



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES0909683	Page	: 1 of 16
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Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: 128662-3	Date Samples Received	: 02-JUL-2009
Sampler	: ME	Issue Date	: 10-JUL-2009
Site	: HOSLEY PARK		
Quote number	: SY/146/09	No. of samples received	: 21
		No. of samples analysed	: 18

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



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This document is issued in accordance with NATA accreditation requirements.

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
Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics
Victor Kedicioglu	Business Manager - NSW	Inorganics
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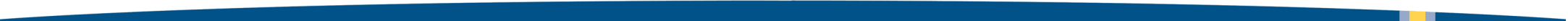
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General Comments

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

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

- **EP075(SIM) : Samples 020709-61-ME and 020709-62-ME required dilution due to sample matrix interference. Results were confirmed by re-extraction and re-analysis.**
- **EP080: The trip spike and its control have been analysed for volatile TPH and BTEX only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.**



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	020709-01-ME	020709-02-ME	020709-03-ME	020709-04-ME	020709-05-ME
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]
				ES0909683-001	ES0909683-002	ES0909683-003	ES0909683-004	ES0909683-005
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	13.8	11.2	13.0	18.3	7.0
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	19	9	11	19
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	22	28	30	18	15
Copper	7440-50-8	5	mg/kg	33	22	29	21	42
Lead	7439-92-1	5	mg/kg	49	114	32	16	16
Nickel	7440-02-0	2	mg/kg	11	15	15	6	7
Zinc	7440-66-6	5	mg/kg	220	159	169	28	204
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	0.30	0.06	0.16	0.07	0.24
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	0.71	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	1.7	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	020709-01-ME	020709-02-ME	020709-03-ME	020709-04-ME	020709-05-ME
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]
				ES0909683-001	ES0909683-002	ES0909683-003	ES0909683-004	ES0909683-005
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				020709-01-ME	020709-02-ME	020709-03-ME	020709-04-ME	020709-05-ME
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]
Compound	CAS Number	LOR	Unit	ES0909683-001	ES0909683-002	ES0909683-003	ES0909683-004	ES0909683-005
EP080/071: Total Petroleum Hydrocarbons - Continued								
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	127	113	117	127	122
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	86.9	93.4	107	113	107
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	92.7	87.1	101	106	105
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	96.8	93.5	88.3	96.7	93.4
2-Chlorophenol-D4	93951-73-6	0.1	%	95.6	93.1	89.2	95.6	93.2
2,4,6-Tribromophenol	118-79-6	0.1	%	86.4	84.4	80.9	76.6	87.8
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	96.8	96.5	90.9	98.0	95.5
Anthracene-d10	1719-06-8	0.1	%	95.3	93.6	89.4	112	91.9
4-Terphenyl-d14	1718-51-0	0.1	%	102	101	94.1	106	97.4
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	103	108	111	113	108
Toluene-D8	2037-26-5	0.1	%	114	111	113	116	115
4-Bromofluorobenzene	460-00-4	0.1	%	103	99.9	99.0	107	108



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	020709-06-ME	020709-07-ME	020709-08-ME	020709-09-ME	020709-10-ME
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]
				ES0909683-006	ES0909683-007	ES0909683-008	ES0909683-009	ES0909683-010
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	12.8	1.7	25.5	25.6	15.5
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	<5	13	16	17
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	24	<2	21	24	22
Copper	7440-50-8	5	mg/kg	12	<5	18	34	14
Lead	7439-92-1	5	mg/kg	31	31	26	35	19
Nickel	7440-02-0	2	mg/kg	6	<2	6	15	6
Zinc	7440-66-6	5	mg/kg	125	46	51	84	23
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	----	<0.10	----	----	<0.10
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	----	----	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	----	0.07
Endrin	72-20-8	0.05	mg/kg	----	<0.05	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	----	----	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	----	----	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	----	----	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	<0.05



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	020709-06-ME	020709-07-ME	020709-08-ME	020709-09-ME	020709-10-ME
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]
				ES0909683-006	ES0909683-007	ES0909683-008	ES0909683-009	ES0909683-010
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg	----	<0.05	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg	----	<0.2	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg	----	<0.05	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3.2	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	1.0	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6.2	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	6.2	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3.0	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	2.7	<0.5	----	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	3.1	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	0.8	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	2.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.2	<0.5	----	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	1.4	<0.5	----	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	<50	<50



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				020709-06-ME	020709-07-ME	020709-08-ME	020709-09-ME	020709-10-ME
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]
Compound	CAS Number	LOR	Unit	ES0909683-006	ES0909683-007	ES0909683-008	ES0909683-009	ES0909683-010
EP080/071: Total Petroleum Hydrocarbons - Continued								
C15 - C28 Fraction	----	100	mg/kg	<100	180	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	<100	<100
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	116	----	----	126
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	112	----	----	112
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	122	----	----	100
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	92.0	90.5	84.1	----	95.3
2-Chlorophenol-D4	93951-73-6	0.1	%	91.4	89.1	84.6	----	94.7
2,4,6-Tribromophenol	118-79-6	0.1	%	83.9	75.5	76.4	----	85.3
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	94.4	91.3	86.8	----	96.0
Anthracene-d10	1719-06-8	0.1	%	93.4	90.1	86.9	----	94.7
4-Terphenyl-d14	1718-51-0	0.1	%	96.9	94.0	90.1	----	99.6
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	101	115	----	96.7	104
Toluene-D8	2037-26-5	0.1	%	108	112	----	103	108
4-Bromofluorobenzene	460-00-4	0.1	%	98.9	113	----	93.0	97.0



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	020709-11-ME	020709-12-ME	020709-13-ME	TB	TS
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]
				ES0909683-011	ES0909683-012	ES0909683-013	ES0909683-014	ES0909683-015
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	24.4	21.5	18.0	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	10	21	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	17	23	32	----	----
Copper	7440-50-8	5	mg/kg	19	9	18	----	----
Lead	7439-92-1	5	mg/kg	20	28	28	----	----
Nickel	7440-02-0	2	mg/kg	6	4	7	----	----
Zinc	7440-66-6	5	mg/kg	30	17	44	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	<0.10	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.11	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	020709-11-ME	020709-12-ME	020709-13-ME	TB	TS
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]
				ES0909683-011	ES0909683-012	ES0909683-013	ES0909683-014	ES0909683-015
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<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	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	----	----	<50	----	----



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

				020709-11-ME	020709-12-ME	020709-13-ME	TB	TS
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]
Compound	CAS Number	LOR	Unit	ES0909683-011	ES0909683-012	ES0909683-013	ES0909683-014	ES0909683-015
EP080/071: Total Petroleum Hydrocarbons - Continued								
C15 - C28 Fraction	----	100	mg/kg	----	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	----	----	<100	----	----
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	<0.2	0.5
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	<0.5	7.6
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	<0.5	1.0
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	<0.5	<0.5	5.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	<0.5	2.1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	128	129	130	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	104	98.8	125	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	117	110	104	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	----	----	96.9	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	----	----	94.8	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	----	----	86.0	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	----	98.4	----	----
Anthracene-d10	1719-06-8	0.1	%	----	----	96.3	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	----	101	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	101	114	87.4
Toluene-D8	2037-26-5	0.1	%	----	----	105	119	94.3
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	87.3	106	86.0



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

Sub-Matrix: SOIL				Client sample ID	020709-61-ME	020709-62-ME	TSC	----	----
				Client sampling date / time	[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	----	----
Compound	CAS Number	LOR	Unit	ES0909683-018	ES0909683-019	ES0909683-020	----	----	----
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%	14.3	19.0	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	11	15	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	1	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	37	35	----	----	----	----
Copper	7440-50-8	5	mg/kg	166	82	----	----	----	----
Lead	7439-92-1	5	mg/kg	332	813	----	----	----	----
Nickel	7440-02-0	2	mg/kg	21	16	----	----	----	----
Zinc	7440-66-6	5	mg/kg	1360	682	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----	----
EN33: TCLP Leach									
Initial pH	----	0.1	pH Unit	8.0	7.7	----	----	----	----
After HCl pH	----	0.1	pH Unit	1.6	1.5	----	----	----	----
Extraction Fluid Number	----	1	-	1	1	----	----	----	----
Final pH	----	0.1	pH Unit	5.1	4.9	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	17.7	5.1	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	11.8	<4.0	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	56.6	18.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	59.9	17.3	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	11.9	<4.0	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<4.0	<4.0	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<4.0	<4.0	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	90	158	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	58200	15600	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	135000	36400	----	----	----	----



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

				020709-61-ME	020709-62-ME	TSC	----	----
				[02-JUL-2009]	[02-JUL-2009]	[02-JUL-2009]	----	----
Compound	CAS Number	LOR	Unit	ES0909683-018	ES0909683-019	ES0909683-020	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued								
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.6	----	----
Toluene	108-88-3	0.5	mg/kg	0.9	0.8	8.3	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	0.6	0.7	1.1	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	2.8	3.6	6.1	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	3.4	5.3	2.3	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	65.3	Not Determined	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	81.9	90.4	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	85.1	77.1	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	70.8	87.4	----	----	----
Anthracene-d10	1719-06-8	0.1	%	101	99.0	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	83.2	94.0	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	106	107	91.9	----	----
Toluene-D8	2037-26-5	0.1	%	103	119	106	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	93.1	106	93.9	----	----



Analytical Results

Sub-Matrix: TCLP LEACHATE

Client sample ID

Client sampling date / time

				020709-61-ME	020709-62-ME			
				[06-JUL-2009]	[06-JUL-2009]			
Compound	CAS Number	LOR	Unit	ES0909683-018	ES0909683-019			
EG005C: Leachable Metals by ICPAES								
Arsenic	7440-38-2	0.1	mg/L	<0.1	<0.1	----	----	----
Cadmium	7440-43-9	0.05	mg/L	<0.05	<0.05	----	----	----
Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	----	----	----
Copper	7440-50-8	0.1	mg/L	<0.1	<0.1	----	----	----
Lead	7439-92-1	0.1	mg/L	<0.1	0.2	----	----	----
Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	----	----	----
Zinc	7440-66-6	0.1	mg/L	16.3	5.1	----	----	----
EG035C: Leachable Mercury by FIMS								
Mercury	7439-97-6	0.0010	mg/L	<0.0010	<0.0010	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	14.8	16.9	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	1.2	1.1	----	----	----
Fluorene	86-73-7	1.0	µg/L	6.3	6.3	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	3.8	3.9	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	34.9	37.8	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	86.2	88.9	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	101	96.6	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	77.4	77.7	----	----	----
Anthracene-d10	1719-06-8	0.1	%	86.0	89.0	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	101	103	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	10	164
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	10	136
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	10	136
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2,4,6-Tribromophenol	118-79-6	19	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121

Sub-Matrix: TCLP LEACHATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	94
2-Chlorophenol-D4	93951-73-6	23	134
2,4,6-Tribromophenol	118-79-6	10	123
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141



AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET18707/ 21887 / 1 - 7

Your ref: ES0909683

NATA Accreditation No: 14484

7 July 2009

Australian Laboratory Services Pty Ltd
277 Woodpark Road
Smithfield NSW 2164

Attn: Mr Victor Kedicioglu

Fax No: 02-87848500

Dear Victor,

Asbestos Identification

This report presents the results of seven samples, forwarded by Australian Laboratory Services Pty Ltd on 6 July 2009, for analysis for asbestos.

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

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining Method (**Safer Environment Method 1.**)

3. Results : **Sample No. 1. ASET18707 / 21887 / 1. ES0909683 - 1- 020709-01-ME.**
Approx dimensions 5.0 cm x 4.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET18707 / 21887 / 2. ES0909683 - 2 - 020709-02-ME.
Approx dimensions 5.0 cm x 4.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 3. ASET18707 / 21887 / 3. ES0909683 - 3 - 020709-03-ME.
Approx dimensions 5.0 cm x 4.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 4. ASET18707 / 21887 / 4. ES0909683 - 5 - 020709-05-ME.
Approx dimensions 5.0 cm x 4.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones, ash and plant matter.
No asbestos detected.

Sample No. 5. ASET18707 / 21887 / 5. ES0909683 - 6 - 020709-06-ME.
Approx dimensions 5.0 cm x 4.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 6. ASET18707 / 21887 / 6. ES0909683 - 16 - 020709-51-ME.
Approx dimensions 6.0 cm x 4.0 cm x 0.7 cm
The sample consisted of a fragment of a fibre cement material.
Chrysotile asbestos and Amosite asbestos detected.

UNIT 7/70 KINGSWAY GLEN WAVERLEY VIC 3150 – PO BOX 213 GLEN WAVERLEY VIC 3150
PHONE: (03) 9574 7647 FAX: (03) 9574 9647 EMAIL: asetmelb@bigpond.net.au WEBSITE: www.aset.com.au

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Sample No. 7. ASET18707 / 21887 / 7. ES0909683 - 17 - 020709-52-ME.

Approx dimensions 5.0 cm x 4.0 cm x 0.7 cm

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

Chrysotile asbestos, Amosite asbestos and Crocidolite asbestos detected.

Analysed and reported by,

A handwritten signature in black ink, appearing to read "Imam Malik", is written over a light purple rectangular background.

**Imam Malik. BSc.
Mineralogist / Approved Signatory
Approved Identifier.**



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



Environmental Division

QUALITY CONTROL REPORT

Work Order	: ES0909683	Page	: 1 of 13
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MR STEPHEN MCCORMACK	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: smccorm@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: HOSLEY PARK	Date Samples Received	: 02-JUL-2009
C-O-C number	: 128662-3	Issue Date	: 10-JUL-2009
Sampler	: ME		
Order number	: ----		
Quote number	: SY/146/09	No. of samples received	: 21
		No. of samples analysed	: 18

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

This document is issued in accordance with NATA accreditation requirements.

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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics
Victor Kedicioglu	Business Manager - NSW	Inorganics
Wisam Abou-Maraseh	Spectroscopist	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: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 1030160)									
ES0909683-001	020709-01-ME	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.8	13.2	4.4	0% - 50%
ES0909683-010	020709-10-ME	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	15.5	15.9	2.3	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 1031311)									
ES0909629-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	42	38	9.3	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	2	2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	7	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
ES0909683-007	020709-07-ME	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	31	31	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	46	50	8.4	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1031312)									
ES0909629-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES0909683-007	020709-07-ME	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1029561)									
ES0909683-001	020709-01-ME	EP066: Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1029560)									
ES0909683-001	020709-01-ME	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1029560) - continued											
ES0909683-001	020709-01-ME	EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	0.30	0.29	3.6	No Limit		
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	0.71	0.77	8.0	0% - 50%		
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	1.7	1.1	39.0	No Limit		
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1029560)											
ES0909683-001	020709-01-ME	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit		
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
				EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1029582)									
ES0909664-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	13.2	12.3	7.0	0% - 20%		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	0.8	0.6	19.2	No Limit		
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	5.8	5.5	5.1	0% - 50%		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	2.7	2.4	13.7	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	7.1	6.5	8.9	0% - 50%		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	2.9	3.0	0.0	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	8.5	8.2	3.5	0% - 50%		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	6.9	6.2	10.6	0% - 50%		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	2.0	1.6	18.7	No Limit		



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1029582) - continued									
ES0909664-001	Anonymous	EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.7	1.4	18.4	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	1.8	1.3	31.6	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.6	0.5	19.6	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.6	1.3	21.7	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	0.6	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h.i)perylene	191-24-2	0.5	mg/kg	0.7	0.5	29.4	No Limit
ES0909683-004	020709-04-ME	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1028876)							
ES0909683-001	020709-01-ME	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES0909683-013	020709-13-ME	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1029581)									
ES0909664-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	840	830	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	200	160	17.5	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES0909683-004	020709-04-ME	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEX (QC Lot: 1028876)									
ES0909683-001	020709-01-ME	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEX (QC Lot: 1028876) - continued									
ES0909683-001	020709-01-ME	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES0909683-013	020709-13-ME	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	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 (%)
EG005C: Leachable Metals by ICPAES (QC Lot: 1031545)									
ES0909597-002	Anonymous	EG005C: Cadmium	7440-43-9	0.05	mg/L	<0.05	<0.05	0.0	No Limit
		EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Copper	7440-50-8	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Zinc	7440-66-6	0.1	mg/L	0.2	0.2	0.0	No Limit
EG035C: Leachable Mercury by FIMS (QC Lot: 1030697)									
ES0909499-001	Anonymous	EG035C: Mercury	7439-97-6	0.0010	mg/L	<0.0010	<0.0010	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1030767)									
ES0909782-009	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
ES0909782-008	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	0.0	No Limit

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 Work Order : ES0909683
 Client : CONSULTING EARTH SCIENTISTS
 Project : CES090515-DP



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 (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1030767) - continued									
ES0909782-008	Anonymous	EP075(SIM): Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	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: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) LowHigh	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005T: Total Metals by ICP-AES (QCLot: 1031311)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.1 mg/kg	120	90.1	124
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	110	83.3	111
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	106	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	112	90.1	114
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.2 mg/kg	110	85.2	111
EG005T: Nickel	7440-02-0	2	mg/kg	<2	54.8 mg/kg	112	88.3	116
EG005T: Zinc	7440-66-6	5	mg/kg	<5	104 mg/kg	111	81.9	112
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1031312)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.4 mg/kg	91.2	67	118
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1029561)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.10	0.5 mg/kg	71.0	57.4	117
EP068A: Organochlorine Pesticides (OC) (QCLot: 1029560)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	76.7	60.8	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	73.4	59.4	115
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	75.4	59.8	117
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	74.2	59.8	118
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	72.0	65.8	114
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	73.5	65.6	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	75.6	67	113
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	75.3	65.6	113
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	96.7	60.7	113
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	74.2	65.8	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	68.1	57.3	120
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	75.5	67.4	116
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	75.2	67.5	114
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	71.9	63	121
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	77.0	66.1	117
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	81.6	65.3	116
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	100	57.3	115
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	91.4	63.6	119
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	95.2	58.4	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	93.9	63.6	117
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	99.0	50.4	132
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1029560)								



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
Method: Compound	CAS Number	LOR	Unit	Result				
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1029560) - continued								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	76.9	25.5	124
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	59.7	10.1	159
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.25 mg/kg	67.1	2.88	149
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	84.7	48.6	126
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	78.8	64.9	111
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	71.4	65.1	111
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.25 mg/kg	78.6	61.4	113
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	76.0	60.4	127
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	80.8	64.7	110
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	83.6	64.2	111
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.25 mg/kg	88.0	60	116
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	88.9	64.8	111
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.25 mg/kg	68.9	61.4	123
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	74.4	64.3	114
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	79.7	45.5	128
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	85.5	65.4	111
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	92.1	62	116
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	103	59.5	119
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.25 mg/kg	72.0	29.8	137
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1029582)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	101	81.9	113
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	93.8	79.6	113
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	94.3	81.5	112
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	93.5	79.9	112
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	93.1	79.4	114
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	95.6	81.1	112
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	93.5	78.8	113
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	92.8	78.9	113
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	84.1	77.2	112
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	95.6	79.8	114
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	89.2	71.8	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	90.7	74.2	117
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	83.5	76.4	113
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	80.8	71	113
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	82.1	71.7	113
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	82.0	72.4	114
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1028876)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	103	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1029581)								



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1029581) - continued								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	110	75.2	116
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	200 mg/kg	108	75.3	113
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	81.0	72.6	117
EP080: BTEX (QCLot: 1028876)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	92.9	67.5	125
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	111	69	122
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	95.9	65.3	126
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	97.6	66.5	124
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	99.1	66.7	123
Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005C: Leachable Metals by ICPAES (QCLot: 1031545)								
EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	1 mg/L	106	89	119
EG005C: Cadmium	7440-43-9	0.05	mg/L	<0.05	0.250 mg/L	109	89	121
EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	1 mg/L	106	89	119
EG005C: Copper	7440-50-8	0.1	mg/L	<0.1	1 mg/L	112	87	121
EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	1 mg/L	113	89	119
EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	1 mg/L	107	88	120
EG005C: Zinc	7440-66-6	0.1	mg/L	<0.1	1 mg/L	109	85	121
EG035C: Leachable Mercury by FIMS (QCLot: 1030697)								
EG035C: Mercury	7439-97-6	0.001	mg/L	<0.0010	0.010 mg/L	102	83	119
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1030767)								
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	2 µg/L	86.9	58.6	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	2 µg/L	81.1	63.6	114
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	2 µg/L	80.1	62.2	113
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	2 µg/L	81.6	63.9	115
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	2 µg/L	85.6	62.6	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	2 µg/L	81.4	64.3	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	2 µg/L	81.4	63.6	118
		1	µg/L	<1.0	----	----	----	----



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1030767) - continued								
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	2 µg/L	82.4	63.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	2 µg/L	83.9	64.1	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	2 µg/L	81.9	62.5	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	2 µg/L	81.7	61.7	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	2 µg/L	82.5	61.7	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	2 µg/L	86.9	63.3	117
		0.5	µg/L	<0.5	----	----	----	----
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	2 µg/L	81.7	59.9	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.2	µg/L	----	2 µg/L	80.7	61.2	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	2 µg/L	82.0	59.1	118
		1	µg/L	<1.0	----	----	----	----



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: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
					MS	Low	High
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number				
EG005T: Total Metals by ICP-AES (QCLot: 1031311)							
ES0909629-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	86.3	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	111	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	83.3	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	116	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	111	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	109	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	111	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1031312)							
ES0909629-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	102	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1029561)							
ES0909683-001	020709-01-ME	EP066: Total Polychlorinated biphenyls	----	0.5 mg/kg	70.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1029560)							
ES0909683-001	020709-01-ME	EP068: gamma-BHC	58-89-9	0.25 mg/kg	88.5	75.65	110.44
		EP068: Heptachlor	76-44-8	0.25 mg/kg	96.0	72.2	106.71
		EP068: Aldrin	309-00-2	0.25 mg/kg	# 116	77.54	107.0
		EP068: Dieldrin	60-57-1	0.25 mg/kg	90.2	76.37	109.7
		EP068: Endrin	72-20-8	1 mg/kg	92.4	68.51	119.47
		EP068: 4,4`-DDT	50-29-3	1 mg/kg	94.8	67.12	118.10
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1029560)							
ES0909683-001	020709-01-ME	EP068: Diazinon	333-41-5	0.25 mg/kg	87.0	75.85	107.06
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	88.6	74.84	107.91
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	88.0	67.98	109.42
		EP068: Bromophos-ethyl	4824-78-6	0.25 mg/kg	93.8	74.94	107.37
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	84.3	75.45	106.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1029582)							
ES0909664-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	70.1	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	80.2	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1028876)							
ES0909683-001	020709-01-ME	EP080: C6 - C9 Fraction	----	26 mg/kg	92.1	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1029581)							
ES0909664-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	102	70	130
		EP071: C15 - C28 Fraction	----	3140 mg/kg	97.1	70	130
		EP071: C29 - C36 Fraction	----	2860 mg/kg	82.7	70	130

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 Client : CONSULTING EARTH SCIENTISTS
 Project : CES090515-DP



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number		MS	Low	High
EP080: BTEX (QCLot: 1028876)							
ES0909683-001	020709-01-ME	EP080: Benzene	71-43-2	2.5 mg/kg	78.1	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	88.3	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	72.7	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	76.0	70	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.3	70	130

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number		MS	Low	High
EG005C: Leachable Metals by ICPAES (QCLot: 1031545)							
ES0909597-003	Anonymous	EG005C: Arsenic	7440-38-2	1 mg/L	113	70	130
		EG005C: Cadmium	7440-43-9	0.250 mg/L	107	70	130
		EG005C: Chromium	7440-47-3	1 mg/L	105	70	130
		EG005C: Copper	7440-50-8	1 mg/L	113	70	130
		EG005C: Lead	7439-92-1	1 mg/L	112	70	130
		EG005C: Nickel	7440-02-0	1 mg/L	105	70	130
		EG005C: Zinc	7440-66-6	1 mg/L	106	70	130
EG035C: Leachable Mercury by FIMS (QCLot: 1030697)							
ES0909499-001	Anonymous	EG035C: Mercury	7439-97-6	0.1 mg/L	111	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1030767)							
ES0909782-009	Anonymous	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	88.0	70	130
		EP075(SIM): Pyrene	129-00-0	20 µg/L	102	70	130



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES0909683	Page	: 1 of 9
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MR STEPHEN MCCORMACK	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: smccorm@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: HOSLEY PARK		
C-O-C number	: 128662-3	Date Samples Received	: 02-JUL-2009
Sampler	: ME	Issue Date	: 10-JUL-2009
Order number	: ----		
Quote number	: SY/146/09	No. of samples received	: 21
		No. of samples analysed	: 18

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

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved	02-JUL-2009	----	----	----	06-JUL-2009	09-JUL-2009	✔	
020709-01-ME, 020709-02-ME,								
020709-03-ME, 020709-04-ME,								
020709-05-ME, 020709-06-ME,								
020709-07-ME, 020709-08-ME,								
020709-09-ME, 020709-10-ME,								
020709-11-ME, 020709-12-ME,								
020709-13-ME, 020709-61-ME,								
020709-62-ME								
EG005C: Leachable Metals by ICPAES								
Clear Plastic Bottle - Nitric Acid; Unfiltered	06-JUL-2009	07-JUL-2009	02-JAN-2010	✔	07-JUL-2009	02-JAN-2010	✔	
020709-61-ME, 020709-62-ME								
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved	02-JUL-2009	07-JUL-2009	30-JUL-2009	✔	07-JUL-2009	29-DEC-2009	✔	
020709-01-ME, 020709-02-ME,								
020709-03-ME, 020709-04-ME,								
020709-05-ME, 020709-06-ME,								
020709-07-ME, 020709-08-ME,								
020709-09-ME, 020709-10-ME,								
020709-11-ME, 020709-12-ME,								
020709-13-ME, 020709-61-ME,								
020709-62-ME								
EG035C: Leachable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered	06-JUL-2009	----	----	----	07-JUL-2009	03-AUG-2009	✔	
020709-61-ME, 020709-62-ME								



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved								
020709-01-ME, 020709-03-ME, 020709-05-ME, 020709-07-ME, 020709-09-ME, 020709-11-ME, 020709-13-ME, 020709-62-ME	020709-02-ME, 020709-04-ME, 020709-06-ME, 020709-08-ME, 020709-10-ME, 020709-12-ME, 020709-61-ME,	02-JUL-2009	07-JUL-2009	30-JUL-2009	✓	08-JUL-2009	30-JUL-2009	✓
EN33: TCLP Leach								
LabSplit: Leach for organics and other tests								
020709-61-ME, 020709-62-ME	020709-62-ME	02-JUL-2009	---	---	----	06-JUL-2009	16-JUL-2009	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved								
020709-01-ME, 020709-03-ME, 020709-05-ME, 020709-10-ME, 020709-12-ME,	020709-02-ME, 020709-04-ME, 020709-07-ME, 020709-11-ME, 020709-13-ME	02-JUL-2009	03-JUL-2009	16-JUL-2009	✓	06-JUL-2009	12-AUG-2009	✓
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved								
020709-01-ME, 020709-03-ME, 020709-05-ME, 020709-10-ME, 020709-12-ME,	020709-02-ME, 020709-04-ME, 020709-07-ME, 020709-11-ME, 020709-13-ME	02-JUL-2009	03-JUL-2009	16-JUL-2009	✓	06-JUL-2009	12-AUG-2009	✓
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved								
020709-01-ME, 020709-03-ME, 020709-05-ME, 020709-10-ME, 020709-12-ME,	020709-02-ME, 020709-04-ME, 020709-07-ME, 020709-11-ME, 020709-13-ME	02-JUL-2009	03-JUL-2009	16-JUL-2009	✓	06-JUL-2009	12-AUG-2009	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved 020709-61-ME, 020709-62-ME	06-JUL-2009	06-JUL-2009	13-JUL-2009	✔	07-JUL-2009	15-AUG-2009	✔	
Soil Glass Jar - Unpreserved 020709-01-ME, 020709-03-ME, 020709-05-ME, 020709-07-ME, 020709-10-ME, 020709-61-ME, 020709-02-ME, 020709-04-ME, 020709-06-ME, 020709-08-ME, 020709-13-ME, 020709-62-ME	02-JUL-2009	03-JUL-2009	16-JUL-2009	✔	06-JUL-2009	12-AUG-2009	✔	
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved 020709-01-ME, 020709-03-ME, 020709-05-ME, 020709-07-ME, 020709-10-ME, 020709-61-ME, 020709-02-ME, 020709-04-ME, 020709-06-ME, 020709-09-ME, 020709-13-ME, 020709-62-ME	02-JUL-2009	03-JUL-2009	16-JUL-2009	✔	06-JUL-2009	12-AUG-2009	✔	
EP080: BTEX								
Soil Glass Jar - Unpreserved 020709-01-ME, 020709-03-ME, 020709-05-ME, 020709-07-ME, 020709-10-ME, TB, 020709-61-ME, TSC 020709-02-ME, 020709-04-ME, 020709-06-ME, 020709-09-ME, 020709-13-ME, TS, 020709-62-ME,	02-JUL-2009	03-JUL-2009	16-JUL-2009	✔	06-JUL-2009	16-JUL-2009	✔	



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: **SOIL**

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)							
Moisture Content	EA055-103	2	17	11.8	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	19	10.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	10	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	10	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	19	10.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	15	13.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	10	10.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	10	10.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	15	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	10	10.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	10	10.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	15	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	ALS QCS3 requirement
Pesticides by GCMS	EP068	1	10	10.0	5.0	✓	ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	10	10.0	5.0	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	15	6.7	5.0	✓	ALS QCS3 requirement

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	Reaular	Actual	Expected	Evaluation	



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)							
Leachable Mercury by FIMS	EG035C	1	9	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	9	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	19	10.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Leachable Mercury by FIMS	EG035C	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Leachable Mercury by FIMS	EG035C	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Leachable Mercury by FIMS	EG035C	1	9	11.1	5.0	✓	ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	9	11.1	5.0	✓	ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	19	5.3	5.0	✓	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
Asbestos - Count (Solid)	ASB-SOL	SOIL	Asbestos Count on solid matrices using PLM conducted by Subcontracting Laboratory
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Leachable Metals by ICPAES	EG005C	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Leachable Mercury by FIMS	EG035C	SOIL	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the TCLP solution. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Preparation Methods	Method	Matrix	Method Descriptions



Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals in TCLP Leachate	EN25C	SOIL	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TCLP for Non & Semivolatile Analytes	EN33a	SOIL	(USEPA SW846-1311, ALS QWI-EN/33) The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Separatory Funnel Extraction of Liquids	ORG14	SOIL	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



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 SW846 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: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP068A: Organochlorine Pesticides (OC)	ES0909683-001	020709-01-ME	Aldrin	309-00-2	116 %	77.54-107.0 %	Recovery greater than upper data quality objective

- 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

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	ES0909683-019	020709-62-ME	Phenol-d6	13127-88-3	Not Determined	----	Surrogate recovery not determined due to (target or non-target) matrix interferences
EP080S: TPH(V)/BTEX Surrogates	ES0909683-019	020709-62-ME	Toluene-D8	2037-26-5	119 %	81-117 %	Recovery greater than upper data quality objective
EP080S: TPH(V)/BTEX Surrogates	ES0909683-014	TB	Toluene-D8	2037-26-5	119 %	81-117 %	Recovery greater than upper data quality objective

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

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.

CHAIN OF CUSTODY DOCUMENTATION

128662



ALS Laboratory Group

 CLIENT: CES
 ADDRESS / OFFICE: 38W Pyrmont
 PROJECT MANAGER (PM): S. McCormack / M. ELBER

 SAMPLER: M. ELBER
 MOBILE: 0413636368
 PHONE: 85692200

PROJECT ID: CES090515-DP

EMAIL REPORT TO: M. ELBER

SITE: Horsley Park

P.O. NO.:

EMAIL INVOICE TO: (If different to report) Accounts

RESULTS REQUIRED (Date): 9/07/09

QUOTE NO.:

ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)

 FOR LABORATORY USE ONLY
 COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
 SAMPLE TEMPERATURE:
 CHILLED / FROZEN / DRYING:

 Notes: e.g. Highly contaminated samples
 e.g. "High PAHs expected".
 Extra volume for QC or trace LORs etc.

SAMPLE INFORMATION (note: S = Soil, W = Water)					CONTAINER INFORMATION	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles
1	020709-01-ME	Soil	02/07/09			
2	" - 02 - "	"	"			
3	" - 03 - "	"	"			
4	" - 04 - "	"	"			
5	" - 05 - "	"	"			
6	" - 06 - "	"	"			
7	" - 07 - "	"	"			
8	" - 08 - "	"	"			
9	" - 09 - "	"	"			
10	" - 10 - "	"	"			
11	" - 11 - "	"	"			
12	" - 12 - "	"	"			

S2	S4	PAH's	S13	Asbestos	Metals TUP	PAH TUP
X	X	X	X	X		
X	X	X	X	X		
X	X	X	X	X		
X	X	X	X	X		
X	X	X		X		
X	X	X				
X		X				
X	X					
X	X	X	X			
X			X			
X			X			

Subcon / Forward Lab / Split WO

Lab / Analysis: ASET ASbestos

Organised By / Date: 02/07/09

Relinquished By / Date:

Connote / Courier:

WO No: ES0909683

Attach By PO / Internal Sheet:

Environmental Division
Sydney

Work Order

ES0909683



Telephone: +61-2-8784 8555

 RELINQUISHED BY:
 Name: M. ELBER
 Of: CES
 Date: 02/07/09
 Time: 12pm

 RECEIVED BY:
 Name: SOY849
 Of: 4-5
 Date: 02/07/09
 Time: 18:05

Con't

Transport

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;
 V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; 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.

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COC Page 1 of 2

128663



ALS Laboratory Group

CLIENT:					SAMPLER:					 ALS Laboratory Group														
ADDRESS / OFFICE:					MOBILE:					SAME AS														
PROJECT MANAGER (PM):					PHONE:					PAGE 1														
PROJECT ID:					EMAIL REPORT TO:																			
SITE:					P.O. NO.:					EMAIL INVOICE TO: (if different to report)														
RESULTS REQUIRED (Rate):					QUOTE NO.:					ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)														
FOR LABORATORY USE ONLY DO NOT WRITE IN THESE AREAS DATE RECEIVED: ☐ Yes ☐ No SAMPLE TEMPERATURE CHILLED: ☐ Yes ☐ No					COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:					S2 S4 PAH's S13 Asbestos Metals TCLP PAM TCLP BTEX Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.														
SAMPLE INFORMATION (note: S = Soil, W = Water)					CONTAINER INFORMATION																			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles																		
13	020709-13-ME	Soil	02/07/09				X	X	X	X														
14	TB	"	"									X												
15	TS	"	"									X												
16	020709-51-ME	-	"							X														
17	" -52- "	-	"							X														
18	020709-61-ME	Soil	"				X	X	X		X	X												
19	" -62-ME	"	"				X	X	X		X	X												
21	020709-15-ME	"	"											HOLD										
20	TSC																							
RELINQUISHED BY:					RECEIVED BY					METHOD OF SHIPMENT														
Name: MICHELEB					Date: 02/07/09					Name: SCOTT					Date: 02/7/9					Con' Note No:				
Of: CES					Time: 12pm					Of: MS					Time: 18:05									
Name:					Date:					Name:					Date:					Transport Co:				
Of:					Time:					Of:					Time:									
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; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; 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.																								

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COC Page 2 of 2



Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES0912581	Page	: 1 of 13
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MS ANGELA MAROYA	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: amaroya@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 21-AUG-2009
C-O-C number	: 206781-82	Issue Date	: 01-SEP-2009
Sampler	: M	No. of samples received	: 18
Site	: HORSLEY PARK	No. of samples analysed	: 16
Quote number	: SY/146/09		

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
- Descriptive Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Spectroscopist	Inorganics
Hoa Nguyen	Inorganic Chemist	Inorganics
KEN HALL	Analyst	Newcastle
Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics
Sanjeshni Jyoti Mala	Senior Chemist Volatile	Organics
Wisam Abou-Maraseh	Spectroscopist	Inorganics

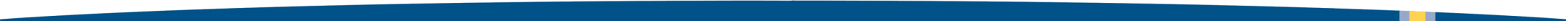
Environmental Division Sydney

Part of the **ALS Laboratory Group**

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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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

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

- **Asbestos Identification**

Samples were analysed by Polarised Light Microscopy including dispersion staining

Legend for Asbestos Type

Am Amosite (brown asbestos) detected

Ch Chrysotile (white asbestos) detected

Cr Crocidolite (blue asbestos) detected

UMF Unknown mineral fibres detected

- No asbestos fibres detected

(t) Trace levels detected

Confirmation by alternative techniques is recommended for samples where unknown mineral fibres are detected.

- EG005C: LCS recovery for chromium falls outside ALS Dynamic Control Limit. However, it is within the acceptance criteria based on ALS DQO. No further action is required.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEX only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EP080: Sample 200805_05_SM results confirmed by re-analysis.



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				200809-01-SM	200809-03-SM	200809-04-SM	200809-05-SM	200809-06-SM
				20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00
Compound	CAS Number	LOR	Unit	ES0912581-001	ES0912581-003	ES0912581-004	ES0912581-005	ES0912581-006
AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	----	----
Asbestos Type	132207-33-1	0.1	g/kg	-	-	-	----	----
Sample weight (dry)	----	0.01	g	201	98.8	117	----	----
APPROVED IDENTIFIER:	----	-	-	K.HALL	K.HALL	K.HALL	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	7.6	16.9	11.2	18.9	19.7
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	26	8	12	6	7
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	20	16	19	14	16
Copper	7440-50-8	5	mg/kg	94	12	12	15	19
Lead	7439-92-1	5	mg/kg	34	18	23	11	25
Nickel	7440-02-0	2	mg/kg	4	4	4	5	5
Zinc	7440-66-6	5	mg/kg	81	23	32	41	115
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EN33: TCLP Leach								
Initial pH	----	0.1	pH Unit	----	----	----	5.9	5.9
After HCl pH	----	0.1	pH Unit	----	----	----	1.5	1.7
Extraction Fluid Number	----	1	-	----	----	----	1	1
Final pH	----	0.1	pH Unit	----	----	----	4.9	5.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	1.4	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	3.0	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	3.0	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	0.6	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				200809-01-SM	200809-03-SM	200809-04-SM	200809-05-SM	200809-06-SM
				20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00
Compound	CAS Number	LOR	Unit	ES0912581-001	ES0912581-003	ES0912581-004	ES0912581-005	ES0912581-006
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	49	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	1620	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	3930	520
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	540
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	1.4	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	0.8	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	3.0	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	2.1	<0.5
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	102	106	98.6	106	112
2-Chlorophenol-D4	93951-73-6	0.1	%	98.5	100	94.6	99.7	106
2,4,6-Tribromophenol	118-79-6	0.1	%	90.0	92.2	91.2	85.7	96.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	91.2	89.1	89.5	80.6	90.8
Anthracene-d10	1719-06-8	0.1	%	90.0	88.2	90.5	85.5	91.0
4-Terphenyl-d14	1718-51-0	0.1	%	94.1	91.7	93.0	90.7	91.0
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	106	117	89.6	113	113
Toluene-D8	2037-26-5	0.1	%	112	94.8	98.1	91.8	97.2
4-Bromofluorobenzene	460-00-4	0.1	%	97.5	101	107	110	106



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				200809-07-SM	200809-08-SM	200809-10-SM	200809-11-SM	200809-12-SM
				20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00
Compound	CAS Number	LOR	Unit	ES0912581-007	ES0912581-008	ES0912581-010	ES0912581-011	ES0912581-012
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	19.2	15.9	17.3	15.5	18.4
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	331	10	5	6	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	27	21	12	12	16
Copper	7440-50-8	5	mg/kg	28	35	22	23	18
Lead	7439-92-1	5	mg/kg	70	216	10	12	26
Nickel	7440-02-0	2	mg/kg	21	9	7	7	14
Zinc	7440-66-6	5	mg/kg	308	267	26	26	116
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EN33: TCLP Leach								
Initial pH	----	0.1	pH Unit	5.9	5.9	----	----	----
After HCl pH	----	0.1	pH Unit	1.6	1.5	----	----	----
Extraction Fluid Number	----	1	-	1	1	----	----	----
Final pH	----	0.1	pH Unit	5.0	5.0	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	50	<50
C15 - C28 Fraction	----	100	mg/kg	110	<100	140	230	2960



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

				200809-07-SM	200809-08-SM	200809-10-SM	200809-11-SM	200809-12-SM
				20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00
Compound	CAS Number	LOR	Unit	ES0912581-007	ES0912581-008	ES0912581-010	ES0912581-011	ES0912581-012
EP080/071: Total Petroleum Hydrocarbons - Continued								
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	6130
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	105	103	100	101	103
2-Chlorophenol-D4	93951-73-6	0.1	%	98.9	98.6	93.4	96.4	97.4
2,4,6-Tribromophenol	118-79-6	0.1	%	90.3	90.6	86.8	87.6	89.4
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	87.8	87.6	86.5	87.8	88.6
Anthracene-d10	1719-06-8	0.1	%	87.5	88.6	87.4	89.2	89.9
4-Terphenyl-d14	1718-51-0	0.1	%	90.8	90.9	89.7	90.9	91.1
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	92.8	112	104	102	95.9
Toluene-D8	2037-26-5	0.1	%	113	103	88.1	86.5	116
4-Bromofluorobenzene	460-00-4	0.1	%	90.9	109	108	93.4	125



Analytical Results

Sub-Matrix: SOIL

Client sample ID

Client sampling date / time

				200809-13-SM	200809-14-SM	200809-15-SM	TRIP BLANK	TRIP SPIKE
				20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00
Compound	CAS Number	LOR	Unit	ES0912581-013	ES0912581-014	ES0912581-015	ES0912581-016	ES0912581-017
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	14.8	16.4	20.3	2.4	4.7
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	14	18	8	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	21	20	17	----	----
Copper	7440-50-8	5	mg/kg	18	21	25	----	----
Lead	7439-92-1	5	mg/kg	27	74	46	----	----
Nickel	7440-02-0	2	mg/kg	5	5	7	----	----
Zinc	7440-66-6	5	mg/kg	32	202	330	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	----	----
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	0.7
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	10.0
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	1.6



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

Client sampling date / time

				200809-13-SM	200809-14-SM	200809-15-SM	TRIP BLANK	TRIP SPIKE
				20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00	20-AUG-2009 15:00
Compound	CAS Number	LOR	Unit	ES0912581-013	ES0912581-014	ES0912581-015	ES0912581-016	ES0912581-017
EP080: BTEX - Continued								
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	7.9
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	3.2
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	98.4	106	103	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	94.2	101	95.6	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	90.0	90.6	89.5	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	88.8	90.0	88.1	----	----
Anthracene-d10	1719-06-8	0.1	%	89.3	90.2	89.0	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	91.8	92.4	91.2	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	80.4	80.4	82.6	87.4	112
Toluene-D8	2037-26-5	0.1	%	99.2	116	100	109	102
4-Bromofluorobenzene	460-00-4	0.1	%	108	109	107	105	103



Analytical Results

Sub-Matrix: SOIL				Client sample ID	TSC				
				Client sampling date / time	20-AUG-2009 15:00				
Compound	CAS Number	LOR	Unit		ES0912581-018				
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)		----	1.0	%	4.3	----	----	----	----
EP080: BTEX									
Benzene	71-43-2	0.2	mg/kg		0.8	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		10.3	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		1.6	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		8.0	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		3.3	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.1	%		90.0	----	----	----	----
Toluene-D8	2037-26-5	0.1	%		110	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		110	----	----	----	----



Analytical Results

Sub-Matrix: TCLP LEACHATE

Client sample ID

Client sampling date / time

				200809-05-SM	200809-06-SM	200809-07-SM	200809-08-SM	----
				26-AUG-2009 12:00	26-AUG-2009 12:00	26-AUG-2009 12:00	26-AUG-2009 12:00	----
Compound	CAS Number	LOR	Unit	ES0912581-005	ES0912581-006	ES0912581-007	ES0912581-008	----
EG005C: Leachable Metals by ICPAES								
Arsenic	7440-38-2	0.1	mg/L	<0.1	<0.1	0.6	<0.1	----
Cadmium	7440-43-9	0.05	mg/L	<0.05	<0.05	<0.05	<0.05	----
Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	----
Copper	7440-50-8	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	----
Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	----
Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	----
Zinc	7440-66-6	0.1	mg/L	0.6	2.1	1.5	1.6	----
EG035C: Leachable Mercury by FIMS								
Mercury	7439-97-6	0.0010	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	26.0	31.0	30.1	29.2	----
2-Chlorophenol-D4	93951-73-6	0.1	%	65.9	82.1	73.6	79.1	----
2,4,6-Tribromophenol	118-79-6	0.1	%	72.2	88.7	78.8	83.2	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	64.7	79.0	71.3	75.4	----
Anthracene-d10	1719-06-8	0.1	%	66.4	82.5	76.2	79.0	----
4-Terphenyl-d14	1718-51-0	0.1	%	60.9	76.4	68.0	71.5	----



Analytical Results

Descriptive Results

Sub-Matrix: SOIL		
Method: <i>Compound</i>	Client sample ID - Client sampling date / time	Analytical Results
AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	200809-01-SM - 20-AUG-2009 15:00	Friable light grey sandy clay soil, with minor rocks, and trace of vegetation remains.
EA200: Description	200809-03-SM - 20-AUG-2009 15:00	Friable light grey sandy clay soil, with minor rocks, and trace of vegetation remains.
EA200: Description	200809-04-SM - 20-AUG-2009 15:00	Friable light grey sandy clay soil, with minor rocks, and trace of vegetation remains.



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2,4,6-Tribromophenol	118-79-6	19	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121

Sub-Matrix: TCLP LEACHATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	94
2-Chlorophenol-D4	93951-73-6	23	134
2,4,6-Tribromophenol	118-79-6	10	123
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141



Environmental Division

QUALITY CONTROL REPORT

Work Order	: ES0912581	Page	: 1 of 11
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MS ANGELA MAROYA	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: amaroya@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: HORSLEY PARK	Date Samples Received	: 21-AUG-2009
C-O-C number	: 206781-82	Issue Date	: 01-SEP-2009
Sampler	: M		
Order number	: ----		
Quote number	: SY/146/09	No. of samples received	: 18
		No. of samples analysed	: 16

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

This document is issued in accordance with NATA accreditation requirements.

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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Spectroscopist	Inorganics
Hoa Nguyen	Inorganic Chemist	Inorganics
KEN HALL	Analyst	Newcastle
Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics
Sanjeshni Jyoti Mala	Senior Chemist Volatile	Organics
Wisam Abou-Maraseh	Spectroscopist	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: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 1078006)									
ES0912503-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	27.8	27.9	0.5	0% - 20%
ES0912581-003	200809-03-SM	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.9	16.4	2.7	0% - 50%
EA055: Moisture Content (QC Lot: 1078007)									
ES0912581-015	200809-15-SM	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	20.3	19.9	2.0	0% - 50%
ES0912590-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	10.8	10.5	2.9	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 1079195)									
ES0912534-009	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	11	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	6	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	23	62.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	21	22	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	47	58	20.5	0% - 50%
ES0912581-007	200809-07-SM	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	27	25	7.4	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	21	18	17.4	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	331	371	11.4	0% - 20%
		EG005T: Copper	7440-50-8	5	mg/kg	28	26	6.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	70	72	2.2	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	308	311	0.9	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 1079780)									
ES0912625-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	40	33	18.9	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	33	28	18.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	13	21.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	62	64	3.4	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	237	198	18.3	0% - 20%
EG005T: Zinc	7440-66-6	5	mg/kg	230	220	4.5	0% - 20%		
EG005T: Total Metals by ICP-AES (QC Lot: 1079842)									
ES0912611-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	<2	54.3	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 1079842) - continued									
ES0912611-001	Anonymous	EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
ES0912647-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	12	11.6	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	10	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	6	6	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	10	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	25	25	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 1079844)									
ES0912651-004	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	4	4	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	35	38	7.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	57	71	21.5	0% - 50%
ES0912651-009	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	4	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	6	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	7	16.3	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	23	20	16.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1079194)									
ES0912445-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	<0.1	83.1	No Limit
ES0912581-007	200809-07-SM	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1078074)									
ES0912581-001	200809-01-SM	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1078074) - continued											
ES0912581-001	200809-01-SM	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES0912581-012	200809-12-SM	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1077712)									
		ES0912527-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES0912581-005	200809-05-SM	EP080: C6 - C9 Fraction	----	10	mg/kg	49	48	3.5	No Limit		
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1078073)											
ES0912581-001	200809-01-SM	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit		
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit		
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit		
ES0912581-012	200809-12-SM	EP071: C15 - C28 Fraction	----	100	mg/kg	2960	3170	6.7	0% - 20%		
		EP071: C29 - C36 Fraction	----	100	mg/kg	6130	6780	10.2	0% - 20%		
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit		
EP080: BTEX (QC Lot: 1077712)											
ES0912527-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
			106-42-3								
	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit			
ES0912581-005	200809-05-SM	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit		
		EP080: Toluene	108-88-3	0.5	mg/kg	1.4	1.3	0.0	No Limit		



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEX (QC Lot: 1077712) - continued									
ES0912581-005	200809-05-SM	EP080: Ethylbenzene	100-41-4	0.5	mg/kg	0.8	0.8	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	3.0	2.8	7.0	No Limit
		106-42-3							
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	2.1	2.0	7.4	No Limit
EP080: BTEX (QC Lot: 1078082)									
ES0912590-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		106-42-3							
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES0912590-008	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		106-42-3							
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	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 (%)
EG005C: Leachable Metals by ICPAES (QC Lot: 1079992)									
ES0912581-005	200809-05-SM	EG005C: Cadmium	7440-43-9	0.05	mg/L	<0.05	<0.05	0.0	No Limit
		EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Copper	7440-50-8	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Zinc	7440-66-6	0.1	mg/L	0.6	0.6	0.0	No Limit
ES0912614-005	Anonymous	EG005C: Cadmium	7440-43-9	0.05	mg/L	<0.05	<0.05	0.0	No Limit
		EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Copper	7440-50-8	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Zinc	7440-66-6	0.1	mg/L	0.2	0.3	0.0	No Limit
EG035C: Leachable Mercury by FIMS (QC Lot: 1083241)									
ES0912581-005	200809-05-SM	EG035C: Mercury	7439-97-6	0.0010	mg/L	<0.0010	<0.0010	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: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005T: Total Metals by ICP-AES (QCLot: 1079195)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.1 mg/kg	106	90.1	124
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	98.2	83.3	111
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	98.8	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	99.0	90.1	114
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.2 mg/kg	95.9	85.2	111
EG005T: Nickel	7440-02-0	2	mg/kg	<2	54.8 mg/kg	99.0	88.3	116
EG005T: Zinc	7440-66-6	5	mg/kg	<5	104 mg/kg	91.1	88.9	112
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1079194)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.4 mg/kg	81.1	67	118
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1078074)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	97.9	81.9	113
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	100	79.6	113
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	93.6	81.5	112
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	97.1	79.9	112
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	97.6	79.4	114
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	101	81.1	112
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	103	78.8	113
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	105	78.9	113
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	101	77.2	112
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	101	79.8	114
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	96.4	71.8	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	101	74.2	117
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	101	76.4	113
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	89.3	71	113
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	88.4	71.7	113
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	88.8	72.4	114
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1077712)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	96.2	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1078073)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	89.0	75.2	116
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	200 mg/kg	85.0	75.3	113
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	83.0	72.6	117
EP080: BTEX (QCLot: 1077712)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	89.7	67.5	125



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Result	Spike	Spike Recovery (%)	Recovery Limits (%)
				Concentration		LCS	Low	High
EP080: BTEX (QCLot: 1077712) - continued								
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	96.4	69	122
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	100	65.3	126
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	102	66.5	124
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	106	66.7	123
EP080: BTEX (QCLot: 1078082)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	77.9	67.5	125
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	85.1	69	122
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	78.8	65.3	126
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	78.5	66.5	124
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	83.6	66.7	123
Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Result	Spike	Spike Recovery (%)	Recovery Limits (%)
				Concentration		LCS	Low	High
EG005C: Leachable Metals by ICPAES (QCLot: 1079992)								
EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	1 mg/L	89.4	89	119
EG005C: Cadmium	7440-43-9	0.05	mg/L	<0.05	0.250 mg/L	94.3	89	121
EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	1 mg/L	# 86.8	89	119
EG005C: Copper	7440-50-8	0.1	mg/L	<0.1	1 mg/L	92.8	87	121
EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	1 mg/L	91.8	89	119
EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	1 mg/L	88.4	88	120
EG005C: Zinc	7440-66-6	0.1	mg/L	<0.1	1 mg/L	90.5	85	121
EG035C: Leachable Mercury by FIMS (QCLot: 1083241)								
EG035C: Mercury	7439-97-6	0.001	mg/L	<0.0010	0.010 mg/L	103	83	119
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1082088)								
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	2 µg/L	85.0	58.6	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	2 µg/L	85.0	63.6	114
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	2 µg/L	80.0	62.2	113
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	2 µg/L	82.0	63.9	115
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	2 µg/L	89.0	62.6	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	2 µg/L	84.5	64.3	116
		1	µg/L	<1.0	----	----	----	----



Sub-Matrix: **WATER**

Method Blank (MB) Report				Laboratory Control Spike (LCS) Report				
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
					LCS	Low	High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1082088) - continued								
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	2 µg/L	92.5	63.6	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	2 µg/L	92.5	63.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	2 µg/L	87.0	64.1	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	2 µg/L	85.5	62.5	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	2 µg/L	89.0	61.7	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	2 µg/L	82.0	61.7	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	2 µg/L	82.0	63.3	117
		0.5	µg/L	<0.5	----	----	----	----
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	2 µg/L	75.0	59.9	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	----	2 µg/L	75.0	61.2	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	2 µg/L	75.5	59.1	118
		1	µg/L	<1.0	----	----	----	----



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: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
					MS	Low	High
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number				
EG005T: Total Metals by ICP-AES (QCLot: 1079195)							
ES0912534-009	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	94.0	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	88.0	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	97.7	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	99.6	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	96.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	97.8	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	86.4	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1079194)							
ES0912445-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	90.3	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1078074)							
ES0912581-001	200809-01-SM	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	86.3	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.9	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1077712)							
ES0912527-001	Anonymous	EP080: C6 - C9 Fraction	----	26 mg/kg	104	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1078073)							
ES0912581-001	200809-01-SM	EP071: C10 - C14 Fraction	----	640 mg/kg	94.7	70	130
		EP071: C15 - C28 Fraction	----	3140 mg/kg	98.1	70	130
		EP071: C29 - C36 Fraction	----	2860 mg/kg	96.4	70	130
EP080: BTEX (QCLot: 1077712)							
ES0912527-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	82.9	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	81.5	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	79.6	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	82.6	70	130
			106-42-3				
	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	83.0	70	130	
EP080: BTEX (QCLot: 1078082)							
ES0912590-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	99.3	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	76.2	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	87.7	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	89.8	70	130
			106-42-3				
	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	87.6	70	130	

Sub-Matrix: **WATER**

Matrix Spike (MS) Report



Sub-Matrix: WATER

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
					MS	Low	High
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number				
EG005C: Leachable Metals by ICPAES (QCLot: 1079992)							
ES0912581-006	200809-06-SM	EG005C: Arsenic	7440-38-2	1 mg/L	100	70	130
		EG005C: Cadmium	7440-43-9	0.250 mg/L	94.6	70	130
		EG005C: Chromium	7440-47-3	1 mg/L	87.3	70	130
		EG005C: Copper	7440-50-8	1 mg/L	96.3	70	130
		EG005C: Lead	7439-92-1	1 mg/L	92.6	70	130
		EG005C: Nickel	7440-02-0	1 mg/L	88.8	70	130
		EG005C: Zinc	7440-66-6	1 mg/L	87.9	70	130
EG035C: Leachable Mercury by FIMS (QCLot: 1083241)							
ES0912581-005	200809-05-SM	EG035C: Mercury	7439-97-6	0.1 mg/L	117	70	130



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES0912581	Page	: 1 of 9
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MS ANGELA MAROYA	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: amaroya@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: HORSLEY PARK	Date Samples Received	: 21-AUG-2009
C-O-C number	: 206781-82	Issue Date	: 01-SEP-2009
Sampler	: M		
Order number	: ----	No. of samples received	: 18
Quote number	: SY/146/09	No. of samples analysed	: 16

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

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Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
AS 4964 - 2004 Identification of Asbestos in bulk samples								
Snap Lock Bag 200809-01-SM, 200809-04-SM	200809-03-SM,	20-AUG-2009	---	---	----	01-SEP-2009	28-FEB-2010	✓
EA055: Moisture Content								
Soil Glass Jar - Unpreserved 200809-01-SM, 200809-04-SM, 200809-06-SM, 200809-08-SM, 200809-11-SM, 200809-13-SM, 200809-15-SM, TRIP SPIKE,	200809-03-SM, 200809-05-SM, 200809-07-SM, 200809-10-SM, 200809-12-SM, 200809-14-SM, TRIP BLANK, TSC	20-AUG-2009	----	----	----	24-AUG-2009	27-AUG-2009	✓
EG005C: Leachable Metals by ICPAES								
Clear Plastic Bottle - Nitric Acid; Unfiltered 200809-05-SM, 200809-07-SM,	200809-06-SM, 200809-08-SM	26-AUG-2009	26-AUG-2009	22-FEB-2010	✓	26-AUG-2009	22-FEB-2010	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved 200809-01-SM, 200809-04-SM, 200809-06-SM, 200809-08-SM, 200809-11-SM, 200809-13-SM, 200809-15-SM	200809-03-SM, 200809-05-SM, 200809-07-SM, 200809-10-SM, 200809-12-SM, 200809-14-SM,	20-AUG-2009	25-AUG-2009	17-SEP-2009	✓	26-AUG-2009	16-FEB-2010	✓
EG035C: Leachable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered 200809-05-SM, 200809-07-SM,	200809-06-SM, 200809-08-SM	26-AUG-2009	----	----	----	29-AUG-2009	23-SEP-2009	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved 200809-01-SM, 200809-03-SM, 200809-04-SM, 200809-05-SM, 200809-06-SM, 200809-07-SM, 200809-08-SM, 200809-10-SM, 200809-11-SM, 200809-12-SM, 200809-13-SM, 200809-14-SM, 200809-15-SM	20-AUG-2009	25-AUG-2009	17-SEP-2009	✓	26-AUG-2009	17-SEP-2009	✓
EN33: TCLP Leach							
LabSplit: Leach for organics and other tests 200809-05-SM, 200809-06-SM, 200809-07-SM, 200809-08-SM	20-AUG-2009	---	---	----	26-AUG-2009	03-SEP-2009	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved 200809-05-SM, 200809-06-SM, 200809-07-SM, 200809-08-SM	26-AUG-2009	27-AUG-2009	02-SEP-2009	✓	28-AUG-2009	06-OCT-2009	✓
Soil Glass Jar - Unpreserved 200809-01-SM, 200809-03-SM, 200809-04-SM, 200809-05-SM, 200809-06-SM, 200809-07-SM, 200809-08-SM, 200809-10-SM, 200809-11-SM, 200809-12-SM, 200809-13-SM, 200809-14-SM, 200809-15-SM	20-AUG-2009	24-AUG-2009	03-SEP-2009	✓	26-AUG-2009	03-OCT-2009	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved 200809-01-SM, 200809-03-SM, 200809-04-SM, 200809-05-SM, 200809-06-SM, 200809-07-SM, 200809-08-SM, 200809-10-SM, 200809-11-SM, 200809-12-SM, 200809-13-SM, 200809-14-SM, 200809-15-SM	20-AUG-2009	24-AUG-2009	03-SEP-2009	✓	26-AUG-2009	03-OCT-2009	✓

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 Work Order : ES0912581
 Client : CONSULTING EARTH SCIENTISTS
 Project : CES090515-DP



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEX								
Soil Glass Jar - Unpreserved		20-AUG-2009	24-AUG-2009	03-SEP-2009	✔	26-AUG-2009	03-SEP-2009	✔
200809-01-SM,	200809-03-SM,							
200809-04-SM,	200809-05-SM,							
200809-06-SM,	200809-07-SM,							
200809-08-SM,	200809-10-SM,							
200809-11-SM,	200809-12-SM,							
200809-13-SM,	200809-14-SM,							
200809-15-SM								
Soil Glass Jar - Unpreserved		20-AUG-2009	24-AUG-2009	03-SEP-2009	✔	27-AUG-2009	03-SEP-2009	✔
TRIP BLANK,	TRIP SPIKE,							
TSC								



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: **SOIL**

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)							
Moisture Content	EA055-103	4	40	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	18	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	18	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	15	13.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	18	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	4	40	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	15	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	40	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	15	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	18	5.6	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	40	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.6	5.0	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	18	5.6	5.0	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	15	6.7	5.0	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	18	5.6	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	40	5.0	5.0	✓	ALS QCS3 requirement

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)							
Leachable Mercury by FIMS	EG035C	1	9	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	2	11	18.2	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Leachable Mercury by FIMS	EG035C	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	11	9.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	16.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

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 Project : CES090515-DP



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	
Method Blanks (MB)							
Leachable Mercury by FIMS	EG035C	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	11	9.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	16.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Leachable Mercury by FIMS	EG035C	1	9	11.1	5.0	✓	ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	11	9.1	5.0	✓	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
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Leachable Metals by ICPAES	EG005C	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Leachable Mercury by FIMS	EG035C	SOIL	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the TCLP solution. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals in TCLP Leachate	EN25C	SOIL	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TCLP for Non & Semivolatile Analytes	EN33a	SOIL	(USEPA SW846-1311, ALS QWI-EN/33) The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.



Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Separatory Funnel Extraction of Liquids	ORG14	SOIL	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



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 SW846 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
Laboratory Control Spike (LCS) Recoveries							
EG005C: Leachable Metals by ICPAES	1242755-002	----	Chromium	7440-47-3	86.8 %	89-119%	Recovery less than lower control limit

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Matrix Spike outliers occur.

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP080S: TPH(V)/BTEX Surrogates	ES0912581-012	200809-12-SM	4-Bromofluorobenzene	460-00-4	125 %	74-121 %	Recovery greater than upper data quality objective

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

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.



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : **ES0912581**

Client : **CONSULTING EARTH SCIENTISTS**
Contact : **MS ANGELA MAROYA**
Address : **JONES BAY WHARF 19-21, LOWER
DECK, SUITE 121,
26-32 PIRRAMA ROAD
PYRMONT NSW, AUSTRALIA 2040**

Laboratory : Environmental Division Sydney
Contact : Charlie Pierce
Address : 277-289 Woodpark Road Smithfield
NSW Australia 2164

E-mail : amaroya@consultingearth.com.au
Telephone : +61 02 8569 2200
Facsimile : +61 02 95524399

E-mail : charlie.pierce@alsenviro.com
Telephone : +61-2-8784 8555
Facsimile : +61-2-8784 8500

Project : CES090515-DP
Order number : ----
C-O-C number : 206781-82
Site : HORSLEY PARK
Sampler : M

Page : 1 of 3
Quote number : ES2009CONEAR0260 (SY/146/09)
QC Level : NEPM 1999 Schedule B(3) and ALS
QCS3 requirement

Dates

Date Samples Received : 21-AUG-2009
Client Requested Due Date : 31-AUG-2009

Issue Date : 24-AUG-2009 14:22
Scheduled Reporting Date : **31-AUG-2009**

Delivery Details

Mode of Delivery : Carrier
No. of coolers/boxes : 1 HARD
Security Seal : Not intact.

Temperature : 5.6'C - Ice present
No. of samples received : 18
No. of samples analysed : 16

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **Sample(s) have been received within recommended holding times.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Jacob Waugh.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (90 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 necessary 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.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - EP080 BTEX	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-07 TPH/BTEX/PAH (SIM)	SOIL - TCLP TCLP Leach
ES0912581-001	20-AUG-2009 15:00	200809-01-SM			✓			✓	✓	
ES0912581-002	20-AUG-2009 15:00	200809-02-SM	✓							
ES0912581-003	20-AUG-2009 15:00	200809-03-SM			✓			✓	✓	
ES0912581-004	20-AUG-2009 15:00	200809-04-SM			✓			✓	✓	
ES0912581-005	20-AUG-2009 10:00	200809-05-SM				✓				
	20-AUG-2009 15:00	200809-05-SM						✓	✓	✓
ES0912581-006	20-AUG-2009 10:00	200809-06-SM				✓				
	20-AUG-2009 15:00	200809-06-SM						✓	✓	✓
ES0912581-007	20-AUG-2009 10:00	200809-07-SM				✓				
	20-AUG-2009 15:00	200809-07-SM						✓	✓	✓
ES0912581-008	20-AUG-2009 10:00	200809-08-SM				✓				
	20-AUG-2009 15:00	200809-08-SM						✓	✓	✓
ES0912581-009	20-AUG-2009 15:00	200809-09-SM	✓							
ES0912581-010	20-AUG-2009 15:00	200809-10-SM						✓	✓	
ES0912581-011	20-AUG-2009 15:00	200809-11-SM						✓	✓	
ES0912581-012	20-AUG-2009 15:00	200809-12-SM						✓	✓	
ES0912581-013	20-AUG-2009 15:00	200809-13-SM						✓	✓	
ES0912581-014	20-AUG-2009 15:00	200809-14-SM						✓	✓	
ES0912581-015	20-AUG-2009 15:00	200809-15-SM						✓	✓	
ES0912581-016	20-AUG-2009 15:00	TRIP BLANK		✓			✓			
ES0912581-017	20-AUG-2009 15:00	TRIP SPIKE		✓			✓			
ES0912581-018	20-AUG-2009 15:00	TSC		✓			✓			



Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - W-02L 8 metals (TCLP)
ES0912581-005	20-AUG-2009 10:00	200809-05-SM	✓
ES0912581-006	20-AUG-2009 10:00	200809-06-SM	✓
ES0912581-007	20-AUG-2009 10:00	200809-07-SM	✓
ES0912581-008	20-AUG-2009 10:00	200809-08-SM	✓

Requested Deliverables

MR STEPHEN MCCORMACK

- *AU Certificate of Analysis - NATA (COA)	Email	smccorm@consultingearth.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	smccorm@consultingearth.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	smccorm@consultingearth.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	smccorm@consultingearth.com.au
- A4 - AU Tax Invoice (INV)	Email	smccorm@consultingearth.com.au
- Default - Chain of Custody (COC)	Email	smccorm@consultingearth.com.au
- EDI Format - ENMRG (ENMRG)	Email	smccorm@consultingearth.com.au

MS ANGELA MAROYA

- *AU Certificate of Analysis - NATA (COA)	Email	amaroya@consultingearth.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	amaroya@consultingearth.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	amaroya@consultingearth.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	amaroya@consultingearth.com.au
- A4 - AU Tax Invoice (INV)	Email	amaroya@consultingearth.com.au
- Default - Chain of Custody (COC)	Email	amaroya@consultingearth.com.au
- EDI Format - ENMRG (ENMRG)	Email	amaroya@consultingearth.com.au

THE CES ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	cesacctnt@consultingearth.com.au
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THE SUB RESULTS

- EDI Format - EQUIS V5 (EQUIS_V5)	Email	subresults.syd@alsenviro.com
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Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES0913072	Page	: 1 of 6
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MR MICHAEL STACEY	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mstacey@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 31-AUG-2009
C-O-C number	: 206783	Issue Date	: 04-SEP-2009
Sampler	: SM	No. of samples received	: 1
Site	: HORNSLEY PARK	No. of samples analysed	: 1
Quote number	: SY/146/09		

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
- Descriptive Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Spectroscopist	Inorganics
Hoa Nguyen	Inorganic Chemist	Inorganics
Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics
Peter Rennie	Team Leader - Asbestos	Newcastle

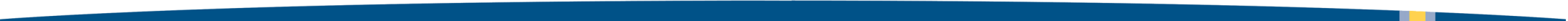
Environmental Division Sydney

Part of the **ALS Laboratory Group**

277-289 Woodpark Road Smithfield NSW Australia 2164

Tel. **+61-2-8784 8555** Fax. +61-2-8784 8500 www.alsglobal.com

A Campbell Brothers Limited Company





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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

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

● Asbestos Identification

Samples were analysed by Polarised Light Microscopy including dispersion staining

Legend for Asbestos Type

Am Amosite (brown asbestos) detected

Ch Chrysotile (white asbestos) detected

Cr Crocidolite (blue asbestos) detected

UMF Unknown mineral fibres detected

- No asbestos fibres detected

(t) Trace levels detected

Confirmation by alternative techniques is recommended for samples where unknown mineral fibres are detected.



Analytical Results

Sub-Matrix: **SOIL**

Client sample ID

310809-100-SM

Client sampling date / time

[31-AUG-2009]

Compound	CAS Number	LOR	Unit	ES0913072-001	----	----	----	----
AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	----	----	----
Asbestos Type	132207-33-1	0.1	g/kg	-	----	----	----	----
Sample weight (dry)	----	0.01	g	69.0	----	----	----	----
APPROVED IDENTIFIER:	----	-	-	P.RENNIE	----	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	14.0	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	16	----	----	----	----
Copper	7440-50-8	5	mg/kg	14	----	----	----	----
Lead	7439-92-1	5	mg/kg	12	----	----	----	----
Nickel	7440-02-0	2	mg/kg	6	----	----	----	----
Zinc	7440-66-6	5	mg/kg	43	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
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	----	----	----	----
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	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	90.2	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	98.9	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	107	----	----	----	----



Analytical Results

Descriptive Results

Sub-Matrix: SOIL		
Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	310809-100-SM - [31-AUG-2009]	Brown lumpy friable soil



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	80	120
Toluene-D8	2037-26-5	81	117
4-Bromofluorobenzene	460-00-4	74	121



Environmental Division

QUALITY CONTROL REPORT

Work Order	: ES0913072	Page	: 1 of 6
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MR MICHAEL STACEY	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mstacey@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: HORNSLEY PARK	Date Samples Received	: 31-AUG-2009
C-O-C number	: 206783	Issue Date	: 04-SEP-2009
Sampler	: SM		
Order number	: ----		
Quote number	: SY/146/09	No. of samples received	: 1
		No. of samples analysed	: 1

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

This document is issued in accordance with NATA accreditation requirements.

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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Spectroscopist	Inorganics
Hoa Nguyen	Inorganic Chemist	Inorganics
Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics
Peter Rennie	Team Leader - Asbestos	Newcastle



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: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 1086595)									
ES0913059-005	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	19.2	13.9	32.0	0% - 50%
ES0913059-014	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	6.4	6.8	7.6	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 1087549)									
ES0913069-003	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	29	34	17.1	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	8	6	15.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	25	11.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	9	12.3	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	21	20	5.5	No Limit
ES0913095-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	6	6	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	8	7	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	16	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	10	17.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	84	82	2.2	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1087548)									
ES0913020-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.0	No Limit
ES0913069-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1086489)									
ES0913069-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1086503)									
ES0912962-002	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES0913059-011	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	600	580	2.8	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	60	<50	0.0	No Limit
EP080: BTEX (QC Lot: 1086489)									
ES0913069-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEX (QC Lot: 1086489) - continued									
ES0913069-002	Anonymous	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	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: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) LowHigh	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005T: Total Metals by ICP-AES (QCLot: 1087549)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.1 mg/kg	115	90.1	124
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.76 mg/kg	108	83.3	111
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	109	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	54.7 mg/kg	113	90.1	114
EG005T: Lead	7439-92-1	5	mg/kg	<5	55.2 mg/kg	103	85.2	111
EG005T: Nickel	7440-02-0	2	mg/kg	<2	54.8 mg/kg	106	88.3	116
EG005T: Zinc	7440-66-6	5	mg/kg	<5	104 mg/kg	99.8	88.9	112
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1087548)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.4 mg/kg	85.8	67	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1086489)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	96.0	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1086503)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	92.0	75.2	116
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	200 mg/kg	91.0	75.3	113
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	97.0	72.6	117
EP080: BTEX (QCLot: 1086489)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	96.1	67.5	125
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	91.4	69	122
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	95.7	65.3	126
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	1 mg/kg	90.9	66.5	124
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	86.1	66.7	123



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: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
					MS	Low	High
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number				
EG005T: Total Metals by ICP-AES (QCLot: 1087549)							
ES0913095-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	104	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	103	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	120	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	102	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	103	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	93.8	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1087548)							
ES0913020-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	92.1	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1086489)							
ES0913069-002	Anonymous	EP080: C6 - C9 Fraction	----	26 mg/kg	99.9	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1086503)							
ES0912962-002	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	117	70	130
		EP071: C15 - C28 Fraction	----	3140 mg/kg	92.8	70	130
		EP071: C29 - C36 Fraction	----	2860 mg/kg	91.7	70	130
EP080: BTEX (QCLot: 1086489)							
ES0913069-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	88.4	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	92.4	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	111	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	107	70	130
			106-42-3				
	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	105	70	130	



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES0913072	Page	: 1 of 5
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MR MICHAEL STACEY	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mstacey@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: HORNSLEY PARK		
C-O-C number	: 206783	Date Samples Received	: 31-AUG-2009
Sampler	: SM	Issue Date	: 04-SEP-2009
Order number	: ----		
Quote number	: SY/146/09	No. of samples received	: 1
		No. of samples analysed	: 1

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

Environmental Division Sydney

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Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag 310809-100-SM	31-AUG-2009	---	---	----	04-SEP-2009	03-MAR-2010	✓
EA055: Moisture Content							
Soil Glass Jar - Unpreserved 310809-100-SM	31-AUG-2009	----	----	----	01-SEP-2009	07-SEP-2009	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved 310809-100-SM	31-AUG-2009	02-SEP-2009	28-SEP-2009	✓	02-SEP-2009	27-FEB-2010	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved 310809-100-SM	31-AUG-2009	02-SEP-2009	28-SEP-2009	✓	03-SEP-2009	28-SEP-2009	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved 310809-100-SM	31-AUG-2009	01-SEP-2009	14-SEP-2009	✓	02-SEP-2009	11-OCT-2009	✓
Soil Glass Jar - Unpreserved 310809-100-SM	31-AUG-2009	03-SEP-2009	14-SEP-2009	✓	03-SEP-2009	14-SEP-2009	✓
EP080: BTEX							
Soil Glass Jar - Unpreserved 310809-100-SM	31-AUG-2009	03-SEP-2009	14-SEP-2009	✓	03-SEP-2009	14-SEP-2009	✓



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: **SOIL**

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)							
Moisture Content	EA055-103	2	20	10.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	11	18.2	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	19	10.5	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	9	11.1	10.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	11	9.1	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	5.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	9	11.1	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	11	9.1	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	5.3	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	9	11.1	5.0	✔	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	11	9.1	5.0	✔	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	5.3	5.0	✔	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✔	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	9	11.1	5.0	✔	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
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



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 SW846 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

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.
- For all matrices, no Matrix Spike 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.

- No Analysis Holding Time Outliers exist.

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.



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : **ES0913072**

Client : **CONSULTING EARTH SCIENTISTS**
Contact : **MR MICHAEL STACEY**
Address : **JONES BAY WHARF 19-21, LOWER
DECK, SUITE 121,
26-32 PIRRAMA ROAD
PYRMONT NSW, AUSTRALIA 2040**

Laboratory : **Environmental Division Sydney**
Contact : **Charlie Pierce**
Address : **277-289 Woodpark Road Smithfield
NSW Australia 2164**

E-mail : **mstacey@consultingearth.com.au**
Telephone : **+61 02 8569 2200**
Facsimile : **+61 02 95524399**

E-mail : **charlie.pierce@alsenviro.com**
Telephone : **+61-2-8784 8555**
Facsimile : **+61-2-8784 8500**

Project : **CES090515-DP**
Order number : **----**
C-O-C number : **206783**
Site : **HORNSLEY PARK**
Sampler : **SM**

Page : **1 of 2**
Quote number : **ES2009CONEAR0260 (SY/146/09)**
QC Level : **NEPM 1999 Schedule B(3) and ALS
QCS3 requirement**

Dates

Date Samples Received : **31-AUG-2009**
Client Requested Due Date : **04-SEP-2009**

Issue Date : **31-AUG-2009 18:19**
Scheduled Reporting Date : **04-SEP-2009**

Delivery Details

Mode of Delivery : **Carrier**
No. of coolers/boxes : **1 BAG**
Security Seal : **Intact.**

Temperature : **24.6°C**
No. of samples received : **1**
No. of samples analysed : **1**

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **Sample(s) have been received within recommended holding times.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Jacob Waugh.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (90 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 necessary 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.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA200 Asbestos Identification in Soils	SOIL - S-05 TPH/BTEX/8 Metals
ES0913072-001	[31-AUG-2009]	310809-100-SM	✓	✓

Requested Deliverables

MR MICHAEL STACEY

- *AU Certificate of Analysis - NATA (COA)	Email	mstacey@consultingearth.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mstacey@consultingearth.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mstacey@consultingearth.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	mstacey@consultingearth.com.au
- Default - Chain of Custody (COC)	Email	mstacey@consultingearth.com.au
- EDI Format - ENMRG (ENMRG)	Email	mstacey@consultingearth.com.au

MR STEPHEN MCCORMACK

- *AU Certificate of Analysis - NATA (COA)	Email	smcc23@yahoo.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	smcc23@yahoo.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	smcc23@yahoo.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	smcc23@yahoo.com.au
- Default - Chain of Custody (COC)	Email	smcc23@yahoo.com.au
- EDI Format - ENMRG (ENMRG)	Email	smcc23@yahoo.com.au

MS ANGELA MAROYA

- *AU Certificate of Analysis - NATA (COA)	Email	amaroya@consultingearth.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	amaroya@consultingearth.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	amaroya@consultingearth.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	amaroya@consultingearth.com.au
- A4 - AU Tax Invoice (INV)	Email	amaroya@consultingearth.com.au
- Default - Chain of Custody (COC)	Email	amaroya@consultingearth.com.au
- EDI Format - ENMRG (ENMRG)	Email	amaroya@consultingearth.com.au

THE CES ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	cesacctnt@consultingearth.com.au
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THE SUB RESULTS

- EDI Format - EQUIS V5 (EQUIS_V5)	Email	subresults.syd@alsenviro.com
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Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES0913164	Page	: 1 of 6
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MS ANGELA MAROYA	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: amaroya@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: REBATCH OF ES0912581		
C-O-C number	: ----	Date Samples Received	: 01-SEP-2009
Sampler	: SMC	Issue Date	: 04-SEP-2009
Site	: ----		
Quote number	: SY/146/09	No. of samples received	: 1
		No. of samples analysed	: 1

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

This document is issued in
accordance with NATA
accreditation requirements.

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	Spectroscopist	Inorganics
Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics

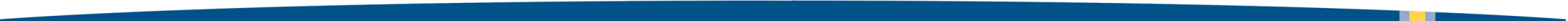
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General Comments

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 date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

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



Analytical Results

Sub-Matrix: SOIL

				Client sample ID	200809-12SM	----	----	----	----
				Client sampling date / time	20-AUG-2009 10:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES0913164-001	----	----	----	----
EN33: TCLP Leach									
Initial pH	----	0.1	pH Unit		7.7	----	----	----	----
After HCl pH	----	0.1	pH Unit		1.6	----	----	----	----
Extraction Fluid Number	----	1	-		1	----	----	----	----
Final pH	----	0.1	pH Unit		4.9	----	----	----	----



Analytical Results

Sub-Matrix: TCLP LEACHATE

Client sample ID

Client sampling date / time

				200809-12SM	----	----	----	----
				03-SEP-2009 12:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES0913164-001	----	----	----	----
EG005C: Leachable Metals by ICPAES								
Arsenic	7440-38-2	0.1	mg/L	<0.1	----	----	----	----
Cadmium	7440-43-9	0.05	mg/L	<0.05	----	----	----	----
Chromium	7440-47-3	0.1	mg/L	<0.1	----	----	----	----
Copper	7440-50-8	0.1	mg/L	<0.1	----	----	----	----
Lead	7439-92-1	0.1	mg/L	<0.1	----	----	----	----
Nickel	7440-02-0	0.1	mg/L	<0.1	----	----	----	----
Zinc	7440-66-6	0.1	mg/L	1.0	----	----	----	----
EG035C: Leachable Mercury by FIMS								
Mercury	7439-97-6	0.0010	mg/L	<0.0010	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	28.8	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	96.0	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	143	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	118	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	121	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	141	----	----	----	----



Surrogate Control Limits

Sub-Matrix: TCLP LEACHATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	94
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	10	123
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141



Environmental Division

QUALITY CONTROL REPORT

Work Order	: ES0913164	Page	: 1 of 6
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MS ANGELA MAROYA	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: amaroya@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 01-SEP-2009
C-O-C number	: ----	Issue Date	: 04-SEP-2009
Sampler	: SMC	No. of samples received	: 1
Order number	: REBATCH OF ES0912581	No. of samples analysed	: 1
Quote number	: SY/146/09		

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

This document is issued in accordance with NATA accreditation requirements.

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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Spectroscopist	Inorganics
Pabi Subba	Senior Organic Chemist (Semi-Volatile)	Organics



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 (%)
EG005C: Leachable Metals by ICPAES (QC Lot: 1088895)									
EB0913627-001	Anonymous	EG005C: Cadmium	7440-43-9	0.05	mg/L	<0.05	<0.05	0.0	No Limit
		EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Copper	7440-50-8	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	0.0	No Limit
		EG005C: Zinc	7440-66-6	0.1	mg/L	12.1	12.0	1.2	0% - 20%
EG035C: Leachable Mercury by FIMS (QC Lot: 1088906)									
EB0913627-001	Anonymous	EG035C: Mercury	7439-97-6	0.0010	mg/L	<0.0010	<0.0010	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**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005C: Leachable Metals by ICPAES (QCLot: 1088895)								
EG005C: Arsenic	7440-38-2	0.1	mg/L	<0.1	1 mg/L	102	89	119
EG005C: Cadmium	7440-43-9	0.05	mg/L	<0.05	0.250 mg/L	106	89	121
EG005C: Chromium	7440-47-3	0.1	mg/L	<0.1	1 mg/L	99.9	89	119
EG005C: Copper	7440-50-8	0.1	mg/L	<0.1	1 mg/L	105	87	121
EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	1 mg/L	105	89	119
EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	1 mg/L	101	88	120
EG005C: Zinc	7440-66-6	0.1	mg/L	<0.1	1 mg/L	102	85	121
EG035C: Leachable Mercury by FIMS (QCLot: 1088906)								
EG035C: Mercury	7439-97-6	0.001	mg/L	<0.0010	0.010 mg/L	104	83	119
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1089149)								
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	2 µg/L	103	58.6	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	2 µg/L	106	63.6	114
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	2 µg/L	99.3	62.2	113
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	2 µg/L	103	63.9	115
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	2 µg/L	107	62.6	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	2 µg/L	110	64.3	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	2 µg/L	110	63.6	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	2 µg/L	111	63.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	2 µg/L	111	64.1	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	2 µg/L	104	62.5	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	2 µg/L	101	61.7	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	2 µg/L	87.3	61.7	117
		1	µg/L	<1.0	----	----	----	----



Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1089149) - continued								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	2 µg/L	110	63.3	117
		0.5	µg/L	<0.5	----	----	----	----
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	2 µg/L	92.9	59.9	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.2	µg/L	----	2 µg/L	89.2	61.2	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	2 µg/L	94.7	59.1	118
		1	µg/L	<1.0	----	----	----	----



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

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) LowHigh	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number				
EG005C: Leachable Metals by ICPAES (QCLot: 1088895)							
EB0913627-002	Anonymous	EG005C: Arsenic	7440-38-2	1 mg/L	113	70	130
		EG005C: Cadmium	7440-43-9	0.250 mg/L	111	70	130
		EG005C: Chromium	7440-47-3	1 mg/L	104	70	130
		EG005C: Copper	7440-50-8	1 mg/L	110	70	130
		EG005C: Lead	7439-92-1	1 mg/L	107	70	130
		EG005C: Nickel	7440-02-0	1 mg/L	108	70	130
		EG005C: Zinc	7440-66-6	1 mg/L	# Not Determined	70	130
EG035C: Leachable Mercury by FIMS (QCLot: 1088906)							
EB0913627-001	Anonymous	EG035C: Mercury	7439-97-6	0.1 mg/L	120	70	130



Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES0913164	Page	: 1 of 5
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: MS ANGELA MAROYA	Contact	: Charlie Pierce
Address	: JONES BAY WHARF 19-21, LOWER DECK, SUITE 121, 26-32 PIRRAMA ROAD PYRMONT NSW, AUSTRALIA 2040	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: amaroya@consultingearth.com.au	E-mail	: charlie.pierce@alsenviro.com
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 95524399	Facsimile	: +61-2-8784 8500
Project	: CES090515-DP	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 01-SEP-2009
C-O-C number	: ----	Issue Date	: 04-SEP-2009
Sampler	: SMC	No. of samples received	: 1
Order number	: REBATCH OF ES0912581	No. of samples analysed	: 1
Quote number	: SY/146/09		

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

Environmental Division Sydney

Part of the **ALS Laboratory Group**

277-289 Woodpark Road Smithfield NSW Australia 2164

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A Campbell Brothers Limited Company



Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005C: Leachable Metals by ICPAES							
Clear Plastic Bottle - Nitric Acid; Unfiltered 200809-12SM	03-SEP-2009	03-SEP-2009	02-MAR-2010	✓	03-SEP-2009	02-MAR-2010	✓
EG035C: Leachable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered 200809-12SM	03-SEP-2009	----	----	----	03-SEP-2009	01-OCT-2009	✓
EN33: TCLP Leach							
LabSplit: Leach for organics and other tests 200809-12SM	20-AUG-2009	---	---	----	03-SEP-2009	03-SEP-2009	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved 200809-12SM	03-SEP-2009	03-SEP-2009	10-SEP-2009	✓	03-SEP-2009	13-OCT-2009	✓



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)							
Leachable Mercury by FIMS	EG035C	1	4	25.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	5	20.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Leachable Mercury by FIMS	EG035C	1	4	25.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	5	20.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Leachable Mercury by FIMS	EG035C	1	4	25.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	5	20.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Leachable Mercury by FIMS	EG035C	1	4	25.0	5.0	✓	ALS QCS3 requirement
Leachable Metals by ICPAES	EG005C	1	5	20.0	5.0	✓	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
Leachable Metals by ICPAES	EG005C	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Leachable Mercury by FIMS	EG035C	SOIL	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the TCLP solution. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	SOIL	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals in TCLP Leachate	EN25C	SOIL	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TCLP for Non & Semivolatile Analytes	EN33a	SOIL	(USEPA SW846-1311, ALS QWI-EN/33) The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.
Separatory Funnel Extraction of Liquids	ORG14	SOIL	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.



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 SW846 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							
EG005C: Leachable Metals by ICPAES	EB0913627-002	Anonymous	Zinc	7440-66-6	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

Sub-Matrix: **TCLP LEACHATE**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	ES0913164-001	200809-12SM	2,4,6-Tribromophenol	118-79-6	143 %	10-123 %	Recovery greater than upper data quality objective
EP075(SIM)T: PAH Surrogates	ES0913164-001	200809-12SM	2-Fluorobiphenyl	321-60-8	118 %	43-116 %	Recovery greater than upper data quality objective

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

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.



Environmental Division

SAMPLE RECEIPT NOTIFICATION (SRN)
Comprehensive Report

Work Order : ES0913164

Client : CONSULTING EARTH SCIENTISTS
Contact : MS ANGELA MAROYA
Address : JONES BAY WHARF 19-21, LOWER
DECK, SUITE 121,
26-32 PIRRAMA ROAD
PYRMONT NSW, AUSTRALIA 2040

E-mail : amaroya@consultingearth.com.au
Telephone : +61 02 8569 2200
Facsimile : +61 02 95524399

Project : CES090515-DP
Order number : REBATCH OF ES0912581
C-O-C number : ----
Site : ----
Sampler : SMC

Laboratory : Environmental Division Sydney
Contact : Charlie Pierce
Address : 277-289 Woodpark Road Smithfield
NSW Australia 2164

E-mail : charlie.pierce@alsenviro.com
Telephone : +61-2-8784 8555
Facsimile : +61-2-8784 8500

Page : 1 of 2

Quote number : ES2009CONEAR0260 (SY/146/09)

QC Level : NEPM 1999 Schedule B(3) and ALS
QCS3 requirement

Dates

Date Samples Received : 01-SEP-2009
Client Requested Due Date : 04-SEP-2009

Issue Date : 01-SEP-2009 17:47
Scheduled Reporting Date : **04-SEP-2009**

Delivery Details

Mode of Delivery : Carrier
No. of coolers/boxes : REBATCH
Security Seal : Intact.

Temperature : 5.2' C
No. of samples received : 1
No. of samples analysed : 1

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times.**
- **This is a rebatch of ES0912581.**
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Please direct any queries related to sample condition / numbering / breakages to Jacob Waugh
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (90 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 necessary 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.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - TCLP TCLP Leach	SOIL - W-02L 8 metals (TCLP)
ES0913164-001	20-AUG-2009 10:00	200809-12SM	✓	✓	✓

Requested Deliverables

MR STEPHEN MCCORMACK

- *AU Certificate of Analysis - NATA (COA)	Email	smcc23@yahoo.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	smcc23@yahoo.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	smcc23@yahoo.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	smcc23@yahoo.com.au
- A4 - AU Tax Invoice (INV)	Email	smcc23@yahoo.com.au
- Default - Chain of Custody (COC)	Email	smcc23@yahoo.com.au
- EDI Format - ENMRG (ENMRG)	Email	smcc23@yahoo.com.au

MS ANGELA MAROYA

- *AU Certificate of Analysis - NATA (COA)	Email	amaroya@consultingearth.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	amaroya@consultingearth.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	amaroya@consultingearth.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	amaroya@consultingearth.com.au
- A4 - AU Tax Invoice (INV)	Email	amaroya@consultingearth.com.au
- Default - Chain of Custody (COC)	Email	amaroya@consultingearth.com.au
- EDI Format - ENMRG (ENMRG)	Email	amaroya@consultingearth.com.au

THE CES ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	cesacctnt@consultingearth.com.au
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THE SUB RESULTS

- EDI Format - EQUIS V5 (EQUIS_V5)	Email	subresults.syd@alsenviro.com
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