORATORY DETAILS

Manager **Huong Crawford**
Laboratory **SGS Alexandria Environmental**
Address **Unit 16, 33 Maddox St
Alexandria NSW 2015**

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Email **au.environmental.sydney@sgs.com**

SGS Reference **SE107815A R0**
Report Number **0000029275**
Date Reported **21 May 2012**
Date Received **02 May 2012**

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

SIGNATORIES

Andy Sutton
Organics Chemist

Huong Crawford
Laboratory Manager

		Sample Number	SE107815A.006
		Sample Matrix	Soil
		Sample Date	27 Apr 2012
		Sample Name	NBH17 3.0-3.45
Parameter	Units	LOR	

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC Method: AN006

pH 1:20	pH Units	-	8.5
pH 1:20 plus HCL	pH Units	-	1.7
Extraction Solution Used	No unit	-	1
Mass of Sample Used*	g	-	50
Volume of Extraction Solution Used*	mL	-	1000
pH TCLP after 18 hours	pH Units	-	5.3

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract Method: AN420

Naphthalene	µg/L	0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1
Fluorene	µg/L	0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1
Anthracene	µg/L	0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1
Pyrene	µg/L	0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (Vic EPA 16)*	µg/L	1	<1

Surrogates

d5-nitrobenzene (Surrogate)	%	-	109
2-fluorobiphenyl (Surrogate)	%	-	90
d14-p-terphenyl (Surrogate)	%	-	97



ANALYTICAL REPORT

SE107815A R0

Sample Number SE107815A.006
Sample Matrix Soil
Sample Date 27 Apr 2012
Sample Name NBH17 3.0-3.45

Parameter Units LOR

Metals in Soil (TCLP) by ICPOES Method: AN320/AN321

Arsenic, As	mg/L	0.05	<0.05
Cadmium, Cd	mg/L	0.005	<0.005
Chromium, Cr	mg/L	0.005	<0.005
Copper, Cu	mg/L	0.01	<0.01
Lead, Pb	mg/L	0.02	<0.02
Nickel, Ni	mg/L	0.01	0.040
Zinc, Zn	mg/L	0.01	0.04

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.

Metals in Soil (TCLP) by ICPOES Method: ME-(AU)-[ENV]AN320/AN321

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arsenic, As	LB020180	mg/L	0.05	<0.05	97%
Cadmium, Cd	LB020180	mg/L	0.005	<0.005	99%
Chromium, Cr	LB020180	mg/L	0.005	<0.005	97%
Copper, Cu	LB020180	mg/L	0.01	<0.01	97%
Lead, Pb	LB020180	mg/L	0.02	<0.02	98%
Nickel, Ni	LB020180	mg/L	0.01	<0.01	100%
Zinc, Zn	LB020180	mg/L	0.01	<0.01	99%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB020063	µg/L	0.1	<0.1	100%
Acenaphthylene	LB020063	µg/L	0.1	<0.1	106%
Acenaphthene	LB020063	µg/L	0.1	<0.1	92%
Fluorene	LB020063	µg/L	0.1	<0.1	NA
Phenanthrene	LB020063	µg/L	0.1	<0.1	101%
Anthracene	LB020063	µg/L	0.1	<0.1	85%
Fluoranthene	LB020063	µg/L	0.1	<0.1	103%
Pyrene	LB020063	µg/L	0.1	<0.1	106%
Benzo(a)anthracene	LB020063	µg/L	0.1	<0.1	NA
Chrysene	LB020063	µg/L	0.1	<0.1	NA
Benzo(b)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(k)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(a)pyrene	LB020063	µg/L	0.1	<0.1	83%
Indeno(1,2,3-cd)pyrene	LB020063	µg/L	0.1	<0.1	NA
Dibenzo(a&h)anthracene	LB020063	µg/L	0.1	<0.1	NA
Benzo(ghi)perylene	LB020063	µg/L	0.1	<0.1	NA
Total PAH (Vic EPA 16)*	LB020063	µg/L	1	<1	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB020063	%	-	108%	97%
2-fluorobiphenyl (Surrogate)	LB020063	%	-	112%	106%
d14-p-terphenyl (Surrogate)	LB020063	%	-	119%	111%

METHOD

METHODOLOGY SUMMARY

AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05 .
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05 .
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN320/AN321	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components.
AN320/AN321	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements. Reference APHA 3120 B.
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).

FOOTNOTES

IS	Insufficient sample for analysis.	QFH	QC result is above the upper tolerance
LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	This analysis is not covered by the scope of accreditation.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated
LOR	Limit of Reporting		
↑↓	Raised or Lowered Limit of Reporting		

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

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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ANALYTICAL REPORT



CLIENT DETAILS

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Email **matthew_locke@coffey.com**

Project **GEOTLCOV24303AC - SICEEP - Additional**
Order Number **81298-299,92346**
Samples **5**

LABORATORY DETAILS

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SGS Reference **SE107686A R0**
Report Number **0000029273**
Date Reported **21 May 2012**
Date Received **27 Apr 2012**

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

SIGNATORIES

Andy Sutton
Organics Chemist

Huong Crawford
Laboratory Manager



ANALYTICAL REPORT

SE107686A R0

Parameter	Sample Number	SE107686A.008	SE107686A.010
	Sample Matrix	Soil	Soil
	Sample Date	23 Apr 2012	24 Apr 2012
	Sample Name	BH12_2.9-3.0	BH23_0.5-0.6
	Units	LOR	

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC Method: AN006

pH 1:20	pH Units	-	8.8	8.0
pH 1:20 plus HCL	pH Units	-	1.7	1.7
Extraction Solution Used	No unit	-	1	1
Mass of Sample Used*	g	-	50	50
Volume of ExtractionSolution Used*	mL	-	1000	1000
pH TCLP after 18 hours	pH Units	-	5.1	5.1

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract Method: AN420

Naphthalene	µg/L	0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	0.6
Anthracene	µg/L	0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	0.2
Pyrene	µg/L	0.1	<0.1	0.2
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1
Benzo(b)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1
Total PAH (Vic EPA 16)*	µg/L	1	<1	1

Surrogates

d5-nitrobenzene (Surrogate)	%	-	95	95
2-fluorobiphenyl (Surrogate)	%	-	88	83
d14-p-terphenyl (Surrogate)	%	-	98	114

Metals in Soil (TCLP) by ICPOES Method: AN320/AN321

Arsenic, As	mg/L	0.05	<0.05	<0.05
Cadmium, Cd	mg/L	0.005	<0.005	<0.005
Chromium, Cr	mg/L	0.005	<0.005	<0.005
Copper, Cu	mg/L	0.01	0.17	0.010
Lead, Pb	mg/L	0.02	0.37	0.04
Nickel, Ni	mg/L	0.01	0.031	0.013
Zinc, Zn	mg/L	0.01	0.80	1.9

Sample Number	SE107686A.017	SE107686A.020
Sample Matrix	Soil	Soil
Sample Date	24/4/12 14:36	24/4/12 15:30
Sample Name	BH20_1.5-1.8	NBH18_0.5-0.6
Parameter	Units	LOR

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC Method: AN006

pH 1:20	pH Units	-	8.7	9.6
pH 1:20 plus HCL	pH Units	-	1.9	1.8
Extraction Solution Used	No unit	-	1	1
Mass of Sample Used*	g	-	50	50
Volume of ExtractionSolution Used*	mL	-	1000	1000
pH TCLP after 18 hours	pH Units	-	6.2	5.3

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract Method: AN420

Naphthalene	µg/L	0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	0.2
Fluorene	µg/L	0.1	<0.1	0.2
Phenanthrene	µg/L	0.1	<0.1	1.2
Anthracene	µg/L	0.1	<0.1	0.1
Fluoranthene	µg/L	0.1	<0.1	0.1
Pyrene	µg/L	0.1	<0.1	0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1
Benzo(b)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1
Total PAH (Vic EPA 16)*	µg/L	1	<1	2

Surrogates

d5-nitrobenzene (Surrogate)	%	-	113	109
2-fluorobiphenyl (Surrogate)	%	-	104	97
d14-p-terphenyl (Surrogate)	%	-	110	113

Metals in Soil (TCLP) by ICPOES Method: AN320/AN321

Arsenic, As	mg/L	0.05	<0.05	<0.05
Cadmium, Cd	mg/L	0.005	<0.005	<0.005
Chromium, Cr	mg/L	0.005	<0.005	<0.005
Copper, Cu	mg/L	0.01	0.016	0.017
Lead, Pb	mg/L	0.02	0.24	<0.02
Nickel, Ni	mg/L	0.01	0.013	0.060
Zinc, Zn	mg/L	0.01	0.66	0.12



ANALYTICAL REPORT

SE107686A R0

		Sample Number	SE107686A.029
		Sample Matrix	Soil
		Sample Date	24 Apr 2012
		Sample Name	NBH24_3.0-3.45
Parameter	Units	LOR	

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC Method: AN006

pH 1:20	pH Units	-	6.6
pH 1:20 plus HCL	pH Units	-	1.7
Extraction Solution Used	No unit	-	1
Mass of Sample Used*	g	-	50
Volume of Extraction Solution Used*	mL	-	1000
pH TCLP after 18 hours	pH Units	-	5.0

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract Method: AN420

Naphthalene	µg/L	0.1	0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	0.4
Fluorene	µg/L	0.1	0.3
Phenanthrene	µg/L	0.1	0.8
Anthracene	µg/L	0.1	<0.1
Fluoranthene	µg/L	0.1	0.1
Pyrene	µg/L	0.1	0.1
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (Vic EPA 16)*	µg/L	1	2

Surrogates

d5-nitrobenzene (Surrogate)	%	-	111
2-fluorobiphenyl (Surrogate)	%	-	99
d14-p-terphenyl (Surrogate)	%	-	110



ANALYTICAL REPORT

SE107686A R0

Sample Number SE107686A.029
Sample Matrix Soil
Sample Date 24 Apr 2012
Sample Name NBH24_3.0-3.45

Parameter Units LOR

Metals in Soil (TCLP) by ICPOES Method: AN320/AN321

Arsenic, As	mg/L	0.05	<0.05
Cadmium, Cd	mg/L	0.005	<0.005
Chromium, Cr	mg/L	0.005	<0.005
Copper, Cu	mg/L	0.01	<0.01
Lead, Pb	mg/L	0.02	<0.02
Nickel, Ni	mg/L	0.01	<0.01
Zinc, Zn	mg/L	0.01	<0.01

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.

Metals in Soil (TCLP) by ICPOES Method: ME-(AU)-[ENV]AN320/AN321

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arsenic, As	LB020180	mg/L	0.05	<0.05	97%
Cadmium, Cd	LB020180	mg/L	0.005	<0.005	99%
Chromium, Cr	LB020180	mg/L	0.005	<0.005	97%
Copper, Cu	LB020180	mg/L	0.01	<0.01	97%
Lead, Pb	LB020180	mg/L	0.02	<0.02	98%
Nickel, Ni	LB020180	mg/L	0.01	<0.01	100%
Zinc, Zn	LB020180	mg/L	0.01	<0.01	99%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB020063	µg/L	0.1	<0.1	100%
Acenaphthylene	LB020063	µg/L	0.1	<0.1	106%
Acenaphthene	LB020063	µg/L	0.1	<0.1	92%
Fluorene	LB020063	µg/L	0.1	<0.1	NA
Phenanthrene	LB020063	µg/L	0.1	<0.1	101%
Anthracene	LB020063	µg/L	0.1	<0.1	85%
Fluoranthene	LB020063	µg/L	0.1	<0.1	103%
Pyrene	LB020063	µg/L	0.1	<0.1	106%
Benzo(a)anthracene	LB020063	µg/L	0.1	<0.1	NA
Chrysene	LB020063	µg/L	0.1	<0.1	NA
Benzo(b)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(k)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(a)pyrene	LB020063	µg/L	0.1	<0.1	83%
Indeno(1,2,3-cd)pyrene	LB020063	µg/L	0.1	<0.1	NA
Dibenzo(a&h)anthracene	LB020063	µg/L	0.1	<0.1	NA
Benzo(ghi)perylene	LB020063	µg/L	0.1	<0.1	NA
Total PAH (Vic EPA 16)*	LB020063	µg/L	1	<1	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB020063	%	-	108%	97%
2-fluorobiphenyl (Surrogate)	LB020063	%	-	112%	106%
d14-p-terphenyl (Surrogate)	LB020063	%	-	119%	111%

METHOD

METHODOLOGY SUMMARY

AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05 .
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05 .
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN320/AN321	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components.
AN320/AN321	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements. Reference APHA 3120 B.
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).

FOOTNOTES

IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
*	This analysis is not covered by the scope of accreditation.
^	Performed by outside laboratory.
LOR	Limit of Reporting
↑↓	Raised or Lowered Limit of Reporting

QFH	QC result is above the upper tolerance
QFL	QC result is below the lower tolerance
-	The sample was not analysed for this analyte
NVL	Not Validated

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

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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CLIENT DETAILS

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Facsimile **02 9911 1002**
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Project **GEOTLCOV24303AC - SICEEP-Additional**
Order Number **92341-92342**
Samples **1**

LABORATORY DETAILS

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SGS Reference **SE107556A R0**
Report Number **0000029271**
Date Reported **21 May 2012**
Date Received **14 Apr 2012**

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

SIGNATORIES



Andy Sutton
Organics Chemist



Huong Crawford
Laboratory Manager



ANALYTICAL REPORT

SE107556A R0

		Sample Number	SE107556A.001
		Sample Matrix	Soil
		Sample Date	14 Apr 2012
		Sample Name	BH1_0.5-0.6
Parameter	Units	LOR	

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC Method: AN006

pH 1:20	pH Units	-	8.7
pH 1:20 plus HCL	pH Units	-	1.8
Extraction Solution Used	No unit	-	1
Mass of Sample Used*	g	-	50
Volume of Extraction Solution Used*	mL	-	1000
pH TCLP after 18 hours	pH Units	-	5.2

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract Method: AN420

Naphthalene	µg/L	0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	0.2
Fluorene	µg/L	0.1	0.3
Phenanthrene	µg/L	0.1	3.3
Anthracene	µg/L	0.1	0.5
Fluoranthene	µg/L	0.1	0.7
Pyrene	µg/L	0.1	0.5
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (Vic EPA 16)*	µg/L	1	6

Surrogates

d5-nitrobenzene (Surrogate)	%	-	105
2-fluorobiphenyl (Surrogate)	%	-	95
d14-p-terphenyl (Surrogate)	%	-	108



ANALYTICAL REPORT

SE107556A R0

Sample Number SE107556A.001
Sample Matrix Soil
Sample Date 14 Apr 2012
Sample Name BH1_0.5-0.6

Parameter Units LOR

Metals in Soil (TCLP) by ICPOES Method: AN320/AN321

Arsenic, As	mg/L	0.05	<0.05
Cadmium, Cd	mg/L	0.005	<0.005
Chromium, Cr	mg/L	0.005	<0.005
Copper, Cu	mg/L	0.01	0.013
Lead, Pb	mg/L	0.02	<0.02
Nickel, Ni	mg/L	0.01	0.075
Zinc, Zn	mg/L	0.01	0.08

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.

Metals in Soil (TCLP) by ICPOES Method: ME-(AU)-[ENV]AN320/AN321

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arsenic, As	LB020180	mg/L	0.05	<0.05	97%
Cadmium, Cd	LB020180	mg/L	0.005	<0.005	99%
Chromium, Cr	LB020180	mg/L	0.005	<0.005	97%
Copper, Cu	LB020180	mg/L	0.01	<0.01	97%
Lead, Pb	LB020180	mg/L	0.02	<0.02	98%
Nickel, Ni	LB020180	mg/L	0.01	<0.01	100%
Zinc, Zn	LB020180	mg/L	0.01	<0.01	99%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB020063	µg/L	0.1	<0.1	100%
Acenaphthylene	LB020063	µg/L	0.1	<0.1	106%
Acenaphthene	LB020063	µg/L	0.1	<0.1	92%
Fluorene	LB020063	µg/L	0.1	<0.1	NA
Phenanthrene	LB020063	µg/L	0.1	<0.1	101%
Anthracene	LB020063	µg/L	0.1	<0.1	85%
Fluoranthene	LB020063	µg/L	0.1	<0.1	103%
Pyrene	LB020063	µg/L	0.1	<0.1	106%
Benzo(a)anthracene	LB020063	µg/L	0.1	<0.1	NA
Chrysene	LB020063	µg/L	0.1	<0.1	NA
Benzo(b)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(k)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(a)pyrene	LB020063	µg/L	0.1	<0.1	83%
Indeno(1,2,3-cd)pyrene	LB020063	µg/L	0.1	<0.1	NA
Dibenzo(a&h)anthracene	LB020063	µg/L	0.1	<0.1	NA
Benzo(ghi)perylene	LB020063	µg/L	0.1	<0.1	NA
Total PAH (Vic EPA 16)*	LB020063	µg/L	1	<1	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB020063	%	-	108%	97%
2-fluorobiphenyl (Surrogate)	LB020063	%	-	112%	106%
d14-p-terphenyl (Surrogate)	LB020063	%	-	119%	111%

METHOD

METHODOLOGY SUMMARY

AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05 .
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05 .
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN320/AN321	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components.
AN320/AN321	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements. Reference APHA 3120 B.
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).

FOOTNOTES

IS	Insufficient sample for analysis.	QFH	QC result is above the upper tolerance
LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	This analysis is not covered by the scope of accreditation.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated
LOR	Limit of Reporting		
↑↓	Raised or Lowered Limit of Reporting		

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

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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ANALYTICAL REPORT



CLIENT DETAILS

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Project **GEOTLCOV24303AC - SICEEP - Additional**
Order Number **81295-6**
Samples **1**

LABORATORY DETAILS

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SGS Reference **SE107335A R0**
Report Number **0000029267**
Date Reported **21 May 2012**
Date Received **18 Apr 2012**

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

SIGNATORIES

Andy Sutton
Organics Chemist

Huong Crawford
Laboratory Manager



ANALYTICAL REPORT

SE107335A R0

		Sample Number	SE107335A.002
		Sample Matrix	Soil
		Sample Date	17 Apr 2012
		Sample Name	BH29_0.9-1.0
Parameter	Units	LOR	

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC Method: AN006

pH 1:20	pH Units	-	8.0
pH 1:20 plus HCL	pH Units	-	1.8
Extraction Solution Used	No unit	-	1
Mass of Sample Used*	g	-	50
Volume of Extraction Solution Used*	mL	-	1000
pH TCLP after 18 hours	pH Units	-	5.6

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract Method: AN420

Naphthalene	µg/L	0.1	13
Acenaphthylene	µg/L	0.1	2.8
Acenaphthene	µg/L	0.1	5.0
Fluorene	µg/L	0.1	7.6
Phenanthrene	µg/L	0.1	28
Anthracene	µg/L	0.1	2.6
Fluoranthene	µg/L	0.1	3.0
Pyrene	µg/L	0.1	2.3
Benzo(a)anthracene	µg/L	0.1	0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (Vic EPA 16)*	µg/L	1	64

Surrogates

d5-nitrobenzene (Surrogate)	%	-	112
2-fluorobiphenyl (Surrogate)	%	-	111
d14-p-terphenyl (Surrogate)	%	-	119



ANALYTICAL REPORT

SE107335A R0

		Sample Number	SE107335A.002
		Sample Matrix	Soil
		Sample Date	17 Apr 2012
		Sample Name	BH29_0.9-1.0
Parameter	Units	LOR	

Metals in Soil (TCLP) by ICPOES Method: AN320/AN321

Arsenic, As	mg/L	0.05	<0.05
Cadmium, Cd	mg/L	0.005	<0.005
Chromium, Cr	mg/L	0.005	<0.005
Copper, Cu	mg/L	0.01	0.27
Lead, Pb	mg/L	0.02	0.08
Nickel, Ni	mg/L	0.01	0.014
Zinc, Zn	mg/L	0.01	9.5

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.

Metals in Soil (TCLP) by ICPOES Method: ME-(AU)-[ENV]AN320/AN321

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arsenic, As	LB020180	mg/L	0.05	<0.05	97%
Cadmium, Cd	LB020180	mg/L	0.005	<0.005	99%
Chromium, Cr	LB020180	mg/L	0.005	<0.005	97%
Copper, Cu	LB020180	mg/L	0.01	<0.01	97%
Lead, Pb	LB020180	mg/L	0.02	<0.02	98%
Nickel, Ni	LB020180	mg/L	0.01	<0.01	100%
Zinc, Zn	LB020180	mg/L	0.01	<0.01	99%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB020063	µg/L	0.1	<0.1	100%
Acenaphthylene	LB020063	µg/L	0.1	<0.1	106%
Acenaphthene	LB020063	µg/L	0.1	<0.1	92%
Fluorene	LB020063	µg/L	0.1	<0.1	NA
Phenanthrene	LB020063	µg/L	0.1	<0.1	101%
Anthracene	LB020063	µg/L	0.1	<0.1	85%
Fluoranthene	LB020063	µg/L	0.1	<0.1	103%
Pyrene	LB020063	µg/L	0.1	<0.1	106%
Benzo(a)anthracene	LB020063	µg/L	0.1	<0.1	NA
Chrysene	LB020063	µg/L	0.1	<0.1	NA
Benzo(b)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(k)fluoranthene	LB020063	µg/L	0.1	<0.1	NA
Benzo(a)pyrene	LB020063	µg/L	0.1	<0.1	83%
Indeno(1,2,3-cd)pyrene	LB020063	µg/L	0.1	<0.1	NA
Dibenzo(a&h)anthracene	LB020063	µg/L	0.1	<0.1	NA
Benzo(ghi)perylene	LB020063	µg/L	0.1	<0.1	NA
Total PAH (Vic EPA 16)*	LB020063	µg/L	1	<1	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB020063	%	-	108%	97%
2-fluorobiphenyl (Surrogate)	LB020063	%	-	112%	106%
d14-p-terphenyl (Surrogate)	LB020063	%	-	119%	111%

METHOD

METHODOLOGY SUMMARY

AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05 .
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05 .
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN320/AN321	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components.
AN320/AN321	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements. Reference APHA 3120 B.
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).

FOOTNOTES

IS	Insufficient sample for analysis.	QFH	QC result is above the upper tolerance
LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	This analysis is not covered by the scope of accreditation.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated
LOR	Limit of Reporting		
↑↓	Raised or Lowered Limit of Reporting		

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

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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CLIENT DETAILS

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Project **GEOTLCOV24303AC - SICEEP - Additional**
 Order Number **89234,236--239**
 Samples **1**

LABORATORY DETAILS

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SGS Reference **SE107862A R0**
 Report Number **0000029277**
 Date Reported **21 May 2012**
 Date Received **02 May 2012**

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
 Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

SIGNATORIES



Andy Sutton
Organics Chemist



Huong Crawford
Laboratory Manager



ANALYTICAL REPORT

SE107862A R0

		Sample Number	SE107862A.001
		Sample Matrix	Soil
		Sample Date	30 Apr 2012
		Sample Name	NBH10_0.4-0.5
Parameter	Units	LOR	

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC Method: AN006

pH 1:20	pH Units	-	8.9
pH 1:20 plus HCL	pH Units	-	1.8
Extraction Solution Used	No unit	-	1
Mass of Sample Used*	g	-	50
Volume of Extraction Solution Used*	mL	-	1000
pH TCLP after 18 hours	pH Units	-	5.5

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract Method: AN420

Naphthalene	µg/L	0.1	0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	0.8
Fluorene	µg/L	0.1	0.7
Phenanthrene	µg/L	0.1	2.3
Anthracene	µg/L	0.1	0.4
Fluoranthene	µg/L	0.1	0.3
Pyrene	µg/L	0.1	0.2
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (Vic EPA 16)*	µg/L	1	5

Surrogates

d5-nitrobenzene (Surrogate)	%	-	110
2-fluorobiphenyl (Surrogate)	%	-	108
d14-p-terphenyl (Surrogate)	%	-	110



ANALYTICAL REPORT

SE107862A R0

Sample Number SE107862A.001
Sample Matrix Soil
Sample Date 30 Apr 2012
Sample Name NBH10_0.4-0.5

Parameter Units LOR

Metals in Soil (TCLP) by ICPOES Method: AN320/AN321

Arsenic, As	mg/L	0.05	<0.05
Cadmium, Cd	mg/L	0.005	0.015
Chromium, Cr	mg/L	0.005	<0.005
Copper, Cu	mg/L	0.01	1.7
Lead, Pb	mg/L	0.02	0.65
Nickel, Ni	mg/L	0.01	0.057
Zinc, Zn	mg/L	0.01	4.0

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.

Metals in Soil (TCLP) by ICPOES Method: ME-(AU)-[ENV]AN320/AN321

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arsenic, As	LB020180	mg/L	0.05	<0.05	97%
Cadmium, Cd	LB020180	mg/L	0.005	<0.005	99%
Chromium, Cr	LB020180	mg/L	0.005	<0.005	97%
Copper, Cu	LB020180	mg/L	0.01	<0.01	97%
Lead, Pb	LB020180	mg/L	0.02	<0.02	98%
Nickel, Ni	LB020180	mg/L	0.01	<0.01	100%
Zinc, Zn	LB020180	mg/L	0.01	<0.01	99%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
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Total PAH (Vic EPA 16)*	LB020063	µg/L	1	<1	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
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METHOD

METHODOLOGY SUMMARY

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LNR	Sample listed, but not received.	QFL	QC result is below the lower tolerance
*	This analysis is not covered by the scope of accreditation.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated
LOR	Limit of Reporting		
↑↓	Raised or Lowered Limit of Reporting		

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

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-11.pdf>

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CLIENT DETAILS

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Project **GEOTLCOV24303AA**
 Order Number **92605-92607**
 Samples **19**

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SGS Reference **SE100639 R0**
 Report Number **0000003282**
 Date Reported **17 Jun 2011**
 Date Received **07 Jun 2011**

COMMENTS

The document is issued in accordance with NATA's accreditation requirements.
 Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

No respirable fibres detected using trace analysis technique.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam.

SIGNATORIES



Andy Sutton
Organics Chemist



Dong Liang
Inorganics Metals Team Leader



Edward Ibrahim
Business Manager



Jue Wang
Organic Chemist



Ly Kim Ha
Organics Supervisor



Ravee Sivasubramaniam
Hygienist

Parameter	Units	LOR	Sample Number	SE100639.001	SE100639.002	SE100639.003	SE100639.005
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	01 Jun 2011	01 Jun 2011	01 Jun 2011	02 Jun 2011
			Sample Name	BH11 0.1-0.2	BH11 0.5m	BH11 1.0m	BH3 0.5m

VOC's in Soil Method: AN433/AN434

Fumigants

2,2-dichloropropane	mg/kg	0.1	-	<0.1	-	<0.1
1,2-dichloropropane	mg/kg	0.1	-	<0.1	-	<0.1
cis-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	<0.1
1,2-dibromoethane (EDB)	mg/kg	0.1	-	<0.1	-	<0.1

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	<1	-	<1
Chloromethane	mg/kg	1	-	<1	-	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	<0.1	-	<0.1
Bromomethane	mg/kg	1	-	<1	-	<1
Chloroethane	mg/kg	1	-	<1	-	<1
Trichlorofluoromethane	mg/kg	1	-	<1	-	<1
Iodomethane	mg/kg	5	-	<5	-	<5
1,1-dichloroethene	mg/kg	0.1	-	<0.1	-	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	<0.5	-	<0.5
Allyl chloride	mg/kg	0.1	-	<0.1	-	<0.1
trans-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	<0.1
1,1-dichloroethane	mg/kg	0.1	-	<0.1	-	<0.1
cis-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	<0.1
Bromochloromethane	mg/kg	0.1	-	<0.1	-	<0.1
1,2-dichloroethane	mg/kg	0.1	-	<0.1	-	<0.1
1,1,1-trichloroethane	mg/kg	0.1	-	<0.1	-	<0.1
1,1-dichloropropene	mg/kg	0.1	-	<0.1	-	<0.1
Carbon tetrachloride	mg/kg	0.1	-	<0.1	-	<0.1
Dibromomethane	mg/kg	0.1	-	<0.1	-	<0.1
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	<0.1	-	<0.1
1,1,2-trichloroethane	mg/kg	0.1	-	<0.1	-	<0.1
1,3-dichloropropane	mg/kg	0.1	-	<0.1	-	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	<0.1	-	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	<0.1
cis-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	<1
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	<0.1
1,2,3-trichloropropane	mg/kg	0.1	-	<0.1	-	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	<1
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	<0.1	-	<0.1
Hexachlorobutadiene	mg/kg	0.1	-	<0.1	-	<0.1

Halogenated Aromatics

Chlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1
Bromobenzene	mg/kg	0.1	-	<0.1	-	<0.1
2-chlorotoluene	mg/kg	0.1	-	<0.1	-	<0.1
4-chlorotoluene	mg/kg	0.1	-	<0.1	-	<0.1
1,3-dichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1
1,4-dichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1
1,2-dichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1

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
Styrene (Vinyl benzene)	mg/kg	0.1	-	<0.1	-	<0.1
o-xylene	mg/kg	0.1	-	<0.1	-	<0.1
Isopropylbenzene (Cumene)	mg/kg	0.1	-	<0.1	-	<0.1
n-propylbenzene	mg/kg	0.1	-	<0.1	-	<0.1

Parameter	Units	LOR	Sample Number	SE100639.001	SE100639.002	SE100639.003	SE100639.005
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	01 Jun 2011	01 Jun 2011	01 Jun 2011	02 Jun 2011
			Sample Name	BH11 0.1-0.2	BH11 0.5m	BH11 1.0m	BH3 0.5m

VOC's in Soil Method: AN433/AN434 (continued)

1,3,5-trimethylbenzene	mg/kg	0.1	-	<0.1	-	<0.1
tert-butylbenzene	mg/kg	0.1	-	<0.1	-	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	-	<0.1	-	<0.1
sec-butylbenzene	mg/kg	0.1	-	<0.1	-	<0.1
p-isopropyltoluene	mg/kg	0.1	-	<0.1	-	<0.1
n-butylbenzene	mg/kg	0.1	-	<0.1	-	<0.1

Nitrogenous Compounds

Acrylonitrile	mg/kg	0.1	-	<0.1	-	<0.1
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Oxygenated Compounds

Acetone (2-propanone)	mg/kg	10	-	<10	-	<10
MtBE (Methyl-tert-butyl ether)	mg/kg	0.5	-	<0.5	-	<0.5
Vinyl acetate	mg/kg	10	-	<10	-	<10
MEK (2-butanone)	mg/kg	10	-	<10	-	<10
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	<1	-	<1
2-hexanone (MBK)	mg/kg	5	-	<5	-	<5

Polycyclic VOCs

Naphthalene	mg/kg	0.1	-	<0.1	-	<0.1
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Sulphonated Compounds

Carbon disulfide	mg/kg	0.5	-	<0.5	-	<0.5
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	-	94	-	87
d4-1,2-dichloroethane (Surrogate)	%	-	-	106	-	100
d8-toluene (Surrogate)	%	-	-	108	-	111
Bromofluorobenzene (Surrogate)	%	-	-	105	-	91

Totals

Total BTEX*	mg/kg	-	-	0	-	0
Total Xylenes*	mg/kg	0.3	-	<0.3	-	<0.3
Total VOC*	mg/kg	24	-	-	-	-

Trihalomethanes

Chloroform	mg/kg	0.1	-	<0.1	-	<0.1
Bromodichloromethane	mg/kg	0.1	-	<0.1	-	<0.1
Chlorodibromomethane	mg/kg	0.1	-	<0.1	-	<0.1
Bromoform	mg/kg	0.1	-	<0.1	-	<0.1

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	-	<20	<20	<20
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	1	-	-	<1	<1
o-xylene	mg/kg	0.5	-	-	<0.5	<0.5
Total Xylenes	mg/kg	0.3	-	-	<0.3	<0.3
Total BTEX*	mg/kg	2.7	-	-	<2.7	<2.7

Parameter	Units	LOR	Sample Number	SE100639.001	SE100639.002	SE100639.003	SE100639.005
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	01 Jun 2011	01 Jun 2011	01 Jun 2011	02 Jun 2011
			Sample Name	BH11 0.1-0.2	BH11 0.5m	BH11 1.0m	BH3 0.5m

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434 (continued)

Surrogates

Trifluorotoluene (Surrogate)	%	-	-	69	114	114
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-

Full 8270 SVOC in Soil Method: AN420

PAHs

Acenaphthene	mg/kg	0.5	-	2.3	-	<0.5
Acenaphthylene	mg/kg	0.5	-	12	-	<0.5
Anthracene	mg/kg	0.5	-	23	-	<0.5
Benzo(a)anthracene	mg/kg	0.5	-	55	-	<0.5
Benzo(b&k)fluoranthene	mg/kg	1	-	64	-	<1
Benzo(b)fluoranthene	mg/kg	0.5	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.5	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.5	-	25	-	<0.5
Benzo(a)pyrene	mg/kg	0.5	-	47	-	<0.5
Chrysene	mg/kg	0.5	-	40	-	<0.5
Dibenzo(ah)anthracene	mg/kg	0.5	-	2.7	-	<0.5
Fluoranthene	mg/kg	0.5	-	120	-	<0.5
Fluorene	mg/kg	0.5	-	8.9	-	<0.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	-	23	-	<0.5
1-methylnaphthalene	mg/kg	0.5	-	2.1	-	<0.5
2-methylnaphthalene	mg/kg	0.5	-	1.5	-	<0.5
Naphthalene	mg/kg	0.5	-	2.6	-	<0.5
Phenanthrene	mg/kg	0.5	-	84	-	<0.5
Pyrene	mg/kg	0.5	-	120	-	<0.5
2-acetylmino fluorene	mg/kg	2	-	<2	-	<2
7,12-dimethyl-benz(a)anthracene	mg/kg	0.5	-	<0.5	-	<0.5
3-methylcholanthrene	mg/kg	1	-	<1	-	<1

OCs

Aldrin	mg/kg	0.5	-	<0.5	-	<0.5
Alpha-BHC	mg/kg	0.5	-	<0.5	-	<0.5
Beta-BHC	mg/kg	0.5	-	<0.5	-	<0.5
Delta-BHC	mg/kg	0.5	-	<0.5	-	<0.5
Gamma-BHC (Lindane)	mg/kg	0.5	-	<0.5	-	<0.5
p,p-DDD	mg/kg	0.5	-	<0.5	-	<0.5
p,p-DDE	mg/kg	0.5	-	<0.5	-	<0.5
p,p-DDT	mg/kg	0.5	-	<0.5	-	<0.5
Dieldrin	mg/kg	0.5	-	<0.5	-	<0.5
Alpha-endosulfan	mg/kg	0.5	-	<0.5	-	<0.5
Beta-endosulfan	mg/kg	0.5	-	<0.5	-	<0.5
Endosulfan sulphate	mg/kg	0.5	-	<0.5	-	<0.5
Endrin	mg/kg	0.5	-	<0.5	-	<0.5
Heptachlor	mg/kg	0.5	-	<0.5	-	<0.5
Heptachlor epoxide	mg/kg	0.5	-	<0.5	-	<0.5
Isodrin	mg/kg	0.5	-	<0.5	-	<0.5
Methoxychlor	mg/kg	0.5	-	<0.5	-	<0.5
Mirex	mg/kg	0.5	-	<0.5	-	<0.5
Alpha-chlordane	mg/kg	0.5	-	<0.5	-	<0.5
Gamma-chlordane	mg/kg	0.5	-	<0.5	-	<0.5
Endrin ketone	mg/kg	0.5	-	<0.5	-	<0.5

Parameter	Units	LOR	Sample Number	SE100639.001	SE100639.002	SE100639.003	SE100639.005
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	01 Jun 2011	01 Jun 2011	01 Jun 2011	02 Jun 2011
			Sample Name	BH11 0.1-0.2	BH11 0.5m	BH11 1.0m	BH3 0.5m

Full 8270 SVOC in Soil Method: AN420 (continued)

OPs

Azinphos-methyl (Guthion)	mg/kg	1	-	<1	-	<1
Bromophos ethyl	mg/kg	1	-	<1	-	<1
Carbophenothion	mg/kg	1	-	<1	-	<1
Chlorfenvinphos-cis (Chlofenvinphos-cis)	mg/kg	5	-	<5	-	<5
Chlorfenvinphos-trans (Chlofenvinphos-trans)	mg/kg	1	-	<1	-	<1
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	1	-	<1	-	<1
Chlorpyrifos-methyl	mg/kg	1	-	<1	-	<1
Co-Ral (Coumaphos)	mg/kg	1	-	<1	-	<1
Diazinon (Dimpylate)	mg/kg	1	-	<1	-	<1
Dichlorvos	mg/kg	1	-	<1	-	<1
Demeton-S-methyl	mg/kg	1	-	<1	-	<1
Dimethoate	mg/kg	1	-	<1	-	<1
Disulfoton (Di-syston)	mg/kg	1	-	<1	-	<1
EPN*	mg/kg	1	-	<1	-	<1
Ethion	mg/kg	1	-	<1	-	<1
Ethoprophos (ethoprop or prophos)	mg/kg	1	-	<1	-	<1
Famphur (Famophos)	mg/kg	1	-	<1	-	<1
Fenamiphos (Phenamiphos)	mg/kg	1	-	<1	-	<1
Fenchlorophos (Ronnell)	mg/kg	1	-	<1	-	<1
Fenitrothion	mg/kg	1	-	<1	-	<1
Fenthion	mg/kg	1	-	<1	-	<1
Malathion (Maldison)	mg/kg	1	-	<1	-	<1
Methidathion	mg/kg	1	-	<1	-	<1
Mevinphos-cis/trans	mg/kg	2	-	<2	-	<2
o,o,o-triethyl phosphorothioate	mg/kg	1	-	<1	-	<1
Parathion ethyl (Parathion)	mg/kg	1	-	<1	-	<1
Parathion methyl	mg/kg	1	-	<1	-	<1
Phorate	mg/kg	1	-	<1	-	<1
Pirimiphos-ethyl	mg/kg	1	-	<1	-	<1
Pirimiphos-methyl	mg/kg	1	-	<1	-	<1
Profenofos	mg/kg	1	-	<1	-	<1
Prothiophos (Tokuthion)*	mg/kg	1	-	<1	-	<1
Sulfotepp	mg/kg	1	-	<1	-	<1
Tetrachlorvinphos (Stirophos)*	mg/kg	1	-	<1	-	<1

PCB UPAC(7) Congeners

PCB Congener C28	mg/kg	0.5	-	<0.5	-	<0.5
PCB Congener C52	mg/kg	0.5	-	<0.5	-	<0.5
PCB Congener C101	mg/kg	0.5	-	<0.5	-	<0.5
PCB Congener C118	mg/kg	0.5	-	<0.5	-	<0.5
PCB Congener C138	mg/kg	0.5	-	<0.5	-	<0.5
PCB Congener C153	mg/kg	0.5	-	<0.5	-	<0.5
PCB Congener C180	mg/kg	0.5	-	<0.5	-	<0.5

SVCH (CI Benzenes, Hydrocarbons & VOCs)

Hexachlorobenzene	mg/kg	0.5	-	<0.5	-	<0.5
1,2-dichlorobenzene	mg/kg	0.5	-	<0.5	-	<0.5
1,3-dichlorobenzene	mg/kg	0.5	-	<0.5	-	<0.5
1,4-dichlorobenzene	mg/kg	0.5	-	<0.5	-	<0.5
Hexachlorobutadiene	mg/kg	0.5	-	<0.5	-	<0.5
Hexachlorocyclopentadiene	mg/kg	1	-	<1	-	<1
Hexachloroethane	mg/kg	0.5	-	<0.5	-	<0.5
Hexachloropropene	mg/kg	0.5	-	<0.5	-	<0.5
Pentachlorobenzene	mg/kg	0.5	-	<0.5	-	<0.5
Pentachloroethane	mg/kg	0.5	-	<0.5	-	<0.5
1,2,3,5 and 1,2,4,5 -tetrachlorobenzene	mg/kg	1	-	<1	-	<1
1,2,3,4-tetrachlorobenzene	mg/kg	0.5	-	<0.5	-	<0.5
1/2-Chloronaphthalene	mg/kg	1	-	<1	-	<1

Parameter	Units	LOR	Sample Number	SE100639.001	SE100639.002	SE100639.003	SE100639.005
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	01 Jun 2011	01 Jun 2011	01 Jun 2011	02 Jun 2011
			Sample Name	BH11 0.1-0.2	BH11 0.5m	BH11 1.0m	BH3 0.5m

Full 8270 SVOC in Soil Method: AN420 (continued)

1,2,4-trichlorobenzene	mg/kg	0.5	-	<0.5	-	<0.5
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Phthalates

Bis(2-ethylhexyl)phthalate	mg/kg	5	-	<5	-	<5
Bis(2-ethylhexyl)adipate	mg/kg	0.5	-	<0.5	-	<0.5
Butyl benzyl phthalate	mg/kg	0.5	-	<0.5	-	<0.5
Di-n-butyl phthalate	mg/kg	0.5	-	<0.5	-	<0.5
Diethyl phthalate	mg/kg	0.5	-	<0.5	-	<0.5
Dimethyl phthalate	mg/kg	0.5	-	<0.5	-	<0.5
Dioctyl phthalate	mg/kg	0.5	-	<0.5	-	<0.5

Carbamates

Carbofuran	mg/kg	0.5	-	<0.5	-	<0.5
Carbaryl	mg/kg	0.5	-	<0.5	-	<0.5

Herbicides (normal)

Trifluralin	mg/kg	0.5	-	<0.5	-	<0.5
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Nitrosamines

N-nitroso-di-n-butylamine (NDBA)	mg/kg	0.5	-	<0.5	-	<0.5
N-nitroso-diethylamine (NDEA)	mg/kg	1	-	<1	-	<1
N-nitroso-di-n-propylamine (NDPA)	mg/kg	0.5	-	<0.5	-	<0.5
N-nitroso-morpholine (NMOR)	mg/kg	0.5	-	<0.5	-	<0.5
N-nitroso-piperidine (NPIP)	mg/kg	0.5	-	<0.5	-	<0.5
N-nitroso-pyrrolidine (NPYR)	mg/kg	1	-	<1	-	<1
4-amino biphenyl	mg/kg	1	-	<1	-	<1

Nitroaromatics and Ketones

Acetophenone	mg/kg	0.5	-	<0.5	-	<0.5
1,3-dinitrobenzene	mg/kg	1	-	<1	-	<1
2,4-dinitrotoluene	mg/kg	0.5	-	<0.5	-	<0.5
2,6-dinitrotoluene	mg/kg	0.5	-	<0.5	-	<0.5
Isophorone	mg/kg	0.5	-	<0.5	-	<0.5
Nitrobenzene	mg/kg	0.5	-	<0.5	-	<0.5
p-(dimethylamino) azobenzene	mg/kg	1	-	<1	-	<1
Phenacetin	mg/kg	1	-	<1	-	<1
Pentachloronitrobenzene (quintozone)	mg/kg	0.5	-	<0.5	-	<0.5

Anilines and Amines

Aniline	mg/kg	3	-	<3	-	<3
4-chloroaniline	mg/kg	1	-	<1	-	<1
2-nitroaniline	mg/kg	1	-	<1	-	<1
3-nitroaniline	mg/kg	1	-	<1	-	<1
4-nitroaniline	mg/kg	1	-	<1	-	<1
Diphenylamine	mg/kg	0.5	-	<0.5	-	<0.5
o-toluidine	mg/kg	1	-	<1	-	<1
5-nitro-o-toluidine	mg/kg	1	-	<1	-	<1
1-naphthylamine	mg/kg	1	-	<1	-	<1
2-naphthylamine	mg/kg	1	-	<1	-	<1

Parameter	Units	LOR	Sample Number	SE100639.001	SE100639.002	SE100639.003	SE100639.005
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	01 Jun 2011	01 Jun 2011	01 Jun 2011	02 Jun 2011
			Sample Name	BH11 0.1-0.2	BH11 0.5m	BH11 1.0m	BH3 0.5m

Full 8270 SVOC in Soil Method: AN420 (continued)

Haloethers

Bis(2-chloroethoxy) methane	mg/kg	0.5	-	<0.5	-	<0.5
Bis(2-chloroethyl) ether	mg/kg	0.5	-	<0.5	-	<0.5
Bis(2-chloroisopropyl) ether	mg/kg	0.5	-	<0.5	-	<0.5
4-chlorophenyl phenyl ether	mg/kg	0.5	-	<0.5	-	<0.5
4-bromophenyl phenyl ether	mg/kg	0.5	-	<0.5	-	<0.5

Other SVOCs

Methyl methanesulfonate	mg/kg	1	-	<1	-	<1
Ethyl methanesulfonate	mg/kg	1	-	<1	-	<1
Dibenzofuran	mg/kg	0.5	-	7.0	-	<0.5
Benzyl alcohol	mg/kg	1	-	<1	-	<1
Safrole	mg/kg	0.5	-	<0.5	-	<0.5
Isosafrole Isomer 1	mg/kg	1	-	<1	-	<1
Isosafrole Isomer 2	mg/kg	1	-	<1	-	<1
1,4-naphthoquinone	mg/kg	0.5	-	<0.5	-	<0.5
Thionazin	mg/kg	1	-	<1	-	<1

Speciated Routine Phenols

3/4-methyl phenol (m/p-cresol)	mg/kg	1	-	<1	-	<1
2-methyl phenol (o-cresol)	mg/kg	0.5	-	<0.5	-	<0.5
2,6-dichlorophenol	mg/kg	0.5	-	<0.5	-	<0.5
2,3,4,6 and 2,3,5,6-tetrachlorophenol	mg/kg	1	-	<1	-	<1
2,4,5-trichlorophenol	mg/kg	0.5	-	<0.5	-	<0.5
4-chloro-3-methylphenol	mg/kg	1	-	<1	-	<1
2-chlorophenol	mg/kg	0.5	-	<0.5	-	<0.5
2,4-dichlorophenol	mg/kg	0.5	-	<0.5	-	<0.5
2,4-dimethyl phenol	mg/kg	0.5	-	<0.5	-	<0.5
2-nitrophenol	mg/kg	0.5	-	<0.5	-	<0.5
Phenol	mg/kg	0.5	-	<0.5	-	<0.5
2,4,6-trichlorophenol	mg/kg	0.5	-	<0.5	-	<0.5
Pentachlorophenol	mg/kg	0.5	-	<0.5	-	<0.5
4-nitrophenol	mg/kg	0.5	-	<0.5	-	<0.5

Surrogates

d5-phenol (Surrogate)	%	-	-	72	-	73
d5-nitrobenzene (Surrogate)	%	-	-	93	-	120
2-fluorobiphenyl (Surrogate)	%	-	-	73	-	105
2,4,6-tribromophenol (Surrogate)	%	-	-	67	-	109
d14-p-terphenyl (Surrogate)	%	-	-	75	-	110

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	-	28	23	<20
TRH C15-C28	mg/kg	50	-	1200	430	<50
TRH C29-C36	mg/kg	50	-	620	260	<50

Surrogates

TRH (Surrogate)	%	-	-	-	-	-
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Parameter	Units	LOR	Sample Number	SE100639.001	SE100639.002	SE100639.003	SE100639.005
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	01 Jun 2011	01 Jun 2011	01 Jun 2011	02 Jun 2011
			Sample Name	BH11 0.1-0.2	BH11 0.5m	BH11 1.0m	BH3 0.5m

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.1	-	-	2.6	-
Acenaphthylene	mg/kg	0.1	-	-	0.7	-
Acenaphthene	mg/kg	0.1	-	-	3.2	-
Fluorene	mg/kg	0.1	-	-	3.6	-
Phenanthrene	mg/kg	0.1	-	-	14	-
Anthracene	mg/kg	0.1	-	-	6.0	-
Fluoranthene	mg/kg	0.1	-	-	16	-
Pyrene	mg/kg	0.1	-	-	18	-
Benzo(a)anthracene	mg/kg	0.1	-	-	8.5	-
Chrysene	mg/kg	0.1	-	-	6.1	-
Benzo(b)fluoranthene	mg/kg	0.1	-	-	9.0	-
Benzo(k)fluoranthene	mg/kg	0.1	-	-	3.0	-
Benzo(a)pyrene	mg/kg	0.05	-	-	7.0	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-	-	3.9	-
Dibenzo(a,h)anthracene	mg/kg	0.1	-	-	0.8	-
Benzo(ghi)perylene	mg/kg	0.1	-	-	4.6	-
Total PAH	mg/kg	1.75	-	-	110	-

Surrogates

d5-nitrobenzene (Surrogate)	%	-	-	-	121	-
2-fluorobiphenyl (Surrogate)	%	-	-	-	107	-
d14-p-terphenyl (Surrogate)	%	-	-	-	110	-

Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: AN040/AN320

Arsenic, As	mg/kg	3	-	5	<3	4
Cadmium, Cd	mg/kg	0.3	-	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	-	16	20	7.5
Copper, Cu	mg/kg	0.5	-	34	18	51
Lead, Pb	mg/kg	1	-	74	21	15
Nickel, Ni	mg/kg	0.5	-	4.6	5.1	6.6
Zinc, Zn	mg/kg	0.5	-	77	160	32

Mercury in Soil Method: AN312

Mercury	mg/kg	0.05	-	0.12	0.09	<0.05
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Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	No	-	No	-
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Moisture Content Method: AN234

% Moisture	%	0.5	-	18	9.4	13
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VOCs in Water Method: AN433/AN434

Fumigants

2,2-dichloropropane	µg/L	0.5	-	-	-	-
1,2-dichloropropane	µg/L	0.5	-	-	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	-	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	-	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.001	SE100639.002	SE100639.003	SE100639.005
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	01 Jun 2011	01 Jun 2011	01 Jun 2011	02 Jun 2011
			Sample Name	BH11 0.1-0.2	BH11 0.5m	BH11 1.0m	BH3 0.5m

VOCs in Water Method: AN433/AN434 (continued)

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-	-	-
Chloromethane	µg/L	5	-	-	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-	-	-
Bromomethane	µg/L	10	-	-	-	-
Chloroethane	µg/L	5	-	-	-	-
Trichlorofluoromethane	µg/L	1	-	-	-	-
Iodomethane	µg/L	5	-	-	-	-
1,1-dichloroethene	µg/L	0.5	-	-	-	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-	-	-
Allyl chloride	µg/L	2	-	-	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	-	-	-
1,1-dichloroethane	µg/L	0.5	-	-	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	-	-	-
Bromochloromethane	µg/L	0.5	-	-	-	-
1,2-dichloroethane	µg/L	0.5	-	-	-	-
1,1,1-trichloroethane	µg/L	0.5	-	-	-	-
1,1-dichloropropene	µg/L	0.5	-	-	-	-
Carbon tetrachloride	µg/L	0.5	-	-	-	-
Dibromomethane	µg/L	0.5	-	-	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	-	-	-	-
1,1,2-trichloroethane	µg/L	0.5	-	-	-	-
1,3-dichloropropane	µg/L	0.5	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-	-	-
cis-1,4-dichloro-2-butene	µg/L	1	-	-	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-	-	-
1,2,3-trichloropropane	µg/L	0.5	-	-	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-	-	-
Hexachlorobutadiene	µg/L	0.5	-	-	-	-

Halogenated Aromatics

Chlorobenzene	µg/L	0.5	-	-	-	-
Bromobenzene	µg/L	0.5	-	-	-	-
2-chlorotoluene	µg/L	0.5	-	-	-	-
4-chlorotoluene	µg/L	0.5	-	-	-	-
1,3-dichlorobenzene	µg/L	0.5	-	-	-	-
1,4-dichlorobenzene	µg/L	0.3	-	-	-	-
1,2-dichlorobenzene	µg/L	0.5	-	-	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-	-	-

Monocyclic Aromatic Hydrocarbons

Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
Styrene (Vinyl benzene)	µg/L	0.5	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	-	-	-	-
n-propylbenzene	µg/L	0.5	-	-	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-	-	-
tert-butylbenzene	µg/L	0.5	-	-	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-	-	-
sec-butylbenzene	µg/L	0.5	-	-	-	-
p-isopropyltoluene	µg/L	0.5	-	-	-	-
n-butylbenzene	µg/L	0.5	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.001	SE100639.002	SE100639.003	SE100639.005
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	01 Jun 2011	01 Jun 2011	01 Jun 2011	02 Jun 2011
			Sample Name	BH11 0.1-0.2	BH11 0.5m	BH11 1.0m	BH3 0.5m

VOCs in Water Method: AN433/AN434 (continued)

Nitrogenous Compounds

Acrylonitrile	µg/L	0.5	-	-	-	-
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Oxygenated Compounds

Acetone (2-propanone)	µg/L	10	-	-	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	-	-	-	-
Vinyl acetate	µg/L	10	-	-	-	-
MEK (2-butanone)	µg/L	10	-	-	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-	-	-
2-hexanone (MBK)	µg/L	5	-	-	-	-

Polycyclic VOCs

Naphthalene	µg/L	0.5	-	-	-	-
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Sulphonated Compounds

Carbon disulfide	µg/L	2	-	-	-	-
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-

Totals

Total VOC	µg/L	10	-	-	-	-
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Trihalomethanes

Chloroform (THM)	µg/L	0.5	-	-	-	-
Bromodichloromethane (THM)	µg/L	0.5	-	-	-	-
Dibromochloromethane (THM)	µg/L	0.5	-	-	-	-
Bromoform (THM)	µg/L	0.5	-	-	-	-

Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434

TRH C6-C9	µg/L	40	-	-	-	-
Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Total BTEX*	µg/L	3	-	-	-	-
Total Xylenes*	µg/L	1.5	-	-	-	-

Surrogates

Trifluorotoluene (Surrogate)	%	-	-	-	-	-
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403

TRH C10-C14	µg/L	100	-	-	-	-
TRH C15-C28	µg/L	200	-	-	-	-
TRH C29-C36	µg/L	200	-	-	-	-

Parameter	Units	LOR
Sample Number	SE100639.001	SE100639.002
Sample Matrix	Soil	Soil
Sample Date	01 Jun 2011	01 Jun 2011
Sample Name	BH11 0.1-0.2	BH11 0.5m
		01 Jun 2011
		BH11 1.0m
		02 Jun 2011
		BH3 0.5m

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403 (continued)

Surrogates

TRH (Surrogate)	%	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420

Naphthalene	µg/L	0.1	-	-	-	-
Acenaphthylene	µg/L	0.1	-	-	-	-
Acenaphthene	µg/L	0.1	-	-	-	-
Fluorene	µg/L	0.1	-	-	-	-
Phenanthrene	µg/L	0.1	-	-	-	-
Anthracene	µg/L	0.1	-	-	-	-
Fluoranthene	µg/L	0.1	-	-	-	-
Pyrene	µg/L	0.1	-	-	-	-
Benzo(a)anthracene	µg/L	0.1	-	-	-	-
Chrysene	µg/L	0.1	-	-	-	-
Benzo(b)fluoranthene	µg/L	0.1	-	-	-	-
Benzo(k)fluoranthene	µg/L	0.1	-	-	-	-
Benzo(a)pyrene	µg/L	0.1	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	0.1	-	-	-	-
Dibenzo(a,h)anthracene	µg/L	0.1	-	-	-	-
Benzo(ghi)perylene	µg/L	0.1	-	-	-	-
Total PAH (18)*	µg/L	1	-	-	-	-

Surrogates

d5-nitrobenzene (Surrogate)	%	-	-	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-

Trace Metals (Dissolved) in Water by ICPMS Method: AN318

Arsenic, As	µg/L	1	-	-	-	-
Cadmium, Cd	µg/L	0.1	-	-	-	-
Chromium, Cr	µg/L	1	-	-	-	-
Copper, Cu	µg/L	1	-	-	-	-
Lead, Pb	µg/L	1	-	-	-	-
Nickel, Ni	µg/L	1	-	-	-	-
Zinc, Zn	µg/L	1	-	-	-	-

Mercury (dissolved) in Water Method: AN311/AN312

Mercury	mg/L	0.0001	-	-	-	-
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Parameter	Units	LOR
Sample Number	SE100639.006	SE100639.007
Sample Matrix	Soil	Soil
Sample Date	02 Jun 2011	02 Jun 2011
Sample Name	BH3 1.0m	BH3 2.5m
		02 Jun 2011
		BH3 5.5m
		02 Jun 2011
		QC01
		03 Jun 2011
		QC02

VOC's in Soil Method: AN433/AN434

Fumigants

2,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-	-
1,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.006	SE100639.007	SE100639.008	SE100639.009	SE100639.010
			Sample Matrix	Soil	Soil	Soil	Soil	Water
			Sample Date	02 Jun 2011	02 Jun 2011	02 Jun 2011	02 Jun 2011	03 Jun 2011
			Sample Name	BH3 1.0m	BH3 2.5m	BH3 5.5m	QC01	QC02

VOC's in Soil Method: AN433/AN434 (continued)

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	-	-	-	-
Chloromethane	mg/kg	1	<1	-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	-	-	-	-
Bromomethane	mg/kg	1	<1	-	-	-	-
Chloroethane	mg/kg	1	<1	-	-	-	-
Trichlorofluoromethane	mg/kg	1	<1	-	-	-	-
Iodomethane	mg/kg	5	<5	-	-	-	-
1,1-dichloroethene	mg/kg	0.1	<0.1	-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	-	-	-	-
Allyl chloride	mg/kg	0.1	<0.1	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-	-
1,1-dichloroethane	mg/kg	0.1	<0.1	-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-	-
Bromochloromethane	mg/kg	0.1	<0.1	-	-	-	-
1,2-dichloroethane	mg/kg	0.1	<0.1	-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	<0.1	-	-	-	-
1,1-dichloropropene	mg/kg	0.1	<0.1	-	-	-	-
Carbon tetrachloride	mg/kg	0.1	<0.1	-	-	-	-
Dibromomethane	mg/kg	0.1	<0.1	-	-	-	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	<0.1	-	-	-	-
1,3-dichloropropane	mg/kg	0.1	<0.1	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-	-
cis-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	<0.1	-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	<0.1	-	-	-	-

Halogenated Aromatics

Chlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
Bromobenzene	mg/kg	0.1	<0.1	-	-	-	-
2-chlorotoluene	mg/kg	0.1	<0.1	-	-	-	-
4-chlorotoluene	mg/kg	0.1	<0.1	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-

Monocyclic Aromatic Hydrocarbons

Benzene	mg/kg	0.1	<0.1	-	-	-	-
Toluene	mg/kg	0.1	<0.1	-	-	-	-
Ethylbenzene	mg/kg	0.1	<0.1	-	-	-	-
m/p-xylene	mg/kg	0.2	<0.2	-	-	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	-	-	-	-
o-xylene	mg/kg	0.1	<0.1	-	-	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	-	-	-	-
n-propylbenzene	mg/kg	0.1	<0.1	-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-	-
tert-butylbenzene	mg/kg	0.1	<0.1	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-	-
sec-butylbenzene	mg/kg	0.1	<0.1	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	<0.1	-	-	-	-
n-butylbenzene	mg/kg	0.1	<0.1	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE100639.006 Soil 02 Jun 2011 BH3 1.0m	SE100639.007 Soil 02 Jun 2011 BH3 2.5m	SE100639.008 Soil 02 Jun 2011 BH3 5.5m	SE100639.009 Soil 02 Jun 2011 QC01	SE100639.010 Water 03 Jun 2011 QC02
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VOC's in Soil Method: AN433/AN434 (continued)

Nitrogenous Compounds

Acrylonitrile	mg/kg	0.1	<0.1	-	-	-	-
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Oxygenated Compounds

Acetone (2-propanone)	mg/kg	10	<10	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.5	<0.5	-	-	-	-
Vinyl acetate	mg/kg	10	<10	-	-	-	-
MEK (2-butanone)	mg/kg	10	<10	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	-	-	-	-
2-hexanone (MBK)	mg/kg	5	<5	-	-	-	-

Polycyclic VOCs

Naphthalene	mg/kg	0.1	<0.1	-	-	-	-
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Sulphonated Compounds

Carbon disulfide	mg/kg	0.5	<0.5	-	-	-	-
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	96	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	110	-	-	-	-
d8-toluene (Surrogate)	%	-	111	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	101	-	-	-	-

Totals

Total BTEX*	mg/kg	-	0	-	-	-	-
Total Xylenes*	mg/kg	0.3	<0.3	-	-	-	-
Total VOC*	mg/kg	24	-	-	-	-	-

Trihalomethanes

Chloroform	mg/kg	0.1	<0.1	-	-	-	-
Bromodichloromethane	mg/kg	0.1	<0.1	-	-	-	-
Chlorodibromomethane	mg/kg	0.1	<0.1	-	-	-	-
Bromoform	mg/kg	0.1	<0.1	-	-	-	-

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	<20	-	<20	<20	-
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	1	-	-	<1	<1	-
o-xylene	mg/kg	0.5	-	-	<0.5	<0.5	-
Total Xylenes	mg/kg	0.3	-	-	<0.3	<0.3	-
Total BTEX*	mg/kg	2.7	-	-	<2.7	<2.7	-

Surrogates

Trifluorotoluene (Surrogate)	%	-	102	-	100	113	-
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE100639.006 Soil 02 Jun 2011 BH3 1.0m	SE100639.007 Soil 02 Jun 2011 BH3 2.5m	SE100639.008 Soil 02 Jun 2011 BH3 5.5m	SE100639.009 Soil 02 Jun 2011 QC01	SE100639.010 Water 03 Jun 2011 QC02
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Full 8270 SVOC in Soil Method: AN420

PAHs

Acenaphthene	mg/kg	0.5	<0.5	-	-	-	-
Acenaphthylene	mg/kg	0.5	<0.5	-	-	-	-
Anthracene	mg/kg	0.5	<0.5	-	-	-	-
Benzo(a)anthracene	mg/kg	0.5	<0.5	-	-	-	-
Benzo(b&k)fluoranthene	mg/kg	1	<1	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.5	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.5	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.5	<0.5	-	-	-	-
Benzo(a)pyrene	mg/kg	0.5	<0.5	-	-	-	-
Chrysene	mg/kg	0.5	<0.5	-	-	-	-
Dibenzo(ah)anthracene	mg/kg	0.5	<0.5	-	-	-	-
Fluoranthene	mg/kg	0.5	<0.5	-	-	-	-
Fluorene	mg/kg	0.5	<0.5	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	-	-	-	-
1-methylnaphthalene	mg/kg	0.5	<0.5	-	-	-	-
2-methylnaphthalene	mg/kg	0.5	<0.5	-	-	-	-
Naphthalene	mg/kg	0.5	<0.5	-	-	-	-
Phenanthrene	mg/kg	0.5	<0.5	-	-	-	-
Pyrene	mg/kg	0.5	<0.5	-	-	-	-
2-acetylamino fluorene	mg/kg	2	<2	-	-	-	-
7,12-dimethyl-benz(a)anthracene	mg/kg	0.5	<0.5	-	-	-	-
3-methylcholanthrene	mg/kg	1	<1	-	-	-	-

OCs

Aldrin	mg/kg	0.5	<0.5	-	-	-	-
Alpha-BHC	mg/kg	0.5	<0.5	-	-	-	-
Beta-BHC	mg/kg	0.5	<0.5	-	-	-	-
Delta-BHC	mg/kg	0.5	<0.5	-	-	-	-
Gamma-BHC (Lindane)	mg/kg	0.5	<0.5	-	-	-	-
p,p-DDD	mg/kg	0.5	<0.5	-	-	-	-
p,p-DDE	mg/kg	0.5	<0.5	-	-	-	-
p,p-DDT	mg/kg	0.5	<0.5	-	-	-	-
Dieldrin	mg/kg	0.5	<0.5	-	-	-	-
Alpha-endosulfan	mg/kg	0.5	<0.5	-	-	-	-
Beta-endosulfan	mg/kg	0.5	<0.5	-	-	-	-
Endosulfan sulphate	mg/kg	0.5	<0.5	-	-	-	-
Endrin	mg/kg	0.5	<0.5	-	-	-	-
Heptachlor	mg/kg	0.5	<0.5	-	-	-	-
Heptachlor epoxide	mg/kg	0.5	<0.5	-	-	-	-
Isodrin	mg/kg	0.5	<0.5	-	-	-	-
Methoxychlor	mg/kg	0.5	<0.5	-	-	-	-
Mirex	mg/kg	0.5	<0.5	-	-	-	-
Alpha-chlordane	mg/kg	0.5	<0.5	-	-	-	-
Gamma-chlordane	mg/kg	0.5	<0.5	-	-	-	-
Endrin ketone	mg/kg	0.5	<0.5	-	-	-	-

OPs

Azinphos-methyl (Guthion)	mg/kg	1	<1	-	-	-	-
Bromophos ethyl	mg/kg	1	<1	-	-	-	-
Carbophenothion	mg/kg	1	<1	-	-	-	-
Chlorfenvinphos-cis (Chlofenvinphos-cis)	mg/kg	5	<5	-	-	-	-
Chlorfenvinphos-trans (Chlofenvinphos-trans)	mg/kg	1	<1	-	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	1	<1	-	-	-	-
Chlorpyrifos-methyl	mg/kg	1	<1	-	-	-	-
Co-Ral (Coumaphos)	mg/kg	1	<1	-	-	-	-
Diazinon (Dimpylate)	mg/kg	1	<1	-	-	-	-
Dichlorvos	mg/kg	1	<1	-	-	-	-
Demeton-S-methyl	mg/kg	1	<1	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE100639.006 Soil 02 Jun 2011 BH3 1.0m	SE100639.007 Soil 02 Jun 2011 BH3 2.5m	SE100639.008 Soil 02 Jun 2011 BH3 5.5m	SE100639.009 Soil 02 Jun 2011 QC01	SE100639.010 Water 03 Jun 2011 QC02
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Full 8270 SVOC in Soil Method: AN420 (continued)

Dimethoate	mg/kg	1	<1	-	-	-	-
Disulfoton (Di-syston)	mg/kg	1	<1	-	-	-	-
EPN*	mg/kg	1	<1	-	-	-	-
Ethion	mg/kg	1	<1	-	-	-	-
Ethoprophos (ethoprop or prophos)	mg/kg	1	<1	-	-	-	-
Famphur (Famophos)	mg/kg	1	<1	-	-	-	-
Fenamiphos (Phenamiphos)	mg/kg	1	<1	-	-	-	-
Fenchlorophos (Ronnell)	mg/kg	1	<1	-	-	-	-
Fenitrothion	mg/kg	1	<1	-	-	-	-
Fenthion	mg/kg	1	<1	-	-	-	-
Malathion (Maldison)	mg/kg	1	<1	-	-	-	-
Methidathion	mg/kg	1	<1	-	-	-	-
Mevinphos-cis/trans	mg/kg	2	<2	-	-	-	-
o,o,o-triethyl phosphorothioate	mg/kg	1	<1	-	-	-	-
Parathion ethyl (Parathion)	mg/kg	1	<1	-	-	-	-
Parathion methyl	mg/kg	1	<1	-	-	-	-
Phorate	mg/kg	1	<1	-	-	-	-
Pirimiphos-ethyl	mg/kg	1	<1	-	-	-	-
Pirimiphos-methyl	mg/kg	1	<1	-	-	-	-
Profenofos	mg/kg	1	<1	-	-	-	-
Prothiophos (Tokuthion)*	mg/kg	1	<1	-	-	-	-
Sulfotepp	mg/kg	1	<1	-	-	-	-
Tetrachlorvinphos (Stiropfos)*	mg/kg	1	<1	-	-	-	-

PCB UPAC(7) Congeners

PCB Congener C28	mg/kg	0.5	<0.5	-	-	-	-
PCB Congener C52	mg/kg	0.5	<0.5	-	-	-	-
PCB Congener C101	mg/kg	0.5	<0.5	-	-	-	-
PCB Congener C118	mg/kg	0.5	<0.5	-	-	-	-
PCB Congener C138	mg/kg	0.5	<0.5	-	-	-	-
PCB Congener C153	mg/kg	0.5	<0.5	-	-	-	-
PCB Congener C180	mg/kg	0.5	<0.5	-	-	-	-

SVCH (CI Benzenes, Hydrocarbons & VOCs)

Hexachlorobenzene	mg/kg	0.5	<0.5	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.5	<0.5	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.5	<0.5	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.5	<0.5	-	-	-	-
Hexachlorobutadiene	mg/kg	0.5	<0.5	-	-	-	-
Hexachlorocyclopentadiene	mg/kg	1	<1	-	-	-	-
Hexachloroethane	mg/kg	0.5	<0.5	-	-	-	-
Hexachloropropene	mg/kg	0.5	<0.5	-	-	-	-
Pentachlorobenzene	mg/kg	0.5	<0.5	-	-	-	-
Pentachloroethane	mg/kg	0.5	<0.5	-	-	-	-
1,2,3,5 and 1,2,4,5 -tetrachlorobenzene	mg/kg	1	<1	-	-	-	-
1,2,3,4-tetrachlorobenzene	mg/kg	0.5	<0.5	-	-	-	-
1/2-Chloronaphthalene	mg/kg	1	<1	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.5	<0.5	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.006	SE100639.007	SE100639.008	SE100639.009	SE100639.010
			Sample Matrix	Soil	Soil	Soil	Soil	Water
			Sample Date	02 Jun 2011	02 Jun 2011	02 Jun 2011	02 Jun 2011	03 Jun 2011
			Sample Name	BH3 1.0m	BH3 2.5m	BH3 5.5m	QC01	QC02

Full 8270 SVOC in Soil Method: AN420 (continued)

Phthalates

Bis(2-ethylhexyl)phthalate	mg/kg	5	<5	-	-	-	-
Bis(2-ethylhexyl)adipate	mg/kg	0.5	<0.5	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.5	<0.5	-	-	-	-
Di-n-butyl phthalate	mg/kg	0.5	<0.5	-	-	-	-
Diethyl phthalate	mg/kg	0.5	<0.5	-	-	-	-
Dimethyl phthalate	mg/kg	0.5	<0.5	-	-	-	-
Dioctyl phthalate	mg/kg	0.5	<0.5	-	-	-	-

Carbamates

Carbofuran	mg/kg	0.5	<0.5	-	-	-	-
Carbaryl	mg/kg	0.5	<0.5	-	-	-	-

Herbicides (normal)

Trifluralin	mg/kg	0.5	<0.5	-	-	-	-
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Nitrosamines

N-nitroso-di-n-butylamine (NDBA)	mg/kg	0.5	<0.5	-	-	-	-
N-nitroso-diethylamine (NDEA)	mg/kg	1	<1	-	-	-	-
N-nitroso-di-n-propylamine (NDPA)	mg/kg	0.5	<0.5	-	-	-	-
N-nitroso-morpholine (NMOR)	mg/kg	0.5	<0.5	-	-	-	-
N-nitroso-piperidine (NPIP)	mg/kg	0.5	<0.5	-	-	-	-
N-nitroso-pyrrolidine (NPYR)	mg/kg	1	<1	-	-	-	-
4-amino biphenyl	mg/kg	1	<1	-	-	-	-

Nitroaromatics and Ketones

Acetophenone	mg/kg	0.5	<0.5	-	-	-	-
1,3-dinitrobenzene	mg/kg	1	<1	-	-	-	-
2,4-dinitrotoluene	mg/kg	0.5	<0.5	-	-	-	-
2,6-dinitrotoluene	mg/kg	0.5	<0.5	-	-	-	-
Isophorone	mg/kg	0.5	<0.5	-	-	-	-
Nitrobenzene	mg/kg	0.5	<0.5	-	-	-	-
p-(dimethylamino) azobenzene	mg/kg	1	<1	-	-	-	-
Phenacetin	mg/kg	1	<1	-	-	-	-
Pentachloronitrobenzene (quintozene)	mg/kg	0.5	<0.5	-	-	-	-

Anilines and Amines

Aniline	mg/kg	3	<3	-	-	-	-
4-chloroaniline	mg/kg	1	<1	-	-	-	-
2-nitroaniline	mg/kg	1	<1	-	-	-	-
3-nitroaniline	mg/kg	1	<1	-	-	-	-
4-nitroaniline	mg/kg	1	<1	-	-	-	-
Diphenylamine	mg/kg	0.5	<0.5	-	-	-	-
o-toluidine	mg/kg	1	<1	-	-	-	-
5-nitro-o-toluidine	mg/kg	1	<1	-	-	-	-
1-naphthylamine	mg/kg	1	<1	-	-	-	-
2-naphthylamine	mg/kg	1	<1	-	-	-	-

Haloethers

Bis(2-chloroethoxy) methane	mg/kg	0.5	<0.5	-	-	-	-
Bis(2-chloroethyl) ether	mg/kg	0.5	<0.5	-	-	-	-
Bis(2-chloroisopropyl) ether	mg/kg	0.5	<0.5	-	-	-	-
4-chlorophenyl phenyl ether	mg/kg	0.5	<0.5	-	-	-	-
4-bromophenyl phenyl ether	mg/kg	0.5	<0.5	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.006	SE100639.007	SE100639.008	SE100639.009	SE100639.010
			Sample Matrix	Soil	Soil	Soil	Soil	Water
			Sample Date	02 Jun 2011	02 Jun 2011	02 Jun 2011	02 Jun 2011	03 Jun 2011
			Sample Name	BH3 1.0m	BH3 2.5m	BH3 5.5m	QC01	QC02

Full 8270 SVOC in Soil Method: AN420 (continued)

Other SVOCs

Methyl methanesulfonate	mg/kg	1	<1	-	-	-	-
Ethyl methanesulfonate	mg/kg	1	<1	-	-	-	-
Dibenzofuran	mg/kg	0.5	<0.5	-	-	-	-
Benzyl alcohol	mg/kg	1	<1	-	-	-	-
Safrole	mg/kg	0.5	<0.5	-	-	-	-
Isosafrole Isomer 1	mg/kg	1	<1	-	-	-	-
Isosafrole Isomer 2	mg/kg	1	<1	-	-	-	-
1,4-naphthoquinone	mg/kg	0.5	<0.5	-	-	-	-
Thionazin	mg/kg	1	<1	-	-	-	-

Speciated Routine Phenols

3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1	-	-	-	-
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5	-	-	-	-
2,6-dichlorophenol	mg/kg	0.5	<0.5	-	-	-	-
2,3,4,6 and 2,3,5,6-tetrachlorophenol	mg/kg	1	<1	-	-	-	-
2,4,5-trichlorophenol	mg/kg	0.5	<0.5	-	-	-	-
4-chloro-3-methylphenol	mg/kg	1	<1	-	-	-	-
2-chlorophenol	mg/kg	0.5	<0.5	-	-	-	-
2,4-dichlorophenol	mg/kg	0.5	<0.5	-	-	-	-
2,4-dimethyl phenol	mg/kg	0.5	<0.5	-	-	-	-
2-nitrophenol	mg/kg	0.5	<0.5	-	-	-	-
Phenol	mg/kg	0.5	<0.5	-	-	-	-
2,4,6-trichlorophenol	mg/kg	0.5	<0.5	-	-	-	-
Pentachlorophenol	mg/kg	0.5	<0.5	-	-	-	-
4-nitrophenol	mg/kg	0.5	<0.5	-	-	-	-

Surrogates

d5-phenol (Surrogate)	%	-	111	-	-	-	-
d5-nitrobenzene (Surrogate)	%	-	115	-	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	100	-	-	-	-
2,4,6-tribromophenol (Surrogate)	%	-	111	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	125	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	<20	-	<20	<20	-
TRH C15-C28	mg/kg	50	<50	-	<50	<50	-
TRH C29-C36	mg/kg	50	<50	-	<50	<50	-

Surrogates

TRH (Surrogate)	%	-	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.1	<0.1	-	-	0.4	-
Acenaphthylene	mg/kg	0.1	<0.1	-	-	<0.1	-
Acenaphthene	mg/kg	0.1	<0.1	-	-	0.2	-
Fluorene	mg/kg	0.1	<0.1	-	-	0.1	-
Phenanthrene	mg/kg	0.1	<0.1	-	-	0.4	-
Anthracene	mg/kg	0.1	<0.1	-	-	0.2	-
Fluoranthene	mg/kg	0.1	0.2	-	-	0.6	-
Pyrene	mg/kg	0.1	0.2	-	-	0.6	-
Benzo(a)anthracene	mg/kg	0.1	0.1	-	-	0.3	-
Chrysene	mg/kg	0.1	<0.1	-	-	0.2	-
Benzo(b)fluoranthene	mg/kg	0.1	0.2	-	-	0.3	-
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	-	-	<0.1	-
Benzo(a)pyrene	mg/kg	0.05	0.10	-	-	0.25	-
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	-

Parameter	Units	LOR	Sample Number	SE100639.006	SE100639.007	SE100639.008	SE100639.009	SE100639.010
			Sample Matrix	Soil	Soil	Soil	Soil	Water
			Sample Date	02 Jun 2011	02 Jun 2011	02 Jun 2011	02 Jun 2011	03 Jun 2011
			Sample Name	BH3 1.0m	BH3 2.5m	BH3 5.5m	QC01	QC02

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)

Benzo(ghi)perylene	mg/kg	0.1	<0.1	-	-	0.2	-
Total PAH	mg/kg	1.75	<1.8 †	-	-	3.7	-

Surrogates

d5-nitrobenzene (Surrogate)	%	-	126	-	-	119	-
2-fluorobiphenyl (Surrogate)	%	-	109	-	-	106	-
d14-p-terphenyl (Surrogate)	%	-	105	-	-	102	-

Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: AN040/AN320

Arsenic, As	mg/kg	3	4	-	<3	9	-
Cadmium, Cd	mg/kg	0.3	<0.3	-	<0.3	<0.3	-
Chromium, Cr	mg/kg	0.3	14	-	6.0	12	-
Copper, Cu	mg/kg	0.5	58	-	4.9	57	-
Lead, Pb	mg/kg	1	27	-	6	120	-
Nickel, Ni	mg/kg	0.5	22	-	0.9	10	-
Zinc, Zn	mg/kg	0.5	50	-	1.9	85	-

Mercury in Soil Method: AN312

Mercury	mg/kg	0.05	0.48	-	<0.05	0.47	-
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Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	No	No	-	-	-
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Moisture Content Method: AN234

% Moisture	%	0.5	17	-	15	14	-
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VOCs in Water Method: AN433/AN434

Fumigants

2,2-dichloropropane	µg/L	0.5	-	-	-	-	<0.5
1,2-dichloropropane	µg/L	0.5	-	-	-	-	<0.5
cis-1,3-dichloropropene	µg/L	0.5	-	-	-	-	<0.5
trans-1,3-dichloropropene	µg/L	0.5	-	-	-	-	<0.5
1,2-dibromoethane (EDB)	µg/L	0.5	-	-	-	-	<0.5

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-	-	-	<5
Chloromethane	µg/L	5	-	-	-	-	<5
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-	-	-	<0.3
Bromomethane	µg/L	10	-	-	-	-	<10
Chloroethane	µg/L	5	-	-	-	-	<5
Trichlorofluoromethane	µg/L	1	-	-	-	-	<1
Iodomethane	µg/L	5	-	-	-	-	<5
1,1-dichloroethene	µg/L	0.5	-	-	-	-	<0.5
Dichloromethane (Methylene chloride)	µg/L	5	-	-	-	-	<5
Allyl chloride	µg/L	2	-	-	-	-	<2
trans-1,2-dichloroethene	µg/L	0.5	-	-	-	-	<0.5
1,1-dichloroethane	µg/L	0.5	-	-	-	-	<0.5
cis-1,2-dichloroethene	µg/L	0.5	-	-	-	-	<0.5
Bromochloromethane	µg/L	0.5	-	-	-	-	<0.5
1,2-dichloroethane	µg/L	0.5	-	-	-	-	<0.5
1,1,1-trichloroethane	µg/L	0.5	-	-	-	-	<0.5
1,1-dichloropropene	µg/L	0.5	-	-	-	-	<0.5
Carbon tetrachloride	µg/L	0.5	-	-	-	-	<0.5
Dibromomethane	µg/L	0.5	-	-	-	-	<0.5
Trichloroethene (Trichloroethylene, TCE)	µg/L	0.5	-	-	-	-	<0.5
1,1,2-trichloroethane	µg/L	0.5	-	-	-	-	<0.5

Parameter	Units	LOR	Sample Number	SE100639.006	SE100639.007	SE100639.008	SE100639.009	SE100639.010
			Sample Matrix	Soil	Soil	Soil	Soil	Water
			Sample Date	02 Jun 2011	02 Jun 2011	02 Jun 2011	02 Jun 2011	03 Jun 2011
			Sample Name	BH3 1.0m	BH3 2.5m	BH3 5.5m	QC01	QC02

VOCs in Water Method: AN433/AN434 (continued)

1,3-dichloropropane	µg/L	0.5	-	-	-	-	<0.5
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-	-	-	<0.5
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-	-	-	<0.5
cis-1,4-dichloro-2-butene	µg/L	1	-	-	-	-	<1
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-	-	-	<0.5
1,2,3-trichloropropane	µg/L	0.5	-	-	-	-	<0.5
trans-1,4-dichloro-2-butene	µg/L	1	-	-	-	-	<1
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-	-	-	<0.5
Hexachlorobutadiene	µg/L	0.5	-	-	-	-	<0.5

Halogenated Aromatics

Chlorobenzene	µg/L	0.5	-	-	-	-	<0.5
Bromobenzene	µg/L	0.5	-	-	-	-	<0.5
2-chlorotoluene	µg/L	0.5	-	-	-	-	<0.5
4-chlorotoluene	µg/L	0.5	-	-	-	-	<0.5
1,3-dichlorobenzene	µg/L	0.5	-	-	-	-	<0.5
1,4-dichlorobenzene	µg/L	0.3	-	-	-	-	<0.3
1,2-dichlorobenzene	µg/L	0.5	-	-	-	-	<0.5
1,2,4-trichlorobenzene	µg/L	0.5	-	-	-	-	<0.5
1,2,3-trichlorobenzene	µg/L	0.5	-	-	-	-	<0.5

Monocyclic Aromatic Hydrocarbons

Benzene	µg/L	0.5	-	-	-	-	<0.5
Toluene	µg/L	0.5	-	-	-	-	<0.5
Ethylbenzene	µg/L	0.5	-	-	-	-	<0.5
m/p-xylene	µg/L	1	-	-	-	-	<1
Styrene (Vinyl benzene)	µg/L	0.5	-	-	-	-	<0.5
o-xylene	µg/L	0.5	-	-	-	-	<0.5
Isopropylbenzene (Cumene)	µg/L	0.5	-	-	-	-	<0.5
n-propylbenzene	µg/L	0.5	-	-	-	-	<0.5
1,3,5-trimethylbenzene	µg/L	0.5	-	-	-	-	<0.5
tert-butylbenzene	µg/L	0.5	-	-	-	-	<0.5
1,2,4-trimethylbenzene	µg/L	0.5	-	-	-	-	<0.5
sec-butylbenzene	µg/L	0.5	-	-	-	-	<0.5
p-isopropyltoluene	µg/L	0.5	-	-	-	-	<0.5
n-butylbenzene	µg/L	0.5	-	-	-	-	<0.5

Parameter	Units	LOR	Sample Number	SE100639.006	SE100639.007	SE100639.008	SE100639.009	SE100639.010
			Sample Matrix	Soil	Soil	Soil	Soil	Water
			Sample Date	02 Jun 2011	02 Jun 2011	02 Jun 2011	02 Jun 2011	03 Jun 2011
			Sample Name	BH3 1.0m	BH3 2.5m	BH3 5.5m	QC01	QC02

VOCs in Water Method: AN433/AN434 (continued)

Nitrogenous Compounds

Acrylonitrile	µg/L	0.5	-	-	-	-	<0.5
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Oxygenated Compounds

Acetone (2-propanone)	µg/L	10	-	-	-	-	<10
MtBE (Methyl-tert-butyl ether)	µg/L	2	-	-	-	-	<2
Vinyl acetate	µg/L	10	-	-	-	-	<10
MEK (2-butanone)	µg/L	10	-	-	-	-	<10
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-	-	-	<5
2-hexanone (MBK)	µg/L	5	-	-	-	-	<5

Polycyclic VOCs

Naphthalene	µg/L	0.5	-	-	-	-	<0.5
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Sulphonated Compounds

Carbon disulfide	µg/L	2	-	-	-	-	<2
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	104
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	113
d8-toluene (Surrogate)	%	-	-	-	-	-	100
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	108

Totals

Total VOC	µg/L	10	-	-	-	-	-
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Trihalomethanes

Chloroform (THM)	µg/L	0.5	-	-	-	-	<0.5
Bromodichloromethane (THM)	µg/L	0.5	-	-	-	-	<0.5
Dibromochloromethane (THM)	µg/L	0.5	-	-	-	-	<0.5
Bromoform (THM)	µg/L	0.5	-	-	-	-	<0.5

Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434

TRH C6-C9	µg/L	40	-	-	-	-	<40
Benzene	µg/L	0.5	-	-	-	-	<0.5
Toluene	µg/L	0.5	-	-	-	-	0.5
Ethylbenzene	µg/L	0.5	-	-	-	-	<0.5
m/p-xylene	µg/L	1	-	-	-	-	1
o-xylene	µg/L	0.5	-	-	-	-	<0.5
Total BTEX*	µg/L	3	-	-	-	-	<3
Total Xylenes*	µg/L	1.5	-	-	-	-	<1.5

Surrogates

Trifluorotoluene (Surrogate)	%	-	-	-	-	-	71
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403

TRH C10-C14	µg/L	100	-	-	-	-	<100
TRH C15-C28	µg/L	200	-	-	-	-	<200
TRH C29-C36	µg/L	200	-	-	-	-	<200

Parameter	Units	LOR	Sample Number	SE100639.006	SE100639.007	SE100639.008	SE100639.009	SE100639.010
			Sample Matrix	Soil	Soil	Soil	Soil	Water
			Sample Date	02 Jun 2011	02 Jun 2011	02 Jun 2011	02 Jun 2011	03 Jun 2011
			Sample Name	BH3 1.0m	BH3 2.5m	BH3 5.5m	QC01	QC02

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403 (continued)

Surrogates

TRH (Surrogate)	%	-	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420

Naphthalene	µg/L	0.1	-	-	-	-	<0.1
Acenaphthylene	µg/L	0.1	-	-	-	-	<0.1
Acenaphthene	µg/L	0.1	-	-	-	-	<0.1
Fluorene	µg/L	0.1	-	-	-	-	<0.1
Phenanthrene	µg/L	0.1	-	-	-	-	<0.1
Anthracene	µg/L	0.1	-	-	-	-	<0.1
Fluoranthene	µg/L	0.1	-	-	-	-	<0.1
Pyrene	µg/L	0.1	-	-	-	-	<0.1
Benzo(a)anthracene	µg/L	0.1	-	-	-	-	<0.1
Chrysene	µg/L	0.1	-	-	-	-	<0.1
Benzo(b)fluoranthene	µg/L	0.1	-	-	-	-	<0.1
Benzo(k)fluoranthene	µg/L	0.1	-	-	-	-	<0.1
Benzo(a)pyrene	µg/L	0.1	-	-	-	-	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	-	-	-	-	<0.1
Dibenzo(a,h)anthracene	µg/L	0.1	-	-	-	-	<0.1
Benzo(ghi)perylene	µg/L	0.1	-	-	-	-	<0.1
Total PAH (18)*	µg/L	1	-	-	-	-	<1

Surrogates

d5-nitrobenzene (Surrogate)	%	-	-	-	-	-	86
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-	83
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-	96

Trace Metals (Dissolved) in Water by ICPMS Method: AN318

Arsenic, As	µg/L	1	-	-	-	-	<1
Cadmium, Cd	µg/L	0.1	-	-	-	-	<0.1
Chromium, Cr	µg/L	1	-	-	-	-	<1
Copper, Cu	µg/L	1	-	-	-	-	<1
Lead, Pb	µg/L	1	-	-	-	-	<1
Nickel, Ni	µg/L	1	-	-	-	-	<1
Zinc, Zn	µg/L	1	-	-	-	-	46

Mercury (dissolved) in Water Method: AN311/AN312

Mercury	mg/L	0.0001	-	-	-	-	<0.0001
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Parameter	Units	LOR	Sample Number	SE100639.011	SE100639.013	SE100639.014	SE100639.015
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	03 Jun 2011	03 Jun 2011	03 Jun 2011
			Sample Name	BH2 0.6m	BH2 1.5m	BH2 2-2.2m	BH2 2.5m

VOC's in Soil Method: AN433/AN434

Fumigants

2,2-dichloropropane	mg/kg	0.1	-	-	<0.1	-
1,2-dichloropropane	mg/kg	0.1	-	-	<0.1	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-	<0.1	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-	<0.1	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-	<0.1	-

Parameter	Units	LOR	Sample Number	SE100639.011	SE100639.013	SE100639.014	SE100639.015
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	03 Jun 2011	03 Jun 2011	03 Jun 2011
			Sample Name	BH2 0.6m	BH2 1.5m	BH2 2-2.2m	BH2 2.5m

VOC's in Soil Method: AN433/AN434 (continued)

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-	<1	-
Chloromethane	mg/kg	1	-	-	<1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-	<0.1	-
Bromomethane	mg/kg	1	-	-	<1	-
Chloroethane	mg/kg	1	-	-	<1	-
Trichlorofluoromethane	mg/kg	1	-	-	<1	-
Iodomethane	mg/kg	5	-	-	<5	-
1,1-dichloroethene	mg/kg	0.1	-	-	<0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-	<0.5	-
Allyl chloride	mg/kg	0.1	-	-	<0.1	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-	<0.1	-
1,1-dichloroethane	mg/kg	0.1	-	-	<0.1	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-	<0.1	-
Bromochloromethane	mg/kg	0.1	-	-	<0.1	-
1,2-dichloroethane	mg/kg	0.1	-	-	<0.1	-
1,1,1-trichloroethane	mg/kg	0.1	-	-	<0.1	-
1,1-dichloropropene	mg/kg	0.1	-	-	<0.1	-
Carbon tetrachloride	mg/kg	0.1	-	-	<0.1	-
Dibromomethane	mg/kg	0.1	-	-	<0.1	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	-	<0.1	-
1,1,2-trichloroethane	mg/kg	0.1	-	-	<0.1	-
1,3-dichloropropane	mg/kg	0.1	-	-	<0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-	<0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-	<0.1	-
cis-1,4-dichloro-2-butene	mg/kg	1	-	-	<1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-	<0.1	-
1,2,3-trichloropropane	mg/kg	0.1	-	-	<0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-	<1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-	<0.1	-
Hexachlorobutadiene	mg/kg	0.1	-	-	<0.1	-

Halogenated Aromatics

Chlorobenzene	mg/kg	0.1	-	-	<0.1	-
Bromobenzene	mg/kg	0.1	-	-	<0.1	-
2-chlorotoluene	mg/kg	0.1	-	-	<0.1	-
4-chlorotoluene	mg/kg	0.1	-	-	<0.1	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	<0.1	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	<0.1	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	<0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	<0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	<0.1	-

Monocyclic Aromatic Hydrocarbons

Benzene	mg/kg	0.1	-	-	<0.1	-
Toluene	mg/kg	0.1	-	-	<0.1	-
Ethylbenzene	mg/kg	0.1	-	-	<0.1	-
m/p-xylene	mg/kg	0.2	-	-	<0.2	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	<0.1	-
o-xylene	mg/kg	0.1	-	-	<0.1	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	<0.1	-
n-propylbenzene	mg/kg	0.1	-	-	<0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	<0.1	-
tert-butylbenzene	mg/kg	0.1	-	-	<0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	<0.1	-
sec-butylbenzene	mg/kg	0.1	-	-	<0.1	-
p-isopropyltoluene	mg/kg	0.1	-	-	<0.1	-
n-butylbenzene	mg/kg	0.1	-	-	<0.1	-

Parameter	Units	LOR	Sample Number	SE100639.011	SE100639.013	SE100639.014	SE100639.015
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	03 Jun 2011	03 Jun 2011	03 Jun 2011
			Sample Name	BH2 0.6m	BH2 1.5m	BH2 2-2.2m	BH2 2.5m

VOC's in Soil Method: AN433/AN434 (continued)

Nitrogenous Compounds

Acrylonitrile	mg/kg	0.1	-	-	<0.1	-
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Oxygenated Compounds

Acetone (2-propanone)	mg/kg	10	-	-	<10	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.5	-	-	<0.5	-
Vinyl acetate	mg/kg	10	-	-	<10	-
MEK (2-butanone)	mg/kg	10	-	-	<10	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	<1	-
2-hexanone (MBK)	mg/kg	5	-	-	<5	-

Polycyclic VOCs

Naphthalene	mg/kg	0.1	-	-	<0.1	-
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Sulphonated Compounds

Carbon disulfide	mg/kg	0.5	-	-	<0.5	-
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	-	-	90	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	101	-
d8-toluene (Surrogate)	%	-	-	-	117	-
Bromofluorobenzene (Surrogate)	%	-	-	-	114	-

Totals

Total BTEX*	mg/kg	-	-	-	0	-
Total Xylenes*	mg/kg	0.3	-	-	<0.3	-
Total VOC*	mg/kg	24	-	-	-	-

Trihalomethanes

Chloroform	mg/kg	0.1	-	-	<0.1	-
Bromodichloromethane	mg/kg	0.1	-	-	<0.1	-
Chlorodibromomethane	mg/kg	0.1	-	-	<0.1	-
Bromoform	mg/kg	0.1	-	-	<0.1	-

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	<20	-	<20	<20
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	1	<1	-	-	<1
o-xylene	mg/kg	0.5	<0.5	-	-	<0.5
Total Xylenes	mg/kg	0.3	<0.3	-	-	<0.3
Total BTEX*	mg/kg	2.7	<2.7	-	-	<2.7

Surrogates

Trifluorotoluene (Surrogate)	%	-	111	-	103	102
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.011	SE100639.013	SE100639.014	SE100639.015
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	03 Jun 2011	03 Jun 2011	03 Jun 2011
			Sample Name	BH2 0.6m	BH2 1.5m	BH2 2-2.2m	BH2 2.5m

Full 8270 SVOC in Soil Method: AN420

PAHs

Acenaphthene	mg/kg	0.5	-	-	-	-
Acenaphthylene	mg/kg	0.5	-	-	-	-
Anthracene	mg/kg	0.5	-	-	-	-
Benzo(a)anthracene	mg/kg	0.5	-	-	-	-
Benzo(b&k)fluoranthene	mg/kg	1	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.5	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.5	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.5	-	-	-	-
Benzo(a)pyrene	mg/kg	0.5	-	-	-	-
Chrysene	mg/kg	0.5	-	-	-	-
Dibenzo(ah)anthracene	mg/kg	0.5	-	-	-	-
Fluoranthene	mg/kg	0.5	-	-	-	-
Fluorene	mg/kg	0.5	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	-	-	-	-
1-methylnaphthalene	mg/kg	0.5	-	-	-	-
2-methylnaphthalene	mg/kg	0.5	-	-	-	-
Naphthalene	mg/kg	0.5	-	-	-	-
Phenanthrene	mg/kg	0.5	-	-	-	-
Pyrene	mg/kg	0.5	-	-	-	-
2-acetylamino fluorene	mg/kg	2	-	-	-	-
7,12-dimethyl-benz(a)anthracene	mg/kg	0.5	-	-	-	-
3-methylcholanthrene	mg/kg	1	-	-	-	-

OCs

Aldrin	mg/kg	0.5	-	-	-	-
Alpha-BHC	mg/kg	0.5	-	-	-	-
Beta-BHC	mg/kg	0.5	-	-	-	-
Delta-BHC	mg/kg	0.5	-	-	-	-
Gamma-BHC (Lindane)	mg/kg	0.5	-	-	-	-
p,p-DDD	mg/kg	0.5	-	-	-	-
p,p-DDE	mg/kg	0.5	-	-	-	-
p,p-DDT	mg/kg	0.5	-	-	-	-
Dieldrin	mg/kg	0.5	-	-	-	-
Alpha-endosulfan	mg/kg	0.5	-	-	-	-
Beta-endosulfan	mg/kg	0.5	-	-	-	-
Endosulfan sulphate	mg/kg	0.5	-	-	-	-
Endrin	mg/kg	0.5	-	-	-	-
Heptachlor	mg/kg	0.5	-	-	-	-
Heptachlor epoxide	mg/kg	0.5	-	-	-	-
Isodrin	mg/kg	0.5	-	-	-	-
Methoxychlor	mg/kg	0.5	-	-	-	-
Mirex	mg/kg	0.5	-	-	-	-
Alpha-chlordane	mg/kg	0.5	-	-	-	-
Gamma-chlordane	mg/kg	0.5	-	-	-	-
Endrin ketone	mg/kg	0.5	-	-	-	-

OPs

Azinphos-methyl (Guthion)	mg/kg	1	-	-	-	-
Bromophos ethyl	mg/kg	1	-	-	-	-
Carbophenothion	mg/kg	1	-	-	-	-
Chlorfenvinphos-cis (Chlofenvinphos-cis)	mg/kg	5	-	-	-	-
Chlorfenvinphos-trans (Chlofenvinphos-trans)	mg/kg	1	-	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	1	-	-	-	-
Chlorpyrifos-methyl	mg/kg	1	-	-	-	-
Co-Ral (Coumaphos)	mg/kg	1	-	-	-	-
Diazinon (Dimpylate)	mg/kg	1	-	-	-	-
Dichlorvos	mg/kg	1	-	-	-	-
Demeton-S-methyl	mg/kg	1	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE100639.011 Soil 03 Jun 2011 BH2 0.6m	SE100639.013 Soil 03 Jun 2011 BH2 1.5m	SE100639.014 Soil 03 Jun 2011 BH2 2-2.2m	SE100639.015 Soil 03 Jun 2011 BH2 2.5m
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Full 8270 SVOC in Soil Method: AN420 (continued)

Dimethoate	mg/kg	1	-	-	-	-
Disulfoton (Di-syston)	mg/kg	1	-	-	-	-
EPN*	mg/kg	1	-	-	-	-
Ethion	mg/kg	1	-	-	-	-
Ethoprophos (ethoprop or prophos)	mg/kg	1	-	-	-	-
Famphur (Famophos)	mg/kg	1	-	-	-	-
Fenamiphos (Phenamiphos)	mg/kg	1	-	-	-	-
Fenchlorophos (Ronnel)	mg/kg	1	-	-	-	-
Fenitrothion	mg/kg	1	-	-	-	-
Fenthion	mg/kg	1	-	-	-	-
Malathion (Maldison)	mg/kg	1	-	-	-	-
Methidathion	mg/kg	1	-	-	-	-
Mevinphos-cis/trans	mg/kg	2	-	-	-	-
o,o,o-triethyl phosphorothioate	mg/kg	1	-	-	-	-
Parathion ethyl (Parathion)	mg/kg	1	-	-	-	-
Parathion methyl	mg/kg	1	-	-	-	-
Phorate	mg/kg	1	-	-	-	-
Pirimiphos-ethyl	mg/kg	1	-	-	-	-
Pirimiphos-methyl	mg/kg	1	-	-	-	-
Profenofos	mg/kg	1	-	-	-	-
Prothiophos (Tokuthion)*	mg/kg	1	-	-	-	-
Sulfotepp	mg/kg	1	-	-	-	-
Tetrachlorvinphos (Stirophos)*	mg/kg	1	-	-	-	-

PCB UPAC(7) Congeners

PCB Congener C28	mg/kg	0.5	-	-	-	-
PCB Congener C52	mg/kg	0.5	-	-	-	-
PCB Congener C101	mg/kg	0.5	-	-	-	-
PCB Congener C118	mg/kg	0.5	-	-	-	-
PCB Congener C138	mg/kg	0.5	-	-	-	-
PCB Congener C153	mg/kg	0.5	-	-	-	-
PCB Congener C180	mg/kg	0.5	-	-	-	-

SVCH (CI Benzenes, Hydrocarbons & VOCs)

Hexachlorobenzene	mg/kg	0.5	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.5	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.5	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.5	-	-	-	-
Hexachlorobutadiene	mg/kg	0.5	-	-	-	-
Hexachlorocyclopentadiene	mg/kg	1	-	-	-	-
Hexachloroethane	mg/kg	0.5	-	-	-	-
Hexachloropropene	mg/kg	0.5	-	-	-	-
Pentachlorobenzene	mg/kg	0.5	-	-	-	-
Pentachloroethane	mg/kg	0.5	-	-	-	-
1,2,3,5 and 1,2,4,5 -tetrachlorobenzene	mg/kg	1	-	-	-	-
1,2,3,4-tetrachlorobenzene	mg/kg	0.5	-	-	-	-
1/2-Chloronaphthalene	mg/kg	1	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.5	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.011	SE100639.013	SE100639.014	SE100639.015
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	03 Jun 2011	03 Jun 2011	03 Jun 2011
			Sample Name	BH2 0.6m	BH2 1.5m	BH2 2-2.2m	BH2 2.5m

Full 8270 SVOC in Soil Method: AN420 (continued)

Phthalates

Bis(2-ethylhexyl)phthalate	mg/kg	5	-	-	-	-
Bis(2-ethylhexyl)adipate	mg/kg	0.5	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.5	-	-	-	-
Di-n-butyl phthalate	mg/kg	0.5	-	-	-	-
Diethyl phthalate	mg/kg	0.5	-	-	-	-
Dimethyl phthalate	mg/kg	0.5	-	-	-	-
Dioctyl phthalate	mg/kg	0.5	-	-	-	-

Carbamates

Carbofuran	mg/kg	0.5	-	-	-	-
Carbaryl	mg/kg	0.5	-	-	-	-

Herbicides (normal)

Trifluralin	mg/kg	0.5	-	-	-	-
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Nitrosamines

N-nitroso-di-n-butylamine (NDBA)	mg/kg	0.5	-	-	-	-
N-nitroso-diethylamine (NDEA)	mg/kg	1	-	-	-	-
N-nitroso-di-n-propylamine (NDPA)	mg/kg	0.5	-	-	-	-
N-nitroso-morpholine (NMOR)	mg/kg	0.5	-	-	-	-
N-nitroso-piperidine (NPIP)	mg/kg	0.5	-	-	-	-
N-nitroso-pyrrolidine (NPYR)	mg/kg	1	-	-	-	-
4-amino biphenyl	mg/kg	1	-	-	-	-

Nitroaromatics and Ketones

Acetophenone	mg/kg	0.5	-	-	-	-
1,3-dinitrobenzene	mg/kg	1	-	-	-	-
2,4-dinitrotoluene	mg/kg	0.5	-	-	-	-
2,6-dinitrotoluene	mg/kg	0.5	-	-	-	-
Isophorone	mg/kg	0.5	-	-	-	-
Nitrobenzene	mg/kg	0.5	-	-	-	-
p-(dimethylamino) azobenzene	mg/kg	1	-	-	-	-
Phenacetin	mg/kg	1	-	-	-	-
Pentachloronitrobenzene (quintozene)	mg/kg	0.5	-	-	-	-

Anilines and Amines

Aniline	mg/kg	3	-	-	-	-
4-chloroaniline	mg/kg	1	-	-	-	-
2-nitroaniline	mg/kg	1	-	-	-	-
3-nitroaniline	mg/kg	1	-	-	-	-
4-nitroaniline	mg/kg	1	-	-	-	-
Diphenylamine	mg/kg	0.5	-	-	-	-
o-toluidine	mg/kg	1	-	-	-	-
5-nitro-o-toluidine	mg/kg	1	-	-	-	-
1-naphthylamine	mg/kg	1	-	-	-	-
2-naphthylamine	mg/kg	1	-	-	-	-

Haloethers

Bis(2-chloroethoxy) methane	mg/kg	0.5	-	-	-	-
Bis(2-chloroethyl) ether	mg/kg	0.5	-	-	-	-
Bis(2-chloroisopropyl) ether	mg/kg	0.5	-	-	-	-
4-chlorophenyl phenyl ether	mg/kg	0.5	-	-	-	-
4-bromophenyl phenyl ether	mg/kg	0.5	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.011	SE100639.013	SE100639.014	SE100639.015
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	03 Jun 2011	03 Jun 2011	03 Jun 2011
			Sample Name	BH2 0.6m	BH2 1.5m	BH2 2-2.2m	BH2 2.5m

Full 8270 SVOC in Soil Method: AN420 (continued)

Other SVOCs

Methyl methanesulfonate	mg/kg	1	-	-	-	-
Ethyl methanesulfonate	mg/kg	1	-	-	-	-
Dibenzofuran	mg/kg	0.5	-	-	-	-
Benzyl alcohol	mg/kg	1	-	-	-	-
Safrole	mg/kg	0.5	-	-	-	-
Isosafrole Isomer 1	mg/kg	1	-	-	-	-
Isosafrole Isomer 2	mg/kg	1	-	-	-	-
1,4-naphthoquinone	mg/kg	0.5	-	-	-	-
Thionazin	mg/kg	1	-	-	-	-

Speciated Routine Phenols

3/4-methyl phenol (m/p-cresol)	mg/kg	1	-	-	-	-
2-methyl phenol (o-cresol)	mg/kg	0.5	-	-	-	-
2,6-dichlorophenol	mg/kg	0.5	-	-	-	-
2,3,4,6 and 2,3,5,6-tetrachlorophenol	mg/kg	1	-	-	-	-
2,4,5-trichlorophenol	mg/kg	0.5	-	-	-	-
4-chloro-3-methylphenol	mg/kg	1	-	-	-	-
2-chlorophenol	mg/kg	0.5	-	-	-	-
2,4-dichlorophenol	mg/kg	0.5	-	-	-	-
2,4-dimethyl phenol	mg/kg	0.5	-	-	-	-
2-nitrophenol	mg/kg	0.5	-	-	-	-
Phenol	mg/kg	0.5	-	-	-	-
2,4,6-trichlorophenol	mg/kg	0.5	-	-	-	-
Pentachlorophenol	mg/kg	0.5	-	-	-	-
4-nitrophenol	mg/kg	0.5	-	-	-	-

Surrogates

d5-phenol (Surrogate)	%	-	-	-	-	-
d5-nitrobenzene (Surrogate)	%	-	-	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-
2,4,6-tribromophenol (Surrogate)	%	-	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	<20	-	<20	<20
TRH C15-C28	mg/kg	50	<50	-	130	140
TRH C29-C36	mg/kg	50	<50	-	92	88

Surrogates

TRH (Surrogate)	%	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.1	<0.1	-	0.1	-
Acenaphthylene	mg/kg	0.1	<0.1	-	0.2	-
Acenaphthene	mg/kg	0.1	<0.1	-	<0.1	-
Fluorene	mg/kg	0.1	<0.1	-	0.2	-
Phenanthrene	mg/kg	0.1	<0.1	-	1.1	-
Anthracene	mg/kg	0.1	<0.1	-	0.4	-
Fluoranthene	mg/kg	0.1	<0.1	-	1.7	-
Pyrene	mg/kg	0.1	<0.1	-	1.6	-
Benzo(a)anthracene	mg/kg	0.1	<0.1	-	0.9	-
Chrysene	mg/kg	0.1	<0.1	-	0.7	-
Benzo(b)fluoranthene	mg/kg	0.1	<0.1	-	0.9	-
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	-	0.3	-
Benzo(a)pyrene	mg/kg	0.05	<0.05	-	0.86	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	-	0.4	-
Dibenzo(a,h)anthracene	mg/kg	0.1	<0.1	-	0.1	-

Parameter	Units	LOR
Sample Number	SE100639.011	SE100639.013
Sample Matrix	Soil	Soil
Sample Date	03 Jun 2011	03 Jun 2011
Sample Name	BH2 0.6m	BH2 1.5m
		BH2 2-2.2m
		03 Jun 2011
		BH2 2.5m

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)

Benzo(ghi)perylene	mg/kg	0.1	<0.1	-	0.5	-
Total PAH	mg/kg	1.75	<1.8 †	-	10	-

Surrogates

d5-nitrobenzene (Surrogate)	%	-	121	-	122	-
2-fluorobiphenyl (Surrogate)	%	-	106	-	106	-
d14-p-terphenyl (Surrogate)	%	-	103	-	101	-

Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: AN040/AN320

Arsenic, As	mg/kg	3	4	-	28	23
Cadmium, Cd	mg/kg	0.3	<0.3	-	0.4	0.4
Chromium, Cr	mg/kg	0.3	7.4	-	11	16
Copper, Cu	mg/kg	0.5	9.9	-	56	51
Lead, Pb	mg/kg	1	15	-	98	93
Nickel, Ni	mg/kg	0.5	11	-	7.0	11
Zinc, Zn	mg/kg	0.5	38	-	110	160

Mercury in Soil Method: AN312

Mercury	mg/kg	0.05	<0.05	-	0.37	0.55
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Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	No	No	-	-
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Moisture Content Method: AN234

% Moisture	%	0.5	8.5	-	17	13
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VOCs in Water Method: AN433/AN434

Fumigants

2,2-dichloropropane	µg/L	0.5	-	-	-	-
1,2-dichloropropane	µg/L	0.5	-	-	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	-	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	-	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-	-	-

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-	-	-
Chloromethane	µg/L	5	-	-	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-	-	-
Bromomethane	µg/L	10	-	-	-	-
Chloroethane	µg/L	5	-	-	-	-
Trichlorofluoromethane	µg/L	1	-	-	-	-
Iodomethane	µg/L	5	-	-	-	-
1,1-dichloroethene	µg/L	0.5	-	-	-	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-	-	-
Allyl chloride	µg/L	2	-	-	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	-	-	-
1,1-dichloroethane	µg/L	0.5	-	-	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	-	-	-
Bromochloromethane	µg/L	0.5	-	-	-	-
1,2-dichloroethane	µg/L	0.5	-	-	-	-
1,1,1-trichloroethane	µg/L	0.5	-	-	-	-
1,1-dichloropropene	µg/L	0.5	-	-	-	-
Carbon tetrachloride	µg/L	0.5	-	-	-	-
Dibromomethane	µg/L	0.5	-	-	-	-
Trichloroethene (Trichloroethylene, TCE)	µg/L	0.5	-	-	-	-
1,1,2-trichloroethane	µg/L	0.5	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.011	SE100639.013	SE100639.014	SE100639.015
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	03 Jun 2011	03 Jun 2011	03 Jun 2011
			Sample Name	BH2 0.6m	BH2 1.5m	BH2 2-2.2m	BH2 2.5m

VOCs in Water Method: AN433/AN434 (continued)

1,3-dichloropropane	µg/L	0.5	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-	-	-
cis-1,4-dichloro-2-butene	µg/L	1	-	-	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-	-	-
1,2,3-trichloropropane	µg/L	0.5	-	-	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-	-	-
Hexachlorobutadiene	µg/L	0.5	-	-	-	-

Halogenated Aromatics

Chlorobenzene	µg/L	0.5	-	-	-	-
Bromobenzene	µg/L	0.5	-	-	-	-
2-chlorotoluene	µg/L	0.5	-	-	-	-
4-chlorotoluene	µg/L	0.5	-	-	-	-
1,3-dichlorobenzene	µg/L	0.5	-	-	-	-
1,4-dichlorobenzene	µg/L	0.3	-	-	-	-
1,2-dichlorobenzene	µg/L	0.5	-	-	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-	-	-

Monocyclic Aromatic Hydrocarbons

Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
Styrene (Vinyl benzene)	µg/L	0.5	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	-	-	-	-
n-propylbenzene	µg/L	0.5	-	-	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-	-	-
tert-butylbenzene	µg/L	0.5	-	-	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-	-	-
sec-butylbenzene	µg/L	0.5	-	-	-	-
p-isopropyltoluene	µg/L	0.5	-	-	-	-
n-butylbenzene	µg/L	0.5	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.011	SE100639.013	SE100639.014	SE100639.015
			Sample Matrix	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	03 Jun 2011	03 Jun 2011	03 Jun 2011
			Sample Name	BH2 0.6m	BH2 1.5m	BH2 2-2.2m	BH2 2.5m

VOCs in Water Method: AN433/AN434 (continued)

Nitrogenous Compounds

Acrylonitrile	µg/L	0.5	-	-	-	-
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Oxygenated Compounds

Acetone (2-propanone)	µg/L	10	-	-	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	-	-	-	-
Vinyl acetate	µg/L	10	-	-	-	-
MEK (2-butanone)	µg/L	10	-	-	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-	-	-
2-hexanone (MBK)	µg/L	5	-	-	-	-

Polycyclic VOCs

Naphthalene	µg/L	0.5	-	-	-	-
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Sulphonated Compounds

Carbon disulfide	µg/L	2	-	-	-	-
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-

Totals

Total VOC	µg/L	10	-	-	-	-
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Trihalomethanes

Chloroform (THM)	µg/L	0.5	-	-	-	-
Bromodichloromethane (THM)	µg/L	0.5	-	-	-	-
Dibromochloromethane (THM)	µg/L	0.5	-	-	-	-
Bromoform (THM)	µg/L	0.5	-	-	-	-

Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434

TRH C6-C9	µg/L	40	-	-	-	-
Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Total BTEX*	µg/L	3	-	-	-	-
Total Xylenes*	µg/L	1.5	-	-	-	-

Surrogates

Trifluorotoluene (Surrogate)	%	-	-	-	-	-
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403

TRH C10-C14	µg/L	100	-	-	-	-
TRH C15-C28	µg/L	200	-	-	-	-
TRH C29-C36	µg/L	200	-	-	-	-

Parameter	Units	LOR
Sample Number	SE100639.011	SE100639.013
Sample Matrix	Soil	Soil
Sample Date	03 Jun 2011	03 Jun 2011
Sample Name	BH2 0.6m	BH2 1.5m
		BH2 2-2.2m
		BH2 2.5m

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403 (continued)

Surrogates

TRH (Surrogate)	%	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420

Naphthalene	µg/L	0.1	-	-	-	-
Acenaphthylene	µg/L	0.1	-	-	-	-
Acenaphthene	µg/L	0.1	-	-	-	-
Fluorene	µg/L	0.1	-	-	-	-
Phenanthrene	µg/L	0.1	-	-	-	-
Anthracene	µg/L	0.1	-	-	-	-
Fluoranthene	µg/L	0.1	-	-	-	-
Pyrene	µg/L	0.1	-	-	-	-
Benzo(a)anthracene	µg/L	0.1	-	-	-	-
Chrysene	µg/L	0.1	-	-	-	-
Benzo(b)fluoranthene	µg/L	0.1	-	-	-	-
Benzo(k)fluoranthene	µg/L	0.1	-	-	-	-
Benzo(a)pyrene	µg/L	0.1	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	0.1	-	-	-	-
Dibenzo(a,h)anthracene	µg/L	0.1	-	-	-	-
Benzo(ghi)perylene	µg/L	0.1	-	-	-	-
Total PAH (18)*	µg/L	1	-	-	-	-

Surrogates

d5-nitrobenzene (Surrogate)	%	-	-	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-

Trace Metals (Dissolved) in Water by ICPMS Method: AN318

Arsenic, As	µg/L	1	-	-	-	-
Cadmium, Cd	µg/L	0.1	-	-	-	-
Chromium, Cr	µg/L	1	-	-	-	-
Copper, Cu	µg/L	1	-	-	-	-
Lead, Pb	µg/L	1	-	-	-	-
Nickel, Ni	µg/L	1	-	-	-	-
Zinc, Zn	µg/L	1	-	-	-	-

Mercury (dissolved) in Water Method: AN311/AN312

Mercury	mg/L	0.0001	-	-	-	-
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Parameter	Units	LOR
Sample Number	SE100639.016	SE100639.017
Sample Matrix	Soil	Soil
Sample Date	03 Jun 2011	06 Jun 2011
Sample Name	QC03	BH4 0.5m
		BH4 1.0m
		BH4 1.5m
		BH4 2.0m

VOC's in Soil Method: AN433/AN434

Fumigants

2,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-	<0.1
1,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-	<0.1
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-	<0.1
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	-	-	-	<0.1

Parameter	Units	LOR	Sample Number	SE100639.016	SE100639.017	SE100639.018	SE100639.019	SE100639.020
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011
			Sample Name	QC03	BH4 0.5m	BH4 1.0m	BH4 1.5m	BH4 2.0m

VOC's in Soil Method: AN433/AN434 (continued)

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	-	-	-	<1
Chloromethane	mg/kg	1	<1	-	-	-	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	-	-	-	<0.1
Bromomethane	mg/kg	1	<1	-	-	-	<1
Chloroethane	mg/kg	1	<1	-	-	-	<1
Trichlorofluoromethane	mg/kg	1	<1	-	-	-	<1
Iodomethane	mg/kg	5	<5	-	-	-	<5
1,1-dichloroethene	mg/kg	0.1	<0.1	-	-	-	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	-	-	-	<0.5
Allyl chloride	mg/kg	0.1	<0.1	-	-	-	<0.1
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-	<0.1
1,1-dichloroethane	mg/kg	0.1	<0.1	-	-	-	<0.1
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-	<0.1
Bromochloromethane	mg/kg	0.1	<0.1	-	-	-	<0.1
1,2-dichloroethane	mg/kg	0.1	<0.1	-	-	-	<0.1
1,1,1-trichloroethane	mg/kg	0.1	<0.1	-	-	-	<0.1
1,1-dichloropropene	mg/kg	0.1	<0.1	-	-	-	<0.1
Carbon tetrachloride	mg/kg	0.1	<0.1	-	-	-	<0.1
Dibromomethane	mg/kg	0.1	<0.1	-	-	-	<0.1
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	-	-	-	<0.1
1,1,2-trichloroethane	mg/kg	0.1	<0.1	-	-	-	<0.1
1,3-dichloropropane	mg/kg	0.1	<0.1	-	-	-	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	-	-	-	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-	<0.1
cis-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	-	<1
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-	<0.1
1,2,3-trichloropropane	mg/kg	0.1	<0.1	-	-	-	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	-	<1
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	-	-	-	<0.1
Hexachlorobutadiene	mg/kg	0.1	<0.1	-	-	-	<0.1

Halogenated Aromatics

Chlorobenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
Bromobenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
2-chlorotoluene	mg/kg	0.1	<0.1	-	-	-	<0.1
4-chlorotoluene	mg/kg	0.1	<0.1	-	-	-	<0.1
1,3-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
1,4-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
1,2-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-	<0.1

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
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	-	-	-	<0.1
o-xylene	mg/kg	0.1	<0.1	-	-	-	<0.1
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	-	-	-	<0.1
n-propylbenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
tert-butylbenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
sec-butylbenzene	mg/kg	0.1	<0.1	-	-	-	<0.1
p-isopropyltoluene	mg/kg	0.1	<0.1	-	-	-	<0.1
n-butylbenzene	mg/kg	0.1	<0.1	-	-	-	<0.1

Parameter	Units	LOR	Sample Number	SE100639.016	SE100639.017	SE100639.018	SE100639.019	SE100639.020
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011
			Sample Name	QC03	BH4 0.5m	BH4 1.0m	BH4 1.5m	BH4 2.0m

VOC's in Soil Method: AN433/AN434 (continued)

Nitrogenous Compounds

Acrylonitrile	mg/kg	0.1	<0.1	-	-	-	<0.1
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Oxygenated Compounds

Acetone (2-propanone)	mg/kg	10	<10	-	-	-	<10
MtBE (Methyl-tert-butyl ether)	mg/kg	0.5	<0.5	-	-	-	<0.5
Vinyl acetate	mg/kg	10	<10	-	-	-	<10
MEK (2-butanone)	mg/kg	10	<10	-	-	-	<10
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	-	-	-	<1
2-hexanone (MBK)	mg/kg	5	<5	-	-	-	<5

Polycyclic VOCs

Naphthalene	mg/kg	0.1	<0.1	-	-	-	<0.1
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Sulphonated Compounds

Carbon disulfide	mg/kg	0.5	<0.5	-	-	-	<0.5
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	95	-	-	-	89
d4-1,2-dichloroethane (Surrogate)	%	-	100	-	-	-	104
d8-toluene (Surrogate)	%	-	82	-	-	-	120
Bromofluorobenzene (Surrogate)	%	-	107	-	-	-	102

Totals

Total BTEX*	mg/kg	-	0	-	-	-	0
Total Xylenes*	mg/kg	0.3	<0.3	-	-	-	<0.3
Total VOC*	mg/kg	24	-	-	-	-	-

Trihalomethanes

Chloroform	mg/kg	0.1	<0.1	-	-	-	<0.1
Bromodichloromethane	mg/kg	0.1	<0.1	-	-	-	<0.1
Chlorodibromomethane	mg/kg	0.1	<0.1	-	-	-	<0.1
Bromoform	mg/kg	0.1	<0.1	-	-	-	<0.1

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	<20	<20	-	-	<20
Benzene	mg/kg	0.1	-	<0.1	-	-	-
Toluene	mg/kg	0.1	-	<0.1	-	-	-
Ethylbenzene	mg/kg	0.1	-	<0.1	-	-	-
m/p-xylene	mg/kg	1	-	<1	-	-	-
o-xylene	mg/kg	0.5	-	<0.5	-	-	-
Total Xylenes	mg/kg	0.3	-	<0.3	-	-	-
Total BTEX*	mg/kg	2.7	-	<2.7	-	-	-

Surrogates

Trifluorotoluene (Surrogate)	%	-	115	104	-	-	99
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.016	SE100639.017	SE100639.018	SE100639.019	SE100639.020
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011
			Sample Name	QC03	BH4 0.5m	BH4 1.0m	BH4 1.5m	BH4 2.0m

Full 8270 SVOC in Soil Method: AN420

PAHs

Acenaphthene	mg/kg	0.5	-	-	-	-	<0.5
Acenaphthylene	mg/kg	0.5	-	-	-	-	<0.5
Anthracene	mg/kg	0.5	-	-	-	-	<0.5
Benzo(a)anthracene	mg/kg	0.5	-	-	-	-	<0.5
Benzo(b&k)fluoranthene	mg/kg	1	-	-	-	-	<1
Benzo(b)fluoranthene	mg/kg	0.5	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.5	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.5	-	-	-	-	<0.5
Benzo(a)pyrene	mg/kg	0.5	-	-	-	-	<0.5
Chrysene	mg/kg	0.5	-	-	-	-	<0.5
Dibenzo(ah)anthracene	mg/kg	0.5	-	-	-	-	<0.5
Fluoranthene	mg/kg	0.5	-	-	-	-	0.6
Fluorene	mg/kg	0.5	-	-	-	-	<0.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	-	-	-	-	<0.5
1-methylnaphthalene	mg/kg	0.5	-	-	-	-	<0.5
2-methylnaphthalene	mg/kg	0.5	-	-	-	-	<0.5
Naphthalene	mg/kg	0.5	-	-	-	-	<0.5
Phenanthrene	mg/kg	0.5	-	-	-	-	<0.5
Pyrene	mg/kg	0.5	-	-	-	-	1.2
2-acetylaminofluorene	mg/kg	2	-	-	-	-	<2
7,12-dimethyl-benz(a)anthracene	mg/kg	0.5	-	-	-	-	<0.5
3-methylcholanthrene	mg/kg	1	-	-	-	-	<1

OCs

Aldrin	mg/kg	0.5	-	-	-	-	<0.5
Alpha-BHC	mg/kg	0.5	-	-	-	-	<0.5
Beta-BHC	mg/kg	0.5	-	-	-	-	<0.5
Delta-BHC	mg/kg	0.5	-	-	-	-	<0.5
Gamma-BHC (Lindane)	mg/kg	0.5	-	-	-	-	<0.5
p,p-DDD	mg/kg	0.5	-	-	-	-	<0.5
p,p-DDE	mg/kg	0.5	-	-	-	-	<0.5
p,p-DDT	mg/kg	0.5	-	-	-	-	<0.5
Dieldrin	mg/kg	0.5	-	-	-	-	<0.5
Alpha-endosulfan	mg/kg	0.5	-	-	-	-	<0.5
Beta-endosulfan	mg/kg	0.5	-	-	-	-	<0.5
Endosulfan sulphate	mg/kg	0.5	-	-	-	-	<0.5
Endrin	mg/kg	0.5	-	-	-	-	<0.5
Heptachlor	mg/kg	0.5	-	-	-	-	<0.5
Heptachlor epoxide	mg/kg	0.5	-	-	-	-	<0.5
Isodrin	mg/kg	0.5	-	-	-	-	<0.5
Methoxychlor	mg/kg	0.5	-	-	-	-	<0.5
Mirex	mg/kg	0.5	-	-	-	-	<0.5
Alpha-chlordane	mg/kg	0.5	-	-	-	-	<0.5
Gamma-chlordane	mg/kg	0.5	-	-	-	-	<0.5
Endrin ketone	mg/kg	0.5	-	-	-	-	<0.5

OPs

Azinphos-methyl (Guthion)	mg/kg	1	-	-	-	-	<1
Bromophos ethyl	mg/kg	1	-	-	-	-	<1
Carbophenothion	mg/kg	1	-	-	-	-	<1
Chlorfenvinphos-cis (Chlofenvinphos-cis)	mg/kg	5	-	-	-	-	<5
Chlorfenvinphos-trans (Chlofenvinphos-trans)	mg/kg	1	-	-	-	-	<1
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	1	-	-	-	-	<1
Chlorpyrifos-methyl	mg/kg	1	-	-	-	-	<1
Co-Ral (Coumaphos)	mg/kg	1	-	-	-	-	<1
Diazinon (Dimpylate)	mg/kg	1	-	-	-	-	<1
Dichlorvos	mg/kg	1	-	-	-	-	<1
Demeton-S-methyl	mg/kg	1	-	-	-	-	<1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE100639.016 Soil 03 Jun 2011 QC03	SE100639.017 Soil 06 Jun 2011 BH4 0.5m	SE100639.018 Soil 06 Jun 2011 BH4 1.0m	SE100639.019 Soil 06 Jun 2011 BH4 1.5m	SE100639.020 Soil 06 Jun 2011 BH4 2.0m
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Full 8270 SVOC in Soil Method: AN420 (continued)

Dimethoate	mg/kg	1	-	-	-	-	-	<1
Disulfoton (Di-syston)	mg/kg	1	-	-	-	-	-	<1
EPN*	mg/kg	1	-	-	-	-	-	<1
Ethion	mg/kg	1	-	-	-	-	-	<1
Ethoprophos (ethoprop or prophos)	mg/kg	1	-	-	-	-	-	<1
Famphur (Famophos)	mg/kg	1	-	-	-	-	-	<1
Fenamiphos (Phenamiphos)	mg/kg	1	-	-	-	-	-	<1
Fenchlorophos (Ronnell)	mg/kg	1	-	-	-	-	-	<1
Fenitrothion	mg/kg	1	-	-	-	-	-	<1
Fenthion	mg/kg	1	-	-	-	-	-	<1
Malathion (Maldison)	mg/kg	1	-	-	-	-	-	<1
Methidathion	mg/kg	1	-	-	-	-	-	<1
Mevinphos-cis/trans	mg/kg	2	-	-	-	-	-	<2
o,o,o-triethyl phosphorothioate	mg/kg	1	-	-	-	-	-	<1
Parathion ethyl (Parathion)	mg/kg	1	-	-	-	-	-	<1
Parathion methyl	mg/kg	1	-	-	-	-	-	<1
Phorate	mg/kg	1	-	-	-	-	-	<1
Pirimiphos-ethyl	mg/kg	1	-	-	-	-	-	<1
Pirimiphos-methyl	mg/kg	1	-	-	-	-	-	<1
Profenofos	mg/kg	1	-	-	-	-	-	<1
Prothiophos (Tokuthion)*	mg/kg	1	-	-	-	-	-	<1
Sulfotepp	mg/kg	1	-	-	-	-	-	<1
Tetrachlorvinphos (Stiropfos)*	mg/kg	1	-	-	-	-	-	<1

PCB UPAC(7) Congeners

PCB Congener C28	mg/kg	0.5	-	-	-	-	-	<0.5
PCB Congener C52	mg/kg	0.5	-	-	-	-	-	<0.5
PCB Congener C101	mg/kg	0.5	-	-	-	-	-	<0.5
PCB Congener C118	mg/kg	0.5	-	-	-	-	-	<0.5
PCB Congener C138	mg/kg	0.5	-	-	-	-	-	<0.5
PCB Congener C153	mg/kg	0.5	-	-	-	-	-	<0.5
PCB Congener C180	mg/kg	0.5	-	-	-	-	-	<0.5

SVCH (CI Benzenes, Hydrocarbons & VOCs)

Hexachlorobenzene	mg/kg	0.5	-	-	-	-	-	<0.5
1,2-dichlorobenzene	mg/kg	0.5	-	-	-	-	-	<0.5
1,3-dichlorobenzene	mg/kg	0.5	-	-	-	-	-	<0.5
1,4-dichlorobenzene	mg/kg	0.5	-	-	-	-	-	<0.5
Hexachlorobutadiene	mg/kg	0.5	-	-	-	-	-	<0.5
Hexachlorocyclopentadiene	mg/kg	1	-	-	-	-	-	<1
Hexachloroethane	mg/kg	0.5	-	-	-	-	-	<0.5
Hexachloropropene	mg/kg	0.5	-	-	-	-	-	<0.5
Pentachlorobenzene	mg/kg	0.5	-	-	-	-	-	<0.5
Pentachloroethane	mg/kg	0.5	-	-	-	-	-	<0.5
1,2,3,5 and 1,2,4,5 -tetrachlorobenzene	mg/kg	1	-	-	-	-	-	<1
1,2,3,4-tetrachlorobenzene	mg/kg	0.5	-	-	-	-	-	<0.5
1/2-Chloronaphthalene	mg/kg	1	-	-	-	-	-	<1
1,2,4-trichlorobenzene	mg/kg	0.5	-	-	-	-	-	<0.5



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Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE100639.016 Soil 03 Jun 2011 QC03	SE100639.017 Soil 06 Jun 2011 BH4 0.5m	SE100639.018 Soil 06 Jun 2011 BH4 1.0m	SE100639.019 Soil 06 Jun 2011 BH4 1.5m	SE100639.020 Soil 06 Jun 2011 BH4 2.0m
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Full 8270 SVOC in Soil Method: AN420 (continued)

Phthalates

Bis(2-ethylhexyl)phthalate	mg/kg	5	-	-	-	-	-	<5
Bis(2-ethylhexyl)adipate	mg/kg	0.5	-	-	-	-	-	<0.5
Butyl benzyl phthalate	mg/kg	0.5	-	-	-	-	-	<0.5
Di-n-butyl phthalate	mg/kg	0.5	-	-	-	-	-	<0.5
Diethyl phthalate	mg/kg	0.5	-	-	-	-	-	<0.5
Dimethyl phthalate	mg/kg	0.5	-	-	-	-	-	<0.5
Dioctyl phthalate	mg/kg	0.5	-	-	-	-	-	<0.5

Carbamates

Carbofuran	mg/kg	0.5	-	-	-	-	-	<0.5
Carbaryl	mg/kg	0.5	-	-	-	-	-	<0.5

Herbicides (normal)

Trifluralin	mg/kg	0.5	-	-	-	-	-	<0.5
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Nitrosamines

N-nitroso-di-n-butylamine (NDBA)	mg/kg	0.5	-	-	-	-	-	<0.5
N-nitroso-diethylamine (NDEA)	mg/kg	1	-	-	-	-	-	<1
N-nitroso-di-n-propylamine (NDPA)	mg/kg	0.5	-	-	-	-	-	<0.5
N-nitroso-morpholine (NMOR)	mg/kg	0.5	-	-	-	-	-	<0.5
N-nitroso-piperidine (NPIP)	mg/kg	0.5	-	-	-	-	-	<0.5
N-nitroso-pyrrolidine (NPYR)	mg/kg	1	-	-	-	-	-	<1
4-amino biphenyl	mg/kg	1	-	-	-	-	-	<1

Nitroaromatics and Ketones

Acetophenone	mg/kg	0.5	-	-	-	-	-	<0.5
1,3-dinitrobenzene	mg/kg	1	-	-	-	-	-	<1
2,4-dinitrotoluene	mg/kg	0.5	-	-	-	-	-	<0.5
2,6-dinitrotoluene	mg/kg	0.5	-	-	-	-	-	<0.5
Isophorone	mg/kg	0.5	-	-	-	-	-	<0.5
Nitrobenzene	mg/kg	0.5	-	-	-	-	-	<0.5
p-(dimethylamino) azobenzene	mg/kg	1	-	-	-	-	-	<1
Phenacetin	mg/kg	1	-	-	-	-	-	<1
Pentachloronitrobenzene (quintozene)	mg/kg	0.5	-	-	-	-	-	<0.5

Anilines and Amines

Aniline	mg/kg	3	-	-	-	-	-	<3
4-chloroaniline	mg/kg	1	-	-	-	-	-	<1
2-nitroaniline	mg/kg	1	-	-	-	-	-	<1
3-nitroaniline	mg/kg	1	-	-	-	-	-	<1
4-nitroaniline	mg/kg	1	-	-	-	-	-	<1
Diphenylamine	mg/kg	0.5	-	-	-	-	-	<0.5
o-toluidine	mg/kg	1	-	-	-	-	-	<1
5-nitro-o-toluidine	mg/kg	1	-	-	-	-	-	<1
1-naphthylamine	mg/kg	1	-	-	-	-	-	<1
2-naphthylamine	mg/kg	1	-	-	-	-	-	<1

Haloethers

Bis(2-chloroethoxy) methane	mg/kg	0.5	-	-	-	-	-	<0.5
Bis(2-chloroethyl) ether	mg/kg	0.5	-	-	-	-	-	<0.5
Bis(2-chloroisopropyl) ether	mg/kg	0.5	-	-	-	-	-	<0.5
4-chlorophenyl phenyl ether	mg/kg	0.5	-	-	-	-	-	<0.5
4-bromophenyl phenyl ether	mg/kg	0.5	-	-	-	-	-	<0.5

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE100639.016 Soil 03 Jun 2011 QC03	SE100639.017 Soil 06 Jun 2011 BH4 0.5m	SE100639.018 Soil 06 Jun 2011 BH4 1.0m	SE100639.019 Soil 06 Jun 2011 BH4 1.5m	SE100639.020 Soil 06 Jun 2011 BH4 2.0m
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Full 8270 SVOC in Soil Method: AN420 (continued)

Other SVOCs

Methyl methanesulfonate	mg/kg	1	-	-	-	-	-	<1
Ethyl methanesulfonate	mg/kg	1	-	-	-	-	-	<1
Dibenzofuran	mg/kg	0.5	-	-	-	-	-	<0.5
Benzyl alcohol	mg/kg	1	-	-	-	-	-	<1
Safrole	mg/kg	0.5	-	-	-	-	-	<0.5
Isosafrole Isomer 1	mg/kg	1	-	-	-	-	-	<1
Isosafrole Isomer 2	mg/kg	1	-	-	-	-	-	<1
1,4-naphthoquinone	mg/kg	0.5	-	-	-	-	-	<0.5
Thionazin	mg/kg	1	-	-	-	-	-	<1

Speciated Routine Phenols

3/4-methyl phenol (m/p-cresol)	mg/kg	1	-	-	-	-	-	<1
2-methyl phenol (o-cresol)	mg/kg	0.5	-	-	-	-	-	<0.5
2,6-dichlorophenol	mg/kg	0.5	-	-	-	-	-	<0.5
2,3,4,6 and 2,3,5,6-tetrachlorophenol	mg/kg	1	-	-	-	-	-	<1
2,4,5-trichlorophenol	mg/kg	0.5	-	-	-	-	-	<0.5
4-chloro-3-methylphenol	mg/kg	1	-	-	-	-	-	<1
2-chlorophenol	mg/kg	0.5	-	-	-	-	-	<0.5
2,4-dichlorophenol	mg/kg	0.5	-	-	-	-	-	<0.5
2,4-dimethyl phenol	mg/kg	0.5	-	-	-	-	-	<0.5
2-nitrophenol	mg/kg	0.5	-	-	-	-	-	<0.5
Phenol	mg/kg	0.5	-	-	-	-	-	<0.5
2,4,6-trichlorophenol	mg/kg	0.5	-	-	-	-	-	<0.5
Pentachlorophenol	mg/kg	0.5	-	-	-	-	-	<0.5
4-nitrophenol	mg/kg	0.5	-	-	-	-	-	<0.5

Surrogates

d5-phenol (Surrogate)	%	-	-	-	-	-	-	101
d5-nitrobenzene (Surrogate)	%	-	-	-	-	-	-	120
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-	-	100
2,4,6-tribromophenol (Surrogate)	%	-	-	-	-	-	-	113
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-	-	120

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	<20	<20	-	-	-	<20
TRH C15-C28	mg/kg	50	140	<50	-	-	-	380
TRH C29-C36	mg/kg	50	85	<50	-	-	-	110

Surrogates

TRH (Surrogate)	%	-	-	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.1	0.1	<0.1	-	-	-	-
Acenaphthylene	mg/kg	0.1	0.3	<0.1	-	-	-	-
Acenaphthene	mg/kg	0.1	<0.1	<0.1	-	-	-	-
Fluorene	mg/kg	0.1	0.2	<0.1	-	-	-	-
Phenanthrene	mg/kg	0.1	1.4	0.3	-	-	-	-
Anthracene	mg/kg	0.1	0.6	0.1	-	-	-	-
Fluoranthene	mg/kg	0.1	2.2	0.7	-	-	-	-
Pyrene	mg/kg	0.1	2.1	0.6	-	-	-	-
Benzo(a)anthracene	mg/kg	0.1	1.2	0.3	-	-	-	-
Chrysene	mg/kg	0.1	0.9	0.3	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.1	1.1	0.4	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	0.6	0.2	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	1.1	0.35	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.5	0.2	-	-	-	-
Dibenzo(a,h)anthracene	mg/kg	0.1	0.1	<0.1	-	-	-	-



ANALYTICAL REPORT

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Sample Number	SE100639.016	SE100639.017	SE100639.018	SE100639.019	SE100639.020
Sample Matrix	Soil	Soil	Soil	Soil	Soil
Sample Date	03 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011
Sample Name	QC03	BH4 0.5m	BH4 1.0m	BH4 1.5m	BH4 2.0m
Parameter	Units	LOR			

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)

Benzo(ghi)perylene	mg/kg	0.1	0.6	0.2	-	-	-
Total PAH	mg/kg	1.75	13	3.8	-	-	-

Surrogates

d5-nitrobenzene (Surrogate)	%	-	126	123	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	108	107	-	-	-
d14-p-terphenyl (Surrogate)	%	-	102	101	-	-	-

Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: AN040/AN320

Arsenic, As	mg/kg	3	21	12	-	-	14
Cadmium, Cd	mg/kg	0.3	0.4	<0.3	-	-	<0.3
Chromium, Cr	mg/kg	0.3	16	10	-	-	12
Copper, Cu	mg/kg	0.5	56	63	-	-	42
Lead, Pb	mg/kg	1	140	47	-	-	110
Nickel, Ni	mg/kg	0.5	8.2	5.6	-	-	10
Zinc, Zn	mg/kg	0.5	100	91	-	-	110

Mercury in Soil Method: AN312

Mercury	mg/kg	0.05	0.40	0.15	-	-	0.64
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Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	-	-	No	No	-
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Moisture Content Method: AN234

% Moisture	%	0.5	16	12	-	-	15
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VOCs in Water Method: AN433/AN434

Fumigants

2,2-dichloropropane	µg/L	0.5	-	-	-	-	-
1,2-dichloropropane	µg/L	0.5	-	-	-	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	-	-	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	-	-	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-	-	-	-

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-	-	-	-
Chloromethane	µg/L	5	-	-	-	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-	-	-	-
Bromomethane	µg/L	10	-	-	-	-	-
Chloroethane	µg/L	5	-	-	-	-	-
Trichlorofluoromethane	µg/L	1	-	-	-	-	-
Iodomethane	µg/L	5	-	-	-	-	-
1,1-dichloroethene	µg/L	0.5	-	-	-	-	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-	-	-	-
Allyl chloride	µg/L	2	-	-	-	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	-	-	-	-
1,1-dichloroethane	µg/L	0.5	-	-	-	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	-	-	-	-
Bromochloromethane	µg/L	0.5	-	-	-	-	-
1,2-dichloroethane	µg/L	0.5	-	-	-	-	-
1,1,1-trichloroethane	µg/L	0.5	-	-	-	-	-
1,1-dichloropropene	µg/L	0.5	-	-	-	-	-
Carbon tetrachloride	µg/L	0.5	-	-	-	-	-
Dibromomethane	µg/L	0.5	-	-	-	-	-
Trichloroethene (Trichloroethylene, TCE)	µg/L	0.5	-	-	-	-	-
1,1,2-trichloroethane	µg/L	0.5	-	-	-	-	-

		Sample Number	SE100639.021
		Sample Matrix	Soil
		Sample Date	06 Jun 2011
		Sample Name	BH4 5.5m
Parameter	Units	LOR	

VOC's in Soil Method: AN433/AN434 (continued)

Nitrogenous Compounds

Acrylonitrile	mg/kg	0.1	-
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Oxygenated Compounds

Acetone (2-propanone)	mg/kg	10	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.5	-
Vinyl acetate	mg/kg	10	-
MEK (2-butanone)	mg/kg	10	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-
2-hexanone (MBK)	mg/kg	5	-

Polycyclic VOCs

Naphthalene	mg/kg	0.1	-
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Sulphonated Compounds

Carbon disulfide	mg/kg	0.5	-
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-
d8-toluene (Surrogate)	%	-	-
Bromofluorobenzene (Surrogate)	%	-	-

Totals

Total BTEX*	mg/kg	-	-
Total Xylenes*	mg/kg	0.3	-
Total VOC*	mg/kg	24	-

Trihalomethanes

Chloroform	mg/kg	0.1	-
Bromodichloromethane	mg/kg	0.1	-
Chlorodibromomethane	mg/kg	0.1	-
Bromoform	mg/kg	0.1	-

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

TRH C6-C9	mg/kg	20	<20
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	1	<1
o-xylene	mg/kg	0.5	<0.5
Total Xylenes	mg/kg	0.3	<0.3
Total BTEX*	mg/kg	2.7	<2.7

Surrogates

Trifluorotoluene (Surrogate)	%	-	102
Dibromofluoromethane (Surrogate)	%	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-
d8-toluene (Surrogate)	%	-	-
Bromofluorobenzene (Surrogate)	%	-	-

Full 8270 SVOC in Soil Method: AN420

PAHs

Acenaphthene	mg/kg	0.5	-
Acenaphthylene	mg/kg	0.5	-
Anthracene	mg/kg	0.5	-
Benzo(a)anthracene	mg/kg	0.5	-

Parameter	Units	LOR	Sample Number	SE100639.016	SE100639.017	SE100639.018	SE100639.019	SE100639.020
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011
			Sample Name	QC03	BH4 0.5m	BH4 1.0m	BH4 1.5m	BH4 2.0m

VOCs in Water Method: AN433/AN434 (continued)

1,3-dichloropropane	µg/L	0.5	-	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-	-	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-	-	-	-
cis-1,4-dichloro-2-butene	µg/L	1	-	-	-	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-	-	-	-
1,2,3-trichloropropane	µg/L	0.5	-	-	-	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-	-	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-	-	-	-
Hexachlorobutadiene	µg/L	0.5	-	-	-	-	-

Halogenated Aromatics

Chlorobenzene	µg/L	0.5	-	-	-	-	-
Bromobenzene	µg/L	0.5	-	-	-	-	-
2-chlorotoluene	µg/L	0.5	-	-	-	-	-
4-chlorotoluene	µg/L	0.5	-	-	-	-	-
1,3-dichlorobenzene	µg/L	0.5	-	-	-	-	-
1,4-dichlorobenzene	µg/L	0.3	-	-	-	-	-
1,2-dichlorobenzene	µg/L	0.5	-	-	-	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-	-	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-	-	-	-

Monocyclic Aromatic Hydrocarbons

Benzene	µg/L	0.5	-	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-	-
Styrene (Vinyl benzene)	µg/L	0.5	-	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	-	-	-	-	-
n-propylbenzene	µg/L	0.5	-	-	-	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-	-	-	-
tert-butylbenzene	µg/L	0.5	-	-	-	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-	-	-	-
sec-butylbenzene	µg/L	0.5	-	-	-	-	-
p-isopropyltoluene	µg/L	0.5	-	-	-	-	-
n-butylbenzene	µg/L	0.5	-	-	-	-	-



ANALYTICAL REPORT

SE100639 R0

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE100639.016 Soil 03 Jun 2011 QC03	SE100639.017 Soil 06 Jun 2011 BH4 0.5m	SE100639.018 Soil 06 Jun 2011 BH4 1.0m	SE100639.019 Soil 06 Jun 2011 BH4 1.5m	SE100639.020 Soil 06 Jun 2011 BH4 2.0m
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VOCs in Water Method: AN433/AN434 (continued)

Nitrogenous Compounds

Acrylonitrile	µg/L	0.5	-	-	-	-	-
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Oxygenated Compounds

Acetone (2-propanone)	µg/L	10	-	-	-	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	-	-	-	-	-
Vinyl acetate	µg/L	10	-	-	-	-	-
MEK (2-butanone)	µg/L	10	-	-	-	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	-	-	-	-
2-hexanone (MBK)	µg/L	5	-	-	-	-	-

Polycyclic VOCs

Naphthalene	µg/L	0.5	-	-	-	-	-
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Sulphonated Compounds

Carbon disulfide	µg/L	2	-	-	-	-	-
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	-

Totals

Total VOC	µg/L	10	-	-	-	-	-
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Trihalomethanes

Chloroform (THM)	µg/L	0.5	-	-	-	-	-
Bromodichloromethane (THM)	µg/L	0.5	-	-	-	-	-
Dibromochloromethane (THM)	µg/L	0.5	-	-	-	-	-
Bromoform (THM)	µg/L	0.5	-	-	-	-	-

Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434

TRH C6-C9	µg/L	40	-	-	-	-	-
Benzene	µg/L	0.5	-	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-	-
Total BTEX*	µg/L	3	-	-	-	-	-
Total Xylenes*	µg/L	1.5	-	-	-	-	-

Surrogates

Trifluorotoluene (Surrogate)	%	-	-	-	-	-	-
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-	-

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403

TRH C10-C14	µg/L	100	-	-	-	-	-
TRH C15-C28	µg/L	200	-	-	-	-	-
TRH C29-C36	µg/L	200	-	-	-	-	-

Parameter	Units	LOR	Sample Number	SE100639.016	SE100639.017	SE100639.018	SE100639.019	SE100639.020
			Sample Matrix	Soil	Soil	Soil	Soil	Soil
			Sample Date	03 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011	06 Jun 2011
			Sample Name	QC03	BH4 0.5m	BH4 1.0m	BH4 1.5m	BH4 2.0m

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403 (continued)

Surrogates

TRH (Surrogate)	%	-	-	-	-	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420

Naphthalene	µg/L	0.1	-	-	-	-	-
Acenaphthylene	µg/L	0.1	-	-	-	-	-
Acenaphthene	µg/L	0.1	-	-	-	-	-
Fluorene	µg/L	0.1	-	-	-	-	-
Phenanthrene	µg/L	0.1	-	-	-	-	-
Anthracene	µg/L	0.1	-	-	-	-	-
Fluoranthene	µg/L	0.1	-	-	-	-	-
Pyrene	µg/L	0.1	-	-	-	-	-
Benzo(a)anthracene	µg/L	0.1	-	-	-	-	-
Chrysene	µg/L	0.1	-	-	-	-	-
Benzo(b)fluoranthene	µg/L	0.1	-	-	-	-	-
Benzo(k)fluoranthene	µg/L	0.1	-	-	-	-	-
Benzo(a)pyrene	µg/L	0.1	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	µg/L	0.1	-	-	-	-	-
Dibenzo(a,h)anthracene	µg/L	0.1	-	-	-	-	-
Benzo(ghi)perylene	µg/L	0.1	-	-	-	-	-
Total PAH (18)*	µg/L	1	-	-	-	-	-

Surrogates

d5-nitrobenzene (Surrogate)	%	-	-	-	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-	-

Trace Metals (Dissolved) in Water by ICPMS Method: AN318

Arsenic, As	µg/L	1	-	-	-	-	-
Cadmium, Cd	µg/L	0.1	-	-	-	-	-
Chromium, Cr	µg/L	1	-	-	-	-	-
Copper, Cu	µg/L	1	-	-	-	-	-
Lead, Pb	µg/L	1	-	-	-	-	-
Nickel, Ni	µg/L	1	-	-	-	-	-
Zinc, Zn	µg/L	1	-	-	-	-	-

Mercury (dissolved) in Water Method: AN311/AN312

Mercury	mg/L	0.0001	-	-	-	-	-
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Parameter	Units	LOR	Sample Number	SE100639.021
			Sample Matrix	Soil
			Sample Date	06 Jun 2011
			Sample Name	BH4 5.5m

VOC's in Soil Method: AN433/AN434

Fumigants

2,2-dichloropropane	mg/kg	0.1	-
1,2-dichloropropane	mg/kg	0.1	-
cis-1,3-dichloropropene	mg/kg	0.1	-
trans-1,3-dichloropropene	mg/kg	0.1	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-

	Sample Number	SE100639.021
	Sample Matrix	Soil
	Sample Date	06 Jun 2011
	Sample Name	BH4 5.5m
Parameter	Units	LOR

VOC's in Soil Method: AN433/AN434 (continued)

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	mg/kg	1	-
Chloromethane	mg/kg	1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-
Bromomethane	mg/kg	1	-
Chloroethane	mg/kg	1	-
Trichlorofluoromethane	mg/kg	1	-
Iodomethane	mg/kg	5	-
1,1-dichloroethene	mg/kg	0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-
Allyl chloride	mg/kg	0.1	-
trans-1,2-dichloroethene	mg/kg	0.1	-
1,1-dichloroethane	mg/kg	0.1	-
cis-1,2-dichloroethene	mg/kg	0.1	-
Bromochloromethane	mg/kg	0.1	-
1,2-dichloroethane	mg/kg	0.1	-
1,1,1-trichloroethane	mg/kg	0.1	-
1,1-dichloropropene	mg/kg	0.1	-
Carbon tetrachloride	mg/kg	0.1	-
Dibromomethane	mg/kg	0.1	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-
1,1,2-trichloroethane	mg/kg	0.1	-
1,3-dichloropropane	mg/kg	0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-
cis-1,4-dichloro-2-butene	mg/kg	1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-
1,2,3-trichloropropane	mg/kg	0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-
Hexachlorobutadiene	mg/kg	0.1	-

Halogenated Aromatics

Chlorobenzene	mg/kg	0.1	-
Bromobenzene	mg/kg	0.1	-
2-chlorotoluene	mg/kg	0.1	-
4-chlorotoluene	mg/kg	0.1	-
1,3-dichlorobenzene	mg/kg	0.1	-
1,4-dichlorobenzene	mg/kg	0.1	-
1,2-dichlorobenzene	mg/kg	0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1	-

Monocyclic Aromatic Hydrocarbons

Benzene	mg/kg	0.1	-
Toluene	mg/kg	0.1	-
Ethylbenzene	mg/kg	0.1	-
m/p-xylene	mg/kg	0.2	-
Styrene (Vinyl benzene)	mg/kg	0.1	-
o-xylene	mg/kg	0.1	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-
n-propylbenzene	mg/kg	0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1	-
tert-butylbenzene	mg/kg	0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1	-
sec-butylbenzene	mg/kg	0.1	-
p-isopropyltoluene	mg/kg	0.1	-
n-butylbenzene	mg/kg	0.1	-

		Sample Number	SE100639.021
		Sample Matrix	Soil
		Sample Date	06 Jun 2011
		Sample Name	BH4 5.5m
Parameter	Units	LOR	

Full 8270 SVOC in Soil Method: AN420 (continued)

Benzo(b&k)fluoranthene	mg/kg	1	-
Benzo(b)fluoranthene	mg/kg	0.5	-
Benzo(k)fluoranthene	mg/kg	0.5	-
Benzo(ghi)perylene	mg/kg	0.5	-
Benzo(a)pyrene	mg/kg	0.5	-
Chrysene	mg/kg	0.5	-
Dibenzo(ah)anthracene	mg/kg	0.5	-
Fluoranthene	mg/kg	0.5	-
Fluorene	mg/kg	0.5	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.5	-
1-methylnaphthalene	mg/kg	0.5	-
2-methylnaphthalene	mg/kg	0.5	-
Naphthalene	mg/kg	0.5	-
Phenanthrene	mg/kg	0.5	-
Pyrene	mg/kg	0.5	-
2-acetylmino fluorene	mg/kg	2	-
7,12-dimethyl-benz(a)anthracene	mg/kg	0.5	-
3-methylcholanthrene	mg/kg	1	-

OCs

Aldrin	mg/kg	0.5	-
Alpha-BHC	mg/kg	0.5	-
Beta-BHC	mg/kg	0.5	-
Delta-BHC	mg/kg	0.5	-
Gamma-BHC (Lindane)	mg/kg	0.5	-
p,p-DDD	mg/kg	0.5	-
p,p-DDE	mg/kg	0.5	-
p,p-DDT	mg/kg	0.5	-
Dieldrin	mg/kg	0.5	-
Alpha-endosulfan	mg/kg	0.5	-
Beta-endosulfan	mg/kg	0.5	-
Endosulfan sulphate	mg/kg	0.5	-
Endrin	mg/kg	0.5	-
Heptachlor	mg/kg	0.5	-
Heptachlor epoxide	mg/kg	0.5	-
Isodrin	mg/kg	0.5	-
Methoxychlor	mg/kg	0.5	-
Mirex	mg/kg	0.5	-
Alpha-chlordane	mg/kg	0.5	-
Gamma-chlordane	mg/kg	0.5	-
Endrin ketone	mg/kg	0.5	-

OPs

Azinphos-methyl (Guthion)	mg/kg	1	-
Bromophos ethyl	mg/kg	1	-
Carbophenothion	mg/kg	1	-
Chlorfenvinphos-cis (Chlofenvinphos-cis)	mg/kg	5	-
Chlorfenvinphos-trans (Chlofenvinphos-trans)	mg/kg	1	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	1	-
Chlorpyrifos-methyl	mg/kg	1	-
Co-Ral (Coumaphos)	mg/kg	1	-
Diazinon (Dimpylate)	mg/kg	1	-
Dichlorvos	mg/kg	1	-
Demeton-S-methyl	mg/kg	1	-
Dimethoate	mg/kg	1	-
Disulfoton (Di-syston)	mg/kg	1	-
EPN*	mg/kg	1	-
Ethion	mg/kg	1	-
Ethoprophos (ethoprop or propfos)	mg/kg	1	-

		Sample Number	SE100639.021
		Sample Matrix	Soil
		Sample Date	06 Jun 2011
		Sample Name	BH4 5.5m
Parameter	Units	LOR	

Full 8270 SVOC in Soil Method: AN420 (continued)

Famphur (Famophos)	mg/kg	1	-
Fenamiphos (Phenamiphos)	mg/kg	1	-
Fenchlorophos (Ronne)	mg/kg	1	-
Fenitrothion	mg/kg	1	-
Fenthion	mg/kg	1	-
Malathion (Maldison)	mg/kg	1	-
Methidathion	mg/kg	1	-
Mevinphos-cis/trans	mg/kg	2	-
o,o,o-triethyl phosphorothioate	mg/kg	1	-
Parathion ethyl (Parathion)	mg/kg	1	-
Parathion methyl	mg/kg	1	-
Phorate	mg/kg	1	-
Pirimiphos-ethyl	mg/kg	1	-
Pirimiphos-methyl	mg/kg	1	-
Profenofos	mg/kg	1	-
Prothiophos (Tokuthion)*	mg/kg	1	-
Sulfotepp	mg/kg	1	-
Tetrachlorvinphos (Stiropfos)*	mg/kg	1	-

PCB UPAC(7) Congeners

PCB Congener C28	mg/kg	0.5	-
PCB Congener C52	mg/kg	0.5	-
PCB Congener C101	mg/kg	0.5	-
PCB Congener C118	mg/kg	0.5	-
PCB Congener C138	mg/kg	0.5	-
PCB Congener C153	mg/kg	0.5	-
PCB Congener C180	mg/kg	0.5	-

SVCH (Cl Benzenes, Hydrocarbons & VOCs)

Hexachlorobenzene	mg/kg	0.5	-
1,2-dichlorobenzene	mg/kg	0.5	-
1,3-dichlorobenzene	mg/kg	0.5	-
1,4-dichlorobenzene	mg/kg	0.5	-
Hexachlorobutadiene	mg/kg	0.5	-
Hexachlorocyclopentadiene	mg/kg	1	-
Hexachloroethane	mg/kg	0.5	-
Hexachloropropene	mg/kg	0.5	-
Pentachlorobenzene	mg/kg	0.5	-
Pentachloroethane	mg/kg	0.5	-
1,2,3,5 and 1,2,4,5 -tetrachlorobenzene	mg/kg	1	-
1,2,3,4-tetrachlorobenzene	mg/kg	0.5	-
1/2-Chloronaphthalene	mg/kg	1	-
1,2,4-trichlorobenzene	mg/kg	0.5	-

		Sample Number	SE100639.021
		Sample Matrix	Soil
		Sample Date	06 Jun 2011
		Sample Name	BH4 5.5m
Parameter	Units	LOR	

Full 8270 SVOC in Soil Method: AN420 (continued)

Phthalates

Bis(2-ethylhexyl)phthalate	mg/kg	5	-
Bis(2-ethylhexyl)adipate	mg/kg	0.5	-
Butyl benzyl phthalate	mg/kg	0.5	-
Di-n-butyl phthalate	mg/kg	0.5	-
Diethyl phthalate	mg/kg	0.5	-
Dimethyl phthalate	mg/kg	0.5	-
Dioctyl phthalate	mg/kg	0.5	-

Carbamates

Carbofuran	mg/kg	0.5	-
Carbaryl	mg/kg	0.5	-

Herbicides (normal)

Trifluralin	mg/kg	0.5	-
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Nitrosamines

N-nitroso-di-n-butylamine (NDBA)	mg/kg	0.5	-
N-nitroso-diethylamine (NDEA)	mg/kg	1	-
N-nitroso-di-n-propylamine (NDPA)	mg/kg	0.5	-
N-nitroso-morpholine (NMOR)	mg/kg	0.5	-
N-nitroso-piperidine (NPIP)	mg/kg	0.5	-
N-nitroso-pyrrolidine (NPYR)	mg/kg	1	-
4-amino biphenyl	mg/kg	1	-

Nitroaromatics and Ketones

Acetophenone	mg/kg	0.5	-
1,3-dinitrobenzene	mg/kg	1	-
2,4-dinitrotoluene	mg/kg	0.5	-
2,6-dinitrotoluene	mg/kg	0.5	-
Isophorone	mg/kg	0.5	-
Nitrobenzene	mg/kg	0.5	-
p-(dimethylamino) azobenzene	mg/kg	1	-
Phenacetin	mg/kg	1	-
Pentachloronitrobenzene (quintozene)	mg/kg	0.5	-

Anilines and Amines

Aniline	mg/kg	3	-
4-chloroaniline	mg/kg	1	-
2-nitroaniline	mg/kg	1	-
3-nitroaniline	mg/kg	1	-
4-nitroaniline	mg/kg	1	-
Diphenylamine	mg/kg	0.5	-
o-toluidine	mg/kg	1	-
5-nitro-o-toluidine	mg/kg	1	-
1-naphthylamine	mg/kg	1	-
2-naphthylamine	mg/kg	1	-

Haloethers

Bis(2-chloroethoxy) methane	mg/kg	0.5	-
Bis(2-chloroethyl) ether	mg/kg	0.5	-
Bis(2-chloroisopropyl) ether	mg/kg	0.5	-
4-chlorophenyl phenyl ether	mg/kg	0.5	-
4-bromophenyl phenyl ether	mg/kg	0.5	-

	Sample Number	SE100639.021
	Sample Matrix	Soil
	Sample Date	06 Jun 2011
	Sample Name	BH4 5.5m
Parameter	Units	LOR

Full 8270 SVOC in Soil Method: AN420 (continued)

Other SVOCs

Methyl methanesulfonate	mg/kg	1	-
Ethyl methanesulfonate	mg/kg	1	-
Dibenzofuran	mg/kg	0.5	-
Benzyl alcohol	mg/kg	1	-
Safrole	mg/kg	0.5	-
Isosafrole Isomer 1	mg/kg	1	-
Isosafrole Isomer 2	mg/kg	1	-
1,4-naphthoquinone	mg/kg	0.5	-
Thionazin	mg/kg	1	-

Speciated Routine Phenols

3/4-methyl phenol (m/p-cresol)	mg/kg	1	-
2-methyl phenol (o-cresol)	mg/kg	0.5	-
2,6-dichlorophenol	mg/kg	0.5	-
2,3,4,6 and 2,3,5,6-tetrachlorophenol	mg/kg	1	-
2,4,5-trichlorophenol	mg/kg	0.5	-
4-chloro-3-methylphenol	mg/kg	1	-
2-chlorophenol	mg/kg	0.5	-
2,4-dichlorophenol	mg/kg	0.5	-
2,4-dimethyl phenol	mg/kg	0.5	-
2-nitrophenol	mg/kg	0.5	-
Phenol	mg/kg	0.5	-
2,4,6-trichlorophenol	mg/kg	0.5	-
Pentachlorophenol	mg/kg	0.5	-
4-nitrophenol	mg/kg	0.5	-

Surrogates

d5-phenol (Surrogate)	%	-	-
d5-nitrobenzene (Surrogate)	%	-	-
2-fluorobiphenyl (Surrogate)	%	-	-
2,4,6-tribromophenol (Surrogate)	%	-	-
d14-p-terphenyl (Surrogate)	%	-	-

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	50	<50
TRH C29-C36	mg/kg	50	<50

Surrogates

TRH (Surrogate)	%	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

Naphthalene	mg/kg	0.1	-
Acenaphthylene	mg/kg	0.1	-
Acenaphthene	mg/kg	0.1	-
Fluorene	mg/kg	0.1	-
Phenanthrene	mg/kg	0.1	-
Anthracene	mg/kg	0.1	-
Fluoranthene	mg/kg	0.1	-
Pyrene	mg/kg	0.1	-
Benzo(a)anthracene	mg/kg	0.1	-
Chrysene	mg/kg	0.1	-
Benzo(b)fluoranthene	mg/kg	0.1	-
Benzo(k)fluoranthene	mg/kg	0.1	-
Benzo(a)pyrene	mg/kg	0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	-
Dibenzo(a,h)anthracene	mg/kg	0.1	-

		Sample Number	SE100639.021
		Sample Matrix	Soil
		Sample Date	06 Jun 2011
		Sample Name	BH4 5.5m
Parameter	Units	LOR	

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)

Benzo(ghi)perylene	mg/kg	0.1	-
Total PAH	mg/kg	1.75	-

Surrogates

d5-nitrobenzene (Surrogate)	%	-	-
2-fluorobiphenyl (Surrogate)	%	-	-
d14-p-terphenyl (Surrogate)	%	-	-

Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: AN040/AN320

Arsenic, As	mg/kg	3	<3
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.3	12
Copper, Cu	mg/kg	0.5	1.2
Lead, Pb	mg/kg	1	7
Nickel, Ni	mg/kg	0.5	1.2
Zinc, Zn	mg/kg	0.5	2.5

Mercury in Soil Method: AN312

Mercury	mg/kg	0.05	<0.05
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Fibre Identification in soil Method: AN602

FibreID

Asbestos Detected	No unit	-	-
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Moisture Content Method: AN234

% Moisture	%	0.5	14
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VOCs in Water Method: AN433/AN434

Fumigants

2,2-dichloropropane	µg/L	0.5	-
1,2-dichloropropane	µg/L	0.5	-
cis-1,3-dichloropropene	µg/L	0.5	-
trans-1,3-dichloropropene	µg/L	0.5	-
1,2-dibromoethane (EDB)	µg/L	0.5	-

Halogenated Aliphatics

Dichlorodifluoromethane (CFC-12)	µg/L	5	-
Chloromethane	µg/L	5	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-
Bromomethane	µg/L	10	-
Chloroethane	µg/L	5	-
Trichlorofluoromethane	µg/L	1	-
Iodomethane	µg/L	5	-
1,1-dichloroethene	µg/L	0.5	-
Dichloromethane (Methylene chloride)	µg/L	5	-
Allyl chloride	µg/L	2	-
trans-1,2-dichloroethene	µg/L	0.5	-
1,1-dichloroethane	µg/L	0.5	-
cis-1,2-dichloroethene	µg/L	0.5	-
Bromochloromethane	µg/L	0.5	-
1,2-dichloroethane	µg/L	0.5	-
1,1,1-trichloroethane	µg/L	0.5	-
1,1-dichloropropene	µg/L	0.5	-
Carbon tetrachloride	µg/L	0.5	-
Dibromomethane	µg/L	0.5	-
Trichloroethene (Trichloroethylene, TCE)	µg/L	0.5	-

		Sample Number	SE100639.021
		Sample Matrix	Soil
		Sample Date	06 Jun 2011
		Sample Name	BH4 5.5m
Parameter	Units	LOR	

VOCs in Water Method: AN433/AN434 (continued)

1,1,2-trichloroethane	µg/L	0.5	-
1,3-dichloropropane	µg/L	0.5	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-
cis-1,4-dichloro-2-butene	µg/L	1	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-
1,2,3-trichloropropane	µg/L	0.5	-
trans-1,4-dichloro-2-butene	µg/L	1	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-
Hexachlorobutadiene	µg/L	0.5	-

Halogenated Aromatics

Chlorobenzene	µg/L	0.5	-
Bromobenzene	µg/L	0.5	-
2-chlorotoluene	µg/L	0.5	-
4-chlorotoluene	µg/L	0.5	-
1,3-dichlorobenzene	µg/L	0.5	-
1,4-dichlorobenzene	µg/L	0.3	-
1,2-dichlorobenzene	µg/L	0.5	-
1,2,4-trichlorobenzene	µg/L	0.5	-
1,2,3-trichlorobenzene	µg/L	0.5	-

Monocyclic Aromatic Hydrocarbons

Benzene	µg/L	0.5	-
Toluene	µg/L	0.5	-
Ethylbenzene	µg/L	0.5	-
m/p-xylene	µg/L	1	-
Styrene (Vinyl benzene)	µg/L	0.5	-
o-xylene	µg/L	0.5	-
Isopropylbenzene (Cumene)	µg/L	0.5	-
n-propylbenzene	µg/L	0.5	-
1,3,5-trimethylbenzene	µg/L	0.5	-
tert-butylbenzene	µg/L	0.5	-
1,2,4-trimethylbenzene	µg/L	0.5	-
sec-butylbenzene	µg/L	0.5	-
p-isopropyltoluene	µg/L	0.5	-
n-butylbenzene	µg/L	0.5	-

		Sample Number	SE100639.021
		Sample Matrix	Soil
		Sample Date	06 Jun 2011
		Sample Name	BH4 5.5m
Parameter	Units	LOR	

VOCs in Water Method: AN433/AN434 (continued)

Nitrogenous Compounds

Acrylonitrile	µg/L	0.5	-
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Oxygenated Compounds

Acetone (2-propanone)	µg/L	10	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	-
Vinyl acetate	µg/L	10	-
MEK (2-butanone)	µg/L	10	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-
2-hexanone (MBK)	µg/L	5	-

Polycyclic VOCs

Naphthalene	µg/L	0.5	-
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Sulphonated Compounds

Carbon disulfide	µg/L	2	-
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Surrogates

Dibromofluoromethane (Surrogate)	%	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-
d8-toluene (Surrogate)	%	-	-
Bromofluorobenzene (Surrogate)	%	-	-

Totals

Total VOC	µg/L	10	-
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Trihalomethanes

Chloroform (THM)	µg/L	0.5	-
Bromodichloromethane (THM)	µg/L	0.5	-
Dibromochloromethane (THM)	µg/L	0.5	-
Bromoform (THM)	µg/L	0.5	-

Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434

TRH C6-C9	µg/L	40	-
Benzene	µg/L	0.5	-
Toluene	µg/L	0.5	-
Ethylbenzene	µg/L	0.5	-
m/p-xylene	µg/L	1	-
o-xylene	µg/L	0.5	-
Total BTEX*	µg/L	3	-
Total Xylenes*	µg/L	1.5	-

Surrogates

Trifluorotoluene (Surrogate)	%	-	-
Dibromofluoromethane (Surrogate)	%	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-
d8-toluene (Surrogate)	%	-	-
Bromofluorobenzene (Surrogate)	%	-	-

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403

TRH C10-C14	µg/L	100	-
TRH C15-C28	µg/L	200	-
TRH C29-C36	µg/L	200	-

		Sample Number	SE100639.021
		Sample Matrix	Soil
		Sample Date	06 Jun 2011
		Sample Name	BH4 5.5m
Parameter	Units	LOR	

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403 (continued)

Surrogates

TRH (Surrogate)	%	-	-
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PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420

Naphthalene	µg/L	0.1	-
Acenaphthylene	µg/L	0.1	-
Acenaphthene	µg/L	0.1	-
Fluorene	µg/L	0.1	-
Phenanthrene	µg/L	0.1	-
Anthracene	µg/L	0.1	-
Fluoranthene	µg/L	0.1	-
Pyrene	µg/L	0.1	-
Benzo(a)anthracene	µg/L	0.1	-
Chrysene	µg/L	0.1	-
Benzo(b)fluoranthene	µg/L	0.1	-
Benzo(k)fluoranthene	µg/L	0.1	-
Benzo(a)pyrene	µg/L	0.1	-
Indeno(1,2,3-cd)pyrene	µg/L	0.1	-
Dibenzo(a,h)anthracene	µg/L	0.1	-
Benzo(ghi)perylene	µg/L	0.1	-
Total PAH (18)*	µg/L	1	-

Surrogates

d5-nitrobenzene (Surrogate)	%	-	-
2-fluorobiphenyl (Surrogate)	%	-	-
d14-p-terphenyl (Surrogate)	%	-	-

Trace Metals (Dissolved) in Water by ICPMS Method: AN318

Arsenic, As	µg/L	1	-
Cadmium, Cd	µg/L	0.1	-
Chromium, Cr	µg/L	1	-
Copper, Cu	µg/L	1	-
Lead, Pb	µg/L	1	-
Nickel, Ni	µg/L	1	-
Zinc, Zn	µg/L	1	-

Mercury (dissolved) in Water Method: AN311/AN312

Mercury	mg/L	0.0001	-
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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.

Full 8270 SVOC in Soil Method: ME-(AU)-[ENV]AN420

PAHs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Acenaphthene	LB002494	mg/kg	0.5	<0.5	NA
Acenaphthylene	LB002494	mg/kg	0.5	<0.5	NA
Anthracene	LB002494	mg/kg	0.5	<0.5	120%
Benzo(a)anthracene	LB002494	mg/kg	0.5	<0.5	NA
Benzo(b&k)fluoranthene	LB002494	mg/kg	1	<1	NA
Benzo(ghi)perylene	LB002494	mg/kg	0.5	<0.5	NA
Benzo(a)pyrene	LB002494	mg/kg	0.5	<0.5	89%
Chrysene	LB002494	mg/kg	0.5	<0.5	NA
Dibenzo(ah)anthracene	LB002494	mg/kg	0.5	<0.5	NA
Fluoranthene	LB002494	mg/kg	0.5	<0.5	111%
Fluorene	LB002494	mg/kg	0.5	<0.5	NA
Indeno(1,2,3-cd)pyrene	LB002494	mg/kg	0.5	<0.5	NA
1-methylnaphthalene	LB002494	mg/kg	0.5	<0.5	NA
2-methylnaphthalene	LB002494	mg/kg	0.5	<0.5	NA
Naphthalene	LB002494	mg/kg	0.5	<0.5	95%
Phenanthrene	LB002494	mg/kg	0.5	<0.5	111%
Pyrene	LB002494	mg/kg	0.5	<0.5	126%
2-acetylmino fluorene	LB002494	mg/kg	2	<2	NA
7,12-dimethyl-benz(a)anthracene	LB002494	mg/kg	0.5	<0.5	NA
3-methylcholanthrene	LB002494	mg/kg	1	<1	NA

OCs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Aldrin	LB002494	mg/kg	0.5	<0.5	73%
Alpha-BHC	LB002494	mg/kg	0.5	<0.5	NA
Beta-BHC	LB002494	mg/kg	0.5	<0.5	NA
Delta-BHC	LB002494	mg/kg	0.5	<0.5	NA
Gamma-BHC (Lindane)	LB002494	mg/kg	0.5	<0.5	NA
p,p-DDD	LB002494	mg/kg	0.5	<0.5	NA
p,p-DDE	LB002494	mg/kg	0.5	<0.5	NA
p,p-DDT	LB002494	mg/kg	0.5	<0.5	124%
Dieldrin	LB002494	mg/kg	0.5	<0.5	100%
Alpha-endosulfan	LB002494	mg/kg	0.5	<0.5	NA
Beta-endosulfan	LB002494	mg/kg	0.5	<0.5	NA
Endosulfan sulphate	LB002494	mg/kg	0.5	<0.5	NA
Endrin	LB002494	mg/kg	0.5	<0.5	91%
Heptachlor	LB002494	mg/kg	0.5	<0.5	106%
Heptachlor epoxide	LB002494	mg/kg	0.5	<0.5	NA
Isodrin	LB002494	mg/kg	0.5	<0.5	NA
Methoxychlor	LB002494	mg/kg	0.5	<0.5	NA
Mirex	LB002494	mg/kg	0.5	<0.5	NA
Alpha-chlordane	LB002494	mg/kg	0.5	<0.5	NA
Gamma-chlordane	LB002494	mg/kg	0.5	<0.5	NA
Endrin ketone	LB002494	mg/kg	0.5	<0.5	NA

OPs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Azinphos-methyl (Guthion)	LB002494	mg/kg	1	<1	NA
Bromophos ethyl	LB002494	mg/kg	1	<1	NA
Carbophenothion	LB002494	mg/kg	1	<1	NA
Chlorfenvinphos-cis (Chlofenvinphos-cis)	LB002494	mg/kg	5	<5	NA
Chlorfenvinphos-trans (Chlofenvinphos-trans)	LB002494	mg/kg	1	<1	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB002494	mg/kg	1	<1	130%
Chlorpyrifos-methyl	LB002494	mg/kg	1	<1	NA

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.

Full 8270 SVOC in Soil Method: ME-(AU)-[ENV]AN420 (continued)

				MB	LCS %Recovery
Co-Ral (Coumaphos)	LB002494	mg/kg	1	<1	NA
Diazinon (Dimpylate)	LB002494	mg/kg	1	<1	114%
Dichlorvos	LB002494	mg/kg	1	<1	111%
Demeton-S-methyl	LB002494	mg/kg	1	<1	NA
Dimethoate	LB002494	mg/kg	1	<1	NA
Disulfoton (Di-syston)	LB002494	mg/kg	1	<1	NA
EPN*	LB002494	mg/kg	1	<1	NA
Ethion	LB002494	mg/kg	1	<1	121%
Ethoprophos (ethoprop or prophos)	LB002494	mg/kg	1	<1	NA
Famphur (Famophos)	LB002494	mg/kg	1	<1	NA
Fenamiphos (Phenamiphos)	LB002494	mg/kg	1	<1	NA
Fenchlorophos (Ronnell)	LB002494	mg/kg	1	<1	NA
Fenitrothion	LB002494	mg/kg	1	<1	NA
Fenthion	LB002494	mg/kg	1	<1	NA
Malathion (Maldison)	LB002494	mg/kg	1	<1	NA
Methidathion	LB002494	mg/kg	1	<1	NA
Mevinphos-cis/trans	LB002494	mg/kg	2	<2	NA
o,o,o-triethyl phosphorothioate	LB002494	mg/kg	1	<1	NA
Parathion ethyl (Parathion)	LB002494	mg/kg	1	<1	NA
Parathion methyl	LB002494	mg/kg	1	<1	NA
Phorate	LB002494	mg/kg	1	<1	NA
Pirimiphos-ethyl	LB002494	mg/kg	1	<1	NA
Pirimiphos-methyl	LB002494	mg/kg	1	<1	NA
Profenofos	LB002494	mg/kg	1	<1	NA
Prothiophos (Tokuthion)*	LB002494	mg/kg	1	<1	NA
Sulfotepp	LB002494	mg/kg	1	<1	NA
Tetrachlorvinphos (Stirophos)*	LB002494	mg/kg	1	<1	NA

PCB UPAC(7) Congeners

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
PCB Congener C28	LB002494	mg/kg	0.5	<0.5	NA
PCB Congener C52	LB002494	mg/kg	0.5	<0.5	NA
PCB Congener C101	LB002494	mg/kg	0.5	<0.5	NA
PCB Congener C118	LB002494	mg/kg	0.5	<0.5	NA
PCB Congener C138	LB002494	mg/kg	0.5	<0.5	NA
PCB Congener C153	LB002494	mg/kg	0.5	<0.5	NA
PCB Congener C180	LB002494	mg/kg	0.5	<0.5	NA

SVCH (CI Benzenes, Hydrocarbons & VOCs)

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Hexachlorobenzene	LB002494	mg/kg	0.5	<0.5	79%
1,2-dichlorobenzene	LB002494	mg/kg	0.5	<0.5	NA
1,3-dichlorobenzene	LB002494	mg/kg	0.5	<0.5	NA
1,4-dichlorobenzene	LB002494	mg/kg	0.5	<0.5	NA
Hexachlorobutadiene	LB002494	mg/kg	0.5	<0.5	NA
Hexachlorocyclopentadiene	LB002494	mg/kg	1	<1	NA
Hexachloroethane	LB002494	mg/kg	0.5	<0.5	NA
Hexachloropropene	LB002494	mg/kg	0.5	<0.5	NA
Pentachlorobenzene	LB002494	mg/kg	0.5	<0.5	79%
Pentachloroethane	LB002494	mg/kg	0.5	<0.5	NA
1,2,3,5 and 1,2,4,5 -tetrachlorobenzene	LB002494	mg/kg	1	<1	NA
1,2,3,4-tetrachlorobenzene	LB002494	mg/kg	0.5	<0.5	76%
1/2-Chloronaphthalene	LB002494	mg/kg	1	<1	NA
1,2,4-trichlorobenzene	LB002494	mg/kg	0.5	<0.5	NA

Phthalates

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.

Full 8270 SVOC in Soil Method: ME-(AU)-[ENV]AN420 (continued)

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Bis(2-ethylhexyl)phthalate	LB002494	mg/kg	5	<5	NA
Bis(2-ethylhexyl)adipate	LB002494	mg/kg	0.5	<0.5	NA
Butyl benzyl phthalate	LB002494	mg/kg	0.5	<0.5	98%
Di-n-butyl phthalate	LB002494	mg/kg	0.5	<0.5	108%
Diethyl phthalate	LB002494	mg/kg	0.5	<0.5	84%
Dimethyl phthalate	LB002494	mg/kg	0.5	<0.5	89%
Diocetyl phthalate	LB002494	mg/kg	0.5	<0.5	NA

Carbamates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Carbofuran	LB002494	mg/kg	0.5	<0.5	NA
Carbaryl	LB002494	mg/kg	0.5	<0.5	NA

Herbicides (normal)

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Trifluralin	LB002494	mg/kg	0.5	<0.5	NA

Nitrosamines

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
N-nitroso-di-n-butylamine (NDBA)	LB002494	mg/kg	0.5	<0.5	NA
N-nitroso-diethylamine (NDEA)	LB002494	mg/kg	1	<1	NA
N-nitroso-di-n-propylamine (NDPA)	LB002494	mg/kg	0.5	<0.5	NA
N-nitroso-morpholine (NMOR)	LB002494	mg/kg	0.5	<0.5	NA
N-nitroso-piperidine (NPIP)	LB002494	mg/kg	0.5	<0.5	NA
N-nitroso-pyrrolidine (NPYR)	LB002494	mg/kg	1	<1	NA
4-amino biphenyl	LB002494	mg/kg	1	<1	NA

Nitroaromatics and Ketones

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Acetophenone	LB002494	mg/kg	0.5	<0.5	NA
1,3-dinitrobenzene	LB002494	mg/kg	1	<1	NA
2,4-dinitrotoluene	LB002494	mg/kg	0.5	<0.5	NA
2,6-dinitrotoluene	LB002494	mg/kg	0.5	<0.5	NA
Isophorone	LB002494	mg/kg	0.5	<0.5	NA
Nitrobenzene	LB002494	mg/kg	0.5	<0.5	NA
p-(dimethylamino) azobenzene	LB002494	mg/kg	1	<1	NA
Phenacetin	LB002494	mg/kg	1	<1	NA
Pentachloronitrobenzene (quintozone)	LB002494	mg/kg	0.5	<0.5	112%

Anilines and Amines

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Aniline	LB002494	mg/kg	3	<3	NA
4-chloroaniline	LB002494	mg/kg	1	<1	NA
2-nitroaniline	LB002494	mg/kg	1	<1	NA
3-nitroaniline	LB002494	mg/kg	1	<1	NA
4-nitroaniline	LB002494	mg/kg	1	<1	NA
Diphenylamine	LB002494	mg/kg	0.5	<0.5	NA
o-toluidine	LB002494	mg/kg	1	<1	NA
5-nitro-o-toluidine	LB002494	mg/kg	1	<1	NA
1-naphthylamine	LB002494	mg/kg	1	<1	NA
2-naphthylamine	LB002494	mg/kg	1	<1	NA

Haloethers

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.

Full 8270 SVOC in Soil Method: ME-(AU)-[ENV]AN420 (continued)

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Bis(2-chloroethoxy) methane	LB002494	mg/kg	0.5	<0.5	NA
Bis(2-chloroethyl) ether	LB002494	mg/kg	0.5	<0.5	NA
Bis(2-chloroisopropyl) ether	LB002494	mg/kg	0.5	<0.5	NA
4-chlorophenyl phenyl ether	LB002494	mg/kg	0.5	<0.5	NA
4-bromophenyl phenyl ether	LB002494	mg/kg	0.5	<0.5	NA

Other SVOCs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Methyl methanesulfonate	LB002494	mg/kg	1	<1	NA
Ethyl methanesulfonate	LB002494	mg/kg	1	<1	NA
Dibenzofuran	LB002494	mg/kg	0.5	<0.5	NA
Benzyl alcohol	LB002494	mg/kg	1	<1	NA
Safrole	LB002494	mg/kg	0.5	<0.5	NA
Isosafrole Isomer 1	LB002494	mg/kg	1	<1	NA
Isosafrole Isomer 2	LB002494	mg/kg	1	<1	NA
1,4-naphthoquinone	LB002494	mg/kg	0.5	<0.5	NA
Thionazin	LB002494	mg/kg	1	<1	NA

Speciated Routine Phenols

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
3/4-methyl phenol (m/p-cresol)	LB002494	mg/kg	1	<1	NA
2-methyl phenol (o-cresol)	LB002494	mg/kg	0.5	<0.5	NA
2,6-dichlorophenol	LB002494	mg/kg	0.5	<0.5	NA
2,3,4,6 and 2,3,5,6-tetrachlorophenol	LB002494	mg/kg	1	<1	NA
2,4,5-trichlorophenol	LB002494	mg/kg	0.5	<0.5	NA
4-chloro-3-methylphenol	LB002494	mg/kg	1	<1	NA
2-chlorophenol	LB002494	mg/kg	0.5	<0.5	NA
2,4-dichlorophenol	LB002494	mg/kg	0.5	<0.5	125%
2,4-dimethyl phenol	LB002494	mg/kg	0.5	<0.5	NA
2-nitrophenol	LB002494	mg/kg	0.5	<0.5	NA
Phenol	LB002494	mg/kg	0.5	<0.5	110%
2,4,6-trichlorophenol	LB002494	mg/kg	0.5	<0.5	95%
Pentachlorophenol	LB002494	mg/kg	0.5	<0.5	90%
4-nitrophenol	LB002494	mg/kg	0.5	<0.5	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
d5-phenol (Surrogate)	LB002494	%	-	97%	85%
d5-nitrobenzene (Surrogate)	LB002494	%	-	80%	78%
2-fluorobiphenyl (Surrogate)	LB002494	%	-	115%	98%
2,4,6-tribromophenol (Surrogate)	LB002494	%	-	108%	94%
d14-p-terphenyl (Surrogate)	LB002494	%	-	113%	100%

Mercury (dissolved) in Water Method: ME-(AU)-[ENV]AN311/AN312

Parameter	QC Reference	Units	LOR	MB
Mercury	LB002506	mg/L	0.0001	<0.0001

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	LB002605	mg/kg	0.05	<0.05	0 - 13%	113%	92%

Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: ME-(AU)-[ENV]AN040/AN320

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB002605	mg/kg	3	<3	0 - 14%	97%	89%
Cadmium, Cd	LB002605	mg/kg	0.3	<0.3	3 - 7%	98%	92%
Chromium, Cr	LB002605	mg/kg	0.3	<0.3	1 - 7%	100%	99%
Copper, Cu	LB002605	mg/kg	0.5	<0.5	2 - 19%	97%	81%
Lead, Pb	LB002605	mg/kg	1	<1	33%	96%	107%
Nickel, Ni	LB002605	mg/kg	0.5	<0.5	4 - 9%	98%	92%
Zinc, Zn	LB002605	mg/kg	0.5	<0.5	1 - 5%	96%	134%

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB002494	mg/kg	0.1	<0.1	42%	89%	106%
Acenaphthylene	LB002494	mg/kg	0.1	<0.1	10%	96%	115%
Acenaphthene	LB002494	mg/kg	0.1	<0.1	30%	101%	106%
Fluorene	LB002494	mg/kg	0.1	<0.1	25%	NA	NA
Phenanthrene	LB002494	mg/kg	0.1	<0.1	13%	101%	106%
Anthracene	LB002494	mg/kg	0.1	<0.1	17%	98%	116%
Fluoranthene	LB002494	mg/kg	0.1	<0.1	24%	113%	113%
Pyrene	LB002494	mg/kg	0.1	<0.1	29%	113%	116%
Benzo(a)anthracene	LB002494	mg/kg	0.1	<0.1	21%	NA	NA
Chrysene	LB002494	mg/kg	0.1	<0.1	18%	NA	NA
Benzo(b)fluoranthene	LB002494	mg/kg	0.1	<0.1	23%	NA	NA
Benzo(k)fluoranthene	LB002494	mg/kg	0.1	<0.1	29%	NA	NA
Benzo(a)pyrene	LB002494	mg/kg	0.05	<0.05	27%	100%	113%
Indeno(1,2,3-cd)pyrene	LB002494	mg/kg	0.1	<0.1	27%	NA	NA
Dibenzo(a,h)anthracene	LB002494	mg/kg	0.1	<0.1	19%	NA	NA
Benzo(ghi)perylene	LB002494	mg/kg	0.1	<0.1	29%	NA	NA
Total PAH	LB002494	mg/kg	1.75	<1.8	35%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d5-nitrobenzene (Surrogate)	LB002494	%	-	97%	0%	99%	123%
2-fluorobiphenyl (Surrogate)	LB002494	%	-	88%	2%	83%	106%
d14-p-terphenyl (Surrogate)	LB002494	%	-	95%	3%	84%	106%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB002498	µg/L	0.1	<0.1	115%
Acenaphthylene	LB002498	µg/L	0.1	<0.1	119%
Acenaphthene	LB002498	µg/L	0.1	<0.1	113%
Fluorene	LB002498	µg/L	0.1	<0.1	NA
Phenanthrene	LB002498	µg/L	0.1	<0.1	108%
Anthracene	LB002498	µg/L	0.1	<0.1	112%
Fluoranthene	LB002498	µg/L	0.1	<0.1	108%
Pyrene	LB002498	µg/L	0.1	<0.1	113%
Benzo(a)anthracene	LB002498	µg/L	0.1	<0.1	NA
Chrysene	LB002498	µg/L	0.1	<0.1	NA
Benzo(b)fluoranthene	LB002498	µg/L	0.1	<0.1	NA
Benzo(k)fluoranthene	LB002498	µg/L	0.1	<0.1	NA
Benzo(a)pyrene	LB002498	µg/L	0.1	<0.1	99%

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.

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

				MB	LCS %Recovery
Indeno(1,2,3-cd)pyrene	LB002498	µg/L	0.1	<0.1	NA
Dibenzo(a,h)anthracene	LB002498	µg/L	0.1	<0.1	NA
Benzo(ghi)perylene	LB002498	µg/L	0.1	<0.1	NA
Total PAH (18)*	LB002498	µg/L	1	<1	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB002498	%	-	73%	83%
2-fluorobiphenyl (Surrogate)	LB002498	%	-	71%	79%
d14-p-terphenyl (Surrogate)	LB002498	%	-	70%	71%

Trace Metals (Dissolved) in Water by ICPMS Method: ME-(AU)-[ENV]AN318

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB002539	µg/L	1	<1	0%	98%	101%
Cadmium, Cd	LB002539	µg/L	0.1	<0.1	0%	105%	110%
Chromium, Cr	LB002539	µg/L	1	<1	0%	96%	98%
Copper, Cu	LB002539	µg/L	1	<1	0%	99%	103%
Lead, Pb	LB002539	µg/L	1	<1	0%	107%	110%
Nickel, Ni	LB002539	µg/L	1	<1		100%	103%
Zinc, Zn	LB002539	µg/L	1	<1	4%	101%	100%

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	LB002494	mg/kg	20	<20	0 - 14%	108%	108%
TRH C15-C28	LB002494	mg/kg	50	<50	8 - 21%	100%	110%
TRH C29-C36	LB002494	mg/kg	50	<50	23 - 34%	90%	123%

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

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C10-C14	LB002498	µg/L	100	<100	93%
TRH C15-C28	LB002498	µg/L	200	<200	100%
TRH C29-C36	LB002498	µg/L	200	<200	91%

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

Fumigants

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2,2-dichloropropane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,2-dichloropropane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
cis-1,3-dichloropropene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
trans-1,3-dichloropropene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,2-dibromoethane (EDB)	LB002495	mg/kg	0.1	<0.1	0%	NA	NA

Halogenated Aliphatics

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dichlorodifluoromethane (CFC-12)	LB002495	mg/kg	1	<1	0%	NA	NA
Chloromethane	LB002495	mg/kg	1	<1	0%	NA	NA
Vinyl chloride (Chloroethene)	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
Bromomethane	LB002495	mg/kg	1	<1	0%	NA	NA
Chloroethane	LB002495	mg/kg	1	<1	0%	NA	NA
Trichlorofluoromethane	LB002495	mg/kg	1	<1	0%	NA	NA
Iodomethane	LB002495	mg/kg	5	<5	0%	NA	NA
1,1-dichloroethene	LB002495	mg/kg	0.1	<0.1	0%	88%	90%
Dichloromethane (Methylene chloride)	LB002495	mg/kg	0.5	<0.5	0%	NA	NA
Allyl chloride	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
trans-1,2-dichloroethene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,1-dichloroethane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
cis-1,2-dichloroethene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
Bromochloromethane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,2-dichloroethane	LB002495	mg/kg	0.1	<0.1	0%	96%	98%
1,1,1-trichloroethane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,1-dichloropropene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
Carbon tetrachloride	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
Dibromomethane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
Trichloroethene (Trichloroethylene -TCE)	LB002495	mg/kg	0.1	<0.1	0%	82%	83%
1,1,2-trichloroethane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,3-dichloropropane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
Tetrachloroethene (Perchloroethylene,PCE)	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,1,1,2-tetrachloroethane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
cis-1,4-dichloro-2-butene	LB002495	mg/kg	1	<1	0%	NA	NA
1,1,2,2-tetrachloroethane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,2,3-trichloropropane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
trans-1,4-dichloro-2-butene	LB002495	mg/kg	1	<1	0%	NA	NA
1,2-dibromo-3-chloropropane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
Hexachlorobutadiene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA

Halogenated Aromatics

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Chlorobenzene	LB002495	mg/kg	0.1	<0.1	0%	111%	107%
Bromobenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
2-chlorotoluene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
4-chlorotoluene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,3-dichlorobenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,4-dichlorobenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,2-dichlorobenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,2,4-trichlorobenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,2,3-trichlorobenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA

Monocyclic Aromatic Hydrocarbons

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 (continued)

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB002495	mg/kg	0.1	<0.1	0%	97%	98%
Toluene	LB002495	mg/kg	0.1	<0.1	0%	105%	104%
Ethylbenzene	LB002495	mg/kg	0.1	<0.1	0%	104%	108%
m/p-xylene	LB002495	mg/kg	0.2	<0.2	0%	99%	113%
Styrene (Vinyl benzene)	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
o-xylene	LB002495	mg/kg	0.1	<0.1	0%	101%	106%
Isopropylbenzene (Cumene)	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
n-propylbenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,3,5-trimethylbenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
tert-butylbenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
1,2,4-trimethylbenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
sec-butylbenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
p-isopropyltoluene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
n-butylbenzene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA

Nitrogenous Compounds

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Acrylonitrile	LB002495	mg/kg	0.1	<0.1	0%	NA	NA

Oxygenated Compounds

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Acetone (2-propanone)	LB002495	mg/kg	10	<10	0%	NA	NA
MtBE (Methyl-tert-butyl ether)	LB002495	mg/kg	0.5	<0.5	0%	NA	NA
Vinyl acetate	LB002495	mg/kg	10	<10	0%	NA	NA
MEK (2-butanone)	LB002495	mg/kg	10	<10	0%	NA	NA
MIBK (4-methyl-2-pentanone)	LB002495	mg/kg	1	<1	0%	NA	NA
2-hexanone (MBK)	LB002495	mg/kg	5	<5	0%	NA	NA

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB002495	mg/kg	0.1	<0.1	0%	NA	NA

Sulphonated Compounds

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Carbon disulfide	LB002495	mg/kg	0.5	<0.5	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dibromofluoromethane (Surrogate)	LB002495	%	-	85%	10%	98%	99%
d4-1,2-dichloroethane (Surrogate)	LB002495	%	-	102%	6%	94%	105%
d8-toluene (Surrogate)	LB002495	%	-	97%	29%	100%	102%
Bromofluorobenzene (Surrogate)	LB002495	%	-	107%	0%	105%	108%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total BTEX*	LB002495	mg/kg	-	0	NA	NA	NA
Total Xylenes*	LB002495	mg/kg	0.3	<0.3	0%	NA	NA

Trihalomethanes

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Chloroform	LB002495	mg/kg	0.1	<0.1	0%	79%	83%
Bromodichloromethane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA

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 (continued)

				MB	DUP %RPD	LCS %Recovery	MS %Recovery
Chlorodibromomethane	LB002495	mg/kg	0.1	<0.1	0%	NA	NA
Bromoform	LB002495	mg/kg	0.1	<0.1	0%	NA	NA

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

Fumigants

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
2,2-dichloropropane	LB002526	µg/L	0.5	<0.5	NA
1,2-dichloropropane	LB002526	µg/L	0.5	<0.5	NA
cis-1,3-dichloropropene	LB002526	µg/L	0.5	<0.5	NA
trans-1,3-dichloropropene	LB002526	µg/L	0.5	<0.5	NA
1,2-dibromoethane (EDB)	LB002526	µg/L	0.5	<0.5	NA

Halogenated Aliphatics

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dichlorodifluoromethane (CFC-12)	LB002526	µg/L	5	<5	NA
Chloromethane	LB002526	µg/L	5	<5	NA
Vinyl chloride (Chloroethene)	LB002526	µg/L	0.3	<0.3	NA
Bromomethane	LB002526	µg/L	10	<10	NA
Chloroethane	LB002526	µg/L	5	<5	NA
Trichlorofluoromethane	LB002526	µg/L	1	<1	NA
Iodomethane	LB002526	µg/L	5	<5	NA
1,1-dichloroethene	LB002526	µg/L	0.5	<0.5	109%
Dichloromethane (Methylene chloride)	LB002526	µg/L	5	<5	NA
Allyl chloride	LB002526	µg/L	2	<2	NA
trans-1,2-dichloroethene	LB002526	µg/L	0.5	<0.5	NA
1,1-dichloroethane	LB002526	µg/L	0.5	<0.5	NA
cis-1,2-dichloroethene	LB002526	µg/L	0.5	<0.5	NA
Bromochloromethane	LB002526	µg/L	0.5	<0.5	NA
1,2-dichloroethane	LB002526	µg/L	0.5	<0.5	120%
1,1,1-trichloroethane	LB002526	µg/L	0.5	<0.5	NA
1,1-dichloropropene	LB002526	µg/L	0.5	<0.5	NA
Carbon tetrachloride	LB002526	µg/L	0.5	<0.5	NA
Dibromomethane	LB002526	µg/L	0.5	<0.5	NA
Trichloroethene (Trichloroethylene,TCE)	LB002526	µg/L	0.5	<0.5	106%
1,1,2-trichloroethane	LB002526	µg/L	0.5	<0.5	NA
1,3-dichloropropane	LB002526	µg/L	0.5	<0.5	NA
Tetrachloroethene (Perchloroethylene,PCE)	LB002526	µg/L	0.5	<0.5	NA
1,1,1,2-tetrachloroethane	LB002526	µg/L	0.5	<0.5	NA
cis-1,4-dichloro-2-butene	LB002526	µg/L	1	<1	NA
1,1,2,2-tetrachloroethane	LB002526	µg/L	0.5	<0.5	NA
1,2,3-trichloropropane	LB002526	µg/L	0.5	<0.5	NA
trans-1,4-dichloro-2-butene	LB002526	µg/L	1	<1	NA
1,2-dibromo-3-chloropropane	LB002526	µg/L	0.5	<0.5	NA
Hexachlorobutadiene	LB002526	µg/L	0.5	<0.5	NA

Halogenated Aromatics

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Chlorobenzene	LB002526	µg/L	0.5	<0.5	112%
Bromobenzene	LB002526	µg/L	0.5	<0.5	NA
2-chlorotoluene	LB002526	µg/L	0.5	<0.5	NA
4-chlorotoluene	LB002526	µg/L	0.5	<0.5	NA
1,3-dichlorobenzene	LB002526	µg/L	0.5	<0.5	NA
1,4-dichlorobenzene	LB002526	µg/L	0.3	<0.3	NA
1,2-dichlorobenzene	LB002526	µg/L	0.5	<0.5	NA
1,2,4-trichlorobenzene	LB002526	µg/L	0.5	<0.5	NA

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.

VOCs in Water Method: ME-(AU)-[ENV]AN433/AN434 (continued)

				MB	LCS %Recovery
1,2,3-trichlorobenzene	LB002526	µg/L	0.5	<0.5	NA

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Benzene	LB002526	µg/L	0.5	<0.5	116%
Toluene	LB002526	µg/L	0.5	<0.5	120%
Ethylbenzene	LB002526	µg/L	0.5	<0.5	115%
m/p-xylene	LB002526	µg/L	1	<1	103%
Styrene (Vinyl benzene)	LB002526	µg/L	0.5	<0.5	NA
o-xylene	LB002526	µg/L	0.5	<0.5	111%
Isopropylbenzene (Cumene)	LB002526	µg/L	0.5	<0.5	NA
n-propylbenzene	LB002526	µg/L	0.5	<0.5	NA
1,3,5-trimethylbenzene	LB002526	µg/L	0.5	<0.5	NA
tert-butylbenzene	LB002526	µg/L	0.5	<0.5	NA
1,2,4-trimethylbenzene	LB002526	µg/L	0.5	<0.5	NA
sec-butylbenzene	LB002526	µg/L	0.5	<0.5	NA
p-isopropyltoluene	LB002526	µg/L	0.5	<0.5	NA
n-butylbenzene	LB002526	µg/L	0.5	<0.5	NA

Nitrogenous Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Acrylonitrile	LB002526	µg/L	0.5	<0.5	NA

Oxygenated Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Acetone (2-propanone)	LB002526	µg/L	10	<10	NA
MtBE (Methyl-tert-butyl ether)	LB002526	µg/L	2	<2	NA
Vinyl acetate	LB002526	µg/L	10	<10	NA
MEK (2-butanone)	LB002526	µg/L	10	<10	NA
MIBK (4-methyl-2-pentanone)	LB002526	µg/L	5	<5	NA
2-hexanone (MBK)	LB002526	µg/L	5	<5	NA

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB002526	µg/L	0.5	<0.5	NA

Sulphonated Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Carbon disulfide	LB002526	µg/L	2	<2	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dibromofluoromethane (Surrogate)	LB002526	%	-	108%	100%
d4-1,2-dichloroethane (Surrogate)	LB002526	%	-	117%	103%
d8-toluene (Surrogate)	LB002526	%	-	101%	97%
Bromofluorobenzene (Surrogate)	LB002526	%	-	105%	118%

Trihalomethanes

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Chloroform (THM)	LB002526	µg/L	0.5	<0.5	95%
Bromodichloromethane (THM)	LB002526	µg/L	0.5	<0.5	NA
Dibromochloromethane (THM)	LB002526	µg/L	0.5	<0.5	NA
Bromoform (THM)	LB002526	µg/L	0.5	<0.5	NA

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.

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C9	LB002495	mg/kg	20	<20	0%	99%	131%
Benzene	LB002495	mg/kg	0.1	<0.1		70%	
Toluene	LB002495	mg/kg	0.1	<0.1		69%	
Ethylbenzene	LB002495	mg/kg	0.1	<0.1		69%	
m/p-xylene	LB002495	mg/kg	1	<1		68%	
o-xylene	LB002495	mg/kg	0.5	<0.5		69%	
Total Xylenes	LB002495	mg/kg	0.3	<0.3		69%	
Total BTEX*	LB002495	mg/kg	2.7	<2.7		NA	

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Trifluorotoluene (Surrogate)	LB002495	%	-	127%	10%	67%	71%

Volatile Petroleum Hydrocarbons in Water Method: ME-(AU)-(ENV)AN433/AN434

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C6-C9	LB002526	µg/L	40	<40	123%
Benzene	LB002526	µg/L	0.5	<0.5	96%
Toluene	LB002526	µg/L	0.5	<0.5	94%
Ethylbenzene	LB002526	µg/L	0.5	<0.5	96%
m/p-xylene	LB002526	µg/L	1	<1	94%
o-xylene	LB002526	µg/L	0.5	<0.5	96%
Total BTEX*	LB002526	µg/L	3		NA
Total Xylenes*	LB002526	µg/L	1.5		NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Trifluorotoluene (Surrogate)	LB002526	%	-	87%	69%

METHOD

METHODOLOGY SUMMARY

AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
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.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN088	Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700.
AN234	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.
AN311/AN312	Mercury by Cold Vapour AAS in Waters: 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.
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
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
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.
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 elluent 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, dependant 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).

METHOD

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.

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. Accreditation does not cover the identification of Organic or Synthetic Mineral Fibres.

METHODOLOGY SUMMARY

FOOTNOTES

IS Insufficient sample for analysis.
 LNR Sample listed, but not received.
 * This analysis is not covered by the scope of accreditation.
 ^ Performed by outside laboratory.
 LOR Limit of Reporting
 ↑↓ Raised or Lowered Limit of Reporting

QFH QC result is above the upper tolerance
 QFL QC result is below the lower tolerance
 - The sample was not analysed for this analyte

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

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

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.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf>

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