UNIVERSITY OF QUEENSLAND EXPERIMENTAL MINE
DETAILED SITE INVESTIGATION

Volume 3 of 3

Appendix I Soil Laboratory Certificates and Chain of Custody Documentation

eurofins | mgt

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name: NAA	Contact Name: Steven Sherrington	Purchase Order: J122934	COC Number:
Office Address: 2 Maryview St Milton QLD 4064	Project Manager: " "	PROJECT Number: "	Eurofins | mgt quote ID:
Special Directions & Comments:	Email for results: steve.sherrington@noel-arnold.com.au	PROJECT Name: UQEM DSI	Data output format:

Eurofins | mgt PM and/or Batch number

	Sample ID	Date	Matrix	Analytes: Metals M7	Ra	Hold	Containers: 1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:
1	GW1 0.1	18/10	Soil	X											
2	GW1 0.3	"	"	X											
3	GW1 1	"	"	X											
4	GW1 1R	"	"	X											
5	GW1 1.2			X											
6	GW1 [redacted]2			X											
7	GW1 3.2	"	"	X											
8	GW1 3.5					X									
9	GW1 4					X									
10	GW1 5					X									
11	GW1 6	"	"			X									
12	GW2 0.1			X											
13	GW2 0.2			X	X										
14	GW2 0.2R			X	X										
15	GW2 0.7	"	"	X											
16	GW2 2					X									

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
Relinquished By: S Sherrington	Received By: [signature]	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☐ Courier	7.4
Date & Time: 18/10/13	Date & Time: 1pm. 18/10/13	5 DAY ☑ 10 DAY ☐ Other:	☐ Hand Delivered	Report number: 396797
Signature: [signature]	Signature: [signature]		☐ Postal
			Courier Consignment #:

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

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

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: UQEM DSI J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Oct 18, 2013 1:00 PM
Eurofins | mgt reference: **396797**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **396797-S**
Client Reference UQEM DSI J122934
Received Date Oct 18, 2013

Client Sample ID			**GW1 0.1**	**GW1 0.3**	**GW1 1**	**GW1 1R**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc14594**	**B13-Oc14595**	**B13-Oc14596**	**B13-Oc14597**
Date Sampled			**Oct 18, 2013**	**Oct 18, 2013**	**Oct 18, 2013**	**Oct 18, 2013**
Test/Reference	LOR	Unit				
% Moisture	0.1	%	13	10	19	18
Heavy Metals						
Arsenic	2	mg/kg	27	21	20	19
Cadmium	0.5	mg/kg	< 0.5	< 0.5	0.7	0.7
Chromium	5	mg/kg	24	22	23	24
Copper	5	mg/kg	46	51	80	68
Lead	5	mg/kg	92	65	1900	900
Nickel	5	mg/kg	21	22	26	25
Zinc	5	mg/kg	73	53	100	91

Client Sample ID			**GW1 1.2**	**GW1 2**	**GW1 3.2**	**GW2 0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc14598**	**B13-Oc14599**	**B13-Oc14600**	**B13-Oc14601**
Date Sampled			**Oct 18, 2013**	**Oct 18, 2013**	**Oct 18, 2013**	**Oct 18, 2013**
Test/Reference	LOR	Unit				
% Moisture	0.1	%	18	24	10	15
Heavy Metals						
Arsenic	2	mg/kg	13	9.4	9.6	26
Cadmium	0.5	mg/kg	0.9	< 0.5	< 0.5	6.3
Chromium	5	mg/kg	26	37	23	16
Copper	5	mg/kg	50	37	13	200
Lead	5	mg/kg	550	36	13	5400
Nickel	5	mg/kg	34	27	6.4	19
Zinc	5	mg/kg	80	55	28	270

Client Sample ID			GW2 0.2	GW2 0.2R	GW2 0.7	GW3 0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			B13-Oc14602	B13-Oc14603	B13-Oc14604	B13-Oc14605
Date Sampled			Oct 18, 2013	Oct 18, 2013	Oct 18, 2013	Oct 18, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	< 50
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ*	0.5	mg/kg	0.6	0.6	-	0.6
2-Fluorobiphenyl (surr.)	1	%	90	88	-	95
p-Terphenyl-d14 (surr.)	1	%	92	91	-	97
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	GW2 0.2 Soil B13-Oc14602 Oct 18, 2013	GW2 0.2R Soil B13-Oc14603 Oct 18, 2013	GW2 0.7 Soil B13-Oc14604 Oct 18, 2013	GW3 0.1 Soil B13-Oc14605 Oct 18, 2013
Organochlorine Pesticides						
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	130	113	-	120
Tetrachloro-m-xylene (surr.)	1	%	125	110	-	112
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Total PCB	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	130	113	-	120
Tetrachloro-m-xylene (surr.)	1	%	125	110	-	112
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4.5-Trichlorophenol	1.0	mg/kg	< 1	< 1	-	< 1
2.4.6-Trichlorophenol	1.0	mg/kg	< 1	< 1	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	-	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	-	< 1
Tetrachlorophenols - Total	1.0	mg/kg	< 1	< 1	-	< 1
Total Halogenated Phenol	1	mg/kg	< 1	< 1	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	-	< 5
Dinoseb	20	mg/kg	< 20	< 20	-	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	-	< 20
Phenol-d6 (surr.)	1	%	86	84	-	88
Chromium (hexavalent)	1	mg/kg	< 1	< 1	-	< 1
Cyanide (free)	5	mg/kg	< 5	< 5	-	< 5
Cyanide (total)	5	mg/kg	< 5	< 5	-	< 5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	GW2 0.2 Soil B13-Oc14602 Oct 18, 2013	GW2 0.2R Soil B13-Oc14603 Oct 18, 2013	GW2 0.7 Soil B13-Oc14604 Oct 18, 2013	GW3 0.1 Soil B13-Oc14605 Oct 18, 2013
Sulphate (as S)	10	mg/kg	36	35	-	20
Phosphorus	5	mg/kg	190	190	-	360
Sulphur	5	mg/kg	54	50	-	210
% Moisture	0.1	%	23	20	20	9.8
Heavy Metals						
Arsenic	2	mg/kg	25	37	5.4	43
Barium	5	mg/kg	94	110	-	57
Beryllium	5	mg/kg	< 5	< 5	-	< 5
Boron	10	mg/kg	< 10	< 10	-	< 10
Cadmium	0.5	mg/kg	4.1	3.5	15	5.1
Chromium	5	mg/kg	5.3	6.5	28	13
Cobalt	5	mg/kg	< 5	< 5	-	7.3
Copper	5	mg/kg	460	540	24	210
Lead	5	mg/kg	19000	19000	720	12000
Manganese	5	mg/kg	1300	940	-	1500
Mercury	0.1	mg/kg	0.1	< 0.1	-	< 0.1
Nickel	5	mg/kg	13	11	34	12
Vanadium	10	mg/kg	29	33	-	31
Zinc	5	mg/kg	520	380	260	570
NEPM 1999 Metals : Metals M14						
Chromium (trivalent)	5	mg/kg	5.3	6.5	-	13

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	GW3 0.2 Soil B13-Oc14606 Oct 18, 2013	GW3 0.4 Soil B13-Oc14607 Oct 18, 2013	GW3 1.5 Soil B13-Oc14608 Oct 18, 2013	GW3 2.6 Soil B13-Oc14609 Oct 18, 2013
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	-	< 50	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	GW3 0.2 Soil B13-Oc14606 Oct 18, 2013	GW3 0.4 Soil B13-Oc14607 Oct 18, 2013	GW3 1.5 Soil B13-Oc14608 Oct 18, 2013	GW3 2.6 Soil B13-Oc14609 Oct 18, 2013
Polycyclic Aromatic Hydrocarbons						
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ*	0.5	mg/kg	-	0.6	-	-
2-Fluorobiphenyl (surr.)	1	%	-	92	-	-
p-Terphenyl-d14 (surr.)	1	%	-	93	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Dibutylchlorendate (surr.)	1	%	-	143	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	140	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	GW3 0.2 Soil B13-Oc14606 Oct 18, 2013	GW3 0.4 Soil B13-Oc14607 Oct 18, 2013	GW3 1.5 Soil B13-Oc14608 Oct 18, 2013	GW3 2.6 Soil B13-Oc14609 Oct 18, 2013
Polychlorinated Biphenyls						
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	-
Total PCB	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	143	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	140	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4.5-Trichlorophenol	1.0	mg/kg	-	< 1	-	-
2.4.6-Trichlorophenol	1.0	mg/kg	-	< 1	-	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
4-Chloro-3-methylphenol	1.0	mg/kg	-	< 1	-	-
Pentachlorophenol	1.0	mg/kg	-	< 1	-	-
Tetrachlorophenols - Total	1.0	mg/kg	-	< 1	-	-
Total Halogenated Phenol	1	mg/kg	-	< 1	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	-	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-
Total Non-Halogenated Phenol	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	88	-	-
Chromium (hexavalent)	1	mg/kg	-	< 1	-	-
Cyanide (free)	5	mg/kg	-	< 5	-	-
Cyanide (total)	5	mg/kg	-	< 5	-	-
Sulphate (as S)	10	mg/kg	-	43	-	-
Phosphorus	5	mg/kg	-	290	-	-
Sulphur	5	mg/kg	-	77	-	-
% Moisture	0.1	%	12	25	32	27
Heavy Metals						
Arsenic	2	mg/kg	50	46	46	5.0
Barium	5	mg/kg	-	89	-	-
Beryllium	5	mg/kg	-	< 5	-	-
Boron	10	mg/kg	-	< 10	-	-
Cadmium	0.5	mg/kg	4.5	5.0	6.5	< 0.5
Chromium	5	mg/kg	6.6	11	6.4	30
Cobalt	5	mg/kg	-	< 5	-	-
Copper	5	mg/kg	310	430	650	26
Lead	5	mg/kg	21000	26000	110000	120
Manganese	5	mg/kg	-	4900	-	-
Mercury	0.1	mg/kg	-	< 0.1	-	-
Nickel	5	mg/kg	7.6	11	7.6	46

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	GW3 0.2 Soil B13-Oc14606 Oct 18, 2013	GW3 0.4 Soil B13-Oc14607 Oct 18, 2013	GW3 1.5 Soil B13-Oc14608 Oct 18, 2013	GW3 2.6 Soil B13-Oc14609 Oct 18, 2013
Heavy Metals						
Vanadium	10	mg/kg	-	31	-	-
Zinc	5	mg/kg	630	740	480	64
NEPM 1999 Metals : Metals M14						
Chromium (trivalent)	5	mg/kg	-	11	-	-

Sample History

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

Description	Testing Site	Extracted	Holding Time
NEPM HIL Screen: 1999 B(1)HIL Table 5A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Brisbane	Oct 21, 2013	14 Day
- Method: TRH C6-C36 - MGT 100A (not NATA accredited)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Oct 21, 2013	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Brisbane	Oct 21, 2013	14 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Oct 22, 2013	14 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Polychlorinated Biphenyls	Melbourne	Oct 22, 2013	28 Day
- Method: USEPA 8082 Polychlorinated Biphenyls			
Phenols (Halogenated)	Brisbane	Oct 21, 2013	14 Day
- Method: USEPA 8270 Phenols			
Phenols (non-Halogenated)	Brisbane	Oct 21, 2013	14 Day
- Method: USEPA 8270 Phenols			
Chromium (hexavalent)	Melbourne	Oct 22, 2013	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Oct 23, 2013	14 Day
- Method: USEPA 9010 Cyanide			
Sulphate (as S)	Melbourne	Oct 23, 2013	28 Day
- Method: In house MGT1110A (SO4 by Discrete Analyser)			
Phosphorus	Melbourne	Oct 22, 2013	180 Day
- Method: USEPA 6010			
Sulphur	Melbourne	Oct 22, 2013	7 Day
- Method: LTM-MET-3010			
NEPM 1999 Metals : Metals M14	Brisbane	Oct 21, 2013	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
% Moisture	Brisbane	Oct 21, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			
Metals M7	Brisbane	Oct 21, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Company Name: Noel Arnold & Associates (QLD)
Address: 2 Mayneview St
Milton
QLD 4066

Client Job No.: UQEM DSI J122934

Order No.:
Report #: 396797
Phone: 07 3514 9222
Fax: 07 3514 9220

Received: Oct 18, 2013 1:00 PM
Due: Oct 25, 2013
Priority: 5 Day
Contact Name: Steven Sherrington

Eurofins | mgt Client Manager: Mark Rodriquez

Sample Detail					% Moisture	HOLD	Metals M7	NEPM HIL Screen: 1999 B(1)HIL Table 5A
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271								X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794					X	X	X	
External Laboratory								
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
GW1 0.1	Oct 18, 2013		Soil	B13-Oc14594	X		X	
GW1 0.3	Oct 18, 2013		Soil	B13-Oc14595	X		X	
GW1 1	Oct 18, 2013		Soil	B13-Oc14596	X		X	
GW1 1R	Oct 18, 2013		Soil	B13-Oc14597	X		X	
GW1 1.2	Oct 18, 2013		Soil	B13-Oc14598	X		X	
GW1 2	Oct 18, 2013		Soil	B13-Oc14599	X		X	
GW1 3.2	Oct 18, 2013		Soil	B13-Oc14600	X		X	
GW2 0.1	Oct 18, 2013		Soil	B13-Oc14601	X		X	
GW2 0.2	Oct 18, 2013		Soil	B13-Oc14602	X			X
GW2 0.2R	Oct 18, 2013		Soil	B13-Oc14603	X			X

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Sample Detail					% Moisture	HOLD	Metals M7	NEPM HIL Screen: 1999 B(1)HIL Table 5A
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271								X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794					X	X	X	
External Laboratory								
GW2 0.7	Oct 18, 2013		Soil	B13-Oc14604	X		X	
GW3 0.1	Oct 18, 2013		Soil	B13-Oc14605	X			X
GW3 0.2	Oct 18, 2013		Soil	B13-Oc14606	X		X	
GW3 0.4	Oct 18, 2013		Soil	B13-Oc14607	X			X
GW3 1.5	Oct 18, 2013		Soil	B13-Oc14608	X		X	
GW3 2.6	Oct 18, 2013		Soil	B13-Oc14609	X		X	
GW1 3.5	Oct 18, 2013		Soil	B13-Oc14610		X		
GW1 4	Oct 18, 2013		Soil	B13-Oc14611		X		
GW1 5	Oct 18, 2013		Soil	B13-Oc14612		X		
GW1 6	Oct 18, 2013		Soil	B13-Oc14613		X		
GW2 2	Oct 18, 2013		Soil	B13-Oc14614		X		

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Eurofins | mgt Client Manager: Mark Rodriquez

Sample Detail					% Moisture	HOLD	Metals M7	NEPM HIL Screen: 1999 B(1)HIL Table 5A
Laboratory where analysis is conducted								
Melbourne Laboratory - NATA Site # 1254 & 14271								X
Sydney Laboratory - NATA Site # 18217								
Brisbane Laboratory - NATA Site # 20794					X	X	X	
External Laboratory								
GW2 2.5	Oct 18, 2013		Soil	B13-Oc14615		X		
GW2 3.3	Oct 18, 2013		Soil	B13-Oc14616		X		
GW3 3.5	Oct 18, 2013		Soil	B13-Oc14617		X		

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions LM-LTM-ORG2010							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons USEPA 8270 Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides USEPA 8081 Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls USEPA 8082 Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB	mg/kg	0			0.1	Pass	
Method Blank							
Phenols (Halogenated) USEPA 8270 Phenols							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1.0	Pass	
Pentachlorophenol	mg/kg	< 1			1.0	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1.0	Pass	
Method Blank							
Phenols (non-Halogenated) USEPA 8270 Phenols							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Sulphate (as S)	mg/kg	< 10			10	Pass	
Method Blank							
Metals M7 USEPA 6010/6020 Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 5			5	Pass	
Beryllium	mg/kg	< 5			5	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C6-C36 - MGT 100A							
TRH C6-C9	%	97			70-130	Pass	
TRH C10-C14	%	79			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions LM-LTM-ORG2010							
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	81			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons USEPA 8270 Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	102			70-130	Pass	
Acenaphthylene	%	102			70-130	Pass	
Anthracene	%	108			70-130	Pass	
Benz(a)anthracene	%	104			70-130	Pass	
Benzo(a)pyrene	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	%	81			70-130	Pass	
Benzo(g.h.i)perylene	%	100			70-130	Pass	
Benzo(k)fluoranthene	%	113			70-130	Pass	
Chrysene	%	102			70-130	Pass	
Dibenz(a.h)anthracene	%	99			70-130	Pass	
Fluoranthene	%	105			70-130	Pass	
Fluorene	%	102			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	100			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
Phenanthrene	%	100			70-130	Pass	
Pyrene	%	100			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides USEPA 8081 Organochlorine Pesticides							
4.4'-DDD	%	119			70-130	Pass	
4.4'-DDE	%	119			70-130	Pass	
4.4'-DDT	%	84			70-130	Pass	
a-BHC	%	110			70-130	Pass	
Aldrin	%	106			70-130	Pass	
b-BHC	%	108			70-130	Pass	
d-BHC	%	111			70-130	Pass	
Dieldrin	%	98			70-130	Pass	
Endosulfan I	%	104			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	94			70-130	Pass	
Endrin	%	97			70-130	Pass	
Endrin aldehyde	%	99			70-130	Pass	
Endrin ketone	%	81			70-130	Pass	
g-BHC (Lindane)	%	103			70-130	Pass	
Heptachlor	%	78			70-130	Pass	
Heptachlor epoxide	%	102			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	%	108			70-130	Pass	
Methoxychlor	%	117			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls USEPA 8082 Polychlorinated Biphenyls							
Aroclor-1260	%	105			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated) USEPA 8270 Phenols							
2-Chlorophenol	%	95			30-130	Pass	
2.4-Dichlorophenol	%	94			30-130	Pass	
2.4.5-Trichlorophenol	%	96			30-130	Pass	
2.4.6-Trichlorophenol	%	97			30-130	Pass	
2.6-Dichlorophenol	%	95			30-130	Pass	
4-Chloro-3-methylphenol	%	101			30-130	Pass	
Pentachlorophenol	%	87			30-130	Pass	
Tetrachlorophenols - Total	%	92			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated) USEPA 8270 Phenols							
2-Cyclohexyl-4.6-dinitrophenol	%	52			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	60			30-130	Pass	
2-Methylphenol (o-Cresol)	%	94			30-130	Pass	
2-Nitrophenol	%	95			30-130	Pass	
2.4-Dimethylphenol	%	93			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	95			30-130	Pass	
4-Nitrophenol	%	74			30-130	Pass	
Dinoseb	%	80			30-130	Pass	
Phenol	%	96			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	107			70-130	Pass	
Cyanide (total)	%	87			70-130	Pass	
Sulphate (as S)	%	93			70-130	Pass	
LCS - % Recovery							
Metals M7 USEPA 6010/6020 Heavy Metals							
Arsenic	%	105			80-120	Pass	
Arsenic	%	98			80-120	Pass	
Barium	%	101			80-120	Pass	
Beryllium	%	100			80-120	Pass	
Boron	%	86			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Cadmium	%	92			80-120	Pass	
Chromium	%	105			80-120	Pass	
Chromium	%	98			80-120	Pass	
Cobalt	%	91			80-120	Pass	
Copper	%	96			80-120	Pass	
Copper	%	90			80-120	Pass	
Lead	%	98			80-120	Pass	
Lead	%	120			80-120	Pass	
Manganese	%	101			80-120	Pass	
Mercury	%	82			70-130	Pass	
Nickel	%	94			80-120	Pass	
Nickel	%	85			80-120	Pass	
Vanadium	%	101			80-120	Pass	
Zinc	%	112			80-120	Pass	
Zinc	%	105			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
NEPM 1999 Metals : Metals M14				Result 1					
Barium	B13-Oc14594	CP	%	109			75-125	Pass	
Lead	B13-Oc14594	CP	%	118			75-125	Pass	
Manganese	B13-Oc14594	CP	%	96			75-125	Pass	
Nickel	B13-Oc14594	CP	%	98			75-125	Pass	
Vanadium	B13-Oc14594	CP	%	75			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	B13-Oc14602	CP	%	82			70-130	Pass	
TRH C10-C14	M13-Oc15104	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	B13-Oc14602	CP	%	80			70-130	Pass	
TRH >C10-C16	M13-Oc15104	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B13-Oc14602	CP	%	92			70-130	Pass	
Acenaphthylene	B13-Oc14602	CP	%	91			70-130	Pass	
Anthracene	B13-Oc14602	CP	%	98			70-130	Pass	
Benz(a)anthracene	B13-Oc14602	CP	%	92			70-130	Pass	
Benzo(a)pyrene	B13-Oc14602	CP	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	B13-Oc14602	CP	%	79			70-130	Pass	
Benzo(g.h.i)perylene	B13-Oc14602	CP	%	89			70-130	Pass	
Benzo(k)fluoranthene	B13-Oc14602	CP	%	91			70-130	Pass	
Chrysene	B13-Oc14602	CP	%	92			70-130	Pass	
Dibenz(a.h)anthracene	B13-Oc14602	CP	%	87			70-130	Pass	
Fluoranthene	B13-Oc14602	CP	%	92			70-130	Pass	
Fluorene	B13-Oc14602	CP	%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene	B13-Oc14602	CP	%	89			70-130	Pass	
Naphthalene	B13-Oc14602	CP	%	90			70-130	Pass	
Phenanthrene	B13-Oc14602	CP	%	90			70-130	Pass	
Pyrene	B13-Oc14602	CP	%	90			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M13-Oc14076	NCP	%	123			70-130	Pass	
4.4'-DDE	M13-Oc14076	NCP	%	117			70-130	Pass	
4.4'-DDT	M13-Oc14076	NCP	%	116			70-130	Pass	
a-BHC	M13-Oc14076	NCP	%	124			70-130	Pass	
Aldrin	M13-Oc14076	NCP	%	118			70-130	Pass	
b-BHC	M13-Oc14076	NCP	%	120			70-130	Pass	
d-BHC	M13-Oc14076	NCP	%	126			70-130	Pass	
Dieldrin	M13-Oc14076	NCP	%	104			70-130	Pass	
Endosulfan I	M13-Oc14076	NCP	%	112			70-130	Pass	
Endosulfan II	M13-Oc14076	NCP	%	109			70-130	Pass	
Endosulfan sulphate	M13-Oc14076	NCP	%	97			70-130	Pass	
Endrin	M13-Oc14076	NCP	%	107			70-130	Pass	
Endrin aldehyde	M13-Oc14076	NCP	%	106			70-130	Pass	
Endrin ketone	M13-Oc14076	NCP	%	94			70-130	Pass	
g-BHC (Lindane)	M13-Oc14076	NCP	%	121			70-130	Pass	
Heptachlor	M13-Oc14076	NCP	%	98			70-130	Pass	
Heptachlor epoxide	M13-Oc14076	NCP	%	111			70-130	Pass	
Hexachlorobenzene	M13-Oc14076	NCP	%	123			70-130	Pass	
Methoxychlor	M13-Oc14076	NCP	%	123			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M13-Oc10793	NCP	%	117			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	B13-Oc14602	CP	%	88			30-130	Pass	
2.4-Dichlorophenol	B13-Oc14602	CP	%	86			30-130	Pass	
2.4.5-Trichlorophenol	B13-Oc14602	CP	%	94			30-130	Pass	
2.4.6-Trichlorophenol	B13-Oc14602	CP	%	89			30-130	Pass	
2.6-Dichlorophenol	B13-Oc14602	CP	%	88			30-130	Pass	
4-Chloro-3-methylphenol	B13-Oc14602	CP	%	92			30-130	Pass	
Pentachlorophenol	B13-Oc14602	CP	%	88			30-130	Pass	
Tetrachlorophenols - Total	B13-Oc14602	CP	%	89			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	B13-Oc14602	CP	%	50			30-130	Pass	
2-Methyl-4.6-dinitrophenol	B13-Oc14602	CP	%	70			30-130	Pass	
2-Methylphenol (o-Cresol)	B13-Oc14602	CP	%	86			30-130	Pass	
2-Nitrophenol	B13-Oc14602	CP	%	89			30-130	Pass	
2.4-Dimethylphenol	B13-Oc14602	CP	%	80			30-130	Pass	
2.4-Dinitrophenol	B13-Oc14602	CP	%	65			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	B13-Oc14602	CP	%	89			30-130	Pass	
4-Nitrophenol	B13-Oc14602	CP	%	77			30-130	Pass	
Dinoseb	B13-Oc14602	CP	%	75			30-130	Pass	
Phenol	B13-Oc14602	CP	%	88			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	B13-Oc14602	CP	%	97			70-130	Pass	
Cyanide (total)	B13-Oc14602	CP	%	71			70-130	Pass	
Sulphate (as S)	M13-Oc14553	NCP	%	97			70-130	Pass	
Spike - % Recovery									
NEPM 1999 Metals : Metals M14				Result 1					
Barium	B13-Oc14602	CP	%	116			75-125	Pass	
Chromium	B13-Oc14602	CP	%	85			75-125	Pass	
Chromium	B13-Oc14602	CP	%	85			75-125	Pass	
Copper	B13-Oc14602	CP	%	100			75-125	Pass	
Copper	B13-Oc14602	CP	%	100			75-125	Pass	
Mercury	B13-Oc14602	CP	%	92			70-130	Pass	
Nickel	B13-Oc14602	CP	%	95			75-125	Pass	
Nickel	B13-Oc14602	CP	%	95			75-125	Pass	
Vanadium	B13-Oc14602	CP	%	85			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Metals M7				Result 1	Result 2	RPD			
Arsenic	B13-Oc14594	CP	mg/kg	27	27	1.0	30%	Pass	
Barium	B13-Oc14594	CP	mg/kg	130	130	4.0	30%	Pass	
Beryllium	B13-Oc14594	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Boron	B13-Oc14594	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	B13-Oc14594	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium	B13-Oc14594	CP	mg/kg	24	24	2.0	30%	Pass	
Cobalt	B13-Oc14594	CP	mg/kg	8.4	8.5	1.0	30%	Pass	
Copper	B13-Oc14594	CP	mg/kg	46	48	3.0	30%	Pass	
Lead	B13-Oc14594	CP	mg/kg	92	97	5.0	30%	Pass	
Manganese	B13-Oc14594	CP	mg/kg	350	360	3.0	30%	Pass	
Nickel	B13-Oc14594	CP	mg/kg	21	22	3.0	30%	Pass	

Duplicate									
Metals M7				Result 1	Result 2	RPD			
Vanadium	B13-Oc14594	CP	mg/kg	48	50	4.0	30%	Pass	
Zinc	B13-Oc14594	CP	mg/kg	73	75	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	B13-Oc16083	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M13-Oc15104	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M13-Oc15104	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M13-Oc15104	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	B13-Oc16083	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	B13-Oc16083	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	B13-Oc16083	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M13-Oc15104	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M13-Oc15104	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M13-Oc15104	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M13-Oc14076	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Hexachlorobenzene	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M13-Oc14076	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M13-Oc14076	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M13-Oc14076	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M13-Oc14076	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M13-Oc14076	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M13-Oc14076	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M13-Oc14076	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M13-Oc14076	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M13-Oc14076	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB	M13-Oc14076	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	B13-Oc14602	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	B13-Oc14602	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	B13-Oc14602	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	B13-Oc14602	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	B13-Oc14602	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	B13-Oc14602	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	B13-Oc14602	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	B13-Oc14602	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	B13-Oc14602	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	B13-Oc14602	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	B13-Oc14602	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	B13-Oc14602	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	B13-Oc14602	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	B13-Oc14602	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	B13-Oc14602	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Cyanide (total)	B13-Oc14602	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Sulphate (as S)	M13-Oc14553	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Phosphorus	B13-Oc14602	CP	mg/kg	190	180	5.0	30%	Pass	
Sulphur	B13-Oc14602	CP	mg/kg	54	52	5.0	30%	Pass	
Duplicate									
Metals M7				Result 1	Result 2	RPD			
Arsenic	B13-Oc14602	CP	mg/kg	25	25	3.0	30%	Pass	
Arsenic	B13-Oc14602	CP	mg/kg	25	25	3.0	30%	Pass	
Barium	B13-Oc14602	CP	mg/kg	94	100	7.0	30%	Pass	
Beryllium	B13-Oc14602	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Boron	B13-Oc14602	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	B13-Oc14602	CP	mg/kg	4.1	4.1	<1	30%	Pass	
Cadmium	B13-Oc14602	CP	mg/kg	4.1	4.1	<1	30%	Pass	
Chromium	B13-Oc14602	CP	mg/kg	5.3	5.4	3.0	30%	Pass	
Chromium	B13-Oc14602	CP	mg/kg	5.3	5.4	3.0	30%	Pass	
Cobalt	B13-Oc14602	CP	mg/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Metals M7				Result 1	Result 2	RPD			
Copper	B13-Oc14602	CP	mg/kg	460	480	4.0	30%	Pass	
Copper	B13-Oc14602	CP	mg/kg	460	480	4.0	30%	Pass	
Lead	B13-Oc14602	CP	mg/kg	19000	20000	2.0	30%	Pass	
Lead	B13-Oc14602	CP	mg/kg	19000	20000	2.0	30%	Pass	
Manganese	B13-Oc14602	CP	mg/kg	1300	1400	1.0	30%	Pass	
Mercury	B13-Oc14602	CP	mg/kg	0.1	0.1	15	30%	Pass	
Nickel	B13-Oc14602	CP	mg/kg	13	14	8.0	30%	Pass	
Nickel	B13-Oc14602	CP	mg/kg	13	14	8.0	30%	Pass	
Vanadium	B13-Oc14602	CP	mg/kg	29	30	4.0	30%	Pass	
Zinc	B13-Oc14602	CP	mg/kg	520	540	2.0	30%	Pass	
Zinc	B13-Oc14602	CP	mg/kg	520	540	2.0	30%	Pass	
Duplicate									
Metals M7				Result 1	Result 2	RPD			
Lead	B13-Oc14606	CP	mg/kg	21000	23000	8.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Richard Corner	Senior Analyst-Organic (QLD)
Richard Corner	Senior Analyst-Volatile (QLD)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Michael Wright

National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

Page 1 of 3

CLIENT DETAILS

Company Name : NAA	Contact Name : Steven Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Mayneview St Milton QLD 4064	Project Manager : " "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : Steve Sherrington	PROJECT Name : UQEM DSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

	Sample ID	Date	Matrix	Metals M7	R9	Hold	1LP	250P	125P	1LA	40mL vial	125mL A	Jar	Sample comments:
1	BH01 0.1	21/10	Soil	X										
2	" 0.3			X										
3	" 0.7					X								
4	" 0.8					X								
5	" 1.6					X								
6	" 2					X								
7	" 2.5					X								
8	BH02 0.05			X										
9	" 0.15			X										
10	" 0.5			X										
11	" 1.2			X										
12	" 3					X								
13	" 3.2					X								
14	" 3.7					X								
15	BH03 0.1			X										
16	" 0.2					X								

Relinquished By:	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Received By: Myles Clark	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☑ Courier ☐ Hand Delivered ☐ Postal	8.9
Date & Time : 21/10/13	Date & Time : 22/10/13 11:30am	5 DAY ☑ 10 DAY ☐ Other:	Courier Consignment #:	Report number: 397097
Signature:	Signature:			

☑ CN HD AP CR # CON NOTES POST CODE MASS

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Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 2 of 3

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Magnavieu St Milton	Project Manager : " "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : " "	PROJECT Name : UQEM DSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Metals M7	R9	Hold
1	BH03 0.3	21/10	Soil	X		
2	" 0.3R			X		
3	" 0.5					X
4	" 0.7			X		
5	" 2			X		
6	" 2.7			X		
7	BH04 0.1			X		
8	" 0.3					X
9	" 0.5			X		
10	" 0.8			X		
11	" 1.0			X		
12	" 1.0R			X		
13	" 1.5					X
14	" 2					X
15	" 2.5			X		
16	" 2.7			X		

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:

Relinquished By:	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Received By: Myles Clark	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☐ Courier ☐ Hand Delivered ☐ Postal	8.9
Date & Time : 21/10/13	Date & Time : 22/10/13 11:30 am	5 DAY ☑ 10 DAY ☐ Other:	Courier Consignment # :	Report number: 397097
Signature: [signature]	Signature: [signature]			

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 3 of 3

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : 5122934	COC Number :
Office Address : 2 Mayneview St Milton	Project Manager : " "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : " "	PROJECT Name : UQEM DSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Metals M7	R9	Hold
1	BH05 0.1	21/10	Soil		X	
2	0.3			X		
3	0.5					X
4	1.0			X		
5	1.0 R			X		
6	1.5			X		
7	BH06 0.1			X		
8	0.1 R			X		
9	0.4 R			X		
10	0.6 R			X		
11	0.8					X
12	1.1					X
13	1.2			X		
14	1.6			X		
15	0.4			X		
16	0.6			X		

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:

Relinquished By:	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Received By: Myles Clark	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☐ Courier ☐ Hand Delivered ☐ Postal	8.9
Date & Time : 21/10/13	Date & Time : 22/10/13 11:30 am	5 DAY ☑ 10 DAY ☐ Other:	Courier Consignment #:	Report number: 397097
Signature:	Signature:			

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CON NOTES

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NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: UQEM DSI J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Oct 22, 2013 11:30 AM
Eurofins | mgt reference: **397097**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **397097-S**
Client Reference UQEM DSI J122934
Received Date Oct 22, 2013

Client Sample ID			**BH01_0.1**	**BH01_0.3**	**BH02_0.05**	**BH02_0.15**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc16877**	**B13-Oc16878**	**B13-Oc16879**	**B13-Oc16880**
Date Sampled			**Oct 21, 2013**	**Oct 21, 2013**	**Oct 21, 2013**	**Oct 21, 2013**
Test/Reference	LOR	Unit				
% Moisture	0.1	%	15	9.5	14	8.2
Heavy Metals						
Arsenic	2	mg/kg	27	33	23	68
Cadmium	0.5	mg/kg	0.9	0.7	0.6	< 0.5
Chromium	5	mg/kg	35	31	33	16
Copper	5	mg/kg	50	49	44	24
Lead	5	mg/kg	230	230	120	41
Nickel	5	mg/kg	15	13	15	12
Zinc	5	mg/kg	140	110	71	57

Client Sample ID			**BH02_0.5**	**BH02_1.2**	**BH03_0.1**	**BH03_0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc16881**	**B13-Oc16882**	**B13-Oc16883**	**B13-Oc16884**
Date Sampled			**Oct 21, 2013**	**Oct 21, 2013**	**Oct 21, 2013**	**Oct 21, 2013**
Test/Reference	LOR	Unit				
% Moisture	0.1	%	16	17	17	14
Heavy Metals						
Arsenic	2	mg/kg	16	23	30	42
Cadmium	0.5	mg/kg	< 0.5	< 0.5	10	8.4
Chromium	5	mg/kg	33	28	26	17
Copper	5	mg/kg	33	33	100	200
Lead	5	mg/kg	45	55	5000	14000
Nickel	5	mg/kg	16	13	12	5.8
Zinc	5	mg/kg	50	49	290	500

Client Sample ID			BH03_0.3R	BH03_0.7	BH03_2.0	BH03_2.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			B13-Oc16885	B13-Oc16886	B13-Oc16887	B13-Oc16888
Date Sampled			Oct 21, 2013	Oct 21, 2013	Oct 21, 2013	Oct 21, 2013
Test/Reference	LOR	Unit				
% Moisture	0.1	%	12	14	27	26
Heavy Metals						
Arsenic	2	mg/kg	39	22	6.4	3.7
Cadmium	0.5	mg/kg	8.6	33	< 0.5	< 0.5
Chromium	5	mg/kg	15	30	34	36
Copper	5	mg/kg	190	83	30	29
Lead	5	mg/kg	16000	4400	44	34
Nickel	5	mg/kg	< 5	16	21	21
Zinc	5	mg/kg	470	350	47	50

Client Sample ID			BH04_0.1	BH04_0.5	BH04_0.8	BH04_1.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			B13-Oc16889	B13-Oc16890	B13-Oc16891	B13-Oc16892
Date Sampled			Oct 21, 2013	Oct 21, 2013	Oct 21, 2013	Oct 21, 2013
Test/Reference	LOR	Unit				
% Moisture	0.1	%	7.2	25	27	21
Heavy Metals						
Arsenic	2	mg/kg	42	64	37	8.7
Cadmium	0.5	mg/kg	2.6	6.3	9.1	< 0.5
Chromium	5	mg/kg	12	17	18	32
Copper	5	mg/kg	220	220	180	26
Lead	5	mg/kg	9700	9400	11000	42
Nickel	5	mg/kg	6.8	< 5	< 5	12
Zinc	5	mg/kg	470	230	290	38

Client Sample ID			BH04_1.0R	BH04_2.5	BH04_2.7	BH05_0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			B13-Oc16893	B13-Oc16894	B13-Oc16895	B13-Oc16896
Date Sampled			Oct 21, 2013	Oct 21, 2013	Oct 21, 2013	Oct 21, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	< 50
TRH C29-C36	50	mg/kg	-	-	-	< 50
TRH C10-36 (Total)	50	mg/kg	-	-	-	< 50
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH04_1.0R Soil B13-Oc16893 Oct 21, 2013	BH04_2.5 Soil B13-Oc16894 Oct 21, 2013	BH04_2.7 Soil B13-Oc16895 Oct 21, 2013	BH05_0.1 Soil B13-Oc16896 Oct 21, 2013
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	-	< 100
TRH >C34-C40	100	mg/kg	-	-	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ*	0.5	mg/kg	-	-	-	0.6
2-Fluorobiphenyl (surr.)	1	%	-	-	-	94
p-Terphenyl-d14 (surr.)	1	%	-	-	-	98
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	83
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	96

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH04_1.0R Soil B13-Oc16893 Oct 21, 2013	BH04_2.5 Soil B13-Oc16894 Oct 21, 2013	BH04_2.7 Soil B13-Oc16895 Oct 21, 2013	BH05_0.1 Soil B13-Oc16896 Oct 21, 2013
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	-	< 0.1
Total PCB	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	83
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	96
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4.5-Trichlorophenol	1.0	mg/kg	-	-	-	< 1
2.4.6-Trichlorophenol	1.0	mg/kg	-	-	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
4-Chloro-3-methylphenol	1.0	mg/kg	-	-	-	< 1
Pentachlorophenol	1.0	mg/kg	-	-	-	< 1
Tetrachlorophenols - Total	1.0	mg/kg	-	-	-	< 1
Total Halogenated Phenol	1	mg/kg	-	-	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	-	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	-	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	-	< 0.4
4-Nitrophenol	5	mg/kg	-	-	-	< 5
Dinoseb	20	mg/kg	-	-	-	< 20
Phenol	0.5	mg/kg	-	-	-	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	-	-	-	< 20
Phenol-d6 (surr.)	1	%	-	-	-	85
Chromium (hexavalent)	1	mg/kg	-	-	-	< 1
Cyanide (free)	5	mg/kg	-	-	-	< 5
Cyanide (total)	5	mg/kg	-	-	-	< 5
Sulphate (as S)	10	mg/kg	-	-	-	< 10
Phosphorus	5	mg/kg	-	-	-	270
Sulphur	5	mg/kg	-	-	-	53
% Moisture	0.1	%	19	22	20	6.1
Heavy Metals						
Arsenic	2	mg/kg	4.9	14	10.0	150
Barium	5	mg/kg	-	-	-	67
Beryllium	5	mg/kg	-	-	-	< 5
Boron	10	mg/kg	-	-	-	< 10
Cadmium	0.5	mg/kg	26	< 0.5	< 0.5	1.4
Chromium	5	mg/kg	35	28	28	14

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH04_1.0R Soil B13-Oc16893 Oct 21, 2013	BH04_2.5 Soil B13-Oc16894 Oct 21, 2013	BH04_2.7 Soil B13-Oc16895 Oct 21, 2013	BH05_0.1 Soil B13-Oc16896 Oct 21, 2013
Heavy Metals						
Cobalt	5	mg/kg	-	-	-	< 5
Copper	5	mg/kg	30	25	20	66
Lead	5	mg/kg	1400	29	18	1400
Manganese	5	mg/kg	-	-	-	280
Mercury	0.1	mg/kg	-	-	-	< 0.1
Nickel	5	mg/kg	18	13	6.7	11
Vanadium	10	mg/kg	-	-	-	36
Zinc	5	mg/kg	260	43	20	190
NEPM 1999 Metals : Metals M14						
Chromium (trivalent)	5	mg/kg	-	-	-	14

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH05_0.3 Soil B13-Oc16897 Oct 21, 2013	BH05_1.0 Soil B13-Oc16898 Oct 21, 2013	BH05_1.0R Soil B13-Oc16899 Oct 21, 2013	BH05_1.5 Soil B13-Oc16900 Oct 21, 2013
% Moisture	0.1	%	6.1	2.1	2.6	2.0
Heavy Metals						
Arsenic	2	mg/kg	85	34	18	18
Cadmium	0.5	mg/kg	1.2	0.9	1.2	0.8
Chromium	5	mg/kg	14	15	12	11
Copper	5	mg/kg	53	26	21	18
Lead	5	mg/kg	800	57	71	180
Nickel	5	mg/kg	11	13	11	7.1
Zinc	5	mg/kg	180	110	73	62

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH06_0.1 Soil B13-Oc16901 Oct 21, 2013	BH06_0.1R Soil B13-Oc16902 Oct 21, 2013	BH06_0.4 Soil B13-Oc16903 Oct 21, 2013	BH06_0.4R Soil B13-Oc16904 Oct 21, 2013
% Moisture	0.1	%	13	14	12	12
Heavy Metals						
Arsenic	2	mg/kg	39	31	38	31
Cadmium	0.5	mg/kg	11	10	11	12
Chromium	5	mg/kg	15	16	15	17
Copper	5	mg/kg	170	150	210	160
Lead	5	mg/kg	15000	14000	16000	15000
Nickel	5	mg/kg	< 5	5.3	< 5	< 5
Zinc	5	mg/kg	320	320	470	1600

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH06_0.6 Soil B13-Oc16905 Oct 21, 2013	BH06_0.6R Soil B13-Oc16906 Oct 21, 2013	BH06_1.2 Soil B13-Oc16907 Oct 21, 2013	BH06_1.6 Soil B13-Oc16908 Oct 21, 2013
% Moisture	0.1	%	11	12	11	6.2
Heavy Metals						
Arsenic	2	mg/kg	42	40	56	75
Cadmium	0.5	mg/kg	12	12	13	2.4
Chromium	5	mg/kg	17	16	29	22
Copper	5	mg/kg	210	200	57	45
Lead	5	mg/kg	14000	15000	1200	150
Nickel	5	mg/kg	< 5	< 5	15	19
Zinc	5	mg/kg	1300	900	360	810

Sample History

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

Description	Testing Site	Extracted	Holding Time
NEPM HIL Screen: 1999 B(1)HIL Table 5A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Brisbane	Oct 22, 2013	14 Day
- Method: TRH C6-C36 - MGT 100A (not NATA accredited)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Oct 22, 2013	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Brisbane	Oct 22, 2013	14 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Oct 22, 2013	14 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Polychlorinated Biphenyls	Melbourne	Oct 22, 2013	28 Day
- Method: USEPA 8082 Polychlorinated Biphenyls			
Phenols (Halogenated)	Brisbane	Oct 22, 2013	14 Day
- Method: USEPA 8270 Phenols			
Phenols (non-Halogenated)	Brisbane	Oct 22, 2013	14 Day
- Method: USEPA 8270 Phenols			
Chromium (hexavalent)	Melbourne	Oct 22, 2013	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Oct 28, 2013	14 Day
- Method: USEPA 9010 Cyanide			
Sulphate (as S)	Melbourne	Oct 24, 2013	28 Day
- Method: In house MGT1110A (SO4 by Discrete Analyser)			
Phosphorus	Melbourne	Oct 22, 2013	180 Day
- Method: USEPA 6010			
Sulphur	Melbourne	Oct 22, 2013	7 Day
- Method: LTM-MET-3010			
NEPM 1999 Metals : Metals M14	Brisbane	Oct 22, 2013	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
% Moisture	Brisbane	Oct 30, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			
Metals M7	Brisbane	Oct 22, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB	mg/kg	0			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1.0	Pass	
Pentachlorophenol	mg/kg	< 1			1.0	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1.0	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Sulphate (as S)	mg/kg	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 5			5	Pass	
Beryllium	mg/kg	< 5			5	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	95			70-130	Pass	
TRH C10-C14	%	122			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	93			70-130	Pass	
TRH >C10-C16	%	127			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	105			70-130	Pass	
Acenaphthylene	%	109			70-130	Pass	
Anthracene	%	110			70-130	Pass	
Benz(a)anthracene	%	108			70-130	Pass	
Benzo(a)pyrene	%	107			70-130	Pass	
Benzo(b&j)fluoranthene	%	80			70-130	Pass	
Benzo(g.h.i)perylene	%	108			70-130	Pass	
Benzo(k)fluoranthene	%	107			70-130	Pass	
Chrysene	%	105			70-130	Pass	
Dibenz(a.h)anthracene	%	102			70-130	Pass	
Fluoranthene	%	107			70-130	Pass	
Fluorene	%	105			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	105			70-130	Pass	
Naphthalene	%	104			70-130	Pass	
Phenanthrene	%	105			70-130	Pass	
Pyrene	%	105			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	103			70-130	Pass	
4.4'-DDE	%	105			70-130	Pass	
4.4'-DDT	%	70			70-130	Pass	
a-BHC	%	99			70-130	Pass	
Aldrin	%	105			70-130	Pass	
b-BHC	%	105			70-130	Pass	
d-BHC	%	100			70-130	Pass	
Dieldrin	%	100			70-130	Pass	
Endosulfan I	%	104			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	101			70-130	Pass	
Endrin	%	89			70-130	Pass	
Endrin aldehyde	%	101			70-130	Pass	
Endrin ketone	%	97			70-130	Pass	
g-BHC (Lindane)	%	96			70-130	Pass	
Heptachlor	%	85			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	102			70-130	Pass	
Methoxychlor	%	71			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	85			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	101			30-130	Pass	
2.4-Dichlorophenol	%	101			30-130	Pass	
2.4.5-Trichlorophenol	%	103			30-130	Pass	
2.4.6-Trichlorophenol	%	102			30-130	Pass	
2.6-Dichlorophenol	%	101			30-130	Pass	
4-Chloro-3-methylphenol	%	108			30-130	Pass	
Pentachlorophenol	%	99			30-130	Pass	
Tetrachlorophenols - Total	%	106			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	71			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	70			30-130	Pass	
2-Methylphenol (o-Cresol)	%	101			30-130	Pass	
2-Nitrophenol	%	103			30-130	Pass	
2.4-Dimethylphenol	%	101			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	103			30-130	Pass	
4-Nitrophenol	%	83			30-130	Pass	
Dinoseb	%	90			30-130	Pass	
Phenol	%	101			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	102			70-130	Pass	
Cyanide (total)	%	85			70-130	Pass	
Sulphate (as S)	%	97			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	107			80-120	Pass	
Arsenic	%	107			80-120	Pass	
Barium	%	99			80-120	Pass	
Beryllium	%	104			80-120	Pass	
Boron	%	104			80-120	Pass	
Cadmium	%	116			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	109			80-120	Pass	
Chromium	%	94			80-120	Pass	
Cobalt	%	96			80-120	Pass	
Copper	%	117			80-120	Pass	
Copper	%	101			80-120	Pass	
Lead	%	115			80-120	Pass	
Lead	%	100			80-120	Pass	
Manganese	%	94			80-120	Pass	
Mercury	%	86			70-130	Pass	
Nickel	%	116			80-120	Pass	
Nickel	%	98			80-120	Pass	
Vanadium	%	101			80-120	Pass	
Zinc	%	106			80-120	Pass	
Zinc	%	115			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	B13-Oc16877	CP	%	98			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	B13-Oc16887	CP	%	91			75-125	Pass	
Lead	B13-Oc16887	CP	%	91			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	B13-Oc16896	CP	%	96			70-130	Pass	
TRH C10-C14	M13-Oc21593	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	B13-Oc16896	CP	%	95			70-130	Pass	
TRH >C10-C16	M13-Oc21593	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B13-Oc16896	CP	%	102			70-130	Pass	
Acenaphthylene	B13-Oc16896	CP	%	105			70-130	Pass	
Anthracene	B13-Oc16896	CP	%	106			70-130	Pass	
Benz(a)anthracene	B13-Oc16896	CP	%	107			70-130	Pass	
Benzo(a)pyrene	B13-Oc16896	CP	%	103			70-130	Pass	
Benzo(b&j)fluoranthene	B13-Oc16896	CP	%	83			70-130	Pass	
Benzo(g.h.i)perylene	B13-Oc16896	CP	%	103			70-130	Pass	
Benzo(k)fluoranthene	B13-Oc16896	CP	%	103			70-130	Pass	
Chrysene	B13-Oc16896	CP	%	102			70-130	Pass	
Dibenz(a.h)anthracene	B13-Oc16896	CP	%	101			70-130	Pass	
Fluoranthene	B13-Oc16896	CP	%	106			70-130	Pass	
Fluorene	B13-Oc16896	CP	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	B13-Oc16896	CP	%	105			70-130	Pass	
Naphthalene	B13-Oc16896	CP	%	102			70-130	Pass	
Phenanthrene	B13-Oc16896	CP	%	102			70-130	Pass	
Pyrene	B13-Oc16896	CP	%	103			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	B13-Oc17835	NCP	%	109			70-130	Pass	
4.4'-DDE	B13-Oc17835	NCP	%	107			70-130	Pass	
4.4'-DDT	B13-Oc17835	NCP	%	83			70-130	Pass	
a-BHC	B13-Oc17835	NCP	%	109			70-130	Pass	
Aldrin	B13-Oc17835	NCP	%	111			70-130	Pass	
b-BHC	B13-Oc17835	NCP	%	115			70-130	Pass	
d-BHC	B13-Oc17835	NCP	%	110			70-130	Pass	
Dieldrin	B13-Oc17835	NCP	%	106			70-130	Pass	
Endosulfan I	B13-Oc17835	NCP	%	103			70-130	Pass	
Endosulfan II	B13-Oc17835	NCP	%	102			70-130	Pass	
Endosulfan sulphate	B13-Oc17835	NCP	%	104			70-130	Pass	
Endrin	B13-Oc17835	NCP	%	107			70-130	Pass	
Endrin aldehyde	B13-Oc17835	NCP	%	101			70-130	Pass	
Endrin ketone	B13-Oc17835	NCP	%	92			70-130	Pass	
g-BHC (Lindane)	B13-Oc17835	NCP	%	104			70-130	Pass	
Heptachlor	B13-Oc17835	NCP	%	95			70-130	Pass	
Heptachlor epoxide	B13-Oc17835	NCP	%	104			70-130	Pass	
Hexachlorobenzene	B13-Oc17835	NCP	%	109			70-130	Pass	
Methoxychlor	B13-Oc17835	NCP	%	77			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M13-Oc19423	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	B13-Oc16896	CP	%	99			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4-Dichlorophenol	B13-Oc16896	CP	%	98			30-130	Pass	
2.4.5-Trichlorophenol	B13-Oc16896	CP	%	102			30-130	Pass	
2.4.6-Trichlorophenol	B13-Oc16896	CP	%	101			30-130	Pass	
2.6-Dichlorophenol	B13-Oc16896	CP	%	98			30-130	Pass	
4-Chloro-3-methylphenol	B13-Oc16896	CP	%	100			30-130	Pass	
Pentachlorophenol	B13-Oc16896	CP	%	108			30-130	Pass	
Tetrachlorophenols - Total	B13-Oc16896	CP	%	105			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	B13-Oc16896	CP	%	80			30-130	Pass	
2-Methyl-4.6-dinitrophenol	B13-Oc16896	CP	%	87			30-130	Pass	
2-Methylphenol (o-Cresol)	B13-Oc16896	CP	%	89			30-130	Pass	
2-Nitrophenol	B13-Oc16896	CP	%	106			30-130	Pass	
2.4-Dimethylphenol	B13-Oc16896	CP	%	67			30-130	Pass	
2.4-Dinitrophenol	B13-Oc16896	CP	%	86			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	B13-Oc16896	CP	%	91			30-130	Pass	
4-Nitrophenol	B13-Oc16896	CP	%	75			30-130	Pass	
Dinoseb	B13-Oc16896	CP	%	96			30-130	Pass	
Phenol	B13-Oc16896	CP	%	95			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M13-Oc13800	NCP	%	92			70-130	Pass	
Cyanide (total)	M13-Oc18758	NCP	%	73			70-130	Pass	
Sulphate (as S)	M13-Oc15286	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc19555	NCP	%	110			75-125	Pass	
Cadmium	B13-Oc16896	CP	%	98			75-125	Pass	
Chromium	B13-Oc16896	CP	%	87			75-125	Pass	
Copper	B13-Oc16896	CP	%	79			75-125	Pass	
Mercury	B13-Oc16896	CP	%	93			70-130	Pass	
Nickel	B13-Oc19555	NCP	%	95			75-125	Pass	
Zinc	B13-Oc18072	NCP	%	120			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	B13-Oc16908	CP	%	101			75-125	Pass	
Chromium	B13-Oc16908	CP	%	89			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc16877	CP	mg/kg	27	26	4.0	30%	Pass	
Cadmium	B13-Oc16877	CP	mg/kg	0.9	0.9	8.0	30%	Pass	
Chromium	B13-Oc16877	CP	mg/kg	35	34	4.0	30%	Pass	
Copper	B13-Oc16877	CP	mg/kg	50	48	4.0	30%	Pass	
Lead	B13-Oc16877	CP	mg/kg	230	210	5.0	30%	Pass	
Nickel	B13-Oc16877	CP	mg/kg	15	14	4.0	30%	Pass	
Zinc	B13-Oc16877	CP	mg/kg	140	130	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc16887	CP	mg/kg	6.4	6.9	8.0	30%	Pass	
Cadmium	B13-Oc16887	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium	B13-Oc16887	CP	mg/kg	34	36	5.0	30%	Pass	
Copper	B13-Oc16887	CP	mg/kg	30	31	2.0	30%	Pass	
Lead	B13-Oc16887	CP	mg/kg	44	49	9.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Nickel	B13-Oc16887	CP	mg/kg	21	22	1.0	30%	Pass	
Zinc	B13-Oc16887	CP	mg/kg	47	48	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead	B13-Oc16891	CP	mg/kg	11000	12000	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	B13-Oc16896	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M13-Oc21593	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M13-Oc21593	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M13-Oc21593	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	B13-Oc16896	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	B13-Oc16896	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M13-Oc21593	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M13-Oc21593	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M13-Oc21593	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	B13-Oc17835	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
g-BHC (Lindane)	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	B13-Oc17835	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	B13-Oc17835	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	B13-Oc17835	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	B13-Oc17835	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	B13-Oc17835	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	B13-Oc17835	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	B13-Oc17835	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	B13-Oc17835	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	B13-Oc17835	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB	B13-Oc17835	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	B13-Oc16896	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	B13-Oc16896	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	B13-Oc16896	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	B13-Oc16896	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	B13-Oc16896	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	B13-Oc16896	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	B13-Oc16896	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	B13-Oc16896	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	B13-Oc16896	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	B13-Oc16896	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	B13-Oc16896	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	B13-Oc16896	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	B13-Oc16896	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	B13-Oc16896	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	A13-Oc18831	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Cyanide (total)	M13-Oc18157	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Sulphate (as S)	M13-Oc15286	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc16896	CP	mg/kg	150	140	1.0	30%	Pass	
Cadmium	B13-Oc16896	CP	mg/kg	1.4	1.4	3.0	30%	Pass	
Chromium	B13-Oc16896	CP	mg/kg	14	14	1.0	30%	Pass	
Copper	B13-Oc16896	CP	mg/kg	66	65	1.0	30%	Pass	
Lead	B13-Oc16896	CP	mg/kg	1400	1400	4.0	30%	Pass	
Mercury	B13-Oc16896	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	B13-Oc16896	CP	mg/kg	11	11	2.0	30%	Pass	
Zinc	B13-Oc16896	CP	mg/kg	190	190	1.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc16908	CP	mg/kg	75	77	2.0	30%	Pass	
Cadmium	B13-Oc16908	CP	mg/kg	2.4	2.5	3.0	30%	Pass	
Chromium	B13-Oc16908	CP	mg/kg	22	22	3.0	30%	Pass	
Copper	B13-Oc16908	CP	mg/kg	45	46	2.0	30%	Pass	
Lead	B13-Oc16908	CP	mg/kg	150	150	5.0	30%	Pass	
Nickel	B13-Oc16908	CP	mg/kg	19	20	2.0	30%	Pass	
Zinc	B13-Oc16908	CP	mg/kg	810	830	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

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Michael Wright

National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 1 of 4

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Manneview St Milton	Project Manager : " "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : " "	PROJECT Name : UQEM DSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

	Sample ID	Date	Matrix	Metals M7	R9	Hold	Containers: 1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:
1	BH07 0.1	22/10	Soil	X											
2	0.3					X									
3	0.5			X		[illegible]									
4	0.5R			X		[illegible]									
5	1			X											
6	2			X											
7	2.5					X									
8	2.9			X											
9	BH08 0.1			X											
10	0.4			X											
11	0.4R			X											
12	0.6					X									
13	1					X									
14	1.5					X									
15	2			X											
16	2.7			X											

Relinquished By:	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Received By: Marie I	1 DAY ☑ 2 DAY ☐ 3 DAY ☐	☐ Courier	18.2 ICE BRICKS
Date & Time : 22/10/13	Date & Time : 23.10.13 4.05PM	5 DAY ☑ 10 DAY ☐ Other:	☐ Hand Delivered	Report number:
Signature:	Signature:		☐ Postal	397394
			Courier Consignment #: ☑ CN HD AP CR	# CON NOTES / POST CODE / MASS

eurofins | mgt

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2/ Magnolia View St Milton	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : UQEM DSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

	Sample ID	Date	Matrix	Analytes: Metals M7	Metals R9	Hold	Containers: 1LP	250P	125P	1LA	40mL vial	125mL A	Jar	Sample comments:
1	BH09 0.1	22/10	Soil	X										
2	0.2			X										
3	0.5				X									
4	1			X										
5	1.5				X									
6	2.3			X										
7	3			X										
8	BH10 0.1				X									
9	0.2													
10	0.5			X										
11	1			✓										
12	1.6			X										
13	1.8			X										
14	2.5					X								
15	BH11 0.2			X										
16	0.2R			X										

Relinquished By:	Laboratory Staff: Received By:	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Marie I	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☐ Courier	18.2
Date & Time : 22/10/13	Date & Time : 23.10.13 4:05pm	5 DAY ☑ 10 DAY ☐ Other:	☐ Hand Delivered	Report number:
Signature:	Signature:		☐ Postal	397394
			Courier Consignment # :	

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Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : J122934	COC Number :
Office Address :	Project Manager : "	PROJECT Number :	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : VQEM DSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes: Metals M7 R9 Hold

	Sample ID	Date	Matrix	Metals M7	R9	Hold	Containers	Sample comments:
1	BH11 0.6	22/10	Soil	X				
2	0.9			X				
3	1			X				
4	1.5			X				
5	2					X		
6	BH12 0.1			X				
7	0.2					X		
8	0.3			X				
9	0.5					X		
10	1					X		
11	1.5			X				
12	1.5R			X				
13	2.1			X				
14	BH13 0.3			X				
15	0.3R			X				
16	0.5					X		

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	

Laboratory Staff

Relinquished By: S Sherrington
Date & Time : 22/10/13
Signature:

Received By: Marie I
Date & Time : 23.10.13 4:05pm
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 18.2

Report number: 397394

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : J122934	COC Number :
Office Address :	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : VQEM DSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Metals M7	RQ	Hold
1	BH13 1.0	22/10	Soil			X
2	2.0			X		
3	BH14 0.1			X		
4	0.5					X
5	1.0			X		
6	1.5					X
7	2			X		
8	BH15 0.1			X		
9	0.3					X
10	0.5			X		
11	1.0					X
12	2.0			X		
13	2.1			X		
14	BH09 0.2R			X		
15						
16						

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	

Sample comments:

Laboratory Staff

Relinquished By: SSherrington
Date & Time : 22/10/13
Signature:

Received By: Marco I
Date & Time : 23.10.13 4:05pm
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 18.2

Report number: 397394

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

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Site # 1254 & 14271

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: UQEM DSI J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Oct 23, 2013 4:00 PM
Eurofins | mgt reference: **397394**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **397394-S**
Client Reference UQEM DSI J122934
Received Date Oct 23, 2013

Client Sample ID			**BH07 0.1**	**BH07 0.5**	**BH07 0.5R**	**BH07 1.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc18973**	**B13-Oc18974**	**B13-Oc18975**	**B13-Oc18976**
Date Sampled			**Oct 22, 2013**	**Oct 22, 2013**	**Oct 22, 2013**	**Oct 22, 2013**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	43	85	73	130
Cadmium	0.5	mg/kg	1.2	0.6	< 0.5	0.6
Chromium	5	mg/kg	23	23	14	16
Copper	5	mg/kg	36	53	44	70
Lead	5	mg/kg	190	60	33	37
Nickel	5	mg/kg	13	16	12	17
Zinc	5	mg/kg	190	250	180	380
% Moisture	0.1	%	7.7	4.2	3.0	2.5

Client Sample ID			**BH07 2.0**	**BH08 0.1**	**BH08 0.4**	**BH08 0.4R**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc18977**	**B13-Oc18978**	**B13-Oc18979**	**B13-Oc18980**
Date Sampled			**Oct 22, 2013**	**Oct 22, 2013**	**Oct 22, 2013**	**Oct 22, 2013**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	120	9.1	29	33
Cadmium	0.5	mg/kg	1.3	2.4	11	10
Chromium	5	mg/kg	22	45	22	20
Copper	5	mg/kg	30	29	120	140
Lead	5	mg/kg	39	350	8200	10000
Nickel	5	mg/kg	11	67	14	10
Zinc	5	mg/kg	280	280	620	620
% Moisture	0.1	%	8.4	7.3	9.9	7.3

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH08 2.0 Soil B13-Oc18981 Oct 22, 2013	BH08 2.7 Soil B13-Oc18982 Oct 22, 2013	BH09 0.1 Soil B13-Oc18983 Oct 22, 2013	BH09 0.2 Soil B13-Oc18984 Oct 22, 2013
Heavy Metals						
Arsenic	2	mg/kg	7.6	5.9	11	47
Cadmium	0.5	mg/kg	< 0.5	< 0.5	1.3	11
Chromium	5	mg/kg	39	42	18	15
Copper	5	mg/kg	21	16	32	190
Lead	5	mg/kg	40	26	520	16000
Nickel	5	mg/kg	19	16	8.9	< 5
Zinc	5	mg/kg	63	56	340	910
% Moisture	0.1	%	22	24	12	17

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH09 1.0 Soil B13-Oc18985 Oct 22, 2013	BH09 2.3 Soil B13-Oc18986 Oct 22, 2013	BH09 3.0 Soil B13-Oc18987 Oct 22, 2013	BH10 0.1 Soil B13-Oc18988 Oct 22, 2013
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	84
TRH C29-C36	50	mg/kg	-	-	-	230
TRH C10-36 (Total)	50	mg/kg	-	-	-	310
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	-	220
TRH >C34-C40	100	mg/kg	-	-	-	100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH09 1.0 Soil B13-Oc18985 Oct 22, 2013	BH09 2.3 Soil B13-Oc18986 Oct 22, 2013	BH09 3.0 Soil B13-Oc18987 Oct 22, 2013	BH10 0.1 Soil B13-Oc18988 Oct 22, 2013
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ*	0.5	mg/kg	-	-	-	0.6
2-Fluorobiphenyl (surr.)	1	%	-	-	-	113
p-Terphenyl-d14 (surr.)	1	%	-	-	-	124
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	108
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	105
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	-	< 0.1
Total PCB	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	108
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	105
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
2.4.5-Trichlorophenol	1.0	mg/kg	-	-	-	< 1
2.4.6-Trichlorophenol	1.0	mg/kg	-	-	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	-	-	-	< 0.5
4-Chloro-3-methylphenol	1.0	mg/kg	-	-	-	< 1

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH09 1.0 Soil B13-Oc18985 Oct 22, 2013	BH09 2.3 Soil B13-Oc18986 Oct 22, 2013	BH09 3.0 Soil B13-Oc18987 Oct 22, 2013	BH10 0.1 Soil B13-Oc18988 Oct 22, 2013
Phenols (Halogenated)						
Pentachlorophenol	1.0	mg/kg	-	-	-	< 1
Tetrachlorophenols - Total	1.0	mg/kg	-	-	-	< 1
Total Halogenated Phenol	1	mg/kg	-	-	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	-	< 0.2
2-Nitrophenol	1.0	mg/kg	-	-	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	-	-	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	-	-	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	-	< 0.4
4-Nitrophenol	5	mg/kg	-	-	-	< 5
Dinoseb	20	mg/kg	-	-	-	< 20
Phenol	0.5	mg/kg	-	-	-	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	-	-	-	< 20
Phenol-d6 (surr.)	1	%	-	-	-	98
NEPM HIL Screen: 1999 B(1)HIL Table 5A						
Chromium (hexavalent)	1	mg/kg	-	-	-	< 1
Cyanide (free)	5	mg/kg	-	-	-	< 5
Cyanide (total)	5	mg/kg	-	-	-	< 5
Sulphate (as S)	10	mg/kg	-	-	-	180
Phosphorus	5	mg/kg	-	-	-	510
Sulphur	5	mg/kg	-	-	-	980
Heavy Metals						
Arsenic	2	mg/kg	65	7.7	8.2	21
Barium	10	mg/kg	-	-	-	61
Beryllium	2	mg/kg	-	-	-	< 2
Boron	10	mg/kg	-	-	-	< 10
Cadmium	0.5	mg/kg	8.3	1.4	< 0.5	2.0
Chromium	5	mg/kg	15	35	37	9.8
Cobalt	5	mg/kg	-	-	-	5.3
Copper	5	mg/kg	270	22	21	50
Lead	5	mg/kg	18000	240	43	1000
Manganese	5	mg/kg	-	-	-	580
Mercury	0.1	mg/kg	-	-	-	< 0.1
Nickel	5	mg/kg	< 5	19	23	12
Vanadium	10	mg/kg	-	-	-	17
Zinc	5	mg/kg	790	80	68	490
NEPM 1999 Metals : Metals M14						
Chromium (trivalent)	5	mg/kg	-	-	-	9.8
% Moisture	0.1	%	25	22	23	31

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH10 0.5 Soil B13-Oc18989 Oct 22, 2013	BH10 1.0 Soil B13-Oc18990 Oct 22, 2013	BH10 1.6 Soil B13-Oc18991 Oct 22, 2013	BH10 1.7 Soil B13-Oc18992 Oct 22, 2013
Heavy Metals						
Arsenic	2	mg/kg	34	72	42	7.4
Cadmium	0.5	mg/kg	6.2	10	14	< 0.5
Chromium	5	mg/kg	13	13	15	32
Copper	5	mg/kg	320	290	250	21
Lead	5	mg/kg	16000	17000	15000	130
Nickel	5	mg/kg	< 5	< 5	< 5	18
Zinc	5	mg/kg	1200	1500	1700	100
% Moisture	0.1	%	6.9	20	19	22

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH11 0.2 Soil B13-Oc18993 Oct 22, 2013	BH11 0.2R Soil B13-Oc18994 Oct 22, 2013	BH11 0.6 Soil B13-Oc18995 Oct 22, 2013	BH11 0.9 Soil B13-Oc18996 Oct 22, 2013
Heavy Metals						
Arsenic	2	mg/kg	18	17	6.9	7.0
Cadmium	0.5	mg/kg	0.8	1.2	< 0.5	< 0.5
Chromium	5	mg/kg	25	25	31	32
Copper	5	mg/kg	63	34	16	15
Lead	5	mg/kg	5000	1700	85	47
Nickel	5	mg/kg	12	14	13	13
Zinc	5	mg/kg	240	200	76	65
% Moisture	0.1	%	14	13	15	15

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH11 1.0 Soil B13-Oc18997 Oct 22, 2013	BH11 1.5 Soil B13-Oc18998 Oct 22, 2013	BH12 0.1 Soil B13-Oc18999 Oct 22, 2013	BH12 0.3 Soil B13-Oc19000 Oct 22, 2013
Heavy Metals						
Arsenic	2	mg/kg	21	27	14	27
Cadmium	0.5	mg/kg	< 0.5	0.6	4.8	4.5
Chromium	5	mg/kg	26	21	37	10
Copper	5	mg/kg	23	32	60	120
Lead	5	mg/kg	51	61	3500	6800
Nickel	5	mg/kg	16	20	48	< 5
Zinc	5	mg/kg	140	200	330	500
% Moisture	0.1	%	5.0	7.2	8.8	7.0

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH12 1.5 Soil B13-Oc19001 Oct 22, 2013	BH12 1.5R Soil B13-Oc19002 Oct 22, 2013	BH12 2.1 Soil B13-Oc19003 Oct 22, 2013	BH13 0.3 Soil B13-Oc19004 Oct 22, 2013
Heavy Metals						
Arsenic	2	mg/kg	4.5	8.9	48	93
Cadmium	0.5	mg/kg	0.8	0.6	0.7	170
Chromium	5	mg/kg	33	29	12	26
Copper	5	mg/kg	12	17	17	610
Lead	5	mg/kg	100	95	64	7500
Nickel	5	mg/kg	5.6	9.9	11	13
Zinc	5	mg/kg	99	110	180	38000
% Moisture	0.1	%	18	20	8.1	6.8

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH13 0.3R Soil B13-Oc19005 Oct 22, 2013	BH13 2.0 Soil B13-Oc19006 Oct 22, 2013	BH14 0.1 Soil B13-Oc19007 Oct 22, 2013	BH14 1.0 Soil B13-Oc19008 Oct 22, 2013
Heavy Metals						
Arsenic	2	mg/kg	37	37	25	48
Cadmium	0.5	mg/kg	13	11	6.9	0.8
Chromium	5	mg/kg	5.0	14	13	17
Copper	5	mg/kg	120	160	290	33
Lead	5	mg/kg	4600	8900	24000	350
Nickel	5	mg/kg	7.3	6.1	5.7	12
Zinc	5	mg/kg	1600	1500	2000	300
% Moisture	0.1	%	4.6	7.4	9.2	5.9

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH14 2.0 Soil B13-Oc19009 Oct 22, 2013	BH15 0.1 Soil B13-Oc19010 Oct 22, 2013	BH15 0.5 Soil B13-Oc19011 Oct 22, 2013	BH15 2.0 Soil B13-Oc19012 Oct 22, 2013
Heavy Metals						
Arsenic	2	mg/kg	19	19	8.2	85
Cadmium	0.5	mg/kg	1.1	4.9	3.8	0.7
Chromium	5	mg/kg	14	9.1	17	17
Copper	5	mg/kg	17	160	410	50
Lead	5	mg/kg	140	8600	5600	310
Nickel	5	mg/kg	9.8	< 5	9.6	17
Zinc	5	mg/kg	330	1200	880	370
% Moisture	0.1	%	4.0	5.5	4.9	5.2

Client Sample ID			BH15 2.1	BH09 0.2R	BH07 2.9
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc19013**	**B13-Oc19014**	**B13-Oc19060**
Date Sampled			**Oct 22, 2013**	**Oct 22, 2013**	**Oct 22, 2013**
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	2	mg/kg	65	43	280
Cadmium	0.5	mg/kg	1.4	9.0	2.2
Chromium	5	mg/kg	11	14	31
Copper	5	mg/kg	45	190	59
Lead	5	mg/kg	180	16000	96
Nickel	5	mg/kg	15	< 5	15
Zinc	5	mg/kg	420	1200	420
% Moisture	0.1	%	6.1	16	6.4

Sample History

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

Description	Testing Site	Extracted	Holding Time
NEPM HIL Screen: 1999 B(1)HIL Table 5A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 25, 2013	14 Day
- Method: TRH C6-C36 - MGT 100A			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 25, 2013	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 25, 2013	14 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Oct 25, 2013	14 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Polychlorinated Biphenyls	Melbourne	Oct 25, 2013	28 Day
- Method: USEPA 8082 Polychlorinated Biphenyls			
Phenols (Halogenated)	Melbourne	Oct 25, 2013	14 Day
- Method: USEPA 8270 Phenols			
Phenols (non-Halogenated)	Melbourne	Oct 25, 2013	14 Day
- Method: USEPA 8270 Phenols			
NEPM HIL Screen: 1999 B(1)HIL Table 5A			
Chromium (hexavalent)	Melbourne	Oct 25, 2013	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Oct 25, 2013	14 Day
- Method: USEPA 9010 Cyanide			
Sulphate (as S)	Melbourne	Oct 25, 2013	28 Day
- Method: In house MGT1110A (SO4 by Discrete Analyser)			
Phosphorus	Melbourne	Oct 25, 2013	180 Day
- Method: USEPA 6010			
Sulphur	Melbourne	Oct 25, 2013	7 Day
- Method: LTM-MET-3010			
NEPM 1999 Metals : Metals M14	Melbourne	Oct 25, 2013	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
Metals M7	Brisbane	Oct 25, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			
% Moisture	Brisbane	Oct 25, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB	mg/kg	0			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1.0	Pass	
Pentachlorophenol	mg/kg	< 1			1.0	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1.0	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
NEPM HIL Screen: 1999 B(1)HIL Table 5A							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Sulphate (as S)	mg/kg	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 5			5	Pass	
Beryllium	mg/kg	< 5			5	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	115			70-130	Pass	
TRH C10-C14	%	102			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	115			70-130	Pass	
TRH >C10-C16	%	101			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	113			70-130	Pass	
Acenaphthylene	%	117			70-130	Pass	
Anthracene	%	112			70-130	Pass	
Benz(a)anthracene	%	119			70-130	Pass	
Benzo(a)pyrene	%	117			70-130	Pass	
Benzo(b&j)fluoranthene	%	124			70-130	Pass	
Benzo(g.h.i)perylene	%	107			70-130	Pass	
Benzo(k)fluoranthene	%	122			70-130	Pass	
Chrysene	%	108			70-130	Pass	
Dibenz(a.h)anthracene	%	119			70-130	Pass	
Fluoranthene	%	114			70-130	Pass	
Fluorene	%	113			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	111			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
Phenanthrene	%	116			70-130	Pass	
Pyrene	%	116			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	96			70-130	Pass	
4.4'-DDE	%	83			70-130	Pass	
4.4'-DDT	%	123			70-130	Pass	
a-BHC	%	109			70-130	Pass	
Aldrin	%	97			70-130	Pass	
b-BHC	%	107			70-130	Pass	
d-BHC	%	115			70-130	Pass	
Dieldrin	%	85			70-130	Pass	
Endosulfan I	%	93			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	102			70-130	Pass	
Endrin	%	100			70-130	Pass	
Endrin aldehyde	%	104			70-130	Pass	
Endrin ketone	%	107			70-130	Pass	
g-BHC (Lindane)	%	110			70-130	Pass	
Heptachlor	%	108			70-130	Pass	
Heptachlor epoxide	%	95			70-130	Pass	
Hexachlorobenzene	%	110			70-130	Pass	
Methoxychlor	%	118			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	%	112			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	112			30-130	Pass	
2.4-Dichlorophenol	%	113			30-130	Pass	
2.4.5-Trichlorophenol	%	103			30-130	Pass	
2.4.6-Trichlorophenol	%	113			30-130	Pass	
2.6-Dichlorophenol	%	100			30-130	Pass	
4-Chloro-3-methylphenol	%	113			30-130	Pass	
Pentachlorophenol	%	76			30-130	Pass	
Tetrachlorophenols - Total	%	99			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	60			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	89			30-130	Pass	
2-Methylphenol (o-Cresol)	%	114			30-130	Pass	
2-Nitrophenol	%	113			30-130	Pass	
2.4-Dimethylphenol	%	89			30-130	Pass	
2.4-Dinitrophenol	%	59			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	103			30-130	Pass	
4-Nitrophenol	%	97			30-130	Pass	
Dinoseb	%	92			30-130	Pass	
Phenol	%	103			30-130	Pass	
LCS - % Recovery							
NEPM HIL Screen: 1999 B(1)HIL Table 5A							
Chromium (hexavalent)	%	107			70-130	Pass	
Sulphate (as S)	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	111			80-120	Pass	
Arsenic	%	103			80-120	Pass	
Barium	%	99			80-120	Pass	
Beryllium	%	104			80-120	Pass	
Boron	%	104			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Cadmium	%	97			80-120	Pass	
Chromium	%	116			80-120	Pass	
Chromium	%	107			80-120	Pass	
Cobalt	%	101			80-120	Pass	
Copper	%	107			80-120	Pass	
Copper	%	100			80-120	Pass	
Lead	%	111			80-120	Pass	
Lead	%	108			80-120	Pass	
Manganese	%	98			80-120	Pass	
Mercury	%	115			75-125	Pass	
Nickel	%	106			80-120	Pass	
Nickel	%	99			80-120	Pass	
Vanadium	%	101			80-120	Pass	
Zinc	%	112			80-120	Pass	
Zinc	%	106			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	B13-Oc18973	CP	%	95			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	B13-Oc18973	CP	%	82			75-125	Pass	
Lead	B13-Oc18102	NCP	%	100			75-125	Pass	
Zinc	B13-Oc18973	CP	%	110			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc18983	CP	%	75			75-125	Pass	
Cadmium	B13-Oc18983	CP	%	92			75-125	Pass	
Chromium	B13-Oc18983	CP	%	98			75-125	Pass	
Zinc	B13-Oc18983	CP	%	81			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M13-Oc16962	NCP	%	125			70-130	Pass	
TRH C10-C14	B13-Oc18988	CP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	M13-Oc16962	NCP	%	125			70-130	Pass	
TRH >C10-C16	B13-Oc18988	CP	%	110			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B13-Oc18988	CP	%	81			70-130	Pass	
Acenaphthylene	B13-Oc18988	CP	%	83			70-130	Pass	
Anthracene	B13-Oc18988	CP	%	77			70-130	Pass	
Benz(a)anthracene	B13-Oc18988	CP	%	88			70-130	Pass	
Benzo(a)pyrene	B13-Oc18988	CP	%	83			70-130	Pass	
Benzo(b&j)fluoranthene	B13-Oc18988	CP	%	83			70-130	Pass	
Benzo(g.h.i)perylene	B13-Oc18988	CP	%	93			70-130	Pass	
Benzo(k)fluoranthene	B13-Oc18988	CP	%	96			70-130	Pass	
Chrysene	B13-Oc18988	CP	%	80			70-130	Pass	
Dibenz(a.h)anthracene	B13-Oc18988	CP	%	110			70-130	Pass	
Fluoranthene	B13-Oc18988	CP	%	94			70-130	Pass	
Fluorene	B13-Oc18988	CP	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	B13-Oc18988	CP	%	101			70-130	Pass	
Naphthalene	B13-Oc18988	CP	%	74			70-130	Pass	
Phenanthrene	B13-Oc18988	CP	%	90			70-130	Pass	
Pyrene	B13-Oc18988	CP	%	90			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	B13-Oc18988	CP	%	91			70-130	Pass	
4.4'-DDE	B13-Oc18988	CP	%	107			70-130	Pass	
4.4'-DDT	M13-Oc19841	NCP	%	77			70-130	Pass	
a-BHC	B13-Oc18988	CP	%	124			70-130	Pass	
Aldrin	B13-Oc18988	CP	%	110			70-130	Pass	
b-BHC	B13-Oc18988	CP	%	116			70-130	Pass	
d-BHC	B13-Oc18988	CP	%	120			70-130	Pass	
Dieldrin	B13-Oc18988	CP	%	118			70-130	Pass	
Endosulfan I	B13-Oc18988	CP	%	83			70-130	Pass	
Endosulfan II	B13-Oc18988	CP	%	94			70-130	Pass	
Endosulfan sulphate	B13-Oc18988	CP	%	83			70-130	Pass	
Endrin	B13-Oc18988	CP	%	89			70-130	Pass	
Endrin aldehyde	B13-Oc18988	CP	%	74			70-130	Pass	
Endrin ketone	B13-Oc18988	CP	%	93			70-130	Pass	
g-BHC (Lindane)	B13-Oc18988	CP	%	126			70-130	Pass	
Heptachlor	B13-Oc18988	CP	%	114			70-130	Pass	
Heptachlor epoxide	B13-Oc18988	CP	%	73			70-130	Pass	
Hexachlorobenzene	B13-Oc18988	CP	%	95			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor	M13-Oc19841	NCP	%	74			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	B13-Oc18988	CP	%	83			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	B13-Oc18988	CP	%	90			30-130	Pass	
2.4-Dichlorophenol	B13-Oc18988	CP	%	89			30-130	Pass	
2.4.5-Trichlorophenol	B13-Oc18988	CP	%	83			30-130	Pass	
2.4.6-Trichlorophenol	B13-Oc18988	CP	%	88			30-130	Pass	
2.6-Dichlorophenol	B13-Oc18988	CP	%	80			30-130	Pass	
4-Chloro-3-methylphenol	B13-Oc18988	CP	%	91			30-130	Pass	
Pentachlorophenol	B13-Oc18988	CP	%	69			30-130	Pass	
Tetrachlorophenols - Total	B13-Oc18988	CP	%	80			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	B13-Oc18988	CP	%	110			30-130	Pass	
2-Methyl-4.6-dinitrophenol	B13-Oc18988	CP	%	63			30-130	Pass	
2-Methylphenol (o-Cresol)	B13-Oc18988	CP	%	87			30-130	Pass	
2-Nitrophenol	B13-Oc18988	CP	%	91			30-130	Pass	
2.4-Dimethylphenol	B13-Oc18988	CP	%	75			30-130	Pass	
2.4-Dinitrophenol	B13-Oc18988	CP	%	64			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	B13-Oc18988	CP	%	82			30-130	Pass	
4-Nitrophenol	B13-Oc18988	CP	%	72			30-130	Pass	
Dinoseb	B13-Oc18988	CP	%	66			30-130	Pass	
Phenol	B13-Oc18988	CP	%	95			30-130	Pass	
Spike - % Recovery									
NEPM HIL Screen: 1999 B(1)HIL Table 5A				Result 1					
Chromium (hexavalent)	M13-Oc21194	NCP	%	110			70-130	Pass	
Sulphate (as S)	M13-Oc20473	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc18988	CP	%	92			75-125	Pass	
Barium	B13-Oc18988	CP	%	78			75-125	Pass	
Beryllium	B13-Oc18988	CP	%	76			75-125	Pass	
Cadmium	B13-Oc18988	CP	%	77			75-125	Pass	
Copper	B13-Oc18988	CP	%	87			75-125	Pass	
Mercury	B13-Oc18988	CP	%	106			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Chromium	B13-Oc19004	CP	%	91			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	B13-Oc19014	CP	%	103			75-125	Pass	
Chromium	B13-Oc19014	CP	%	96			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc18973	CP	mg/kg	43	43	<1	30%	Pass	
Cadmium	B13-Oc18973	CP	mg/kg	1.2	1.2	4.0	30%	Pass	
Chromium	B13-Oc18973	CP	mg/kg	23	23	1.0	30%	Pass	
Copper	B13-Oc18973	CP	mg/kg	36	36	<1	30%	Pass	
Lead	B13-Oc18973	CP	mg/kg	190	190	<1	30%	Pass	
Nickel	B13-Oc18973	CP	mg/kg	13	13	1.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Zinc	B13-Oc18973	CP	mg/kg	190	190	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc18983	CP	mg/kg	11	11	<1	30%	Pass	
Cadmium	B13-Oc18983	CP	mg/kg	1.3	1.3	<1	30%	Pass	
Chromium	B13-Oc18983	CP	mg/kg	18	17	2.0	30%	Pass	
Copper	B13-Oc18983	CP	mg/kg	32	31	1.0	30%	Pass	
Lead	B13-Oc18983	CP	mg/kg	520	500	3.0	30%	Pass	
Nickel	B13-Oc18983	CP	mg/kg	8.9	8.7	3.0	30%	Pass	
Zinc	B13-Oc18983	CP	mg/kg	340	330	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M13-Oc16992	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	B13-Oc18988	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	B13-Oc18988	CP	mg/kg	84	100	20	30%	Pass	
TRH C29-C36	B13-Oc18988	CP	mg/kg	230	160	36	30%	Fail	Q15
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M13-Oc16992	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M13-Oc16992	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	M13-Oc16992	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	B13-Oc18988	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	B13-Oc18988	CP	mg/kg	220	170	26	30%	Pass	
TRH >C34-C40	B13-Oc18988	CP	mg/kg	100	110	3.4	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M13-Oc19841	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endosulfan II	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M13-Oc19841	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M13-Oc19841	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M13-Oc19841	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M13-Oc19841	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M13-Oc19841	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M13-Oc19841	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M13-Oc19841	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M13-Oc19841	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M13-Oc19841	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB	M13-Oc19841	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	B13-Oc18988	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	B13-Oc18988	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	B13-Oc18988	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	B13-Oc18988	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	B13-Oc18988	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	B13-Oc18988	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	B13-Oc18988	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	B13-Oc18988	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	B13-Oc18988	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	B13-Oc18988	CP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	B13-Oc18988	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	B13-Oc18988	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	B13-Oc18988	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	B13-Oc18988	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
NEPM HIL Screen: 1999 B(1)HIL Table 5A				Result 1	Result 2	RPD			
Chromium (hexavalent)	M13-Oc20957	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Sulphate (as S)	M13-Oc20473	NCP	mg/kg	29	30	4.4	30%	Pass	
Phosphorus	B13-Oc18988	CP	mg/kg	510	400	9.0	30%	Pass	
Sulphur	B13-Oc18988	CP	mg/kg	980	960	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc18988	CP	mg/kg	21	24	13	30%	Pass	
Barium	B13-Oc18988	CP	mg/kg	61	64	5.0	30%	Pass	
Beryllium	B13-Oc18988	CP	mg/kg	< 2	< 2	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Boron	B13-Oc18988	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	B13-Oc18988	CP	mg/kg	2.0	2.5	22	30%	Pass	
Chromium	B13-Oc18988	CP	mg/kg	9.8	12	18	30%	Pass	
Cobalt	B13-Oc18988	CP	mg/kg	5.3	6.4	18	30%	Pass	
Lead	B13-Oc18988	CP	mg/kg	1000	1000	2.0	30%	Pass	
Manganese	B13-Oc18988	CP	mg/kg	580	590	2.0	30%	Pass	
Mercury	B13-Oc18988	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	B13-Oc18988	CP	mg/kg	12	12	1.0	30%	Pass	
Zinc	B13-Oc18988	CP	mg/kg	490	490	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc18994	CP	mg/kg	17	18	1.0	30%	Pass	
Cadmium	B13-Oc18994	CP	mg/kg	1.2	1.2	1.0	30%	Pass	
Chromium	B13-Oc18994	CP	mg/kg	25	26	2.0	30%	Pass	
Copper	B13-Oc18994	CP	mg/kg	34	35	3.0	30%	Pass	
Lead	B13-Oc18994	CP	mg/kg	1700	1700	2.0	30%	Pass	
Nickel	B13-Oc18994	CP	mg/kg	14	14	2.0	30%	Pass	
Zinc	B13-Oc18994	CP	mg/kg	200	210	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc19004	CP	mg/kg	93	92	1.0	30%	Pass	
Cadmium	B13-Oc19004	CP	mg/kg	170	170	<1	30%	Pass	
Chromium	B13-Oc19004	CP	mg/kg	26	25	2.0	30%	Pass	
Copper	B13-Oc19004	CP	mg/kg	610	610	<1	30%	Pass	
Lead	B13-Oc19004	CP	mg/kg	7500	7300	3.0	30%	Pass	
Nickel	B13-Oc19004	CP	mg/kg	13	13	1.0	30%	Pass	
Zinc	B13-Oc19004	CP	mg/kg	38000	37000	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc19014	CP	mg/kg	43	42	<1	30%	Pass	
Cadmium	B13-Oc19014	CP	mg/kg	9.0	9.1	1.0	30%	Pass	
Chromium	B13-Oc19014	CP	mg/kg	14	15	2.0	30%	Pass	
Copper	B13-Oc19014	CP	mg/kg	190	190	1.0	30%	Pass	
Lead	B13-Oc19014	CP	mg/kg	16000	16000	1.0	30%	Pass	
Nickel	B13-Oc19014	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	B13-Oc19014	CP	mg/kg	1200	1200	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)
Carroll Lee	Senior Analyst-Volatile (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Michael Wright

National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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

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Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 1 of 5

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : 5122934	COC Number :
Office Address : 2 Mangeview St Milton	Project Manager : " "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : " "	PROJECT Name : UQEM	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Metals M7	R9	Hold
1	BH16 0.1	23/10	Soil	X		
2	0.5	"				X
3	1.4	"		X		
4	1.7	"		X		[illegible]
5	2	"		X		
6	BH17 0.2	"				X
7	0.5	"		X		
8	0.5R	"		X		
9	1	"				X
10	1.7	"		X		
11	BH18 0.2	"		X		
12	0.5	"				X
13	1	"		X		
14	1.5	"				X
15	2	"		X		
16	3	"				X

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:

☑ CN HD # CON NOTES POST CODE
AP MAGS

Relinquished By: S Sherrington
Date & Time : 23/10/13
Signature:

Laboratory Staff
Received By: Mane I
Date & Time : 24.10.13 12PM
Signature:

Turn around time
1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment
☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 20.2 ICE BRICKS

Report number: 397424

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Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
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Email: enviro.syd@mgtlabmark.com.au

☑ Brisbane
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Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ Melbourne
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Mayneview St Milton	Project Manager : " "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : " "	PROJECT Name : UQEM	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Metals M7	Ra	Hold.	
1	BH 18 3.7	23/10	Soil	X			
2	BH 19 0.1			XX			
3	0.5					X	
4	0.8			X		X	
5	0.9			X			
6	1.5					X	
7	2			X			
8	BH20 0.1			XX			
9	0.6			X			
10	0.6 R			X			
11	1			X			
12	2.0			X			
13	2.8					X	
14	3.0			X			
15	3.7					X	
16	GW4 0.1	↓	↓			X	

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	

Sample comments:

Laboratory Staff

Relinquished By: S Sherrington
Date & Time : 23/10/13
Signature:

Received By: Marie I
Date & Time : 24.10.13 12PM
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 20.2

Report number: 397424

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : 5122934	COC Number :
Office Address : 2 Mangoview St.	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : UQEM	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Metals R7	Rg Hold
1	GW4 0.5	22/10	Soil	X	
2	" 1	↓	↓		X
3	" 2	↓	↓	X	
4	" 3	↓	↓		X
5	" 4	↓	↓		X
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	Sample comments:

Relinquished By:	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Received By: Marie I	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☐ Courier	20.2
Date & Time : 23/10/13	Date & Time : 24.10.13 12PM	5 DAY ☑ 10 DAY ☐ Other:	☐ Hand Delivered	Report number:
Signature: [signature]	Signature: [signature]		☐ Postal Courier Consignment # :	397424

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

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: VQEM J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Oct 24, 2013 12:00 PM
Eurofins | mgt reference: **397424**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **397424-S**
Client Reference UQEM J122934
Received Date Oct 24, 2013

Client Sample ID			**BH16 0.1**	**BH16 1.4**	**BH16 1.7**	**BH16 2.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc19265**	**B13-Oc19266**	**B13-Oc19267**	**B13-Oc19268**
Date Sampled			**Oct 23, 2013**	**Oct 23, 2013**	**Oct 23, 2013**	**Oct 23, 2013**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	33	3.0	4.7	29
Cadmium	0.5	mg/kg	2.5	< 0.5	< 0.5	6.8
Chromium	5	mg/kg	12	10	10	23
Copper	5	mg/kg	27	5.6	6.1	27
Lead	5	mg/kg	620	16	73	180
Nickel	5	mg/kg	12	9.3	8.3	23
Zinc	5	mg/kg	420	29	76	620
% Moisture	0.1	%	12	1.3	2.9	3.8

Client Sample ID			**BH17 0.5**	**BH17 0.5R**	**BH17 1.7**	**BH18 0.2**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc19269**	**B13-Oc19270**	**B13-Oc19271**	**B13-Oc19272**
Date Sampled			**Oct 23, 2013**	**Oct 23, 2013**	**Oct 23, 2013**	**Oct 23, 2013**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	14	16	8.4	23
Cadmium	0.5	mg/kg	1.0	1.2	0.7	0.6
Chromium	5	mg/kg	28	28	6.8	37
Copper	5	mg/kg	22	25	12	26
Lead	5	mg/kg	430	470	160	260
Nickel	5	mg/kg	12	12	5.8	19
Zinc	5	mg/kg	200	230	110	95
% Moisture	0.1	%	9.1	11	1.3	3.7

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH18 1.0 Soil B13-Oc19273 Oct 23, 2013	BH18 2.0 Soil B13-Oc19274 Oct 23, 2013	BH18 3.7 Soil B13-Oc19275 Oct 23, 2013	BH19 0.1 Soil B13-Oc19276 Oct 23, 2013
Heavy Metals						
Arsenic	2	mg/kg	22	13	25	67
Cadmium	0.5	mg/kg	1.4	< 0.5	0.8	4.8
Chromium	5	mg/kg	80	80	36	14
Copper	5	mg/kg	33	19	20	49
Lead	5	mg/kg	950	150	190	1900
Nickel	5	mg/kg	24	15	19	10
Zinc	5	mg/kg	170	58	160	480
% Moisture	0.1	%	8.1	7.8	13	4.9

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH19 0.8 Soil B13-Oc19277 Oct 23, 2013	BH19 0.9 Soil B13-Oc19278 Oct 23, 2013	BH19 2.0 Soil B13-Oc19279 Oct 23, 2013	BH20 0.1 Soil B13-Oc19280 Oct 23, 2013
Heavy Metals						
Arsenic	2	mg/kg	36	46	32	9.8
Cadmium	0.5	mg/kg	2.8	3.2	4.5	0.7
Chromium	5	mg/kg	9.2	8.0	20	26
Copper	5	mg/kg	120	210	17	25
Lead	5	mg/kg	7400	27000	270	250
Nickel	5	mg/kg	5.6	< 5	9.2	15
Zinc	5	mg/kg	500	360	480	96
% Moisture	0.1	%	6.8	8.2	13	9.3

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH20 0.6 Soil B13-Oc19281 Oct 23, 2013	BH20 0.6R Soil B13-Oc19282 Oct 23, 2013	BH20 1.0 Soil B13-Oc19283 Oct 23, 2013	BH20 2.0 Soil B13-Oc19284 Oct 23, 2013
Heavy Metals						
Arsenic	2	mg/kg	8.7	6.7	14	19
Cadmium	0.5	mg/kg	1.1	< 0.5	2.5	7.5
Chromium	5	mg/kg	21	11	27	25
Copper	5	mg/kg	17	< 5	29	22
Lead	5	mg/kg	230	28	4700	80
Nickel	5	mg/kg	14	5.3	14	12
Zinc	5	mg/kg	110	26	180	240
% Moisture	0.1	%	7.0	8.9	7.4	9.9

Client Sample ID			BH20 3.0	GW4 0.5	GW4 2.0
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc19285**	**B13-Oc19286**	**B13-Oc19287**
Date Sampled			**Oct 23, 2013**	**Oct 23, 2013**	**Oct 23, 2013**
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	2	mg/kg	3.8	2.4	3.2
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	21	30	38
Copper	5	mg/kg	19	11	13
Lead	5	mg/kg	31	14	15
Nickel	5	mg/kg	10	19	20
Zinc	5	mg/kg	61	31	36
% Moisture	0.1	%	3.5	0.4	13

Sample History

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

Description	Testing Site	Extracted	Holding Time
Metals M7	Brisbane	Oct 25, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			
% Moisture	Brisbane	Oct 25, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	100			80-120	Pass	
Cadmium	%	95			80-120	Pass	
Chromium	%	90			80-120	Pass	
Copper	%	89			80-120	Pass	
Lead	%	104			80-120	Pass	
Nickel	%	88			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	B13-Oc19265	CP	%	89			75-125	Pass	
Chromium	B13-Oc19265	CP	%	82			75-125	Pass	
Copper	B13-Oc19555	NCP	%	97			75-125	Pass	
Nickel	B13-Oc19555	NCP	%	95			75-125	Pass	
Zinc	B13-Oc19555	NCP	%	104			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	B13-Oc19275	CP	%	91			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc19285	CP	%	78			75-125	Pass	
Cadmium	B13-Oc19285	CP	%	95			75-125	Pass	
Chromium	B13-Oc19285	CP	%	81			75-125	Pass	
Lead	B13-Oc19285	CP	%	86			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc19265	CP	mg/kg	33	35	6.0	30%	Pass	
Cadmium	B13-Oc19265	CP	mg/kg	2.5	2.6	7.0	30%	Pass	
Chromium	B13-Oc19265	CP	mg/kg	12	13	7.0	30%	Pass	
Copper	B13-Oc19265	CP	mg/kg	27	29	6.0	30%	Pass	
Lead	B13-Oc19265	CP	mg/kg	620	670	8.0	30%	Pass	
Nickel	B13-Oc19265	CP	mg/kg	12	13	5.0	30%	Pass	
Zinc	B13-Oc19265	CP	mg/kg	420	440	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc19275	CP	mg/kg	25	25	2.0	30%	Pass	
Cadmium	B13-Oc19275	CP	mg/kg	0.8	0.8	4.0	30%	Pass	
Chromium	B13-Oc19275	CP	mg/kg	36	35	4.0	30%	Pass	
Copper	B13-Oc19275	CP	mg/kg	20	20	2.0	30%	Pass	
Lead	B13-Oc19275	CP	mg/kg	190	180	5.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Nickel	B13-Oc19275	CP	mg/kg	19	19	2.0	30%	Pass	
Zinc	B13-Oc19275	CP	mg/kg	160	160	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc19285	CP	mg/kg	3.8	3.8	2.0	30%	Pass	
Cadmium	B13-Oc19285	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium	B13-Oc19285	CP	mg/kg	21	20	3.0	30%	Pass	
Copper	B13-Oc19285	CP	mg/kg	19	19	1.0	30%	Pass	
Lead	B13-Oc19285	CP	mg/kg	31	30	4.0	30%	Pass	
Nickel	B13-Oc19285	CP	mg/kg	10	10	1.0	30%	Pass	
Zinc	B13-Oc19285	CP	mg/kg	61	59	3.0	30%	Pass	

Comments

Sample Integrity

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

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)

Michael Wright
National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 1 of ____

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Mayneview St Milton	Project Manager : " "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : " "	PROJECT Name : UQEM DSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Metals M7	Rq	Hold
1	BH21 0.1	24/10	Soil	X		
2	0.3					X
3	0.5			X		
4	1			X		
5	1.5					X
6	2			X		
7	3					X
8	BH22 0.4			X		
9	0.8					X
10	1			X		
11	1.5					X
12	2			X		
13	3			X		
14	4					X
15	5			X		
16	6					X

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:

Relinquished By:	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Received By: Marc I	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☐ Courier ☑ CN HD	11.2 ICE BRICKS
Date & Time : 24/10/13	Date & Time : 25.10.13 1PM	5 DAY ☐ 10 DAY ☐ Other:	☐ Hand Delivered ☐ Postal	Report number:
Signature:	Signature:		Courier Consignment # : AP CR	397576

QS3009_R0 Issue Date: 25 February 2013 Page 1 of 1

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page ____ of ____

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : 5122934	COC Number :
Office Address : 2 Mayneview St Milton	Project Manager : Steve Sherrington	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : "	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

	Sample ID	Date	Matrix	Metals M7	R9	Hold	1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:
1	BH23 0.2	24/10	Soil	X											
2	0.5					X									
3	1			X											
4	1R			X											
5	2					X									
6	3					X									
7	4			X											
8	5			X											
9	5R			X											
10	BH24 0.3				X										
11	0.4				X										
12	04R				X										
13	1.5					X									
14	24			X											
15	GW5 0.2				X										
16	0.5					X									

Relinquished By:	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Received By: marie I	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☐ Courier	11.2
Date & Time : 24/10/13	Date & Time : 25.10.13 1PM	5 DAY ☐ 10 DAY ☐ Other:	☐ Hand Delivered	Report number:
Signature:	Signature:		☐ Postal	397576
			Courier Consignment # :	

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name: Steve Sherringham	Purchase Order : J122934	COC Number :
Office Address: 2 Mayneview St Milton	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : "	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Metals M7	Rd Hold
1	GW5 1	24/10	Soil	X	
2	1.3			X	
3	1.4			X	
4	1.9				
5	2.3				X
6	2.7				X
7	3				X
8					
9					
10					
11					
12					
13					
14					
15					
16					

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	

Sample comments:

Relinquished By:	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
Date & Time :	Received By: Marc I	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☐ Courier ☑ CN ☐ HD	11.2 ICE BRICKS
Signature:	Date & Time : 25.10.13 1PM	5 DAY ☐ 10 DAY ☐ Other:	☐ Hand Delivered # CON NOTES	Report number: 397576
	Signature:		☐ Postal POST CODE	
			Courier Consignment # CR MASS	

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NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: VQEM DSI J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Oct 25, 2013 1:00 PM
Eurofins | mgt reference: **397576**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **397576-S**
Client Reference UQEM J122934
Received Date Oct 25, 2013

Client Sample ID			**BH21 0.1**	**BH21 0.5**	**BH21 1.0**	**BH21 2.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc20569**	**B13-Oc20570**	**B13-Oc20571**	**B13-Oc20572**
Date Sampled			**Oct 24, 2013**	**Oct 24, 2013**	**Oct 24, 2013**	**Oct 24, 2013**
Test/Reference	LOR	Unit				
% Moisture	0.1	%	5.3	5.0	9.7	9.6
Heavy Metals						
Arsenic	2	mg/kg	50	320	27	51
Cadmium	0.5	mg/kg	13	31	50	13
Chromium	5	mg/kg	17	11	16	12
Copper	5	mg/kg	60	38	720	170
Lead	5	mg/kg	1000	1200	6800	11000
Nickel	5	mg/kg	13	21	14	< 5
Zinc	5	mg/kg	4100	8400	17000	3200

Client Sample ID			**BH22 0.4**	**BH22 1.0**	**BH22 2.0**	**BH22 3.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc20573**	**B13-Oc20574**	**B13-Oc20575**	**B13-Oc20576**
Date Sampled			**Oct 24, 2013**	**Oct 24, 2013**	**Oct 24, 2013**	**Oct 24, 2013**
Test/Reference	LOR	Unit				
% Moisture	0.1	%	7.5	6.4	12	13
Heavy Metals						
Arsenic	2	mg/kg	36	110	21	25
Cadmium	0.5	mg/kg	3.8	23	11	12
Chromium	5	mg/kg	13	12	13	17
Copper	5	mg/kg	37	250	380	140
Lead	5	mg/kg	730	5800	12000	8600
Nickel	5	mg/kg	15	14	8.7	< 5
Zinc	5	mg/kg	760	8200	5400	3600

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH22 5.0 Soil B13-Oc20577 Oct 24, 2013	BH23 0.2 Soil B13-Oc20578 Oct 24, 2013	BH23 1.0 Soil B13-Oc20579 Oct 24, 2013	BH23 1.0R Soil B13-Oc20580 Oct 24, 2013
% Moisture	0.1	%	2.9	5.2	6.2	3.7
Heavy Metals						
Arsenic	2	mg/kg	56	40	1800	1200
Cadmium	0.5	mg/kg	3.0	17	14	7.4
Chromium	5	mg/kg	17	9.5	6.6	5.5
Copper	5	mg/kg	130	76	100	110
Lead	5	mg/kg	7800	2300	13000	5900
Nickel	5	mg/kg	< 5	12	13	6.9
Zinc	5	mg/kg	160	750	2200	1500

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH23 4.0 Soil B13-Oc20581 Oct 24, 2013	BH23 5.0 Soil B13-Oc20582 Oct 24, 2013	BH23 5.0R Soil B13-Oc20583 Oct 24, 2013	BH24 0.3 Soil B13-Oc20584 Oct 24, 2013
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	3400
TRH C15-C28	50	mg/kg	-	-	-	73000
TRH C29-C36	50	mg/kg	-	-	-	37000
TRH C10-36 (Total)	50	mg/kg	-	-	-	110000
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	-	40
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
TRH >C10-C16	50	mg/kg	-	-	-	6500
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	-	6500
TRH >C16-C34	100	mg/kg	-	-	-	97000
TRH >C34-C40	100	mg/kg	-	-	-	12000
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	-	-	-	340
Acenaphthylene	0.5	mg/kg	-	-	-	100
Anthracene	0.5	mg/kg	-	-	-	490
Benz(a)anthracene	0.5	mg/kg	-	-	-	730
Benzo(a)pyrene	0.5	mg/kg	-	-	-	630
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	400
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	310
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	370
Chrysene	0.5	mg/kg	-	-	-	620
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	120
Fluoranthene	0.5	mg/kg	-	-	-	1700
Fluorene	0.5	mg/kg	-	-	-	260
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	280
Naphthalene	0.5	mg/kg	-	-	-	570

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH23 4.0 Soil B13-Oc20581 Oct 24, 2013	BH23 5.0 Soil B13-Oc20582 Oct 24, 2013	BH23 5.0R Soil B13-Oc20583 Oct 24, 2013	BH24 0.3 Soil B13-Oc20584 Oct 24, 2013
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	-	-	-	1800
Pyrene	0.5	mg/kg	-	-	-	1600
Total PAH	0.5	mg/kg	-	-	-	10000
Benzo(a)pyrene TEQ*	0.5	mg/kg	-	-	-	940
2-Fluorobiphenyl (surr.)	1	%	-	-	-	125
p-Terphenyl-d14 (surr.)	1	%	-	-	-	148
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	-	< 0.1
4.4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	-	< 0.1
a-BHC	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.1
b-BHC	0.05	mg/kg	-	-	-	< 0.05
d-BHC	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	< 0.05
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.1
Toxaphene	1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	[Q09A]1
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	76
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	-	< 0.1
Total PCB	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	[Q09A]1
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	76
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	-	-	< 50
2.4-Dichlorophenol	0.5	mg/kg	-	-	-	< 50
2.4.5-Trichlorophenol	1.0	mg/kg	-	-	-	< 100
2.4.6-Trichlorophenol	1.0	mg/kg	-	-	-	< 100
2.6-Dichlorophenol	0.5	mg/kg	-	-	-	< 50
4-Chloro-3-methylphenol	1.0	mg/kg	-	-	-	< 100

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH23 4.0 Soil B13-Oc20581 Oct 24, 2013	BH23 5.0 Soil B13-Oc20582 Oct 24, 2013	BH23 5.0R Soil B13-Oc20583 Oct 24, 2013	BH24 0.3 Soil B13-Oc20584 Oct 24, 2013
Phenols (Halogenated)						
Pentachlorophenol	1.0	mg/kg	-	-	-	< 100
Tetrachlorophenols - Total	1.0	mg/kg	-	-	-	< 100
Total Halogenated Phenol	1	mg/kg	-	-	-	< 100
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	-	-	< 1500
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	-	-	< 500
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	-	-	< 50
2-Nitrophenol	1.0	mg/kg	-	-	-	< 100
2.4-Dimethylphenol	0.5	mg/kg	-	-	-	68
2.4-Dinitrophenol	5	mg/kg	-	-	-	< 500
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	-	-	< 100
4-Nitrophenol	5	mg/kg	-	-	-	< 500
Dinoseb	20	mg/kg	-	-	-	< 1500
Phenol	0.5	mg/kg	-	-	-	< 50
Total Non-Halogenated Phenol	20	mg/kg	-	-	-	< 1500
Phenol-d6 (surr.)	1	%	-	-	-	71
Chromium (hexavalent)	1	mg/kg	-	-	-	< 1
Cyanide (free)	5	mg/kg	-	-	-	< 5
Cyanide (total)	5	mg/kg	-	-	-	< 5
Sulphate (as S)	10	mg/kg	-	-	-	49
Phosphorus	5	mg/kg	-	-	-	380
Sulphur	5	mg/kg	-	-	-	510
% Moisture	0.1	%	6.3	6.8	7.4	25
Heavy Metals						
Arsenic	2	mg/kg	180	130	130	30
Barium	10	mg/kg	-	-	-	57
Beryllium	2	mg/kg	-	-	-	< 2
Boron	10	mg/kg	-	-	-	< 10
Cadmium	0.5	mg/kg	1.0	3.8	3.3	37
Chromium	5	mg/kg	9.0	19	17	19
Cobalt	5	mg/kg	-	-	-	8.7
Copper	5	mg/kg	26	28	25	160
Lead	5	mg/kg	430	280	210	5500
Manganese	5	mg/kg	-	-	-	980
Mercury	0.1	mg/kg	-	-	-	0.5
Nickel	5	mg/kg	8.8	14	13	18
Vanadium	10	mg/kg	-	-	-	25
Zinc	5	mg/kg	270	260	250	3400
NEPM 1999 Metals : Metals M14						
Chromium (trivalent)	5	mg/kg	-	-	-	19

Client Sample ID			BH24 0.4	BH24 0.4R	BH24 2.4	GW5 0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			B13-Oc20585	B13-Oc20586	B13-Oc20587	B13-Oc20588
Date Sampled			Oct 24, 2013	Oct 24, 2013	Oct 24, 2013	Oct 24, 2013
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	-	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	-	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	-	< 50
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	-	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	-	< 100
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ*	0.5	mg/kg	0.6	0.6	-	0.6
2-Fluorobiphenyl (surr.)	1	%	102	117	-	137
p-Terphenyl-d14 (surr.)	1	%	101	117	-	145
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH24 0.4 Soil B13-Oc20585 Oct 24, 2013	BH24 0.4R Soil B13-Oc20586 Oct 24, 2013	BH24 2.4 Soil B13-Oc20587 Oct 24, 2013	GW5 0.2 Soil B13-Oc20588 Oct 24, 2013
Organochlorine Pesticides						
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	-	< 1
Dibutylchlorendate (surr.)	1	%	137	98	-	106
Tetrachloro-m-xylene (surr.)	1	%	102	83	-	80
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Total PCB	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	137	98	-	106
Tetrachloro-m-xylene (surr.)	1	%	102	83	-	80
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4.5-Trichlorophenol	1.0	mg/kg	< 1	< 1	-	< 1
2.4.6-Trichlorophenol	1.0	mg/kg	< 1	< 1	-	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	-	< 1
Pentachlorophenol	1.0	mg/kg	< 1	< 1	-	< 1
Tetrachlorophenols - Total	1.0	mg/kg	< 1	< 1	-	< 1
Total Halogenated Phenol	1	mg/kg	< 1	< 1	-	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	-	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
2-Nitrophenol	1.0	mg/kg	< 1	< 1	-	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	-	< 5
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
4-Nitrophenol	5	mg/kg	< 5	< 5	-	< 5
Dinoseb	20	mg/kg	< 20	< 20	-	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	-	< 20
Phenol-d6 (surr.)	1	%	89	100	-	116
Chromium (hexavalent)	1	mg/kg	< 1	< 1	-	< 1
Cyanide (free)	5	mg/kg	< 5	< 5	-	< 5
Cyanide (total)	5	mg/kg	< 5	< 5	-	< 5

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH24 0.4 Soil B13-Oc20585 Oct 24, 2013	BH24 0.4R Soil B13-Oc20586 Oct 24, 2013	BH24 2.4 Soil B13-Oc20587 Oct 24, 2013	GW5 0.2 Soil B13-Oc20588 Oct 24, 2013
Sulphate (as S)	10	mg/kg	< 10	< 10	-	16
Phosphorus	5	mg/kg	160	140	-	250
Sulphur	5	mg/kg	39	170	-	53
% Moisture	0.1	%	9.5	9.9	23	4.4
Heavy Metals						
Arsenic	2	mg/kg	29	30	3.9	7.6
Barium	10	mg/kg	25	25	-	35
Beryllium	2	mg/kg	< 2	< 2	-	< 2
Boron	10	mg/kg	< 10	< 10	-	< 10
Cadmium	0.4	mg/kg	2.9	4.2	75	< 0.4
Chromium	5	mg/kg	7.6	7.8	41	10
Cobalt	5	mg/kg	6.7	< 5	-	5.7
Copper	5	mg/kg	320	300	17	23
Lead	5	mg/kg	16000	13000	1300	32
Manganese	5	mg/kg	2000	1600	-	430
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Nickel	5	mg/kg	6.3	5.9	15	10
Vanadium	10	mg/kg	15	15	-	15
Zinc	5	mg/kg	1300	1800	5100	44
NEPM 1999 Metals : Metals M14						
Chromium (trivalent)	5	mg/kg	7.6	7.8	-	10

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	GW5 1.0 Soil B13-Oc20589 Oct 24, 2013	GW5 1.3 Soil B13-Oc20590 Oct 24, 2013	GW5 1.4 Soil B13-Oc20591 Oct 24, 2013	GW5 1.9 Soil B13-Oc20592 Oct 24, 2013
% Moisture	0.1	%	8.2	29	28	24
Heavy Metals						
Arsenic	2	mg/kg	10	12	18	4.2
Cadmium	0.5	mg/kg	0.7	44	59	< 0.5
Chromium	5	mg/kg	17	40	39	45
Copper	5	mg/kg	16	29	56	20
Lead	5	mg/kg	64	330	2700	200
Nickel	5	mg/kg	11	24	24	26
Zinc	5	mg/kg	93	700	1000	50

Sample History

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

Description	Testing Site	Extracted	Holding Time
NEPM HIL Screen: 1999 B(1)HIL Table 5A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Oct 28, 2013	14 Day
- Method: TRH C6-C36 - MGT 100A			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Oct 28, 2013	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Oct 28, 2013	14 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Oct 28, 2013	14 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Polychlorinated Biphenyls	Melbourne	Oct 28, 2013	28 Day
- Method: USEPA 8082 Polychlorinated Biphenyls			
Phenols (Halogenated)	Melbourne	Oct 28, 2013	14 Day
- Method: USEPA 8270 Phenols			
Phenols (non-Halogenated)	Melbourne	Oct 28, 2013	14 Day
- Method: USEPA 8270 Phenols			
Chromium (hexavalent)	Melbourne	Oct 28, 2013	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Oct 30, 2013	14 Day
- Method: USEPA 9010 Cyanide			
Sulphate (as S)	Melbourne	Oct 28, 2013	28 Day
- Method: In house MGT1110A (SO4 by Discrete Analyser)			
Phosphorus	Melbourne	Oct 28, 2013	180 Day
- Method: USEPA 6010			
Sulphur	Melbourne	Oct 28, 2013	7 Day
- Method: LTM-MET-3010			
NEPM 1999 Metals : Metals M14	Melbourne	Oct 28, 2013	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
% Moisture	Brisbane	Oct 29, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			
Metals M7	Brisbane	Oct 29, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB	mg/kg	0			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1.0	Pass	
Pentachlorophenol	mg/kg	< 1			1.0	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1.0	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Sulphate (as S)	mg/kg	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	97			70-130	Pass	
TRH C10-C14	%	110			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	97			70-130	Pass	
TRH >C10-C16	%	112			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	106			70-130	Pass	
Acenaphthylene	%	107			70-130	Pass	
Anthracene	%	109			70-130	Pass	
Benz(a)anthracene	%	117			70-130	Pass	
Benzo(a)pyrene	%	102			70-130	Pass	
Benzo(b&j)fluoranthene	%	108			70-130	Pass	
Benzo(g.h.i)perylene	%	122			70-130	Pass	
Benzo(k)fluoranthene	%	87			70-130	Pass	
Chrysene	%	107			70-130	Pass	
Dibenz(a.h)anthracene	%	127			70-130	Pass	
Fluoranthene	%	110			70-130	Pass	
Fluorene	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	117			70-130	Pass	
Naphthalene	%	121			70-130	Pass	
Phenanthrene	%	112			70-130	Pass	
Pyrene	%	112			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	99			70-130	Pass	
4.4'-DDE	%	112			70-130	Pass	
4.4'-DDT	%	88			70-130	Pass	
a-BHC	%	107			70-130	Pass	
Aldrin	%	105			70-130	Pass	
b-BHC	%	106			70-130	Pass	
d-BHC	%	107			70-130	Pass	
Dieldrin	%	92			70-130	Pass	
Endosulfan I	%	106			70-130	Pass	
Endosulfan II	%	99			70-130	Pass	
Endosulfan sulphate	%	91			70-130	Pass	
Endrin	%	103			70-130	Pass	
Endrin aldehyde	%	94			70-130	Pass	
Endrin ketone	%	91			70-130	Pass	
g-BHC (Lindane)	%	104			70-130	Pass	
Heptachlor	%	101			70-130	Pass	
Heptachlor epoxide	%	99			70-130	Pass	
Hexachlorobenzene	%	100			70-130	Pass	
Methoxychlor	%	77			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	122			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	110			30-130	Pass	
2.4-Dichlorophenol	%	127			30-130	Pass	
2.4.5-Trichlorophenol	%	128			30-130	Pass	
2.4.6-Trichlorophenol	%	127			30-130	Pass	
2.6-Dichlorophenol	%	130			30-130	Pass	
4-Chloro-3-methylphenol	%	117			30-130	Pass	
Pentachlorophenol	%	74			30-130	Pass	
Tetrachlorophenols - Total	%	126			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	53			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	69			30-130	Pass	
2-Methylphenol (o-Cresol)	%	104			30-130	Pass	
2-Nitrophenol	%	125			30-130	Pass	
2.4-Dimethylphenol	%	123			30-130	Pass	
2.4-Dinitrophenol	%	48			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	111			30-130	Pass	
4-Nitrophenol	%	97			30-130	Pass	
Dinoseb	%	73			30-130	Pass	
Phenol	%	116			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	106			70-130	Pass	
Cyanide (total)	%	92			70-130	Pass	
Sulphate (as S)	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	117			80-120	Pass	
Arsenic	%	96			80-120	Pass	
Barium	%	109			80-120	Pass	
Beryllium	%	104			80-120	Pass	
Boron	%	99			80-120	Pass	
Cadmium	%	100			80-120	Pass	
Cadmium	%	103			80-120	Pass	
Chromium	%	106			80-120	Pass	
Chromium	%	106			80-120	Pass	
Cobalt	%	103			80-120	Pass	
Copper	%	107			80-120	Pass	
Copper	%	114			80-120	Pass	
Lead	%	100			80-120	Pass	
Lead	%	109			80-120	Pass	
Manganese	%	108			80-120	Pass	
Mercury	%	112			75-125	Pass	
Nickel	%	105			80-120	Pass	
Nickel	%	103			80-120	Pass	
Vanadium	%	107			80-120	Pass	
Zinc	%	100			80-120	Pass	
Zinc	%	98			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc20569	CP	%	113			75-125	Pass	
Cadmium	B13-Oc20569	CP	%	116			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	B13-Oc20569	CP	%	91			75-125	Pass	
Copper	B13-Oc21545	NCP	%	113			75-125	Pass	
Lead	B13-Oc21535	NCP	%	80			75-125	Pass	
Zinc	B13-Oc21554	NCP	%	98			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	B13-Oc20579	CP	%	107			75-125	Pass	
Chromium	B13-Oc20579	CP	%	104			75-125	Pass	
Nickel	B13-Oc20579	CP	%	83			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M13-Oc20668	NCP	%	105			70-130	Pass	
TRH C10-C14	M13-Oc21193	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	M13-Oc20668	NCP	%	105			70-130	Pass	
TRH >C10-C16	M13-Oc21193	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M13-Oc21486	NCP	%	95			70-130	Pass	
4.4'-DDE	M13-Oc21486	NCP	%	102			70-130	Pass	
4.4'-DDT	M13-Oc21486	NCP	%	97			70-130	Pass	
a-BHC	M13-Oc21486	NCP	%	100			70-130	Pass	
Aldrin	M13-Oc21486	NCP	%	101			70-130	Pass	
b-BHC	M13-Oc21486	NCP	%	98			70-130	Pass	
d-BHC	M13-Oc21486	NCP	%	101			70-130	Pass	
Dieldrin	M13-Oc21486	NCP	%	103			70-130	Pass	
Endosulfan I	M13-Oc21486	NCP	%	100			70-130	Pass	
Endosulfan II	M13-Oc21486	NCP	%	91			70-130	Pass	
Endosulfan sulphate	M13-Oc21486	NCP	%	86			70-130	Pass	
Endrin	M13-Oc21486	NCP	%	97			70-130	Pass	
Endrin aldehyde	M13-Oc21486	NCP	%	79			70-130	Pass	
Endrin ketone	M13-Oc21486	NCP	%	90			70-130	Pass	
g-BHC (Lindane)	M13-Oc21486	NCP	%	97			70-130	Pass	
Heptachlor	M13-Oc21486	NCP	%	102			70-130	Pass	
Heptachlor epoxide	M13-Oc21486	NCP	%	95			70-130	Pass	
Hexachlorobenzene	M13-Oc21486	NCP	%	98			70-130	Pass	
Methoxychlor	M13-Oc21486	NCP	%	77			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	M13-Oc22449	NCP	%	82			70-130	Pass	
Cyanide (total)	M13-Oc20846	NCP	%	70			70-130	Pass	
Sulphate (as S)	M13-Oc20992	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc20584	CP	%	80			75-125	Pass	
Barium	B13-Oc20584	CP	%	67			75-125	Fail	Q08
Beryllium	B13-Oc20584	CP	%	64			75-125	Fail	Q08
Boron	B13-Oc20584	CP	%	57			75-125	Fail	Q08
Chromium	B13-Oc20584	CP	%	67			75-125	Fail	Q08
Cobalt	B13-Oc20584	CP	%	59			75-125	Fail	Q08
Manganese	M13-Oc22160	NCP	%	114			75-125	Pass	
Mercury	B13-Oc20584	CP	%	100			70-130	Pass	
Nickel	B13-Oc20584	CP	%	62			75-125	Fail	Q08
Vanadium	B13-Oc20584	CP	%	69			75-125	Fail	Q08

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M13-Oc21333	NCP	%	93			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc20569	CP	mg/kg	50	49	2.0	30%	Pass	
Cadmium	B13-Oc20569	CP	mg/kg	13	12	4.0	30%	Pass	
Chromium	B13-Oc20569	CP	mg/kg	17	16	3.0	30%	Pass	
Copper	B13-Oc20569	CP	mg/kg	60	59	2.0	30%	Pass	
Lead	B13-Oc20569	CP	mg/kg	1000	1100	2.0	30%	Pass	
Nickel	B13-Oc20569	CP	mg/kg	13	13	3.0	30%	Pass	
Zinc	B13-Oc20569	CP	mg/kg	4100	4100	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc20579	CP	mg/kg	1800	1800	3.0	30%	Pass	
Cadmium	B13-Oc20579	CP	mg/kg	14	14	2.0	30%	Pass	
Chromium	B13-Oc20579	CP	mg/kg	6.6	7.2	9.0	30%	Pass	
Copper	B13-Oc20579	CP	mg/kg	100	98	2.0	30%	Pass	
Lead	B13-Oc20579	CP	mg/kg	13000	13000	3.0	30%	Pass	
Nickel	B13-Oc20579	CP	mg/kg	13	12	3.0	30%	Pass	
Zinc	B13-Oc20579	CP	mg/kg	2200	2100	4.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M13-Oc20668	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M13-Oc21193	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M13-Oc21193	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M13-Oc21193	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M13-Oc24576	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M13-Oc20668	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10 less BTEX (F1)	M13-Oc20668	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M13-Oc21193	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M13-Oc21193	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M13-Oc21193	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M13-Oc21486	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M13-Oc22826	NCP	mg/kg	0.67	0.68	1.0	30%	Pass	
Endosulfan I	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M13-Oc21486	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M13-Oc21486	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M13-Oc21486	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M13-Oc21486	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M13-Oc21486	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M13-Oc21486	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M13-Oc21486	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M13-Oc21486	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M13-Oc21486	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB	M13-Oc21486	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	M13-Oc16963	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	M13-Oc16963	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	M13-Oc16963	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	M13-Oc16963	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	M13-Oc16963	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M13-Oc16963	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M13-Oc16963	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M13-Oc16963	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	M13-Oc16963	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	M13-Oc16963	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M13-Oc16963	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	M13-Oc16963	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	M13-Oc16963	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	M13-Oc16963	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M13-Oc20851	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Cyanide (total)	B13-Oc20584	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Sulphate (as S)	M13-Oc20992	NCP	mg/kg	23	23	2.7	30%	Pass	
Phosphorus	M13-Oc19922	NCP	mg/kg	470	540	13	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc20584	CP	mg/kg	30	38	23	30%	Pass	
Barium	B13-Oc20584	CP	mg/kg	57	55	3.0	30%	Pass	
Beryllium	B13-Oc20584	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	B13-Oc20584	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	B13-Oc20584	CP	mg/kg	37	37	2.0	30%	Pass	
Chromium	B13-Oc20584	CP	mg/kg	19	19	1.0	30%	Pass	
Cobalt	B13-Oc20584	CP	mg/kg	8.7	8.2	5.0	30%	Pass	
Copper	B13-Oc20584	CP	mg/kg	160	160	<1	30%	Pass	
Lead	B13-Oc20584	CP	mg/kg	5500	4200	27	30%	Pass	
Manganese	B13-Oc20584	CP	mg/kg	980	980	<1	30%	Pass	
Mercury	B13-Oc20584	CP	mg/kg	0.5	0.5	6.0	30%	Pass	
Nickel	B13-Oc20584	CP	mg/kg	18	17	3.0	30%	Pass	
Vanadium	B13-Oc20584	CP	mg/kg	25	22	14	30%	Pass	
Zinc	B13-Oc20584	CP	mg/kg	3400	3200	5.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q09A	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference and is unquantifiable. A result of 1 has been reported for the purposes of providing a numerical result. Acceptance criteria were met for all other QC.
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)
Carroll Lee	Senior Analyst-Volatile (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Michael Wright

National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 1 of ____

Company Name : NAA	Contact Name Steve Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Magnavian St. Milton	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : "	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Metals M7	R9	Hold
1	BH25 0.05	25/10	Soil	X		
2	0.1			X		
3	0.1R			X		
4	0.5			X		
5	BH26 0.1			X		
6	05			X		
7	BH27 0.1			X		
8	0.3			X		
9	0.3R			X		
10	0.5					X
11	BH28 0.1			X		
12	0.5			X		
13	0.5R			X		
14	1					X
15	1.5					X
16	BH29 0.1			X		

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:

Relinquished By: [signature]	Laboratory Staff Received By: Marie I	Turn around time 1 DAY ☐ 2 DAY ☐ 3 DAY ☐	Method Of Shipment ☐ Courier ☑ CN HD ☐ Hand Delivered ☐ Postal AP CR Courier Consignment # :
Date & Time : 25/10/13	Date & Time : 28.10.13 1:30PM	5 DAY ☑ 10 DAY ☐ Other:	# CON NOTES / POST CODE / MASS
Signature: S Sherrington	Signature: [signature]		

Temperature on arrival: 16.5°C ICE BRICK

Report number: 397743

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : 5122934	COC Number :
Office Address : 2 Mayneview St Milton	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : "	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	Metals M7	R9	Hold
1	BH29 0.5	25/10	Soil			x
2	↓ 1	"	"	x		
3	↓ 1.5	"	"			x
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar	

Sample comments:

Laboratory Staff	Turn around time	Method Of Shipment	
Relinquished By: S Sherrington	Received By: Marie I	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☐ Courier
Date & Time : 25/10/13	Date & Time : 28.10.13 1:30PM	5 DAY ☑ 10 DAY ☐ Other:	☐ Hand Delivered
Signature:	Signature:		☐ Postal
			Courier Consignment # :

Temperature on arrival: 16.5°C

Report number: 397743

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NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Oct 28, 2013 1:30 PM
Eurofins | mgt reference: **397743**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **397743-S**
Client Reference J122934
Received Date Oct 28, 2013

Client Sample ID			**BH25 0.05**	**BH25 0.1**	**BH25 0.1R**	**BH25 0.5**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc21535**	**B13-Oc21536**	**B13-Oc21537**	**B13-Oc21538**
Date Sampled			**Oct 25, 2013**	**Oct 25, 2013**	**Oct 25, 2013**	**Oct 25, 2013**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	42	82	67	64
Cadmium	0.5	mg/kg	1.2	1.0	1.1	0.7
Chromium	5	mg/kg	27	28	27	29
Copper	5	mg/kg	76	160	130	130
Lead	5	mg/kg	270	190	180	94
Nickel	5	mg/kg	15	14	16	12
Zinc	5	mg/kg	220	150	190	120
% Moisture	0.1	%	17	11	15	10

Client Sample ID			**BH26 0.1**	**BH26 0.3**	**BH27 0.1**	**BH27 0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc21539**	**B13-Oc21540**	**B13-Oc21541**	**B13-Oc21542**
Date Sampled			**Oct 25, 2013**	**Oct 25, 2013**	**Oct 25, 2013**	**Oct 25, 2013**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	11	11	40	36
Cadmium	0.5	mg/kg	< 0.5	< 0.5	8.8	8.2
Chromium	5	mg/kg	17	18	20	22
Copper	5	mg/kg	35	33	180	180
Lead	5	mg/kg	42	40	5300	12000
Nickel	5	mg/kg	21	20	6.8	< 5
Zinc	5	mg/kg	66	64	650	590
% Moisture	0.1	%	4.2	3.9	10	7.1

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH27 0.3R Soil B13-Oc21543 Oct 25, 2013	BH28 0.1 Soil B13-Oc21544 Oct 25, 2013	BH28 0.5 Soil B13-Oc21545 Oct 25, 2013	BH28 0.5R Soil B13-Oc21546 Oct 25, 2013
Heavy Metals						
Arsenic	2	mg/kg	67	120	31	28
Cadmium	0.5	mg/kg	6.4	6.5	6.7	6.0
Chromium	5	mg/kg	16	19	18	16
Copper	5	mg/kg	160	280	260	230
Lead	5	mg/kg	25000	33000	14000	13000
Nickel	5	mg/kg	5.7	8.1	7.7	8.3
Zinc	5	mg/kg	540	570	550	630
% Moisture	0.1	%	9.4	8.5	7.2	8.7

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH29 0.1 Soil B13-Oc21547 Oct 25, 2013	BH29 1.0 Soil B13-Oc21548 Oct 25, 2013
Heavy Metals				
Arsenic	2	mg/kg	36	36
Cadmium	0.5	mg/kg	11	4.9
Chromium	5	mg/kg	15	27
Copper	5	mg/kg	200	190
Lead	5	mg/kg	16000	12000
Nickel	5	mg/kg	5.8	5.6
Zinc	5	mg/kg	730	300
% Moisture	0.1	%	12	12

Sample History

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

Description	Testing Site	Extracted	Holding Time
Metals M7	Brisbane	Oct 29, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			
% Moisture	Brisbane	Oct 29, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	119			80-120	Pass	
Cadmium	%	105			80-120	Pass	
Chromium	%	109			80-120	Pass	
Copper	%	113			80-120	Pass	
Lead	%	103			80-120	Pass	
Nickel	%	112			80-120	Pass	
Zinc	%	110			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc21554	NCP	%	93			75-125	Pass	
Cadmium	B13-Oc21535	CP	%	91			75-125	Pass	
Chromium	B13-Oc21535	CP	%	84			75-125	Pass	
Lead	B13-Oc21535	CP	%	80			75-125	Pass	
Nickel	B13-Oc20579	NCP	%	83			75-125	Pass	
Zinc	B13-Oc21554	NCP	%	98			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	B13-Oc21545	CP	%	102			75-125	Pass	
Chromium	B13-Oc21545	CP	%	101			75-125	Pass	
Copper	B13-Oc21545	CP	%	113			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc21535	CP	mg/kg	42	45	6.0	30%	Pass	
Cadmium	B13-Oc21535	CP	mg/kg	1.2	1.4	11	30%	Pass	
Chromium	B13-Oc21535	CP	mg/kg	27	29	8.0	30%	Pass	
Copper	B13-Oc21535	CP	mg/kg	76	81	6.0	30%	Pass	
Lead	B13-Oc21535	CP	mg/kg	270	300	11	30%	Pass	
Nickel	B13-Oc21535	CP	mg/kg	15	16	6.0	30%	Pass	
Zinc	B13-Oc21535	CP	mg/kg	220	230	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc21545	CP	mg/kg	31	33	7.0	30%	Pass	
Cadmium	B13-Oc21545	CP	mg/kg	6.7	7.7	14	30%	Pass	
Chromium	B13-Oc21545	CP	mg/kg	18	20	12	30%	Pass	
Copper	B13-Oc21545	CP	mg/kg	260	280	7.0	30%	Pass	
Lead	B13-Oc21545	CP	mg/kg	14000	13000	6.0	30%	Pass	
Nickel	B13-Oc21545	CP	mg/kg	7.7	8.4	8.0	30%	Pass	
Zinc	B13-Oc21545	CP	mg/kg	550	580	6.0	30%	Pass	

Comments

Sample Integrity

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

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)

Michael Wright
National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name: Steven Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Maygnewiew St Milton	Project Manager : " "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : " "	PROJECT Name : UQEM DST	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes: Metals M7 Hold

	Sample ID	Date	Matrix	Metals M7	Hold
1	GW1 28/10/13	28/10	Water	✓	
2	GW1R 28/10/13	"	"	✓	
3	GW2 28/10/13	"	"	✓	
4	BH30 0.1	"	Soil	✓	
5	" 0.5	"	"		✓
6	" 0.75	"	"	✓	
7	" 1	"	"		✓
8	BH31 0.1	"	"	✓	
9	" 0.5	"	"		✓
10	" 1	"	"	✓	
11	" 1.5	"	"		✓
12	BH32 0.1	"	"	✓	
13	" 0.3	"	"		✓
14					
15					
16					

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:

Laboratory Staff

Relinquished By: S Sherrington
Date & Time:
Signature: 28/10/13

Received By: Marie I
Date & Time : 30.10.13 11am
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

E ☑ | CN ☐ | ID ☐
AP ☐ | CR ☐ | ☐

CON NOTES
POST CODE
MASS

Temperature on arrival: 13.2 °C

Report number: 397966

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

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Phone : +61 3 8564 5000
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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: UQEM DSI J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Oct 30, 2013 11:00 AM
Eurofins | mgt reference: **397966**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **397966-S**
Client Reference UQEM DSI J122934
Received Date Oct 30, 2013

Client Sample ID			**BH30 0.1**	**BH30 0.75**	**BH31 0.1**	**BH31 1.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc23042**	**B13-Oc23043**	**B13-Oc23044**	**B13-Oc23045**
Date Sampled			**Oct 28, 2013**	**Oct 28, 2013**	**Oct 28, 2013**	**Oct 28, 2013**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	20	30	230	260
Cadmium	0.5	mg/kg	< 0.5	< 0.5	8.4	3.3
Chromium	5	mg/kg	8.2	20	16	28
Copper	5	mg/kg	19	28	210	140
Lead	5	mg/kg	200	95	28000	5100
Nickel	5	mg/kg	9.4	11	9.5	22
Zinc	5	mg/kg	120	150	1800	880
% Moisture	0.1	%	3.3	8.3	4.5	9.6

Client Sample ID			**BH32 0.1**
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**B13-Oc23046**
Date Sampled			**Oct 28, 2013**
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	2	mg/kg	17
Cadmium	0.5	mg/kg	0.9
Chromium	5	mg/kg	67
Copper	5	mg/kg	35
Lead	5	mg/kg	320
Nickel	5	mg/kg	26
Zinc	5	mg/kg	210
% Moisture	0.1	%	10

Sample History

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

Description	Testing Site	Extracted	Holding Time
Metals M7	Brisbane	Oct 30, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			
% Moisture	Brisbane	Oct 30, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Heavy Metals									
Arsenic			mg/kg	< 2			2	Pass	
Cadmium			mg/kg	< 0.5			0.5	Pass	
Chromium			mg/kg	< 5			5	Pass	
Copper			mg/kg	< 5			5	Pass	
Lead			mg/kg	< 5			5	Pass	
Nickel			mg/kg	< 5			5	Pass	
Zinc			mg/kg	< 5			5	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc23042	CP	%	90			75-125	Pass	
Cadmium	B13-Oc23042	CP	%	98			75-125	Pass	
Chromium	B13-Oc23042	CP	%	97			75-125	Pass	
Copper	B13-Oc23042	CP	%	98			75-125	Pass	
Lead	B13-Oc21554	NCP	%	75			75-125	Pass	
Nickel	B13-Oc23042	CP	%	84			75-125	Pass	
Zinc	B13-Oc21554	NCP	%	98			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc23042	CP	mg/kg	20	21	7.0	30%	Pass	
Cadmium	B13-Oc23042	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium	B13-Oc23042	CP	mg/kg	8.2	8.9	8.0	30%	Pass	
Copper	B13-Oc23042	CP	mg/kg	19	20	6.0	30%	Pass	
Lead	B13-Oc23042	CP	mg/kg	200	210	8.0	30%	Pass	
Nickel	B13-Oc23042	CP	mg/kg	9.4	10	9.0	30%	Pass	
Zinc	B13-Oc23042	CP	mg/kg	120	130	5.0	30%	Pass	

Comments

Sample Integrity

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

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)

Michael Wright
National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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

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Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Manneview St Milton	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : "	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

	Sample ID	Date	Matrix	Analytes: Metals M7	Metals RA suite	Hold	Containers: 1LP	250P	125P	1LA	40mL vial	125mL A	Jar	Sample comments:
1	BH33 0.1	Soil	31/10	X										
2	" 0.2			X										
3	" 0.2R			X										
4	" 0.4					X								
5	BH34 0.1			X										
6	" 0.4			●	X									
7	" 0.4R			●	X									
8	" 0.6					X								
9	" 0.8					X								
10	" 1					X								
11	BH35 0.1			X										
12	" 0.2			X										
13	" 0.4					X								
14	" 1					X								
15	BH36 0.2			X										
16	" 0.2R	↓	✓	X										

Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
Relinquished By: S Sherrington	Received By: Marie I	☐ Courier ☐ Hand Delivered ☐ Postal	15.2 °C ICE BRICKS
Date & Time : 31/10/13	Date & Time : 31.10.13 2PM	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	Report number: 398155
Signature:	Signature:	5 DAY ☑ 10 DAY ☐ Other:	
		Courier Consignment #: # CON NOTES POST CODE	

QS3009_R0 Issue Date: 25 February 2013 Page 1 of 1

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☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name : Sloane Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Mayneview St	Project Manager :	PROJECT Number :	Eurofins | mgt quote ID :
	Email for results :	PROJECT Name :	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	Metals M7	RQ Suite	Hold	Containers: 1LP	250P	125P	1LA	40mL vial	125mL A	Jar	Sample comments:
1	BH36 0.5	31/10	Soil			X								
2	BH37 0.2	↓	↓	X										
3	" 0.5			X										
4	" 0.5R			X										
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Laboratory Staff

Relinquished By: SSherrington
Date & Time : 31/10/13
Signature:

Received By: Marie I
Date & Time : 31.10.13 2pm
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☐ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 15.2°C

Report number: 398155

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Oct 31, 2013 2:00 PM
Eurofins | mgt reference: **398155**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **398155-S**
Client Reference J122934
Received Date Oct 31, 2013

Client Sample ID			**BH33_0.1**	**BH33_0.2**	**BH33_0.2R**	**BH34_0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc24418**	**B13-Oc24419**	**B13-Oc24420**	**B13-Oc24421**
Date Sampled			**Oct 31, 2013**	**Oct 31, 2013**	**Oct 31, 2013**	**Oct 31, 2013**
Test/Reference	LOR	Unit				
% Moisture	0.1	%	5.4	5.5	5.4	35
Heavy Metals						
Arsenic	2	mg/kg	43	46	48	16
Cadmium	0.5	mg/kg	1.1	0.9	0.9	91
Chromium	5	mg/kg	180	200	180	26
Copper	5	mg/kg	44	46	49	58
Lead	5	mg/kg	1500	1200	1300	1100
Nickel	5	mg/kg	60	62	60	28
Zinc	5	mg/kg	480	450	480	9900

Client Sample ID			**BH34_0.4**	**BH34_0.4R**	**BH35_0.1**	**BH35_0.2**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-Oc24422**	**B13-Oc24423**	**B13-Oc24424**	**B13-Oc24425**
Date Sampled			**Oct 31, 2013**	**Oct 31, 2013**	**Oct 31, 2013**	**Oct 31, 2013**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	72	100	-	-
TRH C15-C28	50	mg/kg	< 50	82	-	-
TRH C29-C36	50	mg/kg	< 50	< 50	-	-
TRH C10-36 (Total)	50	mg/kg	72	180	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	64	97	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	64	97	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH34_0.4 Soil B13-Oc24422 Oct 31, 2013	BH34_0.4R Soil B13-Oc24423 Oct 31, 2013	BH35_0.1 Soil B13-Oc24424 Oct 31, 2013	BH35_0.2 Soil B13-Oc24425 Oct 31, 2013
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ*	0.5	mg/kg	0.6	0.6	-	-
2-Fluorobiphenyl (surr.)	1	%	87	105	-	-
p-Terphenyl-d14 (surr.)	1	%	78	101	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
d-BHC	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Toxaphene	1	mg/kg	< 1	< 1	-	-
Dibutylchlorendate (surr.)	1	%	101	117	-	-
Tetrachloro-m-xylene (surr.)	1	%	139	147	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH34_0.4 Soil B13-Oc24422 Oct 31, 2013	BH34_0.4R Soil B13-Oc24423 Oct 31, 2013	BH35_0.1 Soil B13-Oc24424 Oct 31, 2013	BH35_0.2 Soil B13-Oc24425 Oct 31, 2013
Polychlorinated Biphenyls						
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-	-
Total PCB	0.1	mg/kg	< 0.1	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	101	117	-	-
Tetrachloro-m-xylene (surr.)	1	%	139	147	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4.5-Trichlorophenol	1.0	mg/kg	< 1	< 1	-	-
2.4.6-Trichlorophenol	1.0	mg/kg	< 1	< 1	-	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	-	-
4-Chloro-3-methylphenol	1.0	mg/kg	< 1	< 1	-	-
Pentachlorophenol	1.0	mg/kg	< 1	< 1	-	-
Tetrachlorophenols - Total	1.0	mg/kg	< 1	< 1	-	-
Total Halogenated Phenol	1	mg/kg	< 1	< 1	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	-	-
2-Nitrophenol	1.0	mg/kg	< 1	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	-	-
4-Nitrophenol	5	mg/kg	< 5	< 5	-	-
Dinoseb	20	mg/kg	< 20	< 20	-	-
Phenol	0.5	mg/kg	< 0.5	< 0.5	-	-
Total Non-Halogenated Phenol	20	mg/kg	< 20	< 20	-	-
Phenol-d6 (surr.)	1	%	33	29	-	-
Chromium (hexavalent)	1	mg/kg	< 1	< 1	-	-
Cyanide (free)	5	mg/kg	< 5	< 5	-	-
Cyanide (total)	5	mg/kg	< 5	< 5	-	-
Sulphate (as S)	10	mg/kg	< 10	< 10	-	-
Phosphorus	5	mg/kg	84	110	-	-
Sulphur	5	mg/kg	1300	1300	-	-
% Moisture	0.1	%	42	43	19	5.9
Heavy Metals						
Arsenic	2	mg/kg	4.5	5.7	12	53
Barium	10	mg/kg	19	16	-	-
Beryllium	2	mg/kg	< 2	< 2	-	-
Boron	10	mg/kg	42	36	-	-
Cadmium	0.4	mg/kg	3.6	8.1	6.3	3.7
Chromium	5	mg/kg	5.4	6.8	26	9.3
Cobalt	5	mg/kg	< 5	< 5	-	-
Copper	5	mg/kg	17	23	61	270
Lead	5	mg/kg	190	220	3100	18000
Manganese	5	mg/kg	240	360	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-

Client Sample ID			BH34_0.4	BH34_0.4R	BH35_0.1	BH35_0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			B13-Oc24422	B13-Oc24423	B13-Oc24424	B13-Oc24425
Date Sampled			Oct 31, 2013	Oct 31, 2013	Oct 31, 2013	Oct 31, 2013
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	6.5	7.4	19	7.5
Vanadium	10	mg/kg	< 10	< 10	-	-
Zinc	5	mg/kg	690	830	670	2200
NEPM 1999 Metals : Metals M14						
Chromium (trivalent)	5	mg/kg	5.4	6.8	-	-

Client Sample ID			BH36_0.2	BH36_0.2R	BH37_0.2	BH37_0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			B13-Oc24426	B13-Oc24427	B13-Oc24428	B13-Oc24429
Date Sampled			Oct 31, 2013	Oct 31, 2013	Oct 31, 2013	Oct 31, 2013
Test/Reference	LOR	Unit				
% Moisture	0.1	%	16	16	14	14
Heavy Metals						
Arsenic	2	mg/kg	4.3	3.8	4.5	4.1
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	32	32	28	34
Copper	5	mg/kg	17	16	18	17
Lead	5	mg/kg	78	50	100	210
Nickel	5	mg/kg	22	22	19	23
Zinc	5	mg/kg	77	61	87	80

Client Sample ID			BH37_0.5R
Sample Matrix			Soil
Eurofins | mgt Sample No.			B13-Oc24430
Date Sampled			Oct 31, 2013
Test/Reference	LOR	Unit	
% Moisture	0.1	%	15
Heavy Metals			
Arsenic	2	mg/kg	4.3
Cadmium	0.5	mg/kg	< 0.5
Chromium	5	mg/kg	31
Copper	5	mg/kg	17
Lead	5	mg/kg	60
Nickel	5	mg/kg	22
Zinc	5	mg/kg	72

Sample History

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

Description	Testing Site	Extracted	Holding Time
NEPM HIL Screen: 1999 B(1)HIL Table 5A			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Nov 01, 2013	14 Day
- Method: TRH C6-C36 - MGT 100A			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Nov 01, 2013	14 Day
- Method: LM-LTM-ORG2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Nov 01, 2013	14 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Nov 01, 2013	14 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Polychlorinated Biphenyls	Melbourne	Nov 01, 2013	28 Day
- Method: USEPA 8082 Polychlorinated Biphenyls			
Phenols (Halogenated)	Melbourne	Nov 01, 2013	14 Day
- Method: USEPA 8270 Phenols			
Phenols (non-Halogenated)	Melbourne	Nov 01, 2013	14 Day
- Method: USEPA 8270 Phenols			
Chromium (hexavalent)	Melbourne	Nov 01, 2013	28 Day
- Method: APHA 3500-Cr Hexavalent Chromium- (Extraction:- USEPA3060)			
Cyanide (total)	Melbourne	Nov 04, 2013	14 Day
- Method: USEPA 9010 Cyanide			
Sulphate (as S)	Melbourne	Nov 01, 2013	28 Day
- Method: In house MGT1110A (SO4 by Discrete Analyser)			
Phosphorus	Melbourne	Nov 01, 2013	180 Day
- Method: USEPA 6010			
Sulphur	Melbourne	Nov 01, 2013	7 Day
- Method: LTM-MET-3010			
NEPM 1999 Metals : Metals M14	Melbourne	Nov 01, 2013	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			
% Moisture	Melbourne	Nov 01, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			
Metals M7	Brisbane	Oct 31, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH C6-C10 less BTEX (F1)	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB	mg/kg	0			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1.0	Pass	
Pentachlorophenol	mg/kg	< 1			1.0	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1.0	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1.0	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Sulphate (as S)	mg/kg	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	122			70-130	Pass	
TRH C10-C14	%	92			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	123			70-130	Pass	
TRH >C10-C16	%	90			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	103			70-130	Pass	
Acenaphthylene	%	103			70-130	Pass	
Anthracene	%	98			70-130	Pass	
Benz(a)anthracene	%	100			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	99			70-130	Pass	
Benzo(g.h.i)perylene	%	106			70-130	Pass	
Benzo(k)fluoranthene	%	108			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a.h)anthracene	%	119			70-130	Pass	
Fluoranthene	%	94			70-130	Pass	
Fluorene	%	98			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	112			70-130	Pass	
Naphthalene	%	91			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	92			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	101			70-130	Pass	
4.4'-DDE	%	103			70-130	Pass	
4.4'-DDT	%	77			70-130	Pass	
a-BHC	%	111			70-130	Pass	
Aldrin	%	103			70-130	Pass	
b-BHC	%	115			70-130	Pass	
d-BHC	%	123			70-130	Pass	
Dieldrin	%	101			70-130	Pass	
Endosulfan I	%	99			70-130	Pass	
Endosulfan II	%	103			70-130	Pass	
Endosulfan sulphate	%	105			70-130	Pass	
Endrin	%	92			70-130	Pass	
Endrin aldehyde	%	102			70-130	Pass	
Endrin ketone	%	110			70-130	Pass	
g-BHC (Lindane)	%	111			70-130	Pass	
Heptachlor	%	90			70-130	Pass	
Heptachlor epoxide	%	100			70-130	Pass	
Hexachlorobenzene	%	103			70-130	Pass	
Methoxychlor	%	100			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	101			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	101			30-130	Pass	
2.4-Dichlorophenol	%	88			30-130	Pass	
2.4.5-Trichlorophenol	%	82			30-130	Pass	
2.4.6-Trichlorophenol	%	96			30-130	Pass	
2.6-Dichlorophenol	%	96			30-130	Pass	
4-Chloro-3-methylphenol	%	87			30-130	Pass	
Pentachlorophenol	%	61			30-130	Pass	
Tetrachlorophenols - Total	%	80			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	37			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	45			30-130	Pass	
2-Methylphenol (o-Cresol)	%	100			30-130	Pass	
2-Nitrophenol	%	89			30-130	Pass	
2.4-Dimethylphenol	%	69			30-130	Pass	
2.4-Dinitrophenol	%	33			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	95			30-130	Pass	
4-Nitrophenol	%	58			30-130	Pass	
Dinoseb	%	56			30-130	Pass	
Phenol	%	101			30-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	99			70-130	Pass	
Cyanide (total)	%	82			70-130	Pass	
Sulphate (as S)	%	91			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	113			80-120	Pass	
Arsenic	%	105			80-120	Pass	
Barium	%	117			80-120	Pass	
Beryllium	%	109			80-120	Pass	
Boron	%	100			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Cadmium	%	103			80-120	Pass	
Chromium	%	109			80-120	Pass	
Chromium	%	105			80-120	Pass	
Cobalt	%	108			80-120	Pass	
Copper	%	106			80-120	Pass	
Copper	%	99			80-120	Pass	
Lead	%	117			80-120	Pass	
Lead	%	112			80-120	Pass	
Manganese	%	114			80-120	Pass	
Mercury	%	109			75-125	Pass	
Nickel	%	106			80-120	Pass	
Nickel	%	100			80-120	Pass	
Vanadium	%	105			80-120	Pass	
Zinc	%	110			80-120	Pass	
Zinc	%	114			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc24418	CP	%	81			75-125	Pass	
Cadmium	B13-Oc24418	CP	%	103			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	B13-Oc24418	CP	%	111			75-125	Pass	
Copper	B13-Oc24418	CP	%	78			75-125	Pass	
Nickel	B13-Oc24418	CP	%	91			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	B13-Oc24422	CP	%	92			70-130	Pass	
TRH C10-C14	B13-Oc24422	CP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	B13-Oc24422	CP	%	90			70-130	Pass	
TRH >C10-C16	B13-Oc24422	CP	%	92			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M13-Oc24439	NCP	%	91			70-130	Pass	
Acenaphthylene	M13-Oc24439	NCP	%	93			70-130	Pass	
Anthracene	M13-Oc24439	NCP	%	92			70-130	Pass	
Benz(a)anthracene	M13-Oc24439	NCP	%	86			70-130	Pass	
Benzo(a)pyrene	M13-Oc24439	NCP	%	97			70-130	Pass	
Benzo(b&j)fluoranthene	M13-Oc24439	NCP	%	89			70-130	Pass	
Benzo(g.h.i)perylene	M13-Oc24439	NCP	%	91			70-130	Pass	
Benzo(k)fluoranthene	M13-Oc24439	NCP	%	96			70-130	Pass	
Chrysene	M13-Oc24439	NCP	%	89			70-130	Pass	
Dibenz(a.h)anthracene	M13-Oc24439	NCP	%	105			70-130	Pass	
Fluoranthene	M13-Oc24439	NCP	%	81			70-130	Pass	
Fluorene	M13-Oc24439	NCP	%	89			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M13-Oc24439	NCP	%	99			70-130	Pass	
Naphthalene	M13-Oc24439	NCP	%	80			70-130	Pass	
Phenanthrene	M13-Oc24439	NCP	%	86			70-130	Pass	
Pyrene	M13-Oc24439	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	M13-No00432	NCP	%	109			70-130	Pass	
4.4'-DDE	M13-No00432	NCP	%	112			70-130	Pass	
4.4'-DDT	M13-No00432	NCP	%	75			70-130	Pass	
a-BHC	M13-No00432	NCP	%	122			70-130	Pass	
Aldrin	M13-No00432	NCP	%	118			70-130	Pass	
b-BHC	M13-No00432	NCP	%	122			70-130	Pass	
d-BHC	M13-No00432	NCP	%	130			70-130	Pass	
Dieldrin	M13-No00432	NCP	%	113			70-130	Pass	
Endosulfan I	M13-No00432	NCP	%	113			70-130	Pass	
Endosulfan II	M13-No00432	NCP	%	109			70-130	Pass	
Endosulfan sulphate	M13-No00432	NCP	%	108			70-130	Pass	
Endrin	M13-No00432	NCP	%	86			70-130	Pass	
Endrin aldehyde	M13-No00432	NCP	%	112			70-130	Pass	
Endrin ketone	M13-No00432	NCP	%	114			70-130	Pass	
g-BHC (Lindane)	M13-No00432	NCP	%	121			70-130	Pass	
Heptachlor	M13-No00432	NCP	%	92			70-130	Pass	
Heptachlor epoxide	M13-No00432	NCP	%	110			70-130	Pass	
Hexachlorobenzene	M13-No00432	NCP	%	112			70-130	Pass	
Methoxychlor	M13-No00432	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M13-No00432	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Chlorophenol	M13-Oc24439	NCP	%	86			30-130	Pass	
2.4-Dichlorophenol	M13-Oc24439	NCP	%	81			30-130	Pass	
2.4.5-Trichlorophenol	M13-Oc24439	NCP	%	76			30-130	Pass	
2.4.6-Trichlorophenol	M13-Oc24439	NCP	%	86			30-130	Pass	
2.6-Dichlorophenol	M13-Oc24439	NCP	%	85			30-130	Pass	
4-Chloro-3-methylphenol	M13-Oc24439	NCP	%	77			30-130	Pass	
Pentachlorophenol	M13-Oc24439	NCP	%	33			30-130	Pass	
Tetrachlorophenols - Total	M13-Oc24439	NCP	%	61			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M13-Oc24439	NCP	%	52			30-130	Pass	
2-Methyl-4.6-dinitrophenol	M13-Oc24439	NCP	%	54			30-130	Pass	
2-Methylphenol (o-Cresol)	M13-Oc24439	NCP	%	87			30-130	Pass	
2-Nitrophenol	M13-Oc24439	NCP	%	79			30-130	Pass	
2.4-Dimethylphenol	M13-Oc24439	NCP	%	86			30-130	Pass	
2.4-Dinitrophenol	M13-Oc24439	NCP	%	31			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M13-Oc24439	NCP	%	79			30-130	Pass	
4-Nitrophenol	M13-Oc24439	NCP	%	61			30-130	Pass	
Dinoseb	M13-Oc24439	NCP	%	60			30-130	Pass	
Phenol	M13-Oc24439	NCP	%	86			30-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	B13-Oc24422	CP	%	84			70-130	Pass	
Cyanide (total)	M13-No00456	NCP	%	78			70-130	Pass	
Sulphate (as S)	M13-Oc24202	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Barium	M13-Oc24576	NCP	%	112			75-125	Pass	
Beryllium	M13-Oc24576	NCP	%	96			75-125	Pass	
Boron	M13-Oc24576	NCP	%	86			75-125	Pass	
Cobalt	M13-Oc24576	NCP	%	93			75-125	Pass	
Manganese	M13-Oc24576	NCP	%	92			75-125	Pass	
Mercury	B13-Oc24422	CP	%	90			70-130	Pass	
Vanadium	M13-Oc23162	NCP	%	93			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium	B13-Oc24430	CP	%	115			75-125	Pass	
Lead	B13-Oc24430	CP	%	84			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc24418	CP	mg/kg	43	42	4.0	30%	Pass	
Cadmium	B13-Oc24418	CP	mg/kg	1.1	1.0	9.0	30%	Pass	
Chromium	B13-Oc24418	CP	mg/kg	180	170	5.0	30%	Pass	
Copper	B13-Oc24418	CP	mg/kg	44	43	4.0	30%	Pass	
Lead	B13-Oc24418	CP	mg/kg	1500	1400	6.0	30%	Pass	
Nickel	B13-Oc24418	CP	mg/kg	60	57	5.0	30%	Pass	
Zinc	B13-Oc24418	CP	mg/kg	480	460	5.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	B13-Oc24422	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	B13-Oc24422	CP	mg/kg	72	92	24	30%	Pass	
TRH C15-C28	B13-Oc24422	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	B13-Oc24422	CP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	B13-Oc24422	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	B13-Oc24422	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C6-C10 less BTEX (F1)	B13-Oc24422	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	B13-Oc24422	CP	mg/kg	64	81	23	30%	Pass
TRH >C16-C34	B13-Oc24422	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	B13-Oc24422	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g.h.i)perylene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a.h)anthracene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M13-No00432	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4.4'-DDD	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDE	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDT	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	M13-No00432	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	M13-No00432	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	M13-Oc23665	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	M13-Oc23665	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	M13-Oc23665	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	M13-Oc23665	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	M13-Oc23665	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass

Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1254	M13-Oc23665	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M13-Oc23665	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB	M13-Oc23665	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	M13-Oc24439	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	M13-Oc24439	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	M13-Oc24439	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	M13-Oc24439	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	M13-Oc24439	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M13-Oc24439	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M13-Oc24439	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M13-Oc24439	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	M13-Oc24439	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	M13-Oc24439	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M13-Oc24439	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	M13-Oc24439	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	M13-Oc24439	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	M13-Oc24439	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	B13-Oc24422	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Cyanide (total)	B13-Oc24422	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Sulphate (as S)	M13-No00546	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Sulphur	B13-Oc24422	CP	mg/kg	1300	1200	9.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc24422	CP	mg/kg	4.5	6.3	33	30%	Fail	Q15
Barium	B13-Oc24422	CP	mg/kg	19	23	22	30%	Pass	
Beryllium	B13-Oc24422	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Boron	B13-Oc24422	CP	mg/kg	42	38	9.0	30%	Pass	
Cadmium	B13-Oc24422	CP	mg/kg	3.6	4.7	25	30%	Pass	
Chromium	B13-Oc24422	CP	mg/kg	5.4	7.9	37	30%	Fail	Q15
Cobalt	B13-Oc24422	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	B13-Oc24422	CP	mg/kg	17	20	19	30%	Pass	
Lead	B13-Oc24422	CP	mg/kg	190	180	5.0	30%	Pass	
Manganese	B13-Oc24422	CP	mg/kg	240	310	23	30%	Pass	
Mercury	B13-Oc24422	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	B13-Oc24422	CP	mg/kg	6.5	8.1	22	30%	Pass	
Vanadium	B13-Oc24422	CP	mg/kg	< 10	12	43	30%	Fail	Q15
Zinc	B13-Oc24422	CP	mg/kg	690	750	9.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc24430	CP	mg/kg	4.3	4.2	2.0	30%	Pass	
Cadmium	B13-Oc24430	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium	B13-Oc24430	CP	mg/kg	31	33	4.0	30%	Pass	
Copper	B13-Oc24430	CP	mg/kg	17	17	2.0	30%	Pass	
Lead	B13-Oc24430	CP	mg/kg	60	63	5.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Nickel	B13-Oc24430	CP	mg/kg	22	23	2.0	30%	Pass	
Zinc	B13-Oc24430	CP	mg/kg	72	74	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins | mgt's Acceptance Criteria as stipulated in SOP 05. Refer to Glossary Page of this report for further details

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)
Carroll Lee	Senior Analyst-Volatile (VIC)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Michael Wright

National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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

eurofins | mgt

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 1 of 1

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : 5172934	COC Number :
Office Address : 2 Maunganui St Mitcham	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : "	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes: Metals M7 | Sulfide | RTOT | N& TRH, BTEX | OCP/OPP

	Sample ID	Date	Matrix	Metals M7	Sulfide	RTOT	N& TRH, BTEX	OCP/OPP	Containers: 1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:
1	GW4 1/11/13	1/11	W		X												
2	GW4R 1/11/13	"	W		X												
3	GW5 1/11/13	"	W	X													
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Laboratory Staff

Relinquished By: SSherrington
Date & Time : 8/11/13
Signature:

Received By: Marie I
Date & Time : 5.11.13 18PM
Signature:

Turn around time

1 DAY ☐ 2 DAY ☑ 3 DAY ☐
5 DAY ☐ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☑ Postal
Courier Consignment #:
CN HD AP CR
CON NOTES
POST CODE
MASS

EUROFINS WAN.

Temperature on arrival: 10.9 ICE BRICKS

Report number: 398568

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
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NATA # 1261
Site # 1254 & 14271

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Nov 5, 2013 1:00 PM
Eurofins | mgt reference: **398568**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **398568-W**
Client Reference J122934
Received Date Nov 05, 2013

Client Sample ID			**GW4**	**GW4R**	**GW5**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**B13-No02100**	**B13-No02129**	**B13-No02130**
Date Sampled			**Nov 01, 2013**	**Nov 01, 2013**	**Nov 01, 2013**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	-
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	68	63	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	< 0.02	< 0.02	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	-
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	-
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	-
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	-
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	-
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	-
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	-
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	-
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	-
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	-
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	-
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	-
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	-
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	-

Client Sample ID			GW4	GW4R	GW5
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			B13-No02100	B13-No02129	B13-No02130
Date Sampled			Nov 01, 2013	Nov 01, 2013	Nov 01, 2013
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	-
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	-
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	-
Toxaphene	0.01	mg/L	< 0.01	< 0.01	-
Dibutylchlorendate (surr.)	1	%	110	98	-
Tetrachloro-m-xylene (surr.)	1	%	69	69	-
Organophosphorous Pesticides					
Bolstar	0.002	mg/L	< 0.002	< 0.002	-
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	-
Demeton-O	0.002	mg/L	< 0.002	< 0.002	-
Diazinon	0.002	mg/L	< 0.002	< 0.002	-
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	-
Disulfoton	0.002	mg/L	< 0.002	< 0.002	-
Ethion	0.002	mg/L	< 0.002	< 0.002	-
Ethoprop	0.002	mg/L	< 0.002	< 0.002	-
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	-
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	-
Fenthion	0.002	mg/L	< 0.002	< 0.002	-
Merphos	0.002	mg/L	< 0.002	< 0.002	-
Methyl azinphos	0.002	mg/L	< 0.002	< 0.002	-
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	-
Mevinphos	0.002	mg/L	< 0.002	< 0.002	-
Naled	0.002	mg/L	< 0.002	< 0.002	-
Phorate	0.002	mg/L	< 0.002	< 0.002	-
Ronnel	0.002	mg/L	< 0.002	< 0.002	-
Tokuthion	0.002	mg/L	< 0.002	< 0.002	-
Trichloronate	0.002	mg/L	< 0.002	< 0.002	-
Triphenylphosphate (surr.)	1	%	85	66	-
Heavy Metals					
Arsenic	0.001	mg/L	0.003	0.003	0.007
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	0.0032
Chromium	0.001	mg/L	0.12	0.13	0.13
Copper	0.001	mg/L	0.075	0.079	0.42
Lead	0.001	mg/L	0.36	0.51	54
Mercury	0.0001	mg/L	0.0007	0.0010	-
Nickel	0.001	mg/L	0.092	0.092	0.098
Zinc	0.001	mg/L	< 0.001	< 0.001	0.16

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Nov 07, 2013	7 Day
- Method: TRH C6-C36 - MGT 100A			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Nov 05, 2013	7 Day
- Method: LM-LTM-ORG2010			
BTEX	Brisbane	Nov 05, 2013	14 Day
- Method: USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Nov 07, 2013	7 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Organophosphorous Pesticides	Melbourne	Nov 07, 2013	7 Day
- Method: USEPA 8141 Organophosphorus Pesticides			
Metals M7	Brisbane	Nov 05, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			
Metals M8	Brisbane	Nov 05, 2013	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Organophosphorous Pesticides							
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethoprop	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl azinphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.001			0.001	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	115			70-130	Pass	
TRH C10-C14	%	74			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	97			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	107			70-130	Pass	
m&p-Xylenes	%	115			70-130	Pass	
Xylenes - Total	%	114			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	111			70-130	Pass	
TRH >C10-C16	%	76			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	86			70-130	Pass	
4.4'-DDE	%	105			70-130	Pass	
4.4'-DDT	%	100			70-130	Pass	
a-BHC	%	113			70-130	Pass	
Aldrin	%	103			70-130	Pass	
b-BHC	%	127			70-130	Pass	
d-BHC	%	128			70-130	Pass	
Dieldrin	%	113			70-130	Pass	
Endosulfan I	%	98			70-130	Pass	
Endosulfan II	%	102			70-130	Pass	
Endosulfan sulphate	%	118			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	%	127			70-130	Pass	
Endrin aldehyde	%	100			70-130	Pass	
Endrin ketone	%	106			70-130	Pass	
g-BHC (Lindane)	%	109			70-130	Pass	
Heptachlor	%	127			70-130	Pass	
Heptachlor epoxide	%	110			70-130	Pass	
Hexachlorobenzene	%	99			70-130	Pass	
Methoxychlor	%	110			70-130	Pass	
LCS - % Recovery							
Organophosphorous Pesticides							
Diazinon	%	81			70-130	Pass	
Ethion	%	76			70-130	Pass	
Fenitrothion	%	85			70-130	Pass	
Methyl parathion	%	73			70-130	Pass	
Mevinphos	%	75			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	95			80-120	Pass	
Arsenic	%	94			80-120	Pass	
Cadmium	%	102			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	99			80-120	Pass	
Copper	%	91			80-120	Pass	
Copper	%	93			80-120	Pass	
Lead	%	92			80-120	Pass	
Lead	%	93			80-120	Pass	
Mercury	%	86			70-130	Pass	
Nickel	%	99			80-120	Pass	
Zinc	%	91			80-120	Pass	
Zinc	%	94			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M13-No01102	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M13-No01102	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No02159	NCP	%	76			75-125	Pass	
Mercury	B13-No00903	NCP	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M13-No01100	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M13-No01100	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M13-No01100	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M13-No01100	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M13-No01100	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M13-No01100	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Organophosphorous Pesticides				Result 1	Result 2	RPD			
Bolstar	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl azinphos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Phorate	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No02159	NCP	mg/L	0.0090	0.0097	6.0	30%	Pass	
Chromium	B13-No02159	NCP	mg/L	0.16	0.16	2.0	30%	Pass	
Copper	B13-No02159	NCP	mg/L	0.060	0.060	1.0	30%	Pass	
Lead	B13-No02159	NCP	mg/L	0.0030	0.0026	1.0	30%	Pass	
Mercury	B13-No02100	CP	mg/L	0.0007	0.0007	1.0	30%	Pass	
Nickel	B13-No02159	NCP	mg/L	0.051	0.051	<1	30%	Pass	
Zinc	B13-No02159	NCP	mg/L	0.065	0.069	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	B13-No02129	CP	mg/L	0.0010	0.0010	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)
Richard Corner	Senior Analyst-Volatile (QLD)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Michael Wright

National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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NATA # 1261 Site # 20794

Company Name: Noel Arnold & Associates (QLD)
Address: 2 Mayneview St
Milton
QLD 4066

Client Job No.: J122934

Order No.:
Report #: 398568
Phone: 07 3514 9222
Fax: 07 3514 9220

Received: Nov 5, 2013 1:00 PM
Due: Nov 12, 2013
Priority: 5 Day
Contact Name: Steven Sherrington

Eurofins | mgt Client Manager: Mark Rodriquez

Sample Detail					Organochlorine Pesticides	Organophosphorous Pesticides	Metals M7	Metals M8	BTEX	Total Recoverable Hydrocarbons
Laboratory where analysis is conducted										
Melbourne Laboratory - NATA Site # 1254 & 14271					X	X				
Sydney Laboratory - NATA Site # 18217										
Brisbane Laboratory - NATA Site # 20794							X	X	X	X
External Laboratory										
Sample ID	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
GW4	Nov 01, 2013		Water	B13-No02100	X	X		X	X	X
GW4R	Nov 01, 2013		Water	B13-No02129	X	X		X	X	X
GW5	Nov 01, 2013		Water	B13-No02130			X			

Cheers :)

Sent from my iPhone

On 05/11/2013, at 1:41 PM, "EnviroSampleQLD" <EnviroSampleQLD@eurofins.com.au> wrote:

Hi Steve,

As discussed on the phone the samples which required an R10, will now be tested for TRH, BTEX, M8. OCP and OPP.

Regards,

Marie Ioannidis BSc.(Mol.DD) (Hons)
Sample Receipt Manager

#398568

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4172, QLD
Australia
Phone : +61 7 3902 4601
Fax : +61 7 3902 4646

Website: www.eurofins.com.au

Marie – these are required on 3 day TAT.

For the leachates - ALSP
pH 2.9 (acetic acid) – Pb only
pH DI reagent water (~6.5) – Pb, Cd, As, Cu, Zn, Mn plus sulphur

Plus the analysis for Uranium on samples listed below.

Mark.

From: Steve Sherrington [mailto:Steve.Sherrington@noel-arnold.com.au]
Sent: Monday, 18 November 2013 2:55 PM
To: Mark Rodriquez
Subject: Further testing for UQEM samples (J122934)

Hi Mark,

As discussed can we schedule the following test parameters:

- **ASLP (Semi Volatiles and Metals) at pH 1.5 (Gastric Acid) and pH 7 (deionised water)** - on sample numbers:

BH03 0.1, BH03 0.7, BH04 0.1, BH04 0.8, BH05 0.3, BH06 0.1, BH06 0.4, BH06 0.6, BH08 0.4, BH09 0.2, BH09 1.0, BH10 0.5, BH10 1.6, BH11 0.2, BH12 0.1, BH13 0.3, BH14 0.1, BH15 0.1, BH19 0.1, BH19 0.9, BH20 1.0, BH21 1.0, BH22 1.0, BH22 3.0, BH23 0.2, BH24 0.4, BH27 0.1, BH28 0.1, BH28 0.5, BH29 0.1, BH31 0.1, BH33 0.1, BH35 0.1, GW1 0.1, GW2 0.1, GW3 0.1, GW3 1.5, GW3 1.5, GW5 1.4.

- **Uranium** – on sample numbers:

BH10 0.1, BH10 0.5, BH13 0.3, BH13 2.0, BH14 0.1, BH15 0.1, BH16 0.1, BH16 1.4, BH30 0.1.

Any problems please get in contact.

Thanks

Steve.

RYAN
20/11/13 3PM
QC JLT
400473

Steve Sherrington
Senior Environmental Scientist, QLD

Level 1, No 2 Mayneview Street
Milton QLD 4064

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

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: UQEM J122934
COC number: Not provided
Turn around time: 3 Day
Date/Time received: Nov 20, 2013 12:00 PM
Eurofins | mgt reference: **400473**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **400473-S**
Client Reference UQEM J122934
Received Date Nov 20, 2013

Client Sample ID			**BH10 0.5**	**BH13 0.3**	**BH13 2.0**	**BH14 0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-No14854**	**B13-No14863**	**B13-No14864**	**B13-No14867**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit				
Heavy Metals						
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
% Moisture	0.1	%	7.0	5.3	10	12

Client Sample ID			**BH15 0.1**	**BH16 0.1**	**BH16 1.4**	**BH30 0.1**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**B13-No14870**	**B13-No14871**	**B13-No14872**	**B13-No14899**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit				
Heavy Metals						
Uranium	10	mg/kg	< 10	< 10	< 10	< 10
% Moisture	0.1	%	7.6	15	1.9	4.8

Description	Testing Site	Extracted	Holding Time
Heavy Metals	Melbourne	Nov 21, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			
% Moisture	Melbourne	Nov 21, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Uranium	B13-No14854	CP	mg/kg	< 10	< 10	<1	30%	Pass	

Comments

Note: Insuficient sample was available to perform analysis on samples BH10 0.1 and BH24 0.4.

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
G03	Insufficient sample was supplied to conduct this analysis

Authorised By

Mark Rodriquez	Client Services
Emily Rosenberg	Senior Analyst-Metal (VIC)

Glenn Jackson

Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 1 of 1

Company Name : NAA	Contact Name S Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Mayneview St Milton	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results S Sherrington	PROJECT Name : UQEM OSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

	Sample ID	Date	Matrix	Metals M7	Hold
1	BH38 0.1	2/12	Soil	X	
2	0.5				X
3	1			X	
4	1.2				X
5	BH39 0.1			X	
6	0.1R			X	
7	0.5				X
8	0.8			X	
9	1			X	
10	BH40 0.1			X	
11	0.5			X	
12	0.5R			X	
13	0.9				X
14	1			X	
15					
16					

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:
				☑	CN	HD	# CON NOTES	POST CODE
				AC	CR	☐		MASS

Mat VAN

Relinquished By:	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Received By: Marie I	1 DAY ☑ 2 DAY ☐ 3 DAY ☐	☐ Courier	20.8 Attempted to chill.
Date & Time : 2/12/13	Date & Time : 3.12.13 12PM	5 DAY ☐ 10 DAY ☐ Other:	☐ Hand Delivered	Report number:
Signature:	Signature:		☐ Postal	402030
			Courier Consignment # :	

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

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

Sydney
Unit F6, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: UQEM DSI J122934
COC number: Not provided
Turn around time: 1 Day
Date/Time received: Dec 3, 2013 12:00 PM
Eurofins | mgt reference: **402030**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

Certificate of Analysis

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Attention: **Steven Sherrington**

Report **402030-S**
Client Reference UQEM DSI J122934
Received Date Dec 03, 2013

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**BH38 0.1** **Soil** **B13-De01909** **Dec 02, 2013**	**BH38 1.0** **Soil** **B13-De01910** **Dec 02, 2013**	**BH39 0.1** **Soil** **B13-De01911** **Dec 02, 2013**	**BH39 0.1R** **Soil** **B13-De01912** **Dec 02, 2013**
Heavy Metals						
Arsenic	2	mg/kg	55	68	68	72
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chromium	5	mg/kg	25	22	12	13
Copper	5	mg/kg	35	34	31	38
Lead	5	mg/kg	480	200	240	320
Nickel	5	mg/kg	13	14	9.4	8.9
Zinc	5	mg/kg	130	150	110	120
% Moisture	0.1	%	10	10	10	18

Client Sample ID **Sample Matrix** **Eurofins | mgt Sample No.** **Date Sampled** Test/Reference	LOR	Unit	**BH39 0.8** **Soil** **B13-De01913** **Dec 02, 2013**	**BH39 1.0** **Soil** **B13-De01914** **Dec 02, 2013**	**BH40 0.1** **Soil** **B13-De01915** **Dec 02, 2013**	**BH40 0.5** **Soil** **B13-De01916** **Dec 02, 2013**
Heavy Metals						
Arsenic	2	mg/kg	75	75	130	150
Cadmium	0.5	mg/kg	< 0.5	< 0.5	< 0.5	0.7
Chromium	5	mg/kg	16	26	22	28
Copper	5	mg/kg	36	37	50	54
Lead	5	mg/kg	200	150	190	210
Nickel	5	mg/kg	11	16	16	18
Zinc	5	mg/kg	120	120	120	150
% Moisture	0.1	%	7.3	7.7	12	11

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH40 0.5R Soil B13-De01917 Dec 02, 2013	BH40 1.0 Soil B13-De01918 Dec 02, 2013
Heavy Metals				
Arsenic	2	mg/kg	130	120
Cadmium	0.5	mg/kg	1.2	0.6
Chromium	5	mg/kg	28	26
Copper	5	mg/kg	53	37
Lead	5	mg/kg	180	230
Nickel	5	mg/kg	15	13
Zinc	5	mg/kg	120	110
% Moisture	0.1	%	9.4	10.0

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Metals M7	Brisbane	Dec 03, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			
% Moisture	Brisbane	Dec 03, 2013	14 Day
- Method: Method 102 - ANZECC - % Moisture			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

mg/l: milligrams per litre

ug/l: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100ml: Organisms per 100 millilitres

NTU: Units

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

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.5			0.5	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	118			80-120	Pass	
Cadmium	%	114			80-120	Pass	
Chromium	%	109			80-120	Pass	
Copper	%	125			80-120	Fail	Q17
Lead	%	108			80-120	Pass	
Nickel	%	107			80-120	Pass	
Zinc	%	126			80-120	Fail	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-De02414	NCP	%	107			75-125	Pass	
Cadmium	B13-No21815	NCP	%	88			75-125	Pass	
Chromium	B13-De01909	CP	%	80			75-125	Pass	
Copper	B13-De01909	CP	%	99			75-125	Pass	
Lead	B13-De01909	CP	%	103			75-125	Pass	
Nickel	B13-De01909	CP	%	78			75-125	Pass	
Zinc	B13-No21815	NCP	%	73			75-125	Fail	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-De01909	CP	mg/kg	55	54	2.0	30%	Pass	
Cadmium	B13-De01909	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chromium	B13-De01909	CP	mg/kg	25	25	<1	30%	Pass	
Copper	B13-De01909	CP	mg/kg	35	35	1.0	30%	Pass	
Lead	B13-De01909	CP	mg/kg	480	470	2.0	30%	Pass	
Nickel	B13-De01909	CP	mg/kg	13	13	2.0	30%	Pass	
Zinc	B13-De01909	CP	mg/kg	130	130	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
Q17	LCS Recovery outside of acceptance criteria however acceptable recoveries were obtained for other compounds in this group

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)

Glenn Jackson
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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

Appendix J Soil Analytical Results Summary Tables

University of Queensland
Experimental Mine Detailed Site Investigation
J122934 NEPM HIL A,B,C,D / Management Limits

RESULTS TABLE

Noel Arnold & Associates
A GREENCAP CONSULTING COMPANY

		Metals											Cyanide								
		Arsenic	Beryllium	Boron	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Zinc	Cyanide (Free)	Cyanide Total	4,4-DDE	a-BHC	Aldrin	b-BHC	chlordane	d-BHC
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		2	2	10	0.4	5	5	5	5	0.1	5	5	5	5	0.05	0.05	0.05	0.05	0.1	0.05
NEPM 2013 HIL Residential A Soil / Management Limits		100	60	4500	20	100	6000	300	3800	40	400	7400	250						50	
NEPM 2013 HIL Residential B Soil / Management Limits		500	90	40000	150	600	30000	1200	14000	120	1200	60000	300						90	
NEPM 2013 HIL Recreational C Soil / Management Limits		300	90	20000	90	300	17000	600	19000	80	1200	30000	240						70	
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		3000	500	300000	900	4000	240000	1500	60000	730	6000	400000	1500						530	
Field_ID	**Sampled_Date-Time**																			
BH01_0.1	21/10/2013	27	-	-	0.9	-	50	230	-	-	15	140	-	-	-	-	-	-	-	-
BH01_0.3	21/10/2013	33	-	-	0.7	-	49	230	-	-	13	110	-	-	-	-	-	-	-	-
BH02_0.05	21/10/2013	23	-	-	0.6	-	44	120	-	-	15	71	-	-	-	-	-	-	-	-
BH02_0.15	21/10/2013	68	-	-	<0.5	-	24	41	-	-	12	57	-	-	-	-	-	-	-	-
BH02_0.5	21/10/2013	16	-	-	<0.5	-	33	45	-	-	16	50	-	-	-	-	-	-	-	-
BH02_1.2	21/10/2013	23	-	-	<0.5	-	33	55	-	-	13	49	-	-	-	-	-	-	-	-
BH03_0.1	21/10/2013	30	-	-	10	-	100	5000	-	-	12	290	-	-	-	-	-	-	-	-
BH03_0.3	21/10/2013	42	-	-	8.4	-	200	14,000	-	-	5.8	500	-	-	-	-	-	-	-	-
BH03_0.3R	21/10/2013	39	-	-	8.6	-	190	16,000	-	-	<5	470	-	-	-	-	-	-	-	-
BH03_0.7	21/10/2013	22	-	-	33	-	83	4400	-	-	16	350	-	-	-	-	-	-	-	-
BH03_2.0	21/10/2013	6.4	-	-	<0.5	-	30	44	-	-	21	47	-	-	-	-	-	-	-	-
BH03_2.7	21/10/2013	3.7	-	-	<0.5	-	29	34	-	-	21	50	-	-	-	-	-	-	-	-
BH04_0.1	21/10/2013	42	-	-	2.6	-	220	9700	-	-	6.8	470	-	-	-	-	-	-	-	-
BH04_0.5	21/10/2013	64	-	-	6.3	-	220	9400	-	-	<5	230	-	-	-	-	-	-	-	-
BH04_0.8	21/10/2013	37	-	-	9.1	-	180	11,000	-	-	<5	290	-	-	-	-	-	-	-	-
BH04_1.0	21/10/2013	8.7	-	-	<0.5	-	26	42	-	-	12	38	-	-	-	-	-	-	-	-
BH04_1.0R	21/10/2013	4.9	-	-	26	-	30	1400	-	-	18	260	-	-	-	-	-	-	-	-
BH04_2.5	21/10/2013	14	-	-	<0.5	-	25	29	-	-	13	43	-	-	-	-	-	-	-	-
BH04_2.7	21/10/2013	10	-	-	<0.5	-	20	18	-	-	6.7	20	-	-	-	-	-	-	-	-
BH05_0.1	21/10/2013	150	<5	<10	1.4	<5	66	1400	280	<0.1	11	190	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
BH05_0.3	21/10/2013	85	-	-	1.2	-	53	800	-	-	11	180	-	-	-	-	-	-	-	-
BH05_1.0	21/10/2013	34	-	-	0.9	-	26	57	-	-	13	110	-	-	-	-	-	-	-	-
BH05_1.0R	21/10/2013	18	-	-	1.2	-	21	71	-	-	11	73	-	-	-	-	-	-	-	-
BH05_1.5	21/10/2013	18	-	-	0.8	-	18	180	-	-	7.1	62	-	-	-	-	-	-	-	-
BH06_0.1	21/10/2013	39	-	-	11	-	170	15,000	-	-	<5	320	-	-	-	-	-	-	-	-
BH06_0.1R	21/10/2013	31	-	-	10	-	150	14,000	-	-	5.3	320	-	-	-	-	-	-	-	-
BH06_0.4	21/10/2013	38	-	-	11	-	210	16,000	-	-	<5	470	-	-	-	-	-	-	-	-
BH06_0.4R	21/10/2013	31	-	-	12	-	160	15,000	-	-	<5	1600	-	-	-	-	-	-	-	-
BH06_0.6	21/10/2013	42	-	-	12	-	210	14,000	-	-	<5	1300	-	-	-	-	-	-	-	-
BH06_0.6R	21/10/2013	40	-	-	12	-	200	15,000	-	-	<5	900	-	-	-	-	-	-	-	-

University of Queensland
Experimental Mine Detailed Site Investigation
J122934 NEPM HIL A,B,C,D / Management Limits

RESULTS TABLE

Noel Arnold & Associates
A GREENCAP CONSULTING COMPANY

		Metals											Cyanide								
		Arsenic	Beryllium	Boron	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Zinc	Cyanide (Free)	Cyanide Total	4,4-DDE	a-BHC	Aldrin	b-BHC	chlordane	d-BHC
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		2	2	10	0.4	5	5	5	5	0.1	5	5	5	5	0.05	0.05	0.05	0.05	0.1	0.05
NEPM 2013 HIL Residential A Soil / Management Limits		100	60	4500	20	100	6000	300	3800	40	400	7400	250						50	
NEPM 2013 HIL Residential B Soil / Management Limits		500	90	40000	150	600	30000	1200	14000	120	1200	60000	300						90	
NEPM 2013 HIL Recreational C Soil / Management Limits		300	90	20000	90	300	17000	600	19000	80	1200	30000	240						70	
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		3000	500	300000	900	4000	240000	1500	60000	730	6000	400000	1500						530	
Field_ID	**Sampled_Date-Time**																			
BH06_1.2	21/10/2013	56	-	-	13	-	57	1200	-	-	15	360	-	-	-	-	-	-	-	-
BH06_1.6	21/10/2013	75	-	-	2.4	-	45	150	-	-	19	810	-	-	-	-	-	-	-	-
BH07 0.1	22/10/2013	43	-	-	1.2	-	36	190	-	-	13	190	-	-	-	-	-	-	-	-
BH07 0.5	22/10/2013	85	-	-	0.6	-	53	60	-	-	16	250	-	-	-	-	-	-	-	-
BH07 0.5R	22/10/2013	73	-	-	<0.5	-	44	33	-	-	12	180	-	-	-	-	-	-	-	-
BH07 1.0	22/10/2013	130	-	-	0.6	-	70	37	-	-	17	380	-	-	-	-	-	-	-	-
BH07 2.0	22/10/2013	120	-	-	1.3	-	30	39	-	-	11	280	-	-	-	-	-	-	-	-
BH07 2.9	22/10/2013	280	-	-	2.2	-	59	96	-	-	15	420	-	-	-	-	-	-	-	-
BH08 0.1	22/10/2013	9.1	-	-	2.4	-	29	350	-	-	67	280	-	-	-	-	-	-	-	-
BH08 0.4	22/10/2013	29	-	-	11	-	120	8200	-	-	14	620	-	-	-	-	-	-	-	-
BH08 0.4R	22/10/2013	33	-	-	10	-	140	10,000	-	-	10	620	-	-	-	-	-	-	-	-
BH08 2.0	22/10/2013	7.6	-	-	<0.5	-	21	40	-	-	19	63	-	-	-	-	-	-	-	-
BH08 2.7	22/10/2013	5.9	-	-	<0.5	-	16	26	-	-	16	56	-	-	-	-	-	-	-	-
BH09 0.1	22/10/2013	11	-	-	1.3	-	32	520	-	-	8.9	340	-	-	-	-	-	-	-	-
BH09 0.2	22/10/2013	47	-	-	11	-	190	16,000	-	-	<5	910	-	-	-	-	-	-	-	-
BH09 0.2R	22/10/2013	43	-	-	9	-	190	16,000	-	-	<5	1200	-	-	-	-	-	-	-	-
BH09 1.0	22/10/2013	65	-	-	8.3	-	270	18,000	-	-	<5	790	-	-	-	-	-	-	-	-
BH09 2.3	22/10/2013	7.7	-	-	1.4	-	22	240	-	-	19	80	-	-	-	-	-	-	-	-
BH09 3.0	22/10/2013	8.2	-	-	<0.5	-	21	43	-	-	23	68	-	-	-	-	-	-	-	-
BH10 0.1	22/10/2013	21	<2	<10	2	5.3	50	1000	580	<0.1	12	490	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
BH10 0.5	22/10/2013	34	-	-	6.2	-	320	16,000	-	-	<5	1200	-	-	-	-	-	-	-	-
BH10 1.0	22/10/2013	72	-	-	10	-	290	17,000	-	-	<5	1500	-	-	-	-	-	-	-	-
BH10 1.6	22/10/2013	42	-	-	14	-	250	15,000	-	-	<5	1700	-	-	-	-	-	-	-	-
BH10 1.7	22/10/2013	7.4	-	-	<0.5	-	21	130	-	-	18	100	-	-	-	-	-	-	-	-
BH11 0.2	22/10/2013	18	-	-	0.8	-	63	5000	-	-	12	240	-	-	-	-	-	-	-	-
BH11 0.2R	22/10/2013	17	-	-	1.2	-	34	1700	-	-	14	200	-	-	-	-	-	-	-	-
BH11 0.6	22/10/2013	6.9	-	-	<0.5	-	16	85	-	-	13	76	-	-	-	-	-	-	-	-
BH11 0.9	22/10/2013	7	-	-	<0.5	-	15	47	-	-	13	65	-	-	-	-	-	-	-	-
BH11 1.0	22/10/2013	21	-	-	<0.5	-	23	51	-	-	16	140	-	-	-	-	-	-	-	-
BH11 1.5	22/10/2013	27	-	-	0.6	-	32	61	-	-	20	200	-	-	-	-	-	-	-	-

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		Metals											Cyanide								
		Arsenic	Beryllium	Boron	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Zinc	Cyanide (Free)	Cyanide Total	4,4-DDE	a-BHC	Aldrin	b-BHC	chlordane	d-BHC
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		2	2	10	0.4	5	5	5	5	0.1	5	5	5	5	0.05	0.05	0.05	0.05	0.1	0.05
NEPM 2013 HIL Residential A Soil / Management Limits		100	60	4500	20	100	6000	300	3800	40	400	7400	250						50	
NEPM 2013 HIL Residential B Soil / Management Limits		500	90	40000	150	600	30000	1200	14000	120	1200	60000	300						90	
NEPM 2013 HIL Recreational C Soil / Management Limits		300	90	20000	90	300	17000	600	19000	80	1200	30000	240						70	
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		3000	500	300000	900	4000	240000	1500	60000	730	6000	400000	1500						530	
Field_ID	**Sampled_Date-Time**																			
BH12 0.1	22/10/2013	14	-	-	4.8	-	60	3500	-	-	48	330	-	-	-	-	-	-	-	-
BH12 0.3	22/10/2013	27	-	-	4.5	-	120	6800	-	-	<5	500	-	-	-	-	-	-	-	-
BH12 1.5	22/10/2013	4.5	-	-	0.8	-	12	100	-	-	5.6	99	-	-	-	-	-	-	-	-
BH12 1.5R	22/10/2013	8.9	-	-	0.6	-	17	95	-	-	9.9	110	-	-	-	-	-	-	-	-
BH12 2.1	22/10/2013	48	-	-	0.7	-	17	64	-	-	11	180	-	-	-	-	-	-	-	-
BH13 0.3	22/10/2013	93	-	-	170	-	610	7500	-	-	13	38,000	-	-	-	-	-	-	-	-
BH13 0.3R	22/10/2013	37	-	-	13	-	120	4600	-	-	7.3	1600	-	-	-	-	-	-	-	-
BH13 2.0	22/10/2013	37	-	-	11	-	160	8900	-	-	6.1	1500	-	-	-	-	-	-	-	-
BH14 0.1	22/10/2013	25	-	-	6.9	-	290	24,000	-	-	5.7	2000	-	-	-	-	-	-	-	-
BH14 1.0	22/10/2013	48	-	-	0.8	-	33	350	-	-	12	300	-	-	-	-	-	-	-	-
BH14 2.0	22/10/2013	19	-	-	1.1	-	17	140	-	-	9.8	330	-	-	-	-	-	-	-	-
BH15 0.1	22/10/2013	19	-	-	4.9	-	160	8600	-	-	<5	1200	-	-	-	-	-	-	-	-
BH15 0.5	22/10/2013	8.2	-	-	3.8	-	410	5600	-	-	9.6	880	-	-	-	-	-	-	-	-
BH15 2.0	22/10/2013	85	-	-	0.7	-	50	310	-	-	17	370	-	-	-	-	-	-	-	-
BH15 2.1	22/10/2013	65	-	-	1.4	-	45	180	-	-	15	420	-	-	-	-	-	-	-	-
BH16 0.1	23/10/2013	33	-	-	2.5	-	27	620	-	-	12	420	-	-	-	-	-	-	-	-
BH16 1.4	23/10/2013	3	-	-	<0.5	-	5.6	16	-	-	9.3	29	-	-	-	-	-	-	-	-
BH16 1.7	23/10/2013	4.7	-	-	<0.5	-	6.1	73	-	-	8.3	76	-	-	-	-	-	-	-	-
BH16 2.0	23/10/2013	29	-	-	6.8	-	27	180	-	-	23	620	-	-	-	-	-	-	-	-
BH17 0.5	23/10/2013	14	-	-	1	-	22	430	-	-	12	200	-	-	-	-	-	-	-	-
BH17 0.5R	23/10/2013	16	-	-	1.2	-	25	470	-	-	12	230	-	-	-	-	-	-	-	-
BH17 1.7	23/10/2013	8.4	-	-	0.7	-	12	160	-	-	5.8	110	-	-	-	-	-	-	-	-
BH18 0.2	23/10/2013	23	-	-	0.6	-	26	260	-	-	19	95	-	-	-	-	-	-	-	-
BH18 1.0	23/10/2013	22	-	-	1.4	-	33	950	-	-	24	170	-	-	-	-	-	-	-	-
BH18 2.0	23/10/2013	13	-	-	<0.5	-	19	150	-	-	15	58	-	-	-	-	-	-	-	-
BH18 3.7	23/10/2013	25	-	-	0.8	-	20	190	-	-	19	160	-	-	-	-	-	-	-	-
BH19 0.1	23/10/2013	67	-	-	4.8	-	49	1900	-	-	10	480	-	-	-	-	-	-	-	-
BH19 0.8	23/10/2013	36	-	-	2.8	-	120	7400	-	-	5.6	500	-	-	-	-	-	-	-	-
BH19 0.9	23/10/2013	46	-	-	3.2	-	210	27,000	-	-	<5	360	-	-	-	-	-	-	-	-
BH19 2.0	23/10/2013	32	-	-	4.5	-	17	270	-	-	9.2	480	-	-	-	-	-	-	-	-

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		Arsenic	Beryllium	Boron	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Zinc	Cyanide (Free)	Cyanide Total	4,4-DDE	a-BHC	Aldrin	b-BHC	chlordane	d-BHC
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		2	2	10	0.4	5	5	5	5	0.1	5	5	5	5	0.05	0.05	0.05	0.05	0.1	0.05
NEPM 2013 HIL Residential A Soil / Management Limits		100	60	4500	20	100	6000	300	3800	40	400	7400	250						50	
NEPM 2013 HIL Residential B Soil / Management Limits		500	90	40000	150	600	30000	1200	14000	120	1200	60000	300						90	
NEPM 2013 HIL Recreational C Soil / Management Limits		300	90	20000	90	300	17000	600	19000	80	1200	30000	240						70	
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		3000	500	300000	900	4000	240000	1500	60000	730	6000	400000	1500						530	
Field_ID	**Sampled_Date-Time**																			
BH20 0.1	23/10/2013	9.8	-	-	0.7	-	25	250	-	-	15	96	-	-	-	-	-	-	-	-
BH20 0.6	23/10/2013	8.7	-	-	1.1	-	17	230	-	-	14	110	-	-	-	-	-	-	-	-
BH20 0.6R	23/10/2013	6.7	-	-	<0.5	-	<5	28	-	-	5.3	26	-	-	-	-	-	-	-	-
BH20 1.0	23/10/2013	14	-	-	2.5	-	29	4700	-	-	14	180	-	-	-	-	-	-	-	-
BH20 2.0	23/10/2013	19	-	-	7.5	-	22	80	-	-	12	240	-	-	-	-	-	-	-	-
BH20 3.0	23/10/2013	3.8	-	-	<0.5	-	19	31	-	-	10	61	-	-	-	-	-	-	-	-
BH21 0.1	24/10/2013	50	-	-	13	-	60	1000	-	-	13	4100	-	-	-	-	-	-	-	-
BH21 0.5	24/10/2013	320	-	-	31	-	38	1200	-	-	21	8400	-	-	-	-	-	-	-	-
BH21 1.0	24/10/2013	27	-	-	50	-	720	6800	-	-	14	17,000	-	-	-	-	-	-	-	-
BH21 2.0	24/10/2013	51	-	-	13	-	170	11,000	-	-	<5	3200	-	-	-	-	-	-	-	-
BH22 0.4	24/10/2013	36	-	-	3.8	-	37	730	-	-	15	760	-	-	-	-	-	-	-	-
BH22 1.0	24/10/2013	110	-	-	23	-	250	5800	-	-	14	8200	-	-	-	-	-	-	-	-
BH22 2.0	24/10/2013	21	-	-	11	-	380	12,000	-	-	8.7	5400	-	-	-	-	-	-	-	-
BH22 3.0	24/10/2013	25	-	-	12	-	140	8600	-	-	<5	3600	-	-	-	-	-	-	-	-
BH22 5.0	24/10/2013	56	-	-	3	-	130	7800	-	-	<5	160	-	-	-	-	-	-	-	-
BH23 0.2	24/10/2013	40	-	-	17	-	76	2300	-	-	12	750	-	-	-	-	-	-	-	-
BH23 1.0	24/10/2013	1800	-	-	14	-	100	13,000	-	-	13	2200	-	-	-	-	-	-	-	-
BH23 1.0R	24/10/2013	1200	-	-	7.4	-	110	5900	-	-	6.9	1500	-	-	-	-	-	-	-	-
BH23 4.0	24/10/2013	180	-	-	1	-	26	430	-	-	8.8	270	-	-	-	-	-	-	-	-
BH23 5.0	24/10/2013	130	-	-	3.8	-	28	280	-	-	14	260	-	-	-	-	-	-	-	-
BH23 5.0R	24/10/2013	130	-	-	3.3	-	25	210	-	-	13	250	-	-	-	-	-	-	-	-
BH24 0.3	24/10/2013	30	<2	<10	37	8.7	160	5500	980	0.5	18	3400	<5	<5	<0.05	<0.05	<0.1	<0.05	<0.1	<0.05
BH24 0.4	24/10/2013	29	<2	<10	2.9	6.7	320	16,000	2000	<0.1	6.3	1300	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
BH24 0.4R	24/10/2013	30	<2	<10	4.2	<5	300	13,000	1600	<0.1	5.9	1800	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
BH24 2.4	24/10/2013	3.9	-	-	75	-	17	1300	-	-	15	5100	-	-	-	-	-	-	-	-
BH25 0.05	25/10/2013	42	-	-	1.2	-	76	270	-	-	15	220	-	-	-	-	-	-	-	-
BH25 0.1	25/10/2013	82	-	-	1	-	160	190	-	-	14	150	-	-	-	-	-	-	-	-
BH25 0.1R	25/10/2013	67	-	-	1.1	-	130	180	-	-	16	190	-	-	-	-	-	-	-	-
BH25 0.5	25/10/2013	64	-	-	0.7	-	130	94	-	-	12	120	-	-	-	-	-	-	-	-
BH26 0.1	25/10/2013	11	-	-	<0.5	-	35	42	-	-	21	66	-	-	-	-	-	-	-	-

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		Metals											Cyanide								
		Arsenic	Beryllium	Boron	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Zinc	Cyanide (Free)	Cyanide Total	4,4-DDE	a-BHC	Aldrin	b-BHC	chlordane	d-BHC
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		2	2	10	0.4	5	5	5	5	0.1	5	5	5	5	0.05	0.05	0.05	0.05	0.1	0.05
NEPM 2013 HIL Residential A Soil / Management Limits		100	60	4500	20	100	6000	300	3800	40	400	7400	250						50	
NEPM 2013 HIL Residential B Soil / Management Limits		500	90	40000	150	600	30000	1200	14000	120	1200	60000	300						90	
NEPM 2013 HIL Recreational C Soil / Management Limits		300	90	20000	90	300	17000	600	19000	80	1200	30000	240						70	
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		3000	500	300000	900	4000	240000	1500	60000	730	6000	400000	1500						530	
Field_ID	**Sampled_Date-Time**																			
BH26 0.3	25/10/2013	11	-	-	<0.5	-	33	40	-	-	20	64	-	-	-	-	-	-	-	-
BH27 0.1	25/10/2013	40	-	-	8.8	-	180	5300	-	-	6.8	650	-	-	-	-	-	-	-	-
BH27 0.3	25/10/2013	36	-	-	8.2	-	180	12,000	-	-	<5	590	-	-	-	-	-	-	-	-
BH27 0.3R	25/10/2013	67	-	-	6.4	-	160	25,000	-	-	5.7	540	-	-	-	-	-	-	-	-
BH28 0.1	25/10/2013	120	-	-	6.5	-	280	33,000	-	-	8.1	570	-	-	-	-	-	-	-	-
BH28 0.5	25/10/2013	31	-	-	6.7	-	260	14,000	-	-	7.7	550	-	-	-	-	-	-	-	-
BH28 0.5R	25/10/2013	28	-	-	6	-	230	13,000	-	-	8.3	630	-	-	-	-	-	-	-	-
BH29 0.1	25/10/2013	36	-	-	11	-	200	16,000	-	-	5.8	730	-	-	-	-	-	-	-	-
BH29 1.0	25/10/2013	36	-	-	4.9	-	190	12,000	-	-	5.6	300	-	-	-	-	-	-	-	-
BH30 0.1	28/10/2013	20	-	-	<0.5	-	19	200	-	-	9.4	120	-	-	-	-	-	-	-	-
BH30 0.75	28/10/2013	30	-	-	<0.5	-	28	95	-	-	11	150	-	-	-	-	-	-	-	-
BH31 0.1	28/10/2013	230	-	-	8.4	-	210	28,000	-	-	9.5	1800	-	-	-	-	-	-	-	-
BH31 1.0	28/10/2013	260	-	-	3.3	-	140	5100	-	-	22	880	-	-	-	-	-	-	-	-
BH32 0.1	28/10/2013	17	-	-	0.9	-	35	320	-	-	26	210	-	-	-	-	-	-	-	-
BH33_0.1	31/10/2013	43	-	-	1.1	-	44	1500	-	-	60	480	-	-	-	-	-	-	-	-
BH33_0.2	31/10/2013	46	-	-	0.9	-	46	1200	-	-	62	450	-	-	-	-	-	-	-	-
BH33_0.2R	31/10/2013	48	-	-	0.9	-	49	1300	-	-	60	480	-	-	-	-	-	-	-	-
BH34_0.1	31/10/2013	16	-	-	91	-	58	1100	-	-	28	9900	-	-	-	-	-	-	-	-
BH34_0.4	31/10/2013	4.5	<2	42	3.6	<5	17	190	240	<0.1	6.5	690	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
BH34_0.4R	31/10/2013	5.7	<2	36	8.1	<5	23	220	360	<0.1	7.4	830	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
BH35_0.1	31/10/2013	12	-	-	6.3	-	61	3100	-	-	19	670	-	-	-	-	-	-	-	-
BH35_0.2	31/10/2013	53	-	-	3.7	-	270	18,000	-	-	7.5	2200	-	-	-	-	-	-	-	-
BH36_0.2	31/10/2013	4.3	-	-	<0.5	-	17	78	-	-	22	77	-	-	-	-	-	-	-	-
BH36_0.2R	31/10/2013	3.8	-	-	<0.5	-	16	50	-	-	22	61	-	-	-	-	-	-	-	-
BH37_0.2	31/10/2013	4.5	-	-	<0.5	-	18	100	-	-	19	87	-	-	-	-	-	-	-	-
BH37_0.5	31/10/2013	4.1	-	-	<0.5	-	17	210	-	-	23	80	-	-	-	-	-	-	-	-
BH37_0.5R	31/10/2013	4.3	-	-	<0.5	-	17	60	-	-	22	72	-	-	-	-	-	-	-	-
GW1 0.1	18/10/2013	27	-	-	<0.5	-	46	92	-	-	21	73	-	-	-	-	-	-	-	-
GW1 0.3	18/10/2013	21	-	-	<0.5	-	51	65	-	-	22	53	-	-	-	-	-	-	-	-
GW1 1	18/10/2013	20	-	-	0.7	-	80	1900	-	-	26	100	-	-	-	-	-	-	-	-

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		Arsenic	Beryllium	Boron	Cadmium	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Zinc	Cyanide (Free)	Cyanide Total	4,4-DDE	a-BHC	Aldrin	b-BHC	chlordane	d-BHC
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		2	2	10	0.4	5	5	5	5	0.1	5	5	5	5	0.05	0.05	0.05	0.05	0.1	0.05
NEPM 2013 HIL Residential A Soil / Management Limits		100	60	4500	20	100	6000	300	3800	40	400	7400	250						50	
NEPM 2013 HIL Residential B Soil / Management Limits		500	90	40000	150	600	30000	1200	14000	120	1200	60000	300						90	
NEPM 2013 HIL Recreational C Soil / Management Limits		300	90	20000	90	300	17000	600	19000	80	1200	30000	240						70	
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		3000	500	300000	900	4000	240000	1500	60000	730	6000	400000	1500						530	
Field_ID	**Sampled_Date-Time**																			
GW1 1.2	18/10/2013	13	-	-	0.9	-	50	550	-	-	34	80	-	-	-	-	-	-	-	-
GW1 1R	18/10/2013	19	-	-	0.7	-	68	900	-	-	25	91	-	-	-	-	-	-	-	-
GW1 2	18/10/2013	9.4	-	-	<0.5	-	37	36	-	-	27	55	-	-	-	-	-	-	-	-
GW1 3.2	18/10/2013	9.6	-	-	<0.5	-	13	13	-	-	6.4	28	-	-	-	-	-	-	-	-
GW2 0.1	18/10/2013	26	-	-	6.3	-	200	5400	-	-	19	270	-	-	-	-	-	-	-	-
GW2 0.2	18/10/2013	25	<5	<10	4.1	<5	460	19,000	1300	0.1	13	520	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
GW2 0.2R	18/10/2013	37	<5	<10	3.5	<5	540	19,000	940	<0.1	11	380	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
GW2 0.7	18/10/2013	5.4	-	-	15	-	24	720	-	-	34	260	-	-	-	-	-	-	-	-
GW3 0.1	18/10/2013	43	<5	<10	5.1	7.3	210	12,000	1500	<0.1	12	570	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
GW3 0.2	18/10/2013	50	-	-	4.5	-	310	21,000	-	-	7.6	630	-	-	-	-	-	-	-	-
GW3 0.4	18/10/2013	46	<5	<10	5	<5	430	26,000	4900	<0.1	11	740	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
GW3 1.5	18/10/2013	46	-	-	6.5	-	650	110,000	-	-	7.6	480	-	-	-	-	-	-	-	-
GW3 2.6	18/10/2013	5	-	-	<0.5	-	26	120	-	-	46	64	-	-	-	-	-	-	-	-
GW4 0.5	23/10/2013	2.4	-	-	<0.5	-	11	14	-	-	19	31	-	-	-	-	-	-	-	-
GW4 2.0	23/10/2013	3.2	-	-	<0.5	-	13	15	-	-	20	36	-	-	-	-	-	-	-	-
GW5 0.2	24/10/2013	7.6	<2	<10	<0.4	5.7	23	32	430	<0.1	10	44	<5	<5	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05
GW5 1.0	24/10/2013	10	-	-	0.7	-	16	64	-	-	11	93	-	-	-	-	-	-	-	-
GW5 1.3	24/10/2013	12	-	-	44	-	29	330	-	-	24	700	-	-	-	-	-	-	-	-
GW5 1.4	24/10/2013	18	-	-	59	-	56	2700	-	-	24	1000	-	-	-	-	-	-	-	-
GW5 1.9	24/10/2013	4.2	-	-	<0.5	-	20	200	-	-	26	50	-	-	-	-	-	-	-	-

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		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	50	20	20
NEPM 2013 HIL Residential A Soil / Management Limits								10				6		10	300	20				800
NEPM 2013 HIL Residential B Soil / Management Limits								20				10		15	500	30				800
NEPM 2013 HIL Recreational C Soil / Management Limits								20				10		10	400	30				800
NEPM 2013 HIL Commercial/ Industrial D / Management Limits								100				50		80	2500	160				800
Field_ID	Sampled_Date-Time																			
BH01_0.1	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01_0.3	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02_0.05	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02_0.15	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02_0.5	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02_1.2	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03_0.1	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03_0.3	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03_0.3R	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03_0.7	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03_2.0	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03_2.7	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.1	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.5	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.8	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_1.0	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_1.0R	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_2.5	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_2.7	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05_0.1	21/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<50	<20	<20
BH05_0.3	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05_1.0	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05_1.0R	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05_1.5	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.1	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.1R	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.4	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.4R	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.6	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.6R	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	50	20	20
NEPM 2013 HIL Residential A Soil / Management Limits								10				6		10	300	20				800
NEPM 2013 HIL Residential B Soil / Management Limits								20				10		15	500	30				800
NEPM 2013 HIL Recreational C Soil / Management Limits								20				10		10	400	30				800
NEPM 2013 HIL Commercial/ Industrial D / Management Limits								100				50		80	2500	160				800
Field_ID	**Sampled_Date-Time**																			
BH06_1.2	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_1.6	21/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07 0.1	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07 0.5	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07 0.5R	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07 1.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07 2.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07 2.9	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08 0.1	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08 0.4	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08 0.4R	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08 2.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08 2.7	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09 0.1	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09 0.2	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09 0.2R	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09 1.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09 2.3	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09 3.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10 0.1	22/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<50	<20	<20
BH10 0.5	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10 1.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10 1.6	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10 1.7	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 0.2	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 0.2R	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 0.6	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 0.9	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 1.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11 1.5	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	50	20	20
NEPM 2013 HIL Residential A Soil / Management Limits								10				6		10	300	20				800
NEPM 2013 HIL Residential B Soil / Management Limits								20				10		15	500	30				800
NEPM 2013 HIL Recreational C Soil / Management Limits								20				10		10	400	30				800
NEPM 2013 HIL Commercial/ Industrial D / Management Limits								100				50		80	2500	160				800
Field_ID	Sampled_Date-Time																			
BH12 0.1	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12 0.3	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12 1.5	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12 1.5R	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12 2.1	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13 0.3	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13 0.3R	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13 2.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14 0.1	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14 1.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14 2.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15 0.1	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15 0.5	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15 2.0	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15 2.1	22/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16 0.1	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16 1.4	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16 1.7	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16 2.0	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17 0.5	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17 0.5R	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17 1.7	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18 0.2	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18 1.0	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18 2.0	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18 3.7	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19 0.1	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19 0.8	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19 0.9	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19 2.0	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	50	20	20
NEPM 2013 HIL Residential A Soil / Management Limits								10				6		10	300	20				800
NEPM 2013 HIL Residential B Soil / Management Limits								20				10		15	500	30				800
NEPM 2013 HIL Recreational C Soil / Management Limits								20				10		10	400	30				800
NEPM 2013 HIL Commercial/ Industrial D / Management Limits								100				50		80	2500	160				800
Field_ID	Sampled_Date-Time																			
BH20 0.1	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20 0.6	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20 0.6R	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20 1.0	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20 2.0	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20 3.0	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21 0.1	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21 0.5	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21 1.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21 2.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22 0.4	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22 1.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22 2.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22 3.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22 5.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23 0.2	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23 1.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23 1.0R	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23 4.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23 5.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23 5.0R	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH24 0.3	24/10/2013	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<1	40	6500	<20	<20
BH24 0.4	24/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<50	<20	<20
BH24 0.4R	24/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<50	<20	<20
BH24 2.4	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25 0.05	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25 0.1	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25 0.1R	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25 0.5	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH26 0.1	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		Organochlorine Pesticides																NEPM 2013 TPH I			
		DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Naphthalene	F2-NAPHTHALENE	C6-C10 less BTEX (F1)	C6-C10
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	50	20	20
NEPM 2013 HIL Residential A Soil / Management Limits								10				6		10	300	20				800
NEPM 2013 HIL Residential B Soil / Management Limits								20				10		15	500	30				800
NEPM 2013 HIL Recreational C Soil / Management Limits								20				10		10	400	30				800
NEPM 2013 HIL Commercial/ Industrial D / Management Limits								100				50		80	2500	160				800
Field_ID	**Sampled_Date-Time**																			
BH26 0.3	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27 0.1	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27 0.3	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27 0.3R	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28 0.1	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28 0.5	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28 0.5R	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH29 0.1	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH29 1.0	25/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH30 0.1	28/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH30 0.75	28/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH31 0.1	28/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH31 1.0	28/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH32 0.1	28/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH33_0.1	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH33_0.2	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH33_0.2R	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH34_0.1	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH34_0.4	31/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	64	<20	<20
BH34_0.4R	31/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	97	<20	<20
BH35_0.1	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH35_0.2	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH36_0.2	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH36_0.2R	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH37_0.2	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH37_0.5	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH37_0.5R	31/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1 0.1	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1 0.3	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1 1	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		Organochlorine Pesticides																NEPM 2013 TPH I			
		DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Naphthalene	F2-NAPHTHALENE	C6-C10 less BTEX (F1)	C6-C10
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1	0.5	50	20	20
NEPM 2013 HIL Residential A Soil / Management Limits								10				6		10	300	20				800
NEPM 2013 HIL Residential B Soil / Management Limits								20				10		15	500	30				800
NEPM 2013 HIL Recreational C Soil / Management Limits								20				10		10	400	30				800
NEPM 2013 HIL Commercial/ Industrial D / Management Limits								100				50		80	2500	160				800
Field_ID	**Sampled_Date-Time**																			
GW1 1.2	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1 1R	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1 2	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW1 3.2	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2 0.1	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW2 0.2	18/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<50	<20	<20
GW2 0.2R	18/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<50	<20	<20
GW2 0.7	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3 0.1	18/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<50	<20	<20
GW3 0.2	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3 0.4	18/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<50	<20	<20
GW3 1.5	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW3 2.6	18/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4 0.5	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW4 2.0	23/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5 0.2	24/10/2013	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<1	<0.5	<50	<20	<20
GW5 1.0	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5 1.3	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5 1.4	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW5 1.9	24/10/2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		FRACTIONS			PAHs		PCBs	PHENOLS	
		C10-C16	C16-C34	C34-C40	PAHs (Sum of total)	Carcinogenic PAHs as B(a)P TPE	PCBs (Sum of total)	Pentachlorophenol	Phenol
		mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg
EQL		50	100	100	0.5		0.1	1	0.5
NEPM 2013 HIL Residential A Soil / Management Limits		1000	3500	10,000	300	3	1	100	3000
NEPM 2013 HIL Residential B Soil / Management Limits		1000	3500	10,000	400	4	1	130	45000
NEPM 2013 HIL Recreational C Soil / Management Limits		1000	3500	10,000	300	3	1	120	40000
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		1000	5000	10,000	4000	40	7	660	240000
Field_ID	**Sampled_Date-Time**								
BH01_0.1	21/10/2013	-	-	-	-	-	-	-	-
BH01_0.3	21/10/2013	-	-	-	-	-	-	-	-
BH02_0.05	21/10/2013	-	-	-	-	-	-	-	-
BH02_0.15	21/10/2013	-	-	-	-	-	-	-	-
BH02_0.5	21/10/2013	-	-	-	-	-	-	-	-
BH02_1.2	21/10/2013	-	-	-	-	-	-	-	-
BH03_0.1	21/10/2013	-	-	-	-	-	-	-	-
BH03_0.3	21/10/2013	-	-	-	-	-	-	-	-
BH03_0.3R	21/10/2013	-	-	-	-	-	-	-	-
BH03_0.7	21/10/2013	-	-	-	-	-	-	-	-
BH03_2.0	21/10/2013	-	-	-	-	-	-	-	-
BH03_2.7	21/10/2013	-	-	-	-	-	-	-	-
BH04_0.1	21/10/2013	-	-	-	-	-	-	-	-
BH04_0.5	21/10/2013	-	-	-	-	-	-	-	-
BH04_0.8	21/10/2013	-	-	-	-	-	-	-	-
BH04_1.0	21/10/2013	-	-	-	-	-	-	-	-
BH04_1.0R	21/10/2013	-	-	-	-	-	-	-	-
BH04_2.5	21/10/2013	-	-	-	-	-	-	-	-
BH04_2.7	21/10/2013	-	-	-	-	-	-	-	-
BH05_0.1	21/10/2013	<50	<100	<100	<0.5	0.955	<0.1	<1	<0.5
BH05_0.3	21/10/2013	-	-	-	-	-	-	-	-
BH05_1.0	21/10/2013	-	-	-	-	-	-	-	-
BH05_1.0R	21/10/2013	-	-	-	-	-	-	-	-
BH05_1.5	21/10/2013	-	-	-	-	-	-	-	-
BH06_0.1	21/10/2013	-	-	-	-	-	-	-	-
BH06_0.1R	21/10/2013	-	-	-	-	-	-	-	-
BH06_0.4	21/10/2013	-	-	-	-	-	-	-	-
BH06_0.4R	21/10/2013	-	-	-	-	-	-	-	-
BH06_0.6	21/10/2013	-	-	-	-	-	-	-	-
BH06_0.6R	21/10/2013	-	-	-	-	-	-	-	-

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		FRACTIONS			PAHs		PCBs	PHENOLS	
		C10-C16	C16-C34	C34-C40	PAHs (Sum of total)	Carcinogenic PAHs as B(a)P TPE	PCBs (Sum of total)	Pentachlorophenol	Phenol
		mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg
EQL		50	100	100	0.5		0.1	1	0.5
NEPM 2013 HIL Residential A Soil / Management Limits		1000	3500	10,000	300	3	1	100	3000
NEPM 2013 HIL Residential B Soil / Management Limits		1000	3500	10,000	400	4	1	130	45000
NEPM 2013 HIL Recreational C Soil / Management Limits		1000	3500	10,000	300	3	1	120	40000
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		1000	5000	10,000	4000	40	7	660	240000
Field_ID	**Sampled_Date-Time**								
BH06_1.2	21/10/2013	-	-	-	-	-	-	-	-
BH06_1.6	21/10/2013	-	-	-	-	-	-	-	-
BH07 0.1	22/10/2013	-	-	-	-	-	-	-	-
BH07 0.5	22/10/2013	-	-	-	-	-	-	-	-
BH07 0.5R	22/10/2013	-	-	-	-	-	-	-	-
BH07 1.0	22/10/2013	-	-	-	-	-	-	-	-
BH07 2.0	22/10/2013	-	-	-	-	-	-	-	-
BH07 2.9	22/10/2013	-	-	-	-	-	-	-	-
BH08 0.1	22/10/2013	-	-	-	-	-	-	-	-
BH08 0.4	22/10/2013	-	-	-	-	-	-	-	-
BH08 0.4R	22/10/2013	-	-	-	-	-	-	-	-
BH08 2.0	22/10/2013	-	-	-	-	-	-	-	-
BH08 2.7	22/10/2013	-	-	-	-	-	-	-	-
BH09 0.1	22/10/2013	-	-	-	-	-	-	-	-
BH09 0.2	22/10/2013	-	-	-	-	-	-	-	-
BH09 0.2R	22/10/2013	-	-	-	-	-	-	-	-
BH09 1.0	22/10/2013	-	-	-	-	-	-	-	-
BH09 2.3	22/10/2013	-	-	-	-	-	-	-	-
BH09 3.0	22/10/2013	-	-	-	-	-	-	-	-
BH10 0.1	22/10/2013	<50	220	100	<0.5	0.955	<0.1	<1	<0.5
BH10 0.5	22/10/2013	-	-	-	-	-	-	-	-
BH10 1.0	22/10/2013	-	-	-	-	-	-	-	-
BH10 1.6	22/10/2013	-	-	-	-	-	-	-	-
BH10 1.7	22/10/2013	-	-	-	-	-	-	-	-
BH11 0.2	22/10/2013	-	-	-	-	-	-	-	-
BH11 0.2R	22/10/2013	-	-	-	-	-	-	-	-
BH11 0.6	22/10/2013	-	-	-	-	-	-	-	-
BH11 0.9	22/10/2013	-	-	-	-	-	-	-	-
BH11 1.0	22/10/2013	-	-	-	-	-	-	-	-
BH11 1.5	22/10/2013	-	-	-	-	-	-	-	-

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		C10-C16	C16-C34	C34-C40	PAHs (Sum of total)	Carcinogenic PAHs as B(a)P TPE	PCBs (Sum of total)	Pentachlorophenol	Phenol
		mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg
EQL		50	100	100	0.5		0.1	1	0.5
NEPM 2013 HIL Residential A Soil / Management Limits		1000	3500	10,000	300	3	1	100	3000
NEPM 2013 HIL Residential B Soil / Management Limits		1000	3500	10,000	400	4	1	130	45000
NEPM 2013 HIL Recreational C Soil / Management Limits		1000	3500	10,000	300	3	1	120	40000
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		1000	5000	10,000	4000	40	7	660	240000
Field_ID	**Sampled_Date-Time**								
BH12 0.1	22/10/2013	-	-	-	-	-	-	-	-
BH12 0.3	22/10/2013	-	-	-	-	-	-	-	-
BH12 1.5	22/10/2013	-	-	-	-	-	-	-	-
BH12 1.5R	22/10/2013	-	-	-	-	-	-	-	-
BH12 2.1	22/10/2013	-	-	-	-	-	-	-	-
BH13 0.3	22/10/2013	-	-	-	-	-	-	-	-
BH13 0.3R	22/10/2013	-	-	-	-	-	-	-	-
BH13 2.0	22/10/2013	-	-	-	-	-	-	-	-
BH14 0.1	22/10/2013	-	-	-	-	-	-	-	-
BH14 1.0	22/10/2013	-	-	-	-	-	-	-	-
BH14 2.0	22/10/2013	-	-	-	-	-	-	-	-
BH15 0.1	22/10/2013	-	-	-	-	-	-	-	-
BH15 0.5	22/10/2013	-	-	-	-	-	-	-	-
BH15 2.0	22/10/2013	-	-	-	-	-	-	-	-
BH15 2.1	22/10/2013	-	-	-	-	-	-	-	-
BH16 0.1	23/10/2013	-	-	-	-	-	-	-	-
BH16 1.4	23/10/2013	-	-	-	-	-	-	-	-
BH16 1.7	23/10/2013	-	-	-	-	-	-	-	-
BH16 2.0	23/10/2013	-	-	-	-	-	-	-	-
BH17 0.5	23/10/2013	-	-	-	-	-	-	-	-
BH17 0.5R	23/10/2013	-	-	-	-	-	-	-	-
BH17 1.7	23/10/2013	-	-	-	-	-	-	-	-
BH18 0.2	23/10/2013	-	-	-	-	-	-	-	-
BH18 1.0	23/10/2013	-	-	-	-	-	-	-	-
BH18 2.0	23/10/2013	-	-	-	-	-	-	-	-
BH18 3.7	23/10/2013	-	-	-	-	-	-	-	-
BH19 0.1	23/10/2013	-	-	-	-	-	-	-	-
BH19 0.8	23/10/2013	-	-	-	-	-	-	-	-
BH19 0.9	23/10/2013	-	-	-	-	-	-	-	-
BH19 2.0	23/10/2013	-	-	-	-	-	-	-	-

University of Queensland
Experimental Mine Detailed Site Investigation
J122934 NEPM HIL A,B,C,D / Management Limits

RESULTS TABLE

Noel Arnold & Associates
A GREENCAP CONSULTING COMPANY

		FRACTIONS			PAHs		PCBs	PHENOLS	
		C10-C16	C16-C34	C34-C40	PAHs (Sum of total)	Carcinogenic PAHs as B(a)P TPE	PCBs (Sum of total)	Pentachlorophenol	Phenol
		mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg
EQL		50	100	100	0.5		0.1	1	0.5
NEPM 2013 HIL Residential A Soil / Management Limits		1000	3500	10,000	300	3	1	100	3000
NEPM 2013 HIL Residential B Soil / Management Limits		1000	3500	10,000	400	4	1	130	45000
NEPM 2013 HIL Recreational C Soil / Management Limits		1000	3500	10,000	300	3	1	120	40000
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		1000	5000	10,000	4000	40	7	660	240000
Field_ID	**Sampled_Date-Time**								
BH20 0.1	23/10/2013	-	-	-	-	-	-	-	-
BH20 0.6	23/10/2013	-	-	-	-	-	-	-	-
BH20 0.6R	23/10/2013	-	-	-	-	-	-	-	-
BH20 1.0	23/10/2013	-	-	-	-	-	-	-	-
BH20 2.0	23/10/2013	-	-	-	-	-	-	-	-
BH20 3.0	23/10/2013	-	-	-	-	-	-	-	-
BH21 0.1	24/10/2013	-	-	-	-	-	-	-	-
BH21 0.5	24/10/2013	-	-	-	-	-	-	-	-
BH21 1.0	24/10/2013	-	-	-	-	-	-	-	-
BH21 2.0	24/10/2013	-	-	-	-	-	-	-	-
BH22 0.4	24/10/2013	-	-	-	-	-	-	-	-
BH22 1.0	24/10/2013	-	-	-	-	-	-	-	-
BH22 2.0	24/10/2013	-	-	-	-	-	-	-	-
BH22 3.0	24/10/2013	-	-	-	-	-	-	-	-
BH22 5.0	24/10/2013	-	-	-	-	-	-	-	-
BH23 0.2	24/10/2013	-	-	-	-	-	-	-	-
BH23 1.0	24/10/2013	-	-	-	-	-	-	-	-
BH23 1.0R	24/10/2013	-	-	-	-	-	-	-	-
BH23 4.0	24/10/2013	-	-	-	-	-	-	-	-
BH23 5.0	24/10/2013	-	-	-	-	-	-	-	-
BH23 5.0R	24/10/2013	-	-	-	-	-	-	-	-
BH24 0.3	24/10/2013	6500	97,000	12,000	10,000	1247	<0.1	<100	<50
BH24 0.4	24/10/2013	<50	<100	<100	<0.5	0.955	<0.1	<1	<0.5
BH24 0.4R	24/10/2013	<50	<100	<100	<0.5	0.955	<0.1	<1	<0.5
BH24 2.4	24/10/2013	-	-	-	-	-	-	-	-
BH25 0.05	25/10/2013	-	-	-	-	-	-	-	-
BH25 0.1	25/10/2013	-	-	-	-	-	-	-	-
BH25 0.1R	25/10/2013	-	-	-	-	-	-	-	-
BH25 0.5	25/10/2013	-	-	-	-	-	-	-	-
BH26 0.1	25/10/2013	-	-	-	-	-	-	-	-

University of Queensland
Experimental Mine Detailed Site Investigation
J122934 NEPM HIL A,B,C,D / Management Limits

RESULTS TABLE

Noel Arnold & Associates
A GREENCAP CONSULTING COMPANY

		FRACTIONS			PAHs		PCBs	PHENOLS	
		C10-C16	C16-C34	C34-C40	PAHs (Sum of total)	Carcinogenic PAHs as B(a)P TPE	PCBs (Sum of total)	Pentachlorophenol	Phenol
		mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg
EQL		50	100	100	0.5		0.1	1	0.5
NEPM 2013 HIL Residential A Soil / Management Limits		1000	3500	10,000	300	3	1	100	3000
NEPM 2013 HIL Residential B Soil / Management Limits		1000	3500	10,000	400	4	1	130	45000
NEPM 2013 HIL Recreational C Soil / Management Limits		1000	3500	10,000	300	3	1	120	40000
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		1000	5000	10,000	4000	40	7	660	240000
Field_ID	**Sampled_Date-Time**								
BH26 0.3	25/10/2013	-	-	-	-	-	-	-	-
BH27 0.1	25/10/2013	-	-	-	-	-	-	-	-
BH27 0.3	25/10/2013	-	-	-	-	-	-	-	-
BH27 0.3R	25/10/2013	-	-	-	-	-	-	-	-
BH28 0.1	25/10/2013	-	-	-	-	-	-	-	-
BH28 0.5	25/10/2013	-	-	-	-	-	-	-	-
BH28 0.5R	25/10/2013	-	-	-	-	-	-	-	-
BH29 0.1	25/10/2013	-	-	-	-	-	-	-	-
BH29 1.0	25/10/2013	-	-	-	-	-	-	-	-
BH30 0.1	28/10/2013	-	-	-	-	-	-	-	-
BH30 0.75	28/10/2013	-	-	-	-	-	-	-	-
BH31 0.1	28/10/2013	-	-	-	-	-	-	-	-
BH31 1.0	28/10/2013	-	-	-	-	-	-	-	-
BH32 0.1	28/10/2013	-	-	-	-	-	-	-	-
BH33_0.1	31/10/2013	-	-	-	-	-	-	-	-
BH33_0.2	31/10/2013	-	-	-	-	-	-	-	-
BH33_0.2R	31/10/2013	-	-	-	-	-	-	-	-
BH34_0.1	31/10/2013	-	-	-	-	-	-	-	-
BH34_0.4	31/10/2013	64	<100	<100	<0.5	0.955	<0.1	<1	<0.5
BH34_0.4R	31/10/2013	97	<100	<100	<0.5	0.955	<0.1	<1	<0.5
BH35_0.1	31/10/2013	-	-	-	-	-	-	-	-
BH35_0.2	31/10/2013	-	-	-	-	-	-	-	-
BH36_0.2	31/10/2013	-	-	-	-	-	-	-	-
BH36_0.2R	31/10/2013	-	-	-	-	-	-	-	-
BH37_0.2	31/10/2013	-	-	-	-	-	-	-	-
BH37_0.5	31/10/2013	-	-	-	-	-	-	-	-
BH37_0.5R	31/10/2013	-	-	-	-	-	-	-	-
GW1 0.1	18/10/2013	-	-	-	-	-	-	-	-
GW1 0.3	18/10/2013	-	-	-	-	-	-	-	-
GW1 1	18/10/2013	-	-	-	-	-	-	-	-

University of Queensland
Experimental Mine Detailed Site Investigation
J122934 NEPM HIL A,B,C,D / Management Limits

RESULTS TABLE

Noel Arnold & Associates
A GREENCAP CONSULTING COMPANY

		FRACTIONS			PAHs		PCBs	PHENOLS	
		C10-C16	C16-C34	C34-C40	PAHs (Sum of total)	Carcinogenic PAHs as B(a)P TPE	PCBs (Sum of total)	Pentachlorophenol	Phenol
		mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg
EQL		50	100	100	0.5		0.1	1	0.5
NEPM 2013 HIL Residential A Soil / Management Limits		1000	3500	10,000	300	3	1	100	3000
NEPM 2013 HIL Residential B Soil / Management Limits		1000	3500	10,000	400	4	1	130	45000
NEPM 2013 HIL Recreational C Soil / Management Limits		1000	3500	10,000	300	3	1	120	40000
NEPM 2013 HIL Commercial/ Industrial D / Management Limits		1000	5000	10,000	4000	40	7	660	240000
Field_ID	**Sampled_Date-Time**								
GW1 1.2	18/10/2013	-	-	-	-	-	-	-	-
GW1 1R	18/10/2013	-	-	-	-	-	-	-	-
GW1 2	18/10/2013	-	-	-	-	-	-	-	-
GW1 3.2	18/10/2013	-	-	-	-	-	-	-	-
GW2 0.1	18/10/2013	-	-	-	-	-	-	-	-
GW2 0.2	18/10/2013	<50	<100	<100	<0.5	0.955	<0.1	<1	<0.5
GW2 0.2R	18/10/2013	<50	<100	<100	<0.5	0.955	<0.1	<1	<0.5
GW2 0.7	18/10/2013	-	-	-	-	-	-	-	-
GW3 0.1	18/10/2013	<50	<100	<100	<0.5	0.955	<0.1	<1	<0.5
GW3 0.2	18/10/2013	-	-	-	-	-	-	-	-
GW3 0.4	18/10/2013	<50	<100	<100	<0.5	0.955	<0.1	<1	<0.5
GW3 1.5	18/10/2013	-	-	-	-	-	-	-	-
GW3 2.6	18/10/2013	-	-	-	-	-	-	-	-
GW4 0.5	23/10/2013	-	-	-	-	-	-	-	-
GW4 2.0	23/10/2013	-	-	-	-	-	-	-	-
GW5 0.2	24/10/2013	<50	<100	<100	<0.5	0.955	<0.1	<1	<0.5
GW5 1.0	24/10/2013	-	-	-	-	-	-	-	-
GW5 1.3	24/10/2013	-	-	-	-	-	-	-	-
GW5 1.4	24/10/2013	-	-	-	-	-	-	-	-
GW5 1.9	24/10/2013	-	-	-	-	-	-	-	-

University of Queensland
Experimental Mine Detailed Site Investigation
J122934 - Additional Bore Hole Locations HIL A, B, C and D

RESULTS TABLE

Noel Arnold & Associates
A GREENCAP CONSULTING COMPANY

		Metals						
		Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Nickel	Zinc
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		2	0.5	5	5	5	5	5
NEPM 2013 Residential A Soil		100	20		6000	300	400	7400
NEPM 2013 Residential B Soil		500	150		30000	1200	1200	60000
NEPM 2013 Recreational C Soil		300	90		17000	600	1200	30000
NEPM 2013 Commercial/industrial D Soil		3000	900		240000	1500	6000	400000
Field_ID	**Sampled_Date-Time**							
BH38 0.1	2/12/2013	55	<0.5	25	35	480	13	130
BH38 1.0	2/12/2013	68	<0.5	22	34	200	14	150
BH39 0.1	2/12/2013	68	<0.5	12	31	240	9.4	110
BH39 0.8	2/12/2013	75	<0.5	16	36	200	11	120
BH39 1.0	2/12/2013	75	<0.5	26	37	150	16	120
BH40 0.1	2/12/2013	130	<0.5	22	50	190	16	120
BH40 0.5	2/12/2013	150	0.7	28	54	210	18	150
BH40 1.0	2/12/2013	120	0.6	26	37	230	13	110

Appendix K Surface and Groundwater Laboratory Certificates and Chain of Custody Documentation

eurofins | mgt

☐ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☑ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : NAA	Contact Name: Steven Sherrington	Purchase Order : J122934	COC Number :
Office Address : 2 Maygnewiew St Milton	Project Manager : " "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : " "	PROJECT Name : UQEM DSI	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes: Metals M7 Hold

	Sample ID	Date	Matrix	Metals M7	Hold
1	GW1 28/10/13	28/10	Water	✓	
2	GW1R 28/10/13	"	"	✓	
3	GW2 28/10/13	"	"	✓	
4	BH30 0.1	"	Soil	✓	
5	" 0.5	"	"		✓
6	" 0.75	"	"	✓	
7	" 1	"	"		✓
8	BH31 0.1	"	"	✓	
9	" 0.5	"	"		✓
10	" 1	"	"	✓	
11	" 1.5	"	"		✓
12	BH32 0.1	"	"	✓	
13	" 0.3	"	"		✓
14					
15					
16					

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:

Laboratory Staff

Relinquished By: S Sherrington
Date & Time:
Signature: 28/10/13

Received By: Marie I
Date & Time : 30.10.13 11am
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

E ☑ | CN ☐ | HD ☐
AP ☐ | CR ☐ | ☐

CON NOTES
POST CODE
MASS

Temperature on arrival: 13.2 °C
Report number: 397966

eurofins | mgt

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com.au web : www.eurofins.com.au

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

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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: UQEM DSI J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Oct 30, 2013 11:00 AM
Eurofins | mgt reference: **397966**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **397966-W**
Client Reference UQEM DSI J122934
Received Date Oct 30, 2013

Client Sample ID			**GW1 28/10/13**	**GW1R 28/10/13**	**GW2 28/10/13**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**B13-Oc23039**	**B13-Oc23040**	**B13-Oc23041**
Date Sampled			**Oct 28, 2013**	**Oct 28, 2013**	**Oct 28, 2013**
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	0.001	mg/L	0.026	0.027	0.029
Cadmium	0.0002	mg/L	0.0002	0.0003	0.0059
Chromium	0.001	mg/L	0.029	0.045	0.058
Copper	0.001	mg/L	0.050	0.069	0.075
Lead	0.001	mg/L	0.058	0.095	0.75
Nickel	0.001	mg/L	0.018	0.023	0.034
Zinc	0.001	mg/L	0.043	0.057	0.12

Description	Testing Site	Extracted	Holding Time
Metals M7	Brisbane	Oct 30, 2013	180 Day

- Method: USEPA 6010/6020 Heavy Metals

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.001			0.001	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	105			80-120	Pass	
Cadmium	%	93			80-120	Pass	
Chromium	%	101			80-120	Pass	
Copper	%	107			80-120	Pass	
Lead	%	102			80-120	Pass	
Nickel	%	106			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-Oc23054	NCP	%	86			75-125	Pass	
Cadmium	B13-Oc21562	NCP	%	77			75-125	Pass	
Chromium	B13-Oc21562	NCP	%	82			75-125	Pass	
Copper	B13-Oc23054	NCP	%	75			75-125	Pass	
Lead	B13-Oc21562	NCP	%	89			75-125	Pass	
Nickel	B13-Oc23054	NCP	%	84			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-Oc21562	NCP	mg/L	0.0040	0.0038	5.0	30%	Pass	
Cadmium	B13-Oc21562	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	B13-Oc21562	NCP	mg/L	0.010	0.0099	2.0	30%	Pass	
Copper	B13-Oc21562	NCP	mg/L	0.0060	0.0060	1.0	30%	Pass	
Lead	B13-Oc21562	NCP	mg/L	0.014	0.013	2.0	30%	Pass	
Nickel	B13-Oc21562	NCP	mg/L	0.030	0.030	1.0	30%	Pass	
Zinc	B13-Oc21562	NCP	mg/L	0.045	0.045	<1	30%	Pass	

Comments

Sample Integrity

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

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)

Michael Wright
National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS Page 1 of 1

Company Name : NAA	Contact Name : Steve Sherrington	Purchase Order : 5177934	COC Number :
Office Address : 2 Mannarian St Milton	Project Manager : "	PROJECT Number : "	Eurofins | mgt quote ID :
	Email for results : "	PROJECT Name : "	Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

Metals M7 ~~Suite R10~~ (M8, TRH, BTEX OCP/OPP)

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

	Sample ID	Date	Matrix	Metals M7	~~Suite R10~~ (M8, TRH, BTEX OCP/OPP)	Containers: 1LP	250P	125P	1LA	40mL vial	125mL A	Jar		Sample comments:
1	GW4 1/11/13	1/11	W		X									
2	GW4B 1/11/13	"	W		X									
3	GW5 1/11/13	"	W	X										
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														

Relinquished By:	Laboratory Staff Received By:	Turn around time	Method Of Shipment	Temperature on arrival:
S Sherrington	Marie I	1 DAY ☐ 2 DAY ☑ 3 DAY ☐	☐ Courier ☐ Hand Delivered ☐ Postal ☑ CN HD	10.9 ICE BRICKS
Date & Time : 8/11/13	Date & Time : 5.11.13 1PM	5 DAY ☐ 10 DAY ☐ Other:	Courier Consignment #: AP CR	Report number: 398568
Signature:	Signature:			

CON NOTES POST CODE MASS

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

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: J122934
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Nov 5, 2013 1:00 PM
Eurofins | mgt reference: **398568**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **398568-W**
Client Reference J122934
Received Date Nov 05, 2013

Client Sample ID			**GW4**	**GW4R**	**GW5**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**B13-No02100**	**B13-No02129**	**B13-No02130**
Date Sampled			**Nov 01, 2013**	**Nov 01, 2013**	**Nov 01, 2013**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	-
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	68	63	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.02	mg/L	< 0.02	< 0.02	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	-
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-
Organochlorine Pesticides					
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	-
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	-
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	-
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	-
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	-
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	-
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	-
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	-
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	-
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	-
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	-
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	-
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	-

Client Sample ID			GW4	GW4R	GW5
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			B13-No02100	B13-No02129	B13-No02130
Date Sampled			Nov 01, 2013	Nov 01, 2013	Nov 01, 2013
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	-
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	-
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	-
Toxaphene	0.01	mg/L	< 0.01	< 0.01	-
Dibutylchlorendate (surr.)	1	%	110	98	-
Tetrachloro-m-xylene (surr.)	1	%	69	69	-
Organophosphorous Pesticides					
Bolstar	0.002	mg/L	< 0.002	< 0.002	-
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	-
Demeton-O	0.002	mg/L	< 0.002	< 0.002	-
Diazinon	0.002	mg/L	< 0.002	< 0.002	-
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	-
Disulfoton	0.002	mg/L	< 0.002	< 0.002	-
Ethion	0.002	mg/L	< 0.002	< 0.002	-
Ethoprop	0.002	mg/L	< 0.002	< 0.002	-
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	-
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	-
Fenthion	0.002	mg/L	< 0.002	< 0.002	-
Merphos	0.002	mg/L	< 0.002	< 0.002	-
Methyl azinphos	0.002	mg/L	< 0.002	< 0.002	-
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	-
Mevinphos	0.002	mg/L	< 0.002	< 0.002	-
Naled	0.002	mg/L	< 0.002	< 0.002	-
Phorate	0.002	mg/L	< 0.002	< 0.002	-
Ronnel	0.002	mg/L	< 0.002	< 0.002	-
Tokuthion	0.002	mg/L	< 0.002	< 0.002	-
Trichloronate	0.002	mg/L	< 0.002	< 0.002	-
Triphenylphosphate (surr.)	1	%	85	66	-
Heavy Metals					
Arsenic	0.001	mg/L	0.003	0.003	0.007
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	0.0032
Chromium	0.001	mg/L	0.12	0.13	0.13
Copper	0.001	mg/L	0.075	0.079	0.42
Lead	0.001	mg/L	0.36	0.51	54
Mercury	0.0001	mg/L	0.0007	0.0010	-
Nickel	0.001	mg/L	0.092	0.092	0.098
Zinc	0.001	mg/L	< 0.001	< 0.001	0.16

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Nov 07, 2013	7 Day
- Method: TRH C6-C36 - MGT 100A			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Brisbane	Nov 05, 2013	7 Day
- Method: LM-LTM-ORG2010			
BTEX	Brisbane	Nov 05, 2013	14 Day
- Method: USEPA 8260 - MGT 350A Monocyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Nov 07, 2013	7 Day
- Method: USEPA 8081 Organochlorine Pesticides			
Organophosphorous Pesticides	Melbourne	Nov 07, 2013	7 Day
- Method: USEPA 8141 Organophosphorus Pesticides			
Metals M7	Brisbane	Nov 05, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			
Metals M8	Brisbane	Nov 05, 2013	28 Day
- Method: USEPA 6010/6020 Heavy Metals & USEPA 7470/71 Mercury			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environment Protection Authority
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10 less BTEX (F1)	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Organophosphorous Pesticides							
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethoprop	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl azinphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.001			0.001	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	115			70-130	Pass	
TRH C10-C14	%	74			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	97			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	107			70-130	Pass	
m&p-Xylenes	%	115			70-130	Pass	
Xylenes - Total	%	114			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	111			70-130	Pass	
TRH >C10-C16	%	76			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	86			70-130	Pass	
4.4'-DDE	%	105			70-130	Pass	
4.4'-DDT	%	100			70-130	Pass	
a-BHC	%	113			70-130	Pass	
Aldrin	%	103			70-130	Pass	
b-BHC	%	127			70-130	Pass	
d-BHC	%	128			70-130	Pass	
Dieldrin	%	113			70-130	Pass	
Endosulfan I	%	98			70-130	Pass	
Endosulfan II	%	102			70-130	Pass	
Endosulfan sulphate	%	118			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	%	127			70-130	Pass	
Endrin aldehyde	%	100			70-130	Pass	
Endrin ketone	%	106			70-130	Pass	
g-BHC (Lindane)	%	109			70-130	Pass	
Heptachlor	%	127			70-130	Pass	
Heptachlor epoxide	%	110			70-130	Pass	
Hexachlorobenzene	%	99			70-130	Pass	
Methoxychlor	%	110			70-130	Pass	
LCS - % Recovery							
Organophosphorous Pesticides							
Diazinon	%	81			70-130	Pass	
Ethion	%	76			70-130	Pass	
Fenitrothion	%	85			70-130	Pass	
Methyl parathion	%	73			70-130	Pass	
Mevinphos	%	75			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	95			80-120	Pass	
Arsenic	%	94			80-120	Pass	
Cadmium	%	102			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	99			80-120	Pass	
Copper	%	91			80-120	Pass	
Copper	%	93			80-120	Pass	
Lead	%	92			80-120	Pass	
Lead	%	93			80-120	Pass	
Mercury	%	86			70-130	Pass	
Nickel	%	99			80-120	Pass	
Zinc	%	91			80-120	Pass	
Zinc	%	94			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M13-No01102	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M13-No01102	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No02159	NCP	%	76			75-125	Pass	
Mercury	B13-No00903	NCP	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M13-No01100	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M13-No01100	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M13-No01100	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M13-No01100	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M13-No01100	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M13-No01100	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Organophosphorous Pesticides				Result 1	Result 2	RPD			
Bolstar	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl azinphos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Phorate	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	M13-No01376	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No02159	NCP	mg/L	0.0090	0.0097	6.0	30%	Pass	
Chromium	B13-No02159	NCP	mg/L	0.16	0.16	2.0	30%	Pass	
Copper	B13-No02159	NCP	mg/L	0.060	0.060	1.0	30%	Pass	
Lead	B13-No02159	NCP	mg/L	0.0030	0.0026	1.0	30%	Pass	
Mercury	B13-No02100	CP	mg/L	0.0007	0.0007	1.0	30%	Pass	
Nickel	B13-No02159	NCP	mg/L	0.051	0.051	<1	30%	Pass	
Zinc	B13-No02159	NCP	mg/L	0.065	0.069	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Mercury	B13-No02129	CP	mg/L	0.0010	0.0010	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

Mark Rodriquez	Client Services
Bryan Wilson	Senior Analyst-Metal (QLD)
Richard Corner	Senior Analyst-Volatile (QLD)
Stacey Jenkins	Senior Analyst-Organic (VIC)

Michael Wright

National Technical Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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2 Blyth St, Stafford

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ **Sydney**: 277 Woodpark Rd, Smithfield NSW 2176 Ph: 02 8784 8555 E:samples.sydney@alsenviro.com
☐ **Newcastle:** 5 Rosegum Rd, Warabrook NSW 2304 Ph:02 4968 9433 E:samples.newcastle@alsenviro.com
☑ **Brisbane**: 32 Shand St, Stafford QLD 4053 Ph:07 3243 7222 E:samples.brisbane@alsenviro.com
☐ **Townsville:** 14-15 Desma Ct, Bohle QLD 4818 Ph:07 4796 0600 E: townsville.environmental@alsenviro.com
☐ **Melbourne**: 2-4 Westall Rd, Springvale VIC 3171 Ph:03 8549 9600 E: samples.melbourne@alsenviro.com
☐ **Adelaide:** 2-1 Burma Rd, Pooraka SA 5095 Ph: 08 8359 0890 E:adelaide@alsenviro.com
☐ **Perth**: 10 Hod Way, Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsenviro.com
☐ **Launceston:** 27 Wellington St, Launceston TAS 7250 Ph: 03 6331 2158 E: launceston@alsenviro.com

CLIENT: ELP	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT **(List due date):** IF POSSIBLE	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: 27/288 Edward St, Brisbane		☑ Non Standard or urgent TAT **(List due date):** 6-12-13	Custody Seal Intact? Yes / No / N/A
PROJECT: UQ	**ALS QUOTE NO.:**	**COC SEQUENCE NUMBER (Circle)**	Free ice / frozen ice bricks present upon receipt? Yes / No / N/A
ORDER NUMBER:		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt:
PROJECT MANAGER: R. DAVIS	**CONTACT PH:** 32 39 9700	OF: 1 2 3 4 5 6 7	Other Comments:
SAMPLER: R. DAVIS	**SAMPLER MOBILE:** 0417000514	**RELINQUISHED BY:** R. DAVIS	**RECEIVED BY:** David
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):**	DATE/TIME: 2-12-13 / NOON.	DATE/TIME: 2/12/13 13:15
Email Reports to (will default to PM if no other addresses are listed): Richard Davis		**RELINQUISHED BY:**	**RECEIVED BY:**
Email Invoice to (will default to PM if no other addresses are listed): as above.		DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

LAB USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).							Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	W2 - As, Cd, Cr, Cu, Ni, Zn, Pb, Hg	NT 10 CATIONS	NT2 ANIONS	EA005 pH	EA10 EC	EA16 TDS		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	GW1	2-12-13, AM	W		2	✓	✓	✓	✓	✓	✓		
2	GW2	"	"		2	✓	✓	✓	✓	✓	✓		
3	GW4	"	"		2	✓	✓	✓	✓	✓	✓		
4	GW5	"	"		2	✓	✓	✓	✓	✓	✓		
5	GW5R	"	"		2	✓	✓	✓	✓	✓	✓		
6	SW1	"	"		2	✓	✓	✓	✓	✓	✓		
7	SW2	"	"		2	✓	✓	✓	✓	✓	✓		
				TOTAL									

Environmental Division Brisbane
Work Order
EB1329650

Telephone : +61-7-3243 7222

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **EB1329650**		
Client	: **ENVIRONMENTAL AND LICENSING PROFESSIONALS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RICHARD DAVIS	Contact	: Customer Services
Address	: GPO BOX 559 BRISBANE QLD, AUSTRALIA 4001	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: richard.davis@elp.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 32399700	Telephone	: +61 7 3243 7222
Facsimile	: +61 07 32202135	Facsimile	: +61 7 3243 7218
Project	: UQ	Page	: 1 of 2
Order number	: ----		
C-O-C number	: ----	Quote number	: EB2013ENVLIC0235 (BN/832/13)
Site	: ----		
Sampler	: R.DAVIS	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 02-DEC-2013	Issue Date	: 03-DEC-2013 09:15
Client Requested Due Date	: 06-DEC-2013	Scheduled Reporting Date	: **06-DEC-2013**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 5.5°C - Ice present
No. of coolers/boxes	: 1 MEDIUM	No. of samples received	: 7
Security Seal	: Intact.	No. of samples analysed	: 7

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' etc. suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Matt Goodwin.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958),
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exist.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EA005P pH (PC)	WATER - EA010P Conductivity (PC)	WATER - EA015H Total Dissolved Solids - High Level	WATER - EN055 - PG Ionic Balance by ED037P, ED041G,	WATER - NT-01 Major Cations (Ca, Mg, Na, K)	WATER - NT-02 Major Anions (Chloride, Sulphate,	WATER - W-02 8 Metals
EB1329650-001	[02-DEC-2013]	GW1	✓	✓	✓	✓	✓	✓	✓
EB1329650-002	[02-DEC-2013]	GW2	✓	✓	✓	✓	✓	✓	✓
EB1329650-003	[02-DEC-2013]	GW4	✓	✓	✓	✓	✓	✓	✓
EB1329650-004	[02-DEC-2013]	GW5	✓	✓	✓	✓	✓	✓	✓
EB1329650-005	[02-DEC-2013]	GW5R	✓	✓	✓	✓	✓	✓	✓
EB1329650-006	[02-DEC-2013]	SW1	✓	✓	✓	✓	✓	✓	✓
EB1329650-007	[02-DEC-2013]	SW2	✓	✓	✓	✓	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

MR RICHARD DAVIS

- *AU Certificate of Analysis - NATA (COA)	Email	richard.davis@elp.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	richard.davis@elp.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	richard.davis@elp.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	richard.davis@elp.com.au
- A4 - AU Tax Invoice (INV)	Email	richard.davis@elp.com.au
- Chain of Custody (CoC) (COC)	Email	richard.davis@elp.com.au
- EDI Format - ENMRG (ENMRG)	Email	richard.davis@elp.com.au
- EDI Format - XTab (XTAB)	Email	richard.davis@elp.com.au

CERTIFICATE OF ANALYSIS

Work Order	: **EB1329650**	Page	: 1 of 4
Client	: **ENVIRONMENTAL AND LICENSING PROFESSIONALS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RICHARD DAVIS	Contact	: Customer Services
Address	: GPO BOX 559 BRISBANE QLD, AUSTRALIA 4001	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: richard.davis@elp.com.au	E-mail	: Brisbane.Enviro.Services@alsglobal.com
Telephone	: +61 32399700	Telephone	: +61 7 3243 7222
Facsimile	: +61 07 32202135	Facsimile	: +61 7 3243 7218
Project	: UQ	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 02-DEC-2013
Sampler	: R.DAVIS	Issue Date	: 06-DEC-2013
Site	: ----		
		No. of samples received	: 7
Quote number	: BN/832/13	No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Metals Production Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **TDS by method EA-015 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW1	GW2	GW4	GW5	GW5R
				Client sampling date / time	[02-DEC-2013]	[02-DEC-2013]	[02-DEC-2013]	[02-DEC-2013]	[02-DEC-2013]
Compound	CAS Number	LOR	Unit		EB1329650-001	EB1329650-002	EB1329650-003	EB1329650-004	EB1329650-005
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit		6.75	7.10	7.59	7.70	7.70
EA010P: Conductivity by PC Titrator									
Electrical Conductivity @ 25°C	----	1	µS/cm		988	2130	2150	1380	1380
EA015: Total Dissolved Solids									
Total Dissolved Solids @180°C	----	10	mg/L		639	1300	1580	924	935
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L		<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L		<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L		95	170	306	292	294
Total Alkalinity as CaCO3	----	1	mg/L		95	170	306	292	294
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L		189	294	484	149	169
ED045G: Chloride Discrete analyser									
Chloride	16887-00-6	1	mg/L		180	501	384	254	253
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L		16	37	92	108	104
Magnesium	7439-95-4	1	mg/L		27	69	111	52	55
Sodium	7440-23-5	1	mg/L		161	373	249	133	127
Potassium	7440-09-7	1	mg/L		6	13	6	4	3
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		0.025	0.004	0.001	0.013	0.013
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	0.0002	<0.0001	0.0002	0.0002
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		0.002	0.002	0.002	0.001	0.001
Nickel	7440-02-0	0.001	mg/L		0.008	0.003	0.008	0.002	0.002
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	0.003	0.003
Zinc	7440-66-6	0.005	mg/L		0.065	0.038	0.017	0.022	0.019
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EN055: Ionic Balance									
Total Anions	----	0.01	meq/L		10.9	23.6	27.0	16.1	16.5
Total Cations	----	0.01	meq/L		10.2	24.1	24.7	15.6	15.3
Ionic Balance	----	0.01	%		3.50	0.88	4.48	1.72	3.80

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	SW1	SW2	----	----	----
			Client sampling date / time	[02-DEC-2013]	[02-DEC-2013]	----	----	----
Compound	CAS Number	LOR	Unit	EB1329650-006	EB1329650-007	----	----	----
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	7.89	7.95	----	----	----
EA010P: Conductivity by PC Titrator								
Electrical Conductivity @ 25°C	----	1	µS/cm	758	1970	----	----	----
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	----	10	mg/L	456	1180	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	144	135	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	144	135	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	27	90	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	170	567	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	37	43	----	----	----
Magnesium	7439-95-4	1	mg/L	24	45	----	----	----
Sodium	7440-23-5	1	mg/L	92	309	----	----	----
Potassium	7440-09-7	1	mg/L	5	12	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	0.006	0.004	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	0.002	0.003	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.001	0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.016	0.031	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	8.23	20.6	----	----	----
Total Cations	----	0.01	meq/L	7.95	19.6	----	----	----
Ionic Balance	----	0.01	%	1.76	2.42	----	----	----

QUALITY CONTROL REPORT

Work Order	: **EB1329650**	Page	: 1 of 6
Client	: **ENVIRONMENTAL AND LICENSING PROFESSIONALS PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR RICHARD DAVIS	Contact	: Customer Services
Address	: GPO BOX 559 BRISBANE QLD, AUSTRALIA 4001	Address	: 2 Byth Street Stafford QLD Australia 4053
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Telephone	: +61 32399700	Telephone	: +61 7 3243 7222
Facsimile	: +61 07 32202135	Facsimile	: +61 7 3243 7218
Project	: UQ	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 02-DEC-2013
Sampler	: R.DAVIS	Issue Date	: 06-DEC-2013
Order number	: ----		
		No. of samples received	: 7
Quote number	: BN/832/13	No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out ir compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Metals Production Chemist	Brisbane Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA005P: pH by PC Titrator (QC Lot: 3190460)									
EB1329426-007	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.25	8.28	0.4	0% - 20%
EA010P: Conductivity by PC Titrator (QC Lot: 3190462)									
EB1329650-001	GW1	EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	988	982	0.6	0% - 20%
EA015: Total Dissolved Solids (QC Lot: 3190463)									
EB1329508-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	71	69	2.9	No Limit
EB1329508-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	37000	36800	0.5	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 3190461)									
EB1329508-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	45	45	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	45	45	0.0	0% - 20%
EB1329508-010	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	50	50	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	50	50	0.0	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 3190455)									
EB1329508-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
EB1329508-009	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1	1	0.0	No Limit
ED045G: Chloride Discrete analyser (QC Lot: 3190457)									
EB1329508-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	2	2	0.0	No Limit
EB1329508-009	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	3	4	0.0	No Limit
ED093F: Dissolved Major Cations (QC Lot: 3190453)									
EB1329508-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	6	6	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	6	6	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	3	3	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit
EB1329508-009	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	9	9	0.0	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	3	3	0.0	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	3	2	0.0	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	<1	<1	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3193711)									
EB1329634-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3193711) - continued									
EB1329634-004	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
EB1329650-007	SW2	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.031	0.031	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 3193710)									
EB1329390-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EB1329625-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 3190460)								
EA005-P: pH Value	----	0.01	pH Unit	----	7 pH Unit	99.8	98	102
EA010P: Conductivity by PC Titrator (QCLot: 3190462)								
EA010-P: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	4000 µS/cm	94.4	90	110
EA015: Total Dissolved Solids (QCLot: 3190463)								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	92.8	80	120
ED037P: Alkalinity by PC Titrator (QCLot: 3190461)								
ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	----	200 mg/L	97.0	85	115
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 3190455)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	113	85	121
ED045G: Chloride Discrete analyser (QCLot: 3190457)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	1000 mg/L	95.8	75	117
ED093F: Dissolved Major Cations (QCLot: 3190453)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	----	----	----	----
ED093F: Magnesium	7439-95-4	1	mg/L	<1	----	----	----	----
ED093F: Sodium	7440-23-5	1	mg/L	<1	----	----	----	----
ED093F: Potassium	7440-09-7	1	mg/L	<1	----	----	----	----
EG020F: Dissolved Metals by ICP-MS (QCLot: 3193711)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.100 mg/L	99.7	82	116
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.100 mg/L	92.0	88	109
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.100 mg/L	94.9	87	115
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.200 mg/L	104	85	116
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.100 mg/L	97.3	89	110
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.100 mg/L	95.5	86	116
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.200 mg/L	90.1	86	118
EG035F: Dissolved Mercury by FIMS (QCLot: 3193710)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	108	84	118

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Recovery Limits (%) Low	Matrix Spike (MS) Report: Recovery Limits (%) High
ED045G: Chloride Discrete analyser (QCLot: 3190457)							
EB1329508-002	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	# Not Determined	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 3193711)							
EB1329634-005	Anonymous	EG020A-F: Arsenic	7440-38-2	0.100 mg/L	124	70	130
		EG020A-F: Cadmium	7440-43-9	0.100 mg/L	126	70	130
		EG020A-F: Chromium	7440-47-3	0.100 mg/L	124	70	130
		EG020A-F: Copper	7440-50-8	0.200 mg/L	127	70	130
		EG020A-F: Lead	7439-92-1	0.100 mg/L	122	70	130
		EG020A-F: Nickel	7440-02-0	0.100 mg/L	124	70	130
		EG020A-F: Zinc	7440-66-6	0.200 mg/L	126	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 3193710)							
EB1329390-002	Anonymous	EG035F: Mercury	7439-97-6	0.010 mg/L	115	70	130

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report: Spike Concentration	Spike Recovery (%) MS	Spike Recovery (%) MSD	Recovery Limits (%) Low	Recovery Limits (%) High	RPDs (%) Value	RPDs (%) Control Limit
ED045G: Chloride Discrete analyser (QCLot: 3190457)										
EB1329508-002	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	# Not Determined	----	70	130	----	----
EG035F: Dissolved Mercury by FIMS (QCLot: 3193710)										
EB1329390-002	Anonymous	EG035F: Mercury	7439-97-6	0.010 mg/L	115	----	70	130	----	----
EG020F: Dissolved Metals by ICP-MS (QCLot: 3193711)										
EB1329634-005	Anonymous	EG020A-F: Arsenic	7440-38-2	0.100 mg/L	124	----	70	130	----	----
		EG020A-F: Cadmium	7440-43-9	0.100 mg/L	126	----	70	130	----	----
		EG020A-F: Chromium	7440-47-3	0.100 mg/L	124	----	70	130	----	----
		EG020A-F: Copper	7440-50-8	0.200 mg/L	127	----	70	130	----	----
		EG020A-F: Lead	7439-92-1	0.100 mg/L	122	----	70	130	----	----
		EG020A-F: Nickel	7440-02-0	0.100 mg/L	124	----	70	130	----	----
		EG020A-F: Zinc	7440-66-6	0.200 mg/L	126	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EB1329650**	Page	: 1 of 7
Client	: ENVIRONMENTAL AND LICENSING PROFESSIONALS PTY LTD	Laboratory	: Environmental Division Brisbane
Contact	: MR RICHARD DAVIS	Contact	: Customer Services
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Telephone	: +61 32399700	Telephone	: +61 7 3243 7222
Facsimile	: +61 07 32202135	Facsimile	: +61 7 3243 7218
Project	: UQ	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 02-DEC-2013
Sampler	: R.DAVIS	Issue Date	: 06-DEC-2013
Order number	: ----		
		No. of samples received	: 7
Quote number	: BN/832/13	No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	**02-DEC-2013**	**---**	02-DEC-2013	----	**03-DEC-2013**	02-DEC-2013	×
EA010P: Conductivity by PC Titrator							
Clear Plastic Bottle - Natural (EA010-P)							
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	**02-DEC-2013**	**---**	30-DEC-2013	----	**03-DEC-2013**	30-DEC-2013	✓
EA015: Total Dissolved Solids							
Clear Plastic Bottle - Natural (EA015H)							
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	**02-DEC-2013**	**---**	09-DEC-2013	----	**04-DEC-2013**	09-DEC-2013	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P)							
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	**02-DEC-2013**	**---**	16-DEC-2013	----	**03-DEC-2013**	16-DEC-2013	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G)							
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	**02-DEC-2013**	**---**	30-DEC-2013	----	**03-DEC-2013**	30-DEC-2013	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED045G: Chloride Discrete analyser							
Clear Plastic Bottle - Natural (ED045G)							
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	**02-DEC-2013**	**---**	30-DEC-2013	----	**03-DEC-2013**	30-DEC-2013	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Natural (ED093F)							
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	**02-DEC-2013**	**---**	09-DEC-2013	----	**03-DEC-2013**	09-DEC-2013	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	**02-DEC-2013**	**---**	31-MAY-2014	----	**06-DEC-2013**	31-MAY-2014	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	**02-DEC-2013**	**---**	30-DEC-2013	----	**06-DEC-2013**	30-DEC-2013	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Alkalinity by PC Titrator	ED037-P	2	19	**10.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride by Discrete Analyser	ED045G	2	19	**10.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Conductivity by PC Titrator	EA010-P	1	7	**14.3**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	2	20	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	17	**11.8**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	2	19	**10.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH by PC Titrator	EA005-P	1	8	**12.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids (High Level)	EA015H	2	19	**10.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride by Discrete Analyser	ED045G	2	19	**10.5**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Conductivity by PC Titrator	EA010-P	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	**5.9**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH by PC Titrator	EA005-P	2	8	**25.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.0**	**10.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids (High Level)	EA015H	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Chloride by Discrete Analyser	ED045G	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Conductivity by PC Titrator	EA010-P	1	7	**14.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	**5.9**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids (High Level)	EA015H	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Chloride by Discrete Analyser	ED045G	1	19	**5.3**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	1	20	**5.0**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	**5.9**	**5.0**	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	APHA 21st ed. 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Conductivity by PC Titrator	EA010-P	WATER	APHA 21st ed., 2510 B This procedure determines conductivity by automated ISE. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Total Dissolved Solids (High Level)	EA015H	WATER	In-House, APHA 21st ed., 2540C A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Alkalinity by PC Titrator	ED037-P	WATER	APHA 21st ed., 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	APHA 21st ed., 4500-SO4 Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Chloride by Discrete Analyser	ED045G	WATER	APHA 21st ed., 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	Major Cations is determined based on APHA 21st ed., 3120; USEPA SW 846 - 6010 The ICPAES technique ionises the 0.45um filtered sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2) Hardness parameters are calculated based on APHA 21st ed., 2340 B. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): Samples are 0.45 um filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45 um filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	APHA 21st Ed. 1030F. The Ionic Balance is calculated based on the major Anions and Cations. The major anions include Alkalinity, Chloride and Sulfate which determined by PCT and DA. The Cations are determined by Turbi SO4 by DA. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED045G: Chloride Discrete analyser	EB1329508-002	Anonymous	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural						
GW1, GW2, GW4, GW5, GW5R, SW1, SW2	----	----	----	03-DEC-2013	02-DEC-2013	**1**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

Appendix L Soil Leach Laboratory Certificates and Chain of Custody Documentation

Marie – these are required on 3 day TAT.

For the leachates - ALSP
pH 2.9 (acetic acid) – Pb only
pH DI reagent water (~6.5) – Pb, Cd, As, Cu, Zn, Mn plus sulphur

Plus the analysis for Uranium on samples listed below.

Mark.

From: Steve Sherrington [mailto:Steve.Sherrington@noel-arnold.com.au]
Sent: Monday, 18 November 2013 2:55 PM
To: Mark Rodriquez
Subject: Further testing for UQEM samples (J122934)

Hi Mark,

As discussed can we schedule the following test parameters:

- **ASLP (Semi Volatiles and Metals) at pH 1.5 (Gastric Acid) and pH 7 (deionised water)** - on sample numbers:

BH03 0.1, BH03 0.7, BH04 0.1, BH04 0.8, BH05 0.3, BH06 0.1, BH06 0.4, BH06 0.6, BH08 0.4, BH09 0.2, BH09 1.0, BH10 0.5, BH10 1.6, BH11 0.2, BH12 0.1, BH13 0.3, BH14 0.1, BH15 0.1, BH19 0.1, BH19 0.9, BH20 1.0, BH21 1.0, BH22 1.0, BH22 3.0, BH23 0.2, BH24 0.4, BH27 0.1, BH28 0.1, BH28 0.5, BH29 0.1, BH31 0.1, BH33 0.1, BH35 0.1, GW1 0.1, GW2 0.1, GW3 0.1, GW3 1.5, GW3 1.5, GW5 1.4.

- **Uranium** – on sample numbers:

BH10 0.1, BH10 0.5, BH13 0.3, BH13 2.0, BH14 0.1, BH15 0.1, BH16 0.1, BH16 1.4, BH30 0.1.

Any problems please get in contact.

Thanks

Steve.

Steve Sherrington
Senior Environmental Scientist, QLD

Level 1, No 2 Mayneview Street
Milton QLD 4064

Phone: (07) 3514 9222 Fax: (07) 3514 9220
Mobile: 0478 458 885 Direct: (07) 3514 9201
Email: steve.sherrington@noel-arnold.com.au
www.noel-arnold.com.au

RYAN
20/11/13 8PM
QCJLT
400473

eurofins | mgt

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Sample Receipt Advice

Company name: **Noel Arnold & Associates (QLD)**

Contact name: Steven Sherrington
Client job number: UQEM J122934
COC number: Not provided
Turn around time: 3 Day
Date/Time received: Nov 20, 2013 12:00 PM
Eurofins | mgt reference: **400473**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Organic samples had Teflon liners.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Mark Rodriquez on Phone : (08) 8947 1557 or by e.mail: MarkRodriquez@eurofins.com.au

Results will be delivered electronically via e.mail to Steven Sherrington - steve.sherrington@noel-arnold.com.au.

Eurofins | mgt Sample Receipt

eurofins | mgt

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Noel Arnold & Associates (QLD)
2 Mayneview St
Milton
QLD 4066

Attention: **Steven Sherrington**

Report **400473-L**
Client Reference UQEM J122934
Received Date Nov 20, 2013

Client Sample ID			**GW1 0.1**	**GW1 0.1**	**GW2 0.1**	**GW2 0.1**
Sample Matrix			**ASLP**	**ASLP - Reagent Water**	**ASLP**	**ASLP - Reagent Water**
Eurofins | mgt Sample No.			**B13-No14821**	**B13-No14822**	**B13-No14823**	**B13-No14824**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	< 0.005	-	< 0.005
Copper	0.01	mg/L	-	< 0.01	-	0.02
Lead	0.01	mg/L	< 0.01	< 0.01	3.2	0.19
Manganese	0.05	mg/L	-	< 0.05	-	< 0.05
Zinc	0.01	mg/L	-	< 0.01	-	0.05
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.4	6.2	3.5	6.9
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			**GW3 0.1**	**GW3 0.1**	**GW3 1.5**	**GW3 1.5**
Sample Matrix			**ASLP**	**ASLP - Reagent Water**	**ASLP**	**ASLP - Reagent Water**
Eurofins | mgt Sample No.			**B13-No14825**	**B13-No14826**	**B13-No14827**	**B13-No14828**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	< 0.005	-	0.017
Copper	0.01	mg/L	-	0.02	-	< 0.01
Lead	0.01	mg/L	21	0.95	270	0.68
Manganese	0.05	mg/L	-	0.05	-	1.3
Zinc	0.01	mg/L	-	0.21	-	0.24
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.4	6.7	3.5	6.4
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH03 0.1	BH03 0.1	BH03 0.7	BH03 0.7
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14829	B13-No14830	B13-No14831	B13-No14832
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	< 0.005	-	0.012
Copper	0.01	mg/L	-	0.02	-	< 0.01
Lead	0.01	mg/L	2.0	0.23	35	0.19
Manganese	0.05	mg/L	-	< 0.05	-	< 0.05
Zinc	0.01	mg/L	-	0.08	-	0.25
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.5	6.2	3.5	6.5
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH04 0.1	BH04 0.1	BH04 0.8	BH04 0.8
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14833	B13-No14834	B13-No14835	B13-No14836
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	< 0.005	-	0.009
Copper	0.01	mg/L	-	0.02	-	< 0.01
Lead	0.01	mg/L	43	0.64	43	0.54
Manganese	0.05	mg/L	-	0.06	-	< 0.05
Zinc	0.01	mg/L	-	0.11	-	0.18
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.2	7.7	3.2	6.3
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH05 0.3	BH05 0.3	BH06 0.1	BH06 0.1
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14837	B13-No14838	B13-No14839	B13-No14840
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5

Client Sample ID			BH05 0.3	BH05 0.3	BH06 0.1	BH06 0.1
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14837	B13-No14838	B13-No14839	B13-No14840
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.01	mg/L	-	0.02	-	< 0.01
Cadmium	0.005	mg/L	-	< 0.005	-	< 0.005
Copper	0.01	mg/L	-	< 0.01	-	0.04
Lead	0.01	mg/L	0.88	0.05	23	0.87
Manganese	0.05	mg/L	-	< 0.05	-	< 0.05
Zinc	0.01	mg/L	-	0.01	-	0.06
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.3	6.4	3.4	6.4
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH06 0.4	BH06 0.4	BH06 0.6	BH06 0.6
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14841	B13-No14842	B13-No14843	B13-No14844
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	5.2
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	0.010	-	0.009
Copper	0.01	mg/L	-	0.01	-	0.01
Lead	0.01	mg/L	96	0.34	130	0.24
Manganese	0.05	mg/L	-	0.25	-	0.70
Zinc	0.01	mg/L	-	0.12	-	0.06
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.4	6.6	3.4	6.4
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH08 0.4	BH08 0.4	BH09 0.2	BH09 0.2
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14845	B13-No14846	B13-No14847	B13-No14848
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	5.4
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	0.006	-	0.006

Client Sample ID			BH08 0.4	BH08 0.4	BH09 0.2	BH09 0.2
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14845	B13-No14846	B13-No14847	B13-No14848
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Heavy Metals						
Copper	0.01	mg/L	-	< 0.01	-	< 0.01
Lead	0.01	mg/L	50	0.22	160	0.30
Manganese	0.05	mg/L	-	< 0.05	-	0.79
Zinc	0.01	mg/L	-	0.04	-	0.06
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.7	7.9	3.5	7.8
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH09 1.0	BH09 1.0	BH10 0.5	BH10 0.5
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14849	B13-No14850	B13-No14852	B13-No14853
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	0.026	-	< 0.005
Copper	0.01	mg/L	-	0.02	-	< 0.01
Lead	0.01	mg/L	140	0.80	230	0.19
Manganese	0.05	mg/L	-	3.8	-	0.06
Zinc	0.01	mg/L	-	0.23	-	0.02
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.4	6.7	3.4	6.8
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH10 1.6	BH10 1.6	BH11 0.2	BH11 0.2
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14855	B13-No14856	B13-No14857	B13-No14858
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	0.020	-	< 0.005
Copper	0.01	mg/L	-	0.02	-	0.01
Lead	0.01	mg/L	200	0.60	5.0	0.15

Client Sample ID			BH10 1.6	BH10 1.6	BH11 0.2	BH11 0.2
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14855	B13-No14856	B13-No14857	B13-No14858
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Heavy Metals						
Manganese	0.05	mg/L	-	0.15	-	< 0.05
Zinc	0.01	mg/L	-	0.52	-	0.02
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.4	6.2	3.3	6.8
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH12 0.1	BH12 0.1	BH13 0.3	BH13 0.3
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14859	B13-No14860	B13-No14861	B13-No14862
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	0.02
Cadmium	0.005	mg/L	-	0.006	-	< 0.005
Copper	0.01	mg/L	-	< 0.01	-	0.01
Lead	0.01	mg/L	8.3	0.11	40	0.07
Manganese	0.05	mg/L	-	< 0.05	-	< 0.05
Zinc	0.01	mg/L	-	0.13	-	0.03
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.7	7.9	4.4	9.7
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH14 0.1	BH14 0.1	BH15 0.1	BH15 0.1
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14865	B13-No14866	B13-No14868	B13-No14869
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	0.016	-	0.007
Copper	0.01	mg/L	-	0.03	-	0.01
Lead	0.01	mg/L	150	2.6	93	1.7
Manganese	0.05	mg/L	-	< 0.05	-	< 0.05
Zinc	0.01	mg/L	-	1.1	-	0.24

Client Sample ID			BH14 0.1	BH14 0.1	BH15 0.1	BH15 0.1
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14865	B13-No14866	B13-No14868	B13-No14869
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.4	6.4	3.4	6.6
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH19 0.1	BH19 0.1	BH19 0.9	BH19 0.9
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14873	B13-No14874	B13-No14875	B13-No14876
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	< 0.005	-	0.017
Copper	0.01	mg/L	-	< 0.01	-	0.02
Lead	0.01	mg/L	4.8	0.17	780	1.6
Manganese	0.05	mg/L	-	< 0.05	-	< 0.05
Zinc	0.01	mg/L	-	0.11	-	0.90
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.2	6.4	3.7	6.3
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH20 1.0	BH20 1.0	BH21 1.0	BH21 1.0
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14877	B13-No14878	B13-No14879	B13-No14880
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	29	-	31
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	0.22	-	0.22
Copper	0.01	mg/L	-	0.41	-	0.30
Lead	0.01	mg/L	0.09	4.2	19	3.1
Manganese	0.05	mg/L	-	0.42	-	0.38
Zinc	0.01	mg/L	-	39	-	46
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.5	5.5	3.5	5.6

Client Sample ID			BH20 1.0	BH20 1.0	BH21 1.0	BH21 1.0
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14877	B13-No14878	B13-No14879	B13-No14880
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Australian Standard Leaching Procedure (ASLP)						
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH22 1.0	BH22 1.0	BH22 3.0	BH22 3.0
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14881	B13-No14882	B13-No14883	B13-No14884
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	5.9
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	0.016	-	0.080
Copper	0.01	mg/L	-	0.04	-	< 0.01
Lead	0.01	mg/L	11	0.26	38	2.9
Manganese	0.05	mg/L	-	< 0.05	-	0.06
Zinc	0.01	mg/L	-	1.8	-	14
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.6	6.4	3.2	5.2
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH23 0.2	BH23 0.2	GW5 1.4	GW5 1.4
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14885	B13-No14886	B13-No14889	B13-No14890
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	6.7
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	0.011	-	< 0.005
Copper	0.01	mg/L	-	0.01	-	< 0.01
Lead	0.01	mg/L	10	0.36	0.42	< 0.01
Manganese	0.05	mg/L	-	< 0.05	-	< 0.05
Zinc	0.01	mg/L	-	0.38	-	0.06
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.3	6.3	4.3	8.0
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH27 0.1	BH27 0.1	BH28 0.1	BH28 0.1
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14891	B13-No14892	B13-No14893	B13-No14894
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	0.01	-	< 0.01
Cadmium	0.005	mg/L	-	< 0.005	-	< 0.005
Copper	0.01	mg/L	-	0.03	-	< 0.01
Lead	0.01	mg/L	5.7	0.30	46	0.28
Manganese	0.05	mg/L	-	0.07	-	< 0.05
Zinc	0.01	mg/L	-	0.08	-	0.08
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.4	6.2	3.2	6.5
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH28 0.5	BH28 0.5	BH29 0.1	BH29 0.1
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14895	B13-No14896	B13-No14897	B13-No14898
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	0.007	-	0.007
Copper	0.01	mg/L	-	< 0.01	-	0.01
Lead	0.01	mg/L	79	0.99	43	0.54
Manganese	0.05	mg/L	-	< 0.05	-	< 0.05
Zinc	0.01	mg/L	-	0.21	-	0.25
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.3	6.2	3.4	6.8
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH31 0.1	BH31 0.1	BH33 0.1	BH35 0.1
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14900	B13-No14901	B13-No14902	B13-No14903
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Sulphur	0.5	mg/L	-	< 5	-	< 5

Client Sample ID			BH31 0.1	BH31 0.1	BH33 0.1	BH35 0.1
Sample Matrix			ASLP	ASLP - Reagent Water	ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14900	B13-No14901	B13-No14902	B13-No14903
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.01	mg/L	-	< 0.01	-	< 0.01
Cadmium	0.005	mg/L	-	< 0.005	-	< 0.005
Copper	0.01	mg/L	-	< 0.01	-	< 0.01
Lead	0.01	mg/L	390	0.88	0.16	0.03
Manganese	0.05	mg/L	-	0.06	-	< 0.05
Zinc	0.01	mg/L	-	0.13	-	0.03
Australian Standard Leaching Procedure (ASLP)						
Leachate Fluid[C01]		comment	2.0	4.0	2.0	4.0
pH (ASLP - off)	0.1	units	3.7	6.3	3.4	6.7
pH (Leachate fluid)	0.1	units	2.8	6.0	2.8	6.0

Client Sample ID			BH35 0.1	BH33 0.1
Sample Matrix			ASLP	ASLP - Reagent Water
Eurofins | mgt Sample No.			B13-No14904	B13-No14948
Date Sampled			Not Provided	Not Provided
Test/Reference	LOR	Unit		
Sulphur	0.5	mg/L	-	< 5
Heavy Metals				
Arsenic	0.01	mg/L	-	< 0.01
Cadmium	0.005	mg/L	-	< 0.005
Copper	0.01	mg/L	-	< 0.01
Lead	0.01	mg/L	1.0	0.05
Manganese	0.05	mg/L	-	0.09
Zinc	0.01	mg/L	-	0.03
Australian Standard Leaching Procedure (ASLP)				
Leachate Fluid[C01]		comment	2.0	4.0
pH (ASLP - off)	0.1	units	3.6	6.1
pH (Leachate fluid)	0.1	units	2.8	6.0

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Sulphur	Melbourne	Nov 21, 2013	7 Day
- Method: LTM-MET-3010			
Heavy Metals	Melbourne	Nov 22, 2013	180 Day
- Method: USEPA 6010/6020 Heavy Metals			

Eurofins | mgt Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

UNITS

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Units

TERMS

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery
CRM	Certified Reference Material - reported as percent recovery
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands. In the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
ASLP	Australian Standard Leaching Procedure (AS4439.3)
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within
TEQ	Toxic Equivalency Quotient

QC - ACCEPTANCE CRITERIA

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

Results <10 times the LOR : No Limit

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

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

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

QC DATA GENERAL COMMENTS

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.01			0.01	Pass	
Cadmium	mg/L	< 0.005			0.005	Pass	
Copper	mg/L	< 0.01			0.01	Pass	
Lead	mg/L	< 0.01			0.01	Pass	
Manganese	mg/L	< 0.01			0.01	Pass	
Zinc	mg/L	< 0.01			0.01	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No14823	CP	%	89			75-125	Pass	
Cadmium	B13-No14823	CP	%	94			75-125	Pass	
Copper	B13-No14823	CP	%	85			75-125	Pass	
Manganese	B13-No14823	CP	%	110			75-125	Pass	
Zinc	B13-No14823	CP	%	111			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No14831	CP	%	91			75-125	Pass	
Cadmium	B13-No14831	CP	%	105			75-125	Pass	
Copper	B13-No14831	CP	%	91			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No14839	CP	%	93			75-125	Pass	
Cadmium	B13-No14839	CP	%	99			75-125	Pass	
Copper	B13-No14839	CP	%	91			75-125	Pass	
Manganese	B13-No14839	CP	%	111			75-125	Pass	
Zinc	B13-No14839	CP	%	105			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No14847	CP	%	94			75-125	Pass	
Cadmium	B13-No14847	CP	%	101			75-125	Pass	
Copper	B13-No14847	CP	%	108			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No14856	CP	%	89			75-125	Pass	
Cadmium	B13-No14856	CP	%	90			75-125	Pass	
Copper	B13-No14856	CP	%	91			75-125	Pass	
Lead	B13-No14856	CP	%	116			75-125	Pass	
Manganese	B13-No14856	CP	%	95			75-125	Pass	
Zinc	B13-No14856	CP	%	116			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No14868	CP	%	89			75-125	Pass	
Cadmium	B13-No14868	CP	%	91			75-125	Pass	
Copper	B13-No14868	CP	%	96			75-125	Pass	
Manganese	B13-No14868	CP	%	106			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No14879	CP	%	97			75-125	Pass	
Cadmium	B13-No14879	CP	%	103			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic	B13-No14889	CP	%	89			75-125	Pass	
Cadmium	B13-No14889	CP	%	93			75-125	Pass	
Copper	B13-No14889	CP	%	86			75-125	Pass	
Lead	B13-No14889	CP	%	92			75-125	Pass	
Manganese	B13-No14889	CP	%	98			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B13-No14897	CP	%	92			75-125	Pass	
Cadmium	B13-No14897	CP	%	92			75-125	Pass	
Copper	B13-No14897	CP	%	92			75-125	Pass	
Manganese	B13-No14897	CP	%	106			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No14823	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	B13-No14823	CP	mg/L	0.18	0.17	4.2	30%	Pass	
Copper	B13-No14823	CP	mg/L	0.04	0.04	4.6	30%	Pass	
Lead	B13-No14823	CP	mg/L	3.2	3.0	3.8	30%	Pass	
Manganese	B13-No14823	CP	mg/L	1.4	1.3	2.5	30%	Pass	
Zinc	B13-No14823	CP	mg/L	2.2	2.1	3.3	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No14831	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	B13-No14831	CP	mg/L	0.45	0.45	<1	30%	Pass	
Copper	B13-No14831	CP	mg/L	0.16	0.16	<1	30%	Pass	
Lead	B13-No14831	CP	mg/L	35	35	<1	30%	Pass	
Manganese	B13-No14831	CP	mg/L	2.1	2.2	1.9	30%	Pass	
Zinc	B13-No14831	CP	mg/L	7.2	7.3	1.5	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Sulphur	B13-No14836	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No14839	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	B13-No14839	CP	mg/L	0.17	0.17	1.6	30%	Pass	
Copper	B13-No14839	CP	mg/L	0.23	0.22	5.3	30%	Pass	
Lead	B13-No14839	CP	mg/L	23	23	2.3	30%	Pass	
Manganese	B13-No14839	CP	mg/L	1.4	1.3	5.3	30%	Pass	
Zinc	B13-No14839	CP	mg/L	2.0	1.9	5.8	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No14847	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	B13-No14847	CP	mg/L	0.24	0.24	2.3	30%	Pass	
Copper	B13-No14847	CP	mg/L	1.5	1.5	<1	30%	Pass	
Manganese	B13-No14847	CP	mg/L	15	15	1.0	30%	Pass	
Zinc	B13-No14847	CP	mg/L	5.6	5.6	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No14856	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	B13-No14856	CP	mg/L	0.020	0.023	16	30%	Pass	
Copper	B13-No14856	CP	mg/L	0.02	0.02	23	30%	Pass	
Lead	B13-No14856	CP	mg/L	0.60	0.77	25	30%	Pass	
Manganese	B13-No14856	CP	mg/L	0.15	0.20	28	30%	Pass	
Zinc	B13-No14856	CP	mg/L	0.52	0.67	24	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Sulphur	B13-No14862	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No14868	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	B13-No14868	CP	mg/L	0.098	0.10	5.4	30%	Pass	
Copper	B13-No14868	CP	mg/L	0.38	0.39	<1	30%	Pass	
Lead	B13-No14868	CP	mg/L	93	91	1.4	30%	Pass	
Manganese	B13-No14868	CP	mg/L	1.2	1.2	1.2	30%	Pass	
Zinc	B13-No14868	CP	mg/L	7.7	7.7	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No14879	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	B13-No14879	CP	mg/L	0.41	0.41	<1	30%	Pass	
Copper	B13-No14879	CP	mg/L	16	16	1.0	30%	Pass	
Lead	B13-No14879	CP	mg/L	19	19	<1	30%	Pass	
Manganese	B13-No14879	CP	mg/L	3.2	3.1	1.5	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No14889	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	B13-No14889	CP	mg/L	0.43	0.42	2.0	30%	Pass	
Copper	B13-No14889	CP	mg/L	0.03	0.03	5.0	30%	Pass	
Lead	B13-No14889	CP	mg/L	0.42	0.42	<1	30%	Pass	
Manganese	B13-No14889	CP	mg/L	1.1	1.0	3.6	30%	Pass	
Zinc	B13-No14889	CP	mg/L	18	18	3.4	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B13-No14897	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium	B13-No14897	CP	mg/L	0.18	0.17	6.5	30%	Pass	
Copper	B13-No14897	CP	mg/L	0.18	0.16	8.6	30%	Pass	
Lead	B13-No14897	CP	mg/L	43	42	<1	30%	Pass	
Manganese	B13-No14897	CP	mg/L	1.1	1.0	8.9	30%	Pass	
Zinc	B13-No14897	CP	mg/L	12	11	11	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Sulphur	B13-No14948	CP	mg/L	< 5	< 5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
C01	Leachate Fluid Key: 1 - pH 5.0, 2 - pH 2.9, 3 - pH 9.2, 4 - Reagent (DI) water, 5 - Client sample, 6 - other
G03	Insufficient sample was supplied to conduct this analysis

Authorised By

Mark Rodriquez	Client Services
Emily Rosenberg	Senior Analyst-Metal (VIC)

Glenn Jackson
Laboratory Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Appendix M Water Quality Meter Calibration Record

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **09K101340**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		LA2261	pH 7.00
2. pH 4.00		pH 4.00		KL1970	pH 4.00
3. mV		231.58mV		LC1282/LA1927	231.58mV
4. EC		2.76mS		LA2023	2.76mS
6. D.O		0 ppm		386	0 ppm
7. Temp		24.oC		MultiTherm	24.oC

Calibrated by: **Chris Lynch**

Calibration date: **26-Nov-13**

Next calibration due: **25-May-14**

Appendix N UQ Surface Water Monitoring Data Table – Witton Creek

Background - Witton Creek Upstream Monitoring Point

			Background																				
			Witton Creek upstream monitoring point																				
Parameter	WQO (marine)		28/09/2012	25/07/2013	1/08/2013	8/08/2013	15/08/2013	22/08/2013	29/08/2013	5/09/2013	12/09/2013	19/09/2013	26/09/2013	3/10/2013	10/10/2013	17/10/2013	24/10/2013	31/10/2013	7/11/2013	14/11/2013	21/11/2013	28/11/2013	5/12/2013
pH	7.4 - 8.4		7.63	7.38	7.5	7.4	7.1	7.8	7.6	7.5	7.4	7.6	7.4	7.7	7.7	7.9	7.8	7.5	7.8	7.3	7.6	7.6	7.8
Turbidity	25	NTU	4	1.8	7.1	5	2.8	3.2	9.9	10	5	2.3	3.9	3.9	2.8	3.9	3.1	4.9	1.3	11	1.7	1.2	1.1
Silver	0.0014	mg/L	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cadmium	0.0055	mg/L	0.0002	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.0004	nd	nd	nd
Cobalt	0.001	mg/L	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chromium	0.0274 (III)	mg/L	0.002	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chromium	0.0044 (IV)	mg/L	0.002	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.0021	nd	0.007	nd	nd	nd	nd
Copper	0.0013	mg/L	0.002	nd	0.0068	nd	0.0027	nd	nd	nd	nd	0.001	0.001	0.001	0.001	0.003	0.003	0.002	0.001	0.004	0.001	nd	0.001
Lead	0.0044	mg/L	nd	nd	0.0015	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Zinc	0.015	mg/L	0.024	0.038	0.065	0.011	0.0052	nd	nd	0.007	0.003	0.004	nd	0.01	0.006	0.009	nd	0.002	nd	0.15	nd	nd	nd

Conductivity	?	mS/cm	1200	nt	nt	nt	930	1100	1100	1200	1200	900	1800	2100	1200	1200	1200	1200	1500	340	840	940	970
Suspended Solids	25	mg/L	13	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
TDS	N/A	mg/L	804	nt	nt	nt	651	621	704	696	722	585	994	1230	662	816	690	681	847	220	505	617	587
Acidity (as CaCO3)	N/A	mg/L	10	nt	nt	nt	nt	250	250	270	250	220	310	310	260	310	280	250	280	78	200	200	210
Sulphate as SO4	1000	mg/L	29	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Aluminium	N/A	mg/L	0.01	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Arsenic	N/A	mg/L	0.004	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Barium	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Iron	N/A	mg/L	0.99	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Manganese	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Mercury	0.0004	mg/L	<0.0001	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Molybdenum	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Nickel	0.07	mg/L	0.001	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt

nt = not tested

nd=not determined (below detection)

Background - Witton Creek Upstream Monitoring Point

Parameter	WQO (marine)		12/12/2013	18/12/2013	26/12/2013	2/01/2014	9/01/2014	16/01/2014	23/01/2014	30/01/2014	6/02/2014	13/02/2014	20/02/2014	27/02/2014	6/03/2014
pH	7.4 - 8.4		7.7	7.8	nt	nt	7.7	7.8	7.7	8.3	7.9	8.2	7.7	8.1	8
Turbidity	25	NTU	5	2.5	nt	nt	2.3	1.8	2.1	0.7	0.8	1	2	0.8	1
Silver	0.0014	mg/L	nd	nd	nt	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cadmium	0.0055	mg/L	nd	nd	nt	nt	nd	0.0009	nd	nd	nd	0.0008	nd	nd	nd
Cobalt	0.001	mg/L	nd	nd	nt	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chromium	0.0274 (III)	mg/L	nd	nd	nt	nt	0.0095	0.0047	0.0059	0.0065	nd	nd	nd	nd	nd
Chromium	0.0044 (IV)	mg/L	nd	nd	nt	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd
Copper	0.0013	mg/L	0.01	nd	nt	nt	0.006	0.002	0.008	0.004	0.003	0.002	0.003	0.002	0.003
Lead	0.0044	mg/L	nd	nd	nt	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd
Zinc	0.015	mg/L	0.013	nd	nt	nt	0.019	0.007	0.015	0.013	nd	nd	0.009	nd	0.008

Conductivity	?	mS/cm	610	1100	nt	nt	930	1300	810	980	1100	1100	960	910	1100
Suspended Solids	25	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
TDS	N/A	mg/L	390	641	nt	nt	612	719	457	622	649	714	542	512	661
Acidity (as CaCO3)	N/A	mg/L	140	200	nt	nt	200	230	170	180	200	210	200	190	190
Sulphate as SO4	1000	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Aluminium	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Arsenic	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Barium	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Iron	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Manganese	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Mercury	0.0004	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Molybdenum	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Nickel	0.07	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt

nt = not tested

nd=not determined (below detection)

Downstream - Witton Creek Aaron Place Bridge

			Downstream																				
			Aaron Place Bridge, Witton Creek																				
Parameter	WQO (marine)		28/09/2012	25/07/2013	1/08/2013	8/08/2013	15/08/2013	22/08/2013	29/08/2013	5/09/2013	12/09/2013	19/09/2013	26/09/2013	3/10/2013	10/10/2013	17/10/2013	24/10/2013	31/10/2013	7/11/2013	14/11/2013	21/11/2013	28/11/2013	5/12/2013
pH	7.4 - 8.4		7.51	7.32	7.5	7.4	7.2	7.8	7.7	7.5	7.5	7.5	7.6	7.8	7.6	7.8	7.8	7.6	7.5	7.6	7.6	7.5	7.7
Turbidity	25	NTU	6.2	2.1	2.2	3	3.7	3.7	4.3	6.7	10	3.1	2.8	1.8	4.2	3.6	2.2	2.7	3.5	12	1.9	1.9	13
Silver	0.0014	mg/L	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cadmium	0.0055	mg/L	0.0001	0.00095	0.0026	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cobalt	0.001	mg/L	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chromium	0.0274 (III)	mg/L	0.003	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chromium	0.0044 (IV)	mg/L	0.003	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Copper	0.0013	mg/L	0.001	0.0041	0.0022	nd	0.0022	nd	nd	nd	nd	0.001	nd	0.002	nd	nd	0.001	0.002	nd	0.005	nd	0.005	0.002
Lead	0.0044	mg/L	nd	0.0036	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Zinc	0.015	mg/L	0.057	0.45	0.021	0.018	0.005	0.008	nd	0.007	0.004	0.008	nd	0.002	nd	nd	nd	0.005	nd	0.005	0.016	0.01	0.008
Conductivity	?	mS/cm	2740	nt	nt	nt	967	2800	1200	1200	1300	1800	1900	1000	7300	13000	2400	940	7900	320	1500	890	10000
Suspended Solids	25	mg/L	9	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
TDS	N/A	mg/L	1650	nt	nt	nt	677	1640	723	680	704	990	1140	679	4030	7340	1400	537	5190	200	881	548	6850
Acidity (as CaCO3)	N/A	mg/L	10	nt	nt	nt	nt	410	260	280	270	300	330	220	860	1600	410	210	1000	80	250	190	1100
Sulphate as SO4	1000	mg/L	116	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Aluminium	N/A	mg/L	0.03	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Arsenic	N/A	mg/L	0.003	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Barium	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Iron	N/A	mg/L	1.61	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Manganese	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Mercury	0.0004	mg/L	<0.0001	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Molybdenum	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Nickel	0.07	mg/L	0.002	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
nt = not tested			nt = not tested																				
nd=not determined (below detection)			nd=not determined (below detection)																				

Downstream - Witton Creek Aaron Place Bridge

Parameter	WQO (marine)		12/12/2013	18/12/2013	26/12/2013	2/01/2014	9/01/2014	16/01/2014	23/01/2014	30/01/2014	6/02/2014	13/02/2014	20/02/2014	27/02/2014	6/03/2014
pH	7.4 - 8.4		7.5	7.5	nt	nt	7.4	7.8	7	7.8	7.8	8	7.6	7.6	7.6
Turbidity	25	NTU	4.3	2.6	nt	nt	100	2.3	13	21	2.2	2.8	2.2	7.5	1.7
Silver	0.0014	mg/L	nd	nd	nt	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd
Cadmium	0.0055	mg/L	nd	nd	nt	nt	nd	0.0011	nd	0.0001	nd	0.0004	nd	nd	nd
Cobalt	0.001	mg/L	nd	nd	nt	nt	nd	nd	nd	0.001	nd	nd	nd	nd	nd
Chromium	0.0274 (III)	mg/L	nd	nd	nt	nt	0.01	0.0044	0.0038	0.0081	nd	nd	nd	nd	nd
Chromium	0.0044 (IV)	mg/L	nd	nd	nt	nt	nd	nd	nd	nd	nd	nd	nd	nd	nd
Copper	0.0013	mg/L	0.012	nd	nt	nt	0.004	0.001	0.019	0.012	nd	0.001	0.002	0.001	0.003
Lead	0.0044	mg/L	nd	nd	nt	nt	nd	nd	0.004	nd	nd	nd	nd	nd	nd
Zinc	0.015	mg/L	0.011	0.01	nt	nt	0.021	0.006	0.063	0.024	nd	nd	0.015	0.003	0.008
Conductivity	?	mS/cm	580	5500	nt	nt	860	1700	400	9000	1600	1400	3200	6600	1100
Suspended Solids	25	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
TDS	N/A	mg/L	355	3450	nt	nt	505	1020	261	5230	975	922	1800	3790	622
Acidity (as CaCO3)	N/A	mg/L	130	610	nt	nt	180	250	75	910	250	240	390	730	180
Sulphate as SO4	1000	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Aluminium	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Arsenic	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Barium	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Iron	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Manganese	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Mercury	0.0004	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Molybdenum	N/A	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
Nickel	0.07	mg/L	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt	nt
nt = not tested															
nd=not determined (below detection)															