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CERTIFICATE OF ANALYSIS

72707

Client:

Consulting Earth Scientists Pty Ltd
Suite 3, Level 1
55 Grandview Street
Pymble
NSW 2073

Attention: Mark Pickett

Sample log in details:

Your Reference:	<u>CES111206-CA Four Points</u>
No. of samples:	14 soils
Date samples received / completed instructions received	02/05/12 / 04/05/12

Analysis Details:

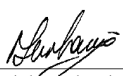
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.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

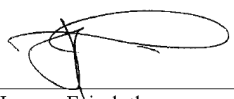
Report Details:

Date results requested by: / Issue Date: 11/05/12 / 11/05/12
Date of Preliminary Report: Not issued
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Results Approved By:


Rhian Morgan
Reporting Supervisor


Nick Sarlamis
Inorganics Supervisor


Jeremy Faircloth
Chemist



vTRH & BTEX in Soil						
Our Reference:	UNITS	72707-1	72707-2	72707-4	72707-5	72707-6
Your Reference	-----	FP-BH1	FP-BH1	FP-BH3	FP-BH4	FP-BH4
Depth	-----	0.5	0.5	1.5	1.0	1.65
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	08/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012
vTRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	100	101	99	103	100

vTRH & BTEX in Soil						
Our Reference:	UNITS	72707-8	72707-9	72707-10	72707-13	72707-14
Your Reference	-----	FP-BH5	FP-BH5	FP-BH5	Trip Blank	FP-BH1
Depth	-----	0.5	1.5	3.0	-	1.5
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	08/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012
vTRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	102	100	99	107	104

vTRH & BTEX in Soil		
Our Reference:	UNITS	72707-16
Your Reference	-----	TS
Depth	-----	-
Date Sampled		26/04/2012
Type of sample		soil
Date extracted	-	07/05/2012
Date analysed	-	08/05/2012
Benzene	mg/kg	100%
Toluene	mg/kg	100%
Ethylbenzene	mg/kg	100%
m+p-xylene	mg/kg	99%
o-Xylene	mg/kg	102%
Surrogate aaa-Trifluorotoluene	%	77

sTRH in Soil (C10-C36)						
Our Reference:	UNITS	72707-1	72707-2	72707-4	72707-5	72707-6
Your Reference	-----	FP-BH1	FP-BH1	FP-BH3	FP-BH4	FP-BH4
Depth	-----	0.5	0.5	1.5	1.0	1.65
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	08/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	116	120	117	115	113

sTRH in Soil (C10-C36)					
Our Reference:	UNITS	72707-8	72707-9	72707-10	72707-14
Your Reference	-----	FP-BH5	FP-BH5	FP-BH5	FP-BH1
Depth	-----	0.5	1.5	3.0	1.5
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	08/05/2012	08/05/2012	08/05/2012	08/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100
Surrogate o-Terphenyl	%	111	116	113	110

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	72707-1 FP-BH1 0.5 26/04/2012 soil	72707-2 FP-BH1 0.5 26/04/2012 soil	72707-4 FP-BH3 1.5 26/04/2012 soil	72707-5 FP-BH4 1.0 26/04/2012 soil	72707-6 FP-BH4 1.65 26/04/2012 soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	09/05/2012	09/05/2012	09/05/2012	09/05/2012	09/05/2012
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.6	0.9	0.1
Anthracene	mg/kg	<0.1	<0.1	0.2	0.3	<0.1
Fluoranthene	mg/kg	<0.1	0.2	0.8	2.0	0.1
Pyrene	mg/kg	<0.1	0.2	0.8	2.0	0.1
Benzo(a)anthracene	mg/kg	<0.1	0.1	0.3	1	0.1
Chrysene	mg/kg	<0.1	0.1	0.4	1.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	0.5	1.5	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.07	0.38	1.1	0.06
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.2	0.6	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.1	0.5	<0.1
Surrogate p-Terphenyl-d14	%	107	104	104	93	106

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	72707-8 FP-BH5 0.5 26/04/2012 soil	72707-9 FP-BH5 1.5 26/04/2012 soil	72707-10 FP-BH5 3.0 26/04/2012 soil	72707-14 FP-BH1 1.5 26/04/2012 soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	09/05/2012	09/05/2012	09/05/2012	09/05/2012
Naphthalene	mg/kg	<0.1	0.2	<0.1	<0.1
Acenaphthylene	mg/kg	0.3	1.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	0.5	<0.1	<0.1
Phenanthrene	mg/kg	1.5	4.0	<0.1	0.1
Anthracene	mg/kg	0.4	1	<0.1	<0.1
Fluoranthene	mg/kg	2.7	5.1	<0.1	0.3
Pyrene	mg/kg	2.5	4.5	<0.1	0.3
Benzo(a)anthracene	mg/kg	1.4	2.3	<0.1	0.1
Chrysene	mg/kg	1.4	2.2	<0.1	0.1
Benzo(b+k)fluoranthene	mg/kg	2.1	3.4	<0.2	0.2
Benzo(a)pyrene	mg/kg	1.4	2.2	<0.05	0.11
Indeno(1,2,3-c,d)pyrene	mg/kg	0.7	1.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	0.1	0.2	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.5	0.8	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	97	89	109	104

Organochlorine Pesticides in soil						
Our Reference:	UNITS	72707-1	72707-2	72707-4	72707-5	72707-6
Your Reference	-----	FP-BH1	FP-BH1	FP-BH3	FP-BH4	FP-BH4
Depth	-----	0.5	0.5	1.5	1.0	1.65
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	08/05/2012	08/05/2012	08/05/2012	08/05/2012	08/05/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	122	118	117	112	117

Organochlorine Pesticides in soil					
Our Reference:	UNITS	72707-8	72707-9	72707-10	72707-14
Your Reference	-----	FP-BH5	FP-BH5	FP-BH5	FP-BH1
Depth	-----	0.5	1.5	3.0	1.5
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	08/05/2012	08/05/2012	08/05/2012	08/05/2012
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	113	112	108	108

Organophosphorus Pesticides						
Our Reference:	UNITS	72707-1	72707-2	72707-4	72707-5	72707-6
Your Reference	-----	FP-BH1	FP-BH1	FP-BH3	FP-BH4	FP-BH4
Depth	-----	0.5	0.5	1.5	1.0	1.65
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil	soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	122	118	117	112	117

Organophosphorus Pesticides					
Our Reference:	UNITS	72707-8	72707-9	72707-10	72707-14
Your Reference	-----	FP-BH5	FP-BH5	FP-BH5	FP-BH1
Depth	-----	0.5	1.5	3.0	1.5
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	113	112	108	108

Client Reference: CES111206-CA Four Points

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	72707-1 FP-BH1 0.5 26/04/2012 soil	72707-2 FP-BH1 0.5 26/04/2012 soil	72707-4 FP-BH3 1.5 26/04/2012 soil	72707-5 FP-BH4 1.0 26/04/2012 soil	72707-6 FP-BH4 1.65 26/04/2012 soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	122	118	117	112	117

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	72707-8 FP-BH5 0.5 26/04/2012 soil	72707-9 FP-BH5 1.5 26/04/2012 soil	72707-10 FP-BH5 3.0 26/04/2012 soil	72707-14 FP-BH1 1.5 26/04/2012 soil
Date extracted	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	113	112	108	108

Acid Extractable metals in soil						
Our Reference:	UNITS	72707-1	72707-2	72707-4	72707-5	72707-6
Your Reference	-----	FP-BH1	FP-BH1	FP-BH3	FP-BH4	FP-BH4
Depth	-----	0.5	0.5	1.5	1.0	1.65
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil	soil
Date digested	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Arsenic	mg/kg	<4	<4	5	<4	<4
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	12	11	14	9	6
Copper	mg/kg	50	40	30	13	30
Lead	mg/kg	7	7	97	16	130
Mercury	mg/kg	<0.1	<0.1	0.5	<0.1	0.5
Nickel	mg/kg	120	110	8	10	10
Zinc	mg/kg	45	40	25	31	20

Acid Extractable metals in soil					
Our Reference:	UNITS	72707-8	72707-9	72707-10	72707-14
Your Reference	-----	FP-BH5	FP-BH5	FP-BH5	FP-BH1
Depth	-----	0.5	1.5	3.0	1.5
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil
Date digested	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Date analysed	-	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Arsenic	mg/kg	<4	140	<4	<4
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	9	7	12	14
Copper	mg/kg	50	91	13	26
Lead	mg/kg	57	150	21	28
Mercury	mg/kg	0.2	1.2	<0.1	<0.1
Nickel	mg/kg	32	10	<1	54
Zinc	mg/kg	72	130	18	39

Miscellaneous Inorg - soil			
Our Reference:	UNITS	72707-7	72707-11
Your Reference	-----	FP-BH4	FP-BH5
Depth	-----	6.0	4.5
Date Sampled		26/04/2012	26/04/2012
Type of sample		soil	soil
Date prepared	-	11/05/2012	11/05/2012
Date analysed	-	11/05/2012	11/05/2012
pH 1:5 soil:water	pH Units	8.4	8.2
Chloride, Cl 1:5 soil:water	mg/kg	520	810
Sulphate, SO ₄ 1:5 soil:water	mg/kg	76	110

Moisture						
Our Reference:	UNITS	72707-1	72707-2	72707-4	72707-5	72707-6
Your Reference	-----	FP-BH1	FP-BH1	FP-BH3	FP-BH4	FP-BH4
Depth	-----	0.5	0.5	1.5	1.0	1.65
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	7/05/2012	7/05/2012	7/05/2012	7/05/2012	7/05/2012
Date analysed	-	8/05/2012	8/05/2012	8/05/2012	8/05/2012	8/05/2012
Moisture	%	8.7	8.5	22	9.0	23

Moisture						
Our Reference:	UNITS	72707-7	72707-8	72707-9	72707-10	72707-11
Your Reference	-----	FP-BH4	FP-BH5	FP-BH5	FP-BH5	FP-BH5
Depth	-----	6.0	0.5	1.5	3.0	4.5
Date Sampled		26/04/2012	26/04/2012	26/04/2012	26/04/2012	26/04/2012
Type of sample		soil	soil	soil	soil	soil
Date prepared	-	7/05/2012	7/05/2012	7/05/2012	7/05/2012	7/05/2012
Date analysed	-	8/05/2012	8/05/2012	8/05/2012	8/05/2012	8/05/2012
Moisture	%	20	12	17	20	18

Moisture			
Our Reference:	UNITS	72707-13	72707-14
Your Reference	-----	TripBlank	FP-BH1
Depth	-----	-	1.5
Date Sampled		26/04/2012	26/04/2012
Type of sample		soil	soil
Date prepared	-	7/05/2012	7/05/2012
Date analysed	-	8/05/2012	8/05/2012
Moisture	%	5.3	9.4

MethodID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA 21st ED, 4500-H+.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA 21st ED, 4110-B.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.

Client Reference: CES111206-CA Four Points

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH & BTEX in Soil						Base II Duplicate II %RPD		
Date extracted	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-7	07/05/2012
Date analysed	-			08/05/2012	72707-1	08/05/2012 08/05/2012	LCS-7	08/05/2012
vTRHC ₆ - C ₉	mg/kg	25	Org-016	<25	72707-1	<25 <25	LCS-7	97%
Benzene	mg/kg	0.2	Org-016	<0.2	72707-1	<0.2 <0.2	LCS-7	100%
Toluene	mg/kg	0.5	Org-016	<0.5	72707-1	<0.5 <0.5	LCS-7	99%
Ethylbenzene	mg/kg	1	Org-016	<1	72707-1	<1 <1	LCS-7	92%
m+p-xylene	mg/kg	2	Org-016	<2	72707-1	<2 <2	LCS-7	96%
o-Xylene	mg/kg	1	Org-016	<1	72707-1	<1 <1	LCS-7	97%
Surrogate aaa-Trifluorotoluene	%		Org-016	105	72707-1	100 101 RPD: 1	LCS-7	102%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sTRH in Soil (C10-C36)						Base II Duplicate II %RPD		
Date extracted	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-7	07/05/2012
Date analysed	-			08/05/2012	72707-1	08/05/2012 08/05/2012	LCS-7	08/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	72707-1	<50 <50	LCS-7	90%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	72707-1	<100 <100	LCS-7	110%
TRHC ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	72707-1	<100 <100	LCS-7	110%
Surrogate o-Terphenyl	%		Org-003	116	72707-1	116 109 RPD: 6	LCS-7	81%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-7	07/05/2012
Date analysed	-			09/05/2012	72707-1	09/05/2012 09/05/2012	LCS-7	09/05/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	LCS-7	94%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	LCS-7	100%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	LCS-7	97%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 0.1	LCS-7	93%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 0.2	LCS-7	97%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	LCS-7	103%

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QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	72707-1	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	72707-1	<0.05 0.05	LCS-7	100%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	101	72707-1	107 111 RPD: 4	LCS-7	105%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-7	07/05/2012
Date analysed	-			07/05/2012	72707-1	08/05/2012 08/05/2012	LCS-7	07/05/2012
HCB	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	109%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	86%
Heptachlor	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	90%
delta-BHC	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	93%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	112%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	105%
Dieldrin	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	119%
Endrin	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	115%
pp-DDD	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	122%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	LCS-7	100%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-005	92	72707-1	122 116 RPD: 5	LCS-7	98%

Client Reference: CES111206-CA Four Points

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II %RPD		
Date extracted	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-7	07/05/2012
Date analysed	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-7	07/05/2012
Diazinon	mg/kg	0.1	Org-008	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	72707-1	<0.1 <0.1	LCS-7	105%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	72707-1	<0.1 <0.1	LCS-7	114%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	72707-1	<0.1 <0.1	LCS-7	112%
Surrogate TCLMX	%		Org-008	92	72707-1	122 116 RPD: 5	LCS-7	124%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-7	07/05/2012
Date analysed	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-7	07/05/2012
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	72707-1	<0.1 <0.1	LCS-7	98%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	72707-1	<0.1 <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	92	72707-1	122 116 RPD: 5	LCS-7	127%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-1	07/05/2012
Date analysed	-			07/05/2012	72707-1	07/05/2012 07/05/2012	LCS-1	07/05/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	72707-1	<4 <4	LCS-1	87%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	72707-1	<0.5 <0.5	LCS-1	83%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	72707-1	12 13 RPD: 8	LCS-1	87%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	72707-1	50 46 RPD: 8	LCS-1	87%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	72707-1	7 8 RPD: 13	LCS-1	86%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	72707-1	<0.1 <0.1	LCS-1	101%

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QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base Duplicate %RPD	Spike Sm#	Spike % Recovery
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	72707-1	120 110 RPD: 9	LCS-1	88%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	72707-1	45 42 RPD: 7	LCS-1	87%
QUALITY CONTROL Miscellaneous Inorg - soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base Duplicate %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			11/05/2012	[NT]	[NT]	LCS-1	11/05/2012
Date analysed	-			11/05/2012	[NT]	[NT]	LCS-1	11/05/2012
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	LCS-1	100%
Chloride, Cl 1:5 soil:water	mg/kg	2	Inorg-081	<2	[NT]	[NT]	LCS-1	94%
Sulphate, SO4 1:5 soil:water	mg/kg	2	Inorg-081	<2	[NT]	[NT]	LCS-1	116%
QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank				
Date prepared	-			[NT]				
Date analysed	-			[NT]				
Moisture	%	0.1	Inorg-008	[NT]				
QUALITY CONTROL vTRH & BTEX in Soil	UNITS	Dup. Sm#		Duplicate Base + Duplicate + %RPD		Spike Sm#	Spike % Recovery	
Date extracted	-	[NT]		[NT]		72707-2	07/05/2012	
Date analysed	-	[NT]		[NT]		72707-2	08/05/2012	
vTRH C ₆ - C ₉	mg/kg	[NT]		[NT]		72707-2	98%	
Benzene	mg/kg	[NT]		[NT]		72707-2	98%	
Toluene	mg/kg	[NT]		[NT]		72707-2	97%	
Ethylbenzene	mg/kg	[NT]		[NT]		72707-2	95%	
m+p-xylene	mg/kg	[NT]		[NT]		72707-2	99%	
o-Xylene	mg/kg	[NT]		[NT]		72707-2	100%	
Surrogate aaa- Trifluorotoluene	%	[NT]		[NT]		72707-2	100%	

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QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	72707-2	07/05/2012
Date analysed	-	[NT]	[NT]	72707-2	08/05/2012
TRHC ₁₀ - C ₁₄	mg/kg	[NT]	[NT]	72707-2	96%
TRHC ₁₅ - C ₂₃	mg/kg	[NT]	[NT]	72707-2	115%
TRHC ₂₃ - C ₃₆	mg/kg	[NT]	[NT]	72707-2	105%
Surrogate o-Terphenyl	%	[NT]	[NT]	72707-2	87%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	72707-2	07/05/2012
Date analysed	-	[NT]	[NT]	72707-2	09/05/2012
Naphthalene	mg/kg	[NT]	[NT]	72707-2	89%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	72707-2	96%
Phenanthrene	mg/kg	[NT]	[NT]	72707-2	104%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	72707-2	105%
Pyrene	mg/kg	[NT]	[NT]	72707-2	109%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	72707-2	110%
Benzo(b+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	72707-2	100%
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl- d ₁₄	%	[NT]	[NT]	72707-2	92%

Client Reference: CES111206-CA Four Points

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	72707-2	07/05/2012
Date analysed	-	[NT]	[NT]	72707-2	07/05/2012
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	72707-2	117%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	72707-2	92%
Heptachlor	mg/kg	[NT]	[NT]	72707-2	97%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	72707-2	97%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	72707-2	119%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	72707-2	111%
Dieldrin	mg/kg	[NT]	[NT]	72707-2	127%
Endrin	mg/kg	[NT]	[NT]	72707-2	108%
pp-DDD	mg/kg	[NT]	[NT]	72707-2	129%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	72707-2	105%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	72707-2	102%

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QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	72707-2	07/05/2012
Date analysed	-	[NT]	[NT]	72707-2	07/05/2012
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Ronnel	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	mg/kg	[NT]	[NT]	72707-2	104%
Fenitrothion	mg/kg	[NT]	[NT]	72707-2	112%
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	72707-2	114%
Surrogate TCLMX	%	[NT]	[NT]	72707-2	105%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	72707-2	07/05/2012
Date analysed	-	[NT]	[NT]	72707-2	07/05/2012
Arochlor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	[NT]	[NT]	72707-2	103%
Arochlor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	72707-2	109%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	72707-2	07/05/2012
Date analysed	-	[NT]	[NT]	72707-2	07/05/2012
Arsenic	mg/kg	[NT]	[NT]	72707-2	88%
Cadmium	mg/kg	[NT]	[NT]	72707-2	75%
Chromium	mg/kg	[NT]	[NT]	72707-2	90%
Copper	mg/kg	[NT]	[NT]	72707-2	90%
Lead	mg/kg	[NT]	[NT]	72707-2	104%
Mercury	mg/kg	[NT]	[NT]	72707-2	106%
Nickel	mg/kg	[NT]	[NT]	72707-2	75%
Zinc	mg/kg	[NT]	[NT]	72707-2	83%

Report Comments:

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

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

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

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

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



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CERTIFICATE OF ANALYSIS

72890

Client:

Consulting Earth Scientists Pty Ltd
Suite 3, Level 1
55 Grandview Street
Pymble
NSW 2073

Attention: Mark Pickett

Sample log in details:

Your Reference:	<u>CES111206-CA</u>
No. of samples:	6 waters
Date samples received / completed instructions received	08/05/12 / 08/05/12

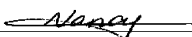
Analysis Details:

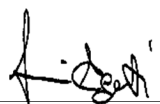
Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.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

Report Details:

Date results requested by: / Issue Date: 14/05/12 / 14/05/12
Date of Preliminary Report: Not Issued
NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:


Nancy Zhang
Chemist


Giovanni Agosti
Technical Manager

vTRH & BTEX in Water Our Reference: Your Reference	UNITS -----	72890-1 070512-01-TG	72890-2 070512-02-TG	72890-3 070512-04-TG	72890-4 070512-05-TG	72890-5 070512-TS-TG
Date Sampled Type of sample	-----	07/05/2012 water	07/05/2012 water	07/05/2012 water	07/05/2012 water	07/05/2012 water
Date extracted	-	09/05/2012	09/05/2012	09/05/2012	09/05/2012	09/05/2012
Date analysed	-	09/05/2012	09/05/2012	09/05/2012	09/05/2012	09/05/2012
TRHC ₆ - C ₉	µg/L	<10	<10	<10	<10	[NA]
Benzene	µg/L	<1	<1	<1	<1	96%
Toluene	µg/L	<1	<1	<1	<1	100%
Ethylbenzene	µg/L	<1	<1	<1	<1	99%
m+p-xylene	µg/L	<2	<2	<2	<2	98%
o-xylene	µg/L	<1	<1	<1	<1	99%
Surrogate Dibromofluoromethane	%	95	101	99	109	97
Surrogate toluene-d8	%	102	103	100	99	99
Surrogate 4-BFB	%	98	96	97	94	97

vTRH & BTEX in Water Our Reference: Your Reference	UNITS -----	72890-6 070512-TB-TG
Date Sampled Type of sample	-----	07/05/2012 water
Date extracted	-	09/05/2012
Date analysed	-	09/05/2012
TRHC ₆ - C ₉	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Surrogate Dibromofluoromethane	%	102
Surrogate toluene-d8	%	99
Surrogate 4-BFB	%	92

sTRH in Water (C10-C36)					
Our Reference:	UNITS	72890-1	72890-2	72890-3	72890-4
Your Reference	-----	070512-01-TG	070512-02-TG	070512-04-TG	070512-05-TG
Date Sampled	-----	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Type of sample		water	water	water	water
Date extracted	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
Date analysed	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
TRHC ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	µg/L	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	µg/L	<100	<100	<100	<100
Surrogate o-Terphenyl	%	103	103	106	98

PAHs in Water Our Reference: Your Reference	UNITS -----	72890-1 070512-01- TG	72890-2 070512-02- TG	72890-3 070512-04- TG	72890-4 070512-05- TG
Date Sampled Type of sample	-----	07/05/2012 water	07/05/2012 water	07/05/2012 water	07/05/2012 water
Date extracted	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
Date analysed	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
Naphthalene	µg/L	<1	<1	<1	<1
Acenaphthylene	µg/L	<1	<1	<1	<1
Acenaphthene	µg/L	<1	<1	<1	<1
Fluorene	µg/L	<1	<1	<1	<1
Phenanthrene	µg/L	<1	<1	<1	<1
Anthracene	µg/L	<1	<1	<1	<1
Fluoranthene	µg/L	<1	<1	<1	<1
Pyrene	µg/L	<1	<1	<1	<1
Benzo(a)anthracene	µg/L	<1	<1	<1	<1
Chrysene	µg/L	<1	<1	<1	<1
Benzo(b+k)fluoranthene	µg/L	<2	<2	<2	<2
Benzo(a)pyrene	µg/L	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1	<1	<1	<1
Dibenzo(a,h)anthracene	µg/L	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	<1	<1	<1	<1
Surrogate p-Terphenyl-d ₁₄	%	101	100	97	95

OCP in water Our Reference: Your Reference	UNITS -----	72890-1 070512-01- TG	72890-2 070512-02- TG	72890-3 070512-04- TG	72890-4 070512-05- TG
Date Sampled Type of sample	-----	07/05/2012 water	07/05/2012 water	07/05/2012 water	07/05/2012 water
Date extracted	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
Date analysed	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
HCB	µg/L	<0.2	<0.2	<0.2	<0.2
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2
Surrogate TCLMX	%	107	108	121	115

OP Pesticides in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	72890-1 070512-01- TG 07/05/2012 water	72890-2 070512-02- TG 07/05/2012 water	72890-3 070512-04- TG 07/05/2012 water	72890-4 070512-05- TG 07/05/2012 water
Date extracted	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
Date analysed	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
Diazinon	µg/L	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos	µg/L	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2
Surrogate TCLMX	%	107	108	121	115

PCBs in Water Our Reference: Your Reference	UNITS -----	72890-1 070512-01- TG	72890-2 070512-02- TG	72890-3 070512-04- TG	72890-4 070512-05- TG
Date Sampled Type of sample	-----	07/05/2012 water	07/05/2012 water	07/05/2012 water	07/05/2012 water
Date extracted	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
Date analysed	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
Arochlor 1016	µg/L	<2	<2	<2	<2
Arochlor 1221	µg/L	<2	<2	<2	<2
Arochlor 1232	µg/L	<2	<2	<2	<2
Arochlor 1242	µg/L	<2	<2	<2	<2
Arochlor 1248	µg/L	<2	<2	<2	<2
Arochlor 1254	µg/L	<2	<2	<2	<2
Arochlor 1260	µg/L	<2	<2	<2	<2
Surrogate TCLMX	%	107	108	121	115

HM in water - dissolved					
Our Reference:	UNITS	72890-1	72890-2	72890-3	72890-4
Your Reference	-----	070512-01-TG	070512-02-TG	070512-04-TG	070512-05-TG
Date Sampled	-----	07/05/2012	07/05/2012	07/05/2012	07/05/2012
Type of sample		water	water	water	water
Date prepared	-	09/05/2012	09/05/2012	09/05/2012	09/05/2012
Date analysed	-	10/05/2012	10/05/2012	10/05/2012	10/05/2012
Arsenic-Dissolved	µg/L	3	2	2	<1
Cadmium-Dissolved	µg/L	0.3	0.2	<0.1	0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1
Copper-Dissolved	µg/L	<1	<1	<1	4
Lead-Dissolved	µg/L	<1	1	<1	1
Mercury-Dissolved	µg/L	<0.050	<0.050	<0.050	<0.050
Nickel-Dissolved	µg/L	14	16	7	8
Zinc-Dissolved	µg/L	23	28	<1	43

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH & BTEX in Water						Base II Duplicate II %RPD		
Date extracted	-			09/05/2012	[NT]	[NT]	LCS-W1	09/05/2012
Date analysed	-			09/05/2012	[NT]	[NT]	LCS-W1	09/05/2012
TRHC ₆ - C ₉	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	106%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	105%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	105%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	105%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	108%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	106%
Surrogate Dibromofluoromethane	%		Org-016	103	[NT]	[NT]	LCS-W1	99%
Surrogate toluene-d8	%		Org-016	98	[NT]	[NT]	LCS-W1	99%
Surrogate 4-BFB	%		Org-016	91	[NT]	[NT]	LCS-W1	100%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sTRH in Water (C10-C36)						Base II Duplicate II %RPD		
Date extracted	-			10/05/2012	[NT]	[NT]	LCS-W1	10/05/2012
Date analysed	-			10/05/2012	[NT]	[NT]	LCS-W1	10/05/2012
TRHC ₁₀ - C ₁₄	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	74%
TRHC ₁₅ - C ₂₈	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	106%
TRHC ₂₈ - C ₃₆	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	97%
Surrogate o-Terphenyl	%		Org-003	96	[NT]	[NT]	LCS-W1	120%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Water						Base II Duplicate II %RPD		
Date extracted	-			10/05/2012	[NT]	[NT]	LCS-W2	10/05/2012
Date analysed	-			10/05/2012	[NT]	[NT]	LCS-W2	10/05/2012
Naphthalene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W2	77%
Acenaphthylene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W2	74%
Phenanthrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W2	74%
Anthracene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W2	75%
Pyrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W2	75%
Benzo(a)anthracene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Water						Base II Duplicate II %RPD		
Chrysene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W2	93%
Benzo(b+k)fluoranthene	µg/L	2	Org-012 subset	<2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W2	110%
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d ₁₄	%		Org-012 subset	77	[NT]	[NT]	LCS-W2	78%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
OCP in water						Base II Duplicate II %RPD		
Date extracted	-			10/05/2012	[NT]	[NT]	LCS-W1	10/05/2012
Date analysed	-			10/05/2012	[NT]	[NT]	LCS-W1	10/05/2012
HCB	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	101%
gamma-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
beta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	87%
Heptachlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	95%
delta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	98%
Heptachlor Epoxide	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	104%
gamma-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan I	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDE	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	90%
Dieldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	110%
Endrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	105%
pp-DDD	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	94%
Endosulfan II	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDT	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	92%
Methoxychlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-005	100	[NT]	[NT]	LCS-W1	98%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
OP Pesticides in water						Base II Duplicate II %RPD		
Date extracted	-			10/05/2012	[NT]	[NT]	LCS-W1	10/05/2012
Date analysed	-			10/05/2012	[NT]	[NT]	LCS-W1	10/05/2012
Diazinon	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Dimethoate	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos-methyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Ronnel	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	108%
Fenitrothion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	138%
Bromophos ethyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Ethion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	115%
Surrogate TCLMX	%		Org-008	100	[NT]	[NT]	LCS-W1	118%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Water						Base II Duplicate II %RPD		
Date extracted	-			10/05/2012	[NT]	[NT]	LCS-W1	10/05/2012
Date analysed	-			10/05/2012	[NT]	[NT]	LCS-W1	10/05/2012
Arochlor 1016	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	µg/L	2	Org-006	<2	[NT]	[NT]	LCS-W1	100%
Arochlor 1260	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	100	[NT]	[NT]	LCS-W1	106%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
HM in water - dissolved						Base II Duplicate II %RPD		
Date prepared	-			09/05/2012	72890-1	09/05/2012 09/05/2012	LCS-W1	09/05/2012
Date analysed	-			10/05/2012	72890-1	10/05/2012 10/05/2012	LCS-W1	10/05/2012
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	72890-1	3 2 RPD: 40	LCS-W1	110%
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	<0.1	72890-1	0.3 0.2 RPD: 40	LCS-W1	109%
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	72890-1	<1 <1	LCS-W1	106%
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	72890-1	<1 <1	LCS-W1	97%
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	72890-1	<1 1	LCS-W1	106%
Mercury-Dissolved	µg/L	0.05	Metals-021 CV-AAS	<0.050	72890-1	<0.050 <0.050	LCS-W1	120%
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	72890-1	14 14 RPD: 0	LCS-W1	101%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
HM in water - dissolved						Base Duplicate %RPD		
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	72890-1	23 24 RPD: 4	LCS-W1	113%
QUALITYCONTROL HM in water - dissolved	UNITS	Dup. Sm#		Duplicate Base + Duplicate + %RPD		Spike Sm#	Spike % Recovery	
Date prepared	-	[NT]		[NT]		72890-2	09/05/2012	
Date analysed	-	[NT]		[NT]		72890-2	10/05/2012	
Arsenic-Dissolved	µg/L	[NT]		[NT]		72890-2	94%	
Cadmium-Dissolved	µg/L	[NT]		[NT]		72890-2	85%	
Chromium-Dissolved	µg/L	[NT]		[NT]		72890-2	116%	
Copper-Dissolved	µg/L	[NT]		[NT]		72890-2	85%	
Lead-Dissolved	µg/L	[NT]		[NT]		72890-2	86%	
Mercury-Dissolved	µg/L	[NT]		[NT]		72890-2	116%	
Nickel-Dissolved	µg/L	[NT]		[NT]		72890-2	94%	
Zinc-Dissolved	µg/L	[NT]		[NT]		72890-2	85%	

Report Comments:

Asbestos ID was analysed by Approved Identifier:
 Asbestos ID was authorised by Approved Signatory:

Not applicable for this job
 Not applicable for this job

INS: Insufficient sample for this test
 NA: Test not required
 <: Less than

PQL: Practical Quantitation Limit
 RPD: Relative Percent Difference
 >: Greater than

NT: Not tested
 NA: Test not required
 LCS: Laboratory Control Sample

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

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

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

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES1211111	Page	: 1 of 7
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MARK PICKETT	Contact	: Client Services
Address	: Suite 55 Upper Level Jones Bay Wharf 26-32 Pirrama Rd PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mark.pickett@consultingearth.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9552 4399	Facsimile	: +61-2-8784 8500
Project	: CES111206-CA FOUR POINTS	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 07-MAY-2012
C-O-C number	: ----	Issue Date	: 15-MAY-2012
Sampler	: MP	No. of samples received	: 1
Site	: ----	No. of samples analysed	: 1
Quote number	: SY/272/10		

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
- Surrogate Control 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 in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Edwandy Fadjjar	Organic Coordinator	Sydney Organics
Evie.Sidarta	Inorganic Chemist	Sydney Inorganics
Raymond Commodor	Instrument Chemist	Sydney 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

- **EG005: LCS recoveries for some elements fall outside ALS Dynamic Control Limit. However, they are within the acceptance criteria based on ALS DQO. No further action is required.**

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

Sub-Matrix: SOIL				Client sample ID	FP_BH1_0.5m	----	----	----	----
				Client sampling date / time	26-APR-2012 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1211111-001	----	----	----	----	
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1.0	%	13.3	----	----	----	----	
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	6	----	----	----	----	
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----	
Chromium	7440-47-3	2	mg/kg	17	----	----	----	----	
Copper	7440-50-8	5	mg/kg	21	----	----	----	----	
Lead	7439-92-1	5	mg/kg	38	----	----	----	----	
Nickel	7440-02-0	2	mg/kg	61	----	----	----	----	
Zinc	7440-66-6	5	mg/kg	74	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	----	----	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----	
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----	
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----	
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----	
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----	
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----	
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----	
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----	
EP068B: Organophosphorus Pesticides (OP)									



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				FP_BH1_0.5m	----	----	----	----
				26-APR-2012 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1211111-001	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

FP_BH1_0.5m

Client sampling date / time

26-APR-2012 15:00

Compound	CAS Number	LOR	Unit	ES1211111-001				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft								
C6 - C10 Fraction	----	10	mg/kg	<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	----	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
EP080: BTEXN								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	69.0	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	104	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	54.5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	103	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	95.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	113	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	99.9	----	----	----	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				FP_BH1_0.5m	----	----	----	----
				26-APR-2012 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1211111-001	----	----	----	----
EP075(SIM)T: PAH Surrogates - Continued								
Anthracene-d10	1719-06-8	0.1	%	109	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	103	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	92.8	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	99.4	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	80.7	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	30.8	155.7
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	19.5	167.0
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	22.7	163.5
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	56.3	133.3
2-Chlorophenol-D4	93951-73-6	53.8	133.8
2,4,6-Tribromophenol	118-79-6	23.1	134.9
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	58.9	132.7
Anthracene-d10	1719-06-8	55.0	137.6
4-Terphenyl-d14	1718-51-0	54.0	147.8
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES1211407	Page	: 1 of 7
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MARK PICKETT	Contact	: Client Services
Address	: Suite 55 Upper Level Jones Bay Wharf 26-32 Pirrama Rd PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mark.pickett@consultingearth.com.au	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 9552 4399	Facsimile	: +61-2-8784 8500
Project	: FOUR POINTS CES111206-CA	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 09-MAY-2012
C-O-C number	: ----	Issue Date	: 14-MAY-2012
Sampler	: TG	No. of samples received	: 1
Site	: ----	No. of samples analysed	: 1
Quote number	: SY/272/10		

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- General Comments
- Analytical Results
- Surrogate Control Limits



WORLD RECOGNISED
ACCREDITATION

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
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Edwandy Fadjar	Organic Coordinator	Sydney Organics



General Comments

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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.

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LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- **EG020: LCS recoveries for some elements fall outside ALS Dynamic Control Limit. However, they are within the acceptance criteria based on ALS DQO. No further action is required.**
- **EG020A-T: Sample was rerun (X10) due to matrix interference and LOR's have been raised accordingly.**
- **EG035: Positive mercury results have been confirmed by re-analysis.**



Analytical Results

Sub-Matrix: **WATER**

Client sample ID

070512-03-TG

Client sampling date / time

07-MAY-2012 15:00

Compound	CAS Number	LOR	Unit	ES1211407-001	----	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	0.108	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0010	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.256	----	----	----	----
Copper	7440-50-8	0.001	mg/L	0.761	----	----	----	----
Lead	7439-92-1	0.001	mg/L	1.28	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.067	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.674	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	0.0020	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	1	µg/L	<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	----	----	----	----
4,4'-DDT	50-29-3	2	µg/L	<2	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	----	----	----	----
Methoxychlor	72-43-5	2	µg/L	<2	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	----	----	----	----

Sub-Matrix: **WATER**

Client sample ID

Client sampling date / time

Sum of polycyclic aromatic hydrocarbons

EP080/071: Total Petroleum Hydrocarbons

Sub-Matrix: WATER				Client sample ID	070512-03-TG	----	----	----	----
				Client sampling date / time	07-MAY-2012 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1211407-001	----	----	----	----	
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----	
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----	
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft									
C6 - C10 Fraction	----	20	µg/L	<20	----	----	----	----	
^ C6 - C10 Fraction minus BTEX (F1)	----	20	µg/L	<20	----	----	----	----	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	
Toluene	108-88-3	2	µg/L	<2	----	----	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----	
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----	
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	111	----	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%	73.8	----	----	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%	60.1	----	----	----	----	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%	34.5	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	0.1	%	78.5	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	0.1	%	79.5	----	----	----	----	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%	71.1	----	----	----	----	
Anthracene-d10	1719-06-8	0.1	%	79.4	----	----	----	----	
4-Terphenyl-d14	1718-51-0	0.1	%	86.3	----	----	----	----	
EP080S: TPH(V)/BTEX Surrogates									



Analytical Results

Sub-Matrix: WATER

				Client sample ID	070512-03-TG	----	----	----	----
				Client sampling date / time	07-MAY-2012 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1211407-001	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		102	----	----	----	----
Toluene-D8	2037-26-5	0.1	%		103	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		96.2	----	----	----	----



Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	14.1	151.8
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	33.6	142.5
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	28.1	147.7
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10.0	64.1
2-Chlorophenol-D4	93951-73-6	11.3	122.9
2,4,6-Tribromophenol	118-79-6	11.7	144.0
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	19.9	122.8
Anthracene-d10	1719-06-8	23.3	125.8
4-Terphenyl-d14	1718-51-0	20.3	134.5
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128