



**CHAIN OF CUSTODY**

ALS Laboratory  
please tick →

ADELAIDE 21 Burma Road Pooraka SA 5095  
Ph: 08 8350 0390 E: adelaide@alsglobal.com

BRISBANE 32 Strand Street Stafford QLD 4033  
Ph: 07 3243 7232 E: samples.brisbane@alsglobal.com

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NOOWRA 41/3 Coary Place North Nowra NSW 2541  
Ph: 02423 2063 E: nowra@alsglobal.com

PERTH 10 Hod Way Melba WA 6000  
Ph: 08 9209 7655 E: samples.perth@alsglobal.com

SYDNEY 277-289 Woodpark Road Smithfield NSW 2164  
Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

TOWNSVILLE 14-15 Desma Court Bohle QLD 4816  
Ph: 07 4706 0500 E: townsville@alsglobal.com

WOLLONGONG 99 Kenny Street Wollongong NSW 2500  
Ph: 02 4225 3125 E: portkenbla@alsglobal.com

CLIENT: <b>ERM</b>	TURNAROUND REQUIREMENTS: <input checked="" type="checkbox"/> Standard TAT (List due date): (Standard TAT may be longer for some tests e.g. Ultra Trace Organics) <input type="checkbox"/> Non Standard or urgent TAT (List due date):	<b>FOR LABORATORY USE ONLY (Circle)</b> Contaminated/Spill/Incident? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> NA Free (24/7) Return (to ALS) present Upon receipt? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> NA Res. (to) Sample Temp. (to) Lab. on Receipt? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> NA Other Comments:
OFFICE: <b>Sydney</b>	ALS QUOTE NO.: <b>SY794/13</b>	
PROJECT: <b>Project Symphony</b>	SITE: <b>BAYSWATER / LIDDELL</b>	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
ORDER NUMBER: <b>0224193</b>	PROJECT MANAGER: <b>JOSEPH FERRING</b> CONTACT PH:	
SAMPLER: <b>STEPHEN MULLIGAN</b>	SAMPLER MOBILE:	RECEIVED BY: <b>[Signature]</b>
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	RELINQUISHED BY: <b>[Signature]</b>
Email Reports to (will default to PM if no other addresses are listed):	→ <b>symphony.molgen@erm.com</b>	DATE/TIME: <b>14/11/13 10:35</b>
Email Invoice to (will default to ALS if no other addresses are listed):	→ <b>john.ewing@erm.com</b>	DATE/TIME: <b>14/11/13 17:00</b>

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATERIAL: SOLID (S) / WATER (W)	CONTAINER INFORMATION	ANALYSIS REQUIRED including SUITES (NS, Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).												Additional Information		
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below (refer to)	TOTAL CONTAINERS	S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, Bi, Mo, Ti, Se)	S-24 TRHICs- C40/IBTEXN, PAH, Phenols	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (ED007)	PFOS/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)	Comments + Analysis BTEX TRH
8	BG-MW01-0.2	7/11/13	S	1 Jar + 1 bag	2	X	X	X	X				X				
9	BG-MW08-0.2	7/11/13	S	" "	2	X	X	X	X				X				
10	BG-MW03-1.5	7/11/13	S	" "	2					X	X			X	X		
11	BG-MW04-0.2	7/11/13	S	" "	2	X		X	X				X				
12	BG-MW05-0.2	7/11/13	S	" "	2	X		X	X				X				
13	BG-MW06-0.2	7/11/13	S	1 Jar + 1 bag	2	X		X	X				X				
14	BG-MW07-0.2	7/11/13	S	" "	2	X		X	X				X				
15	BG-MW02-0.2	7/11/13	S	" "	2	X		X	X				X				
16	BH-DB06-0.25	7/11/13	S	" "	2	X		X		X	X		X				X
17	Trip Spike	5/11/13	S	1 Jar	1												X
18	Trip Blank	5/11/13	S	1 Jar	1												X
19	ROL-07113	7/11/13	W	2xVOC, 1xSVOC, 1xmetals	4	X		X	X								X
TOTAL																	

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

## Wael Saleh

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**From:** Barbara Hanna  
**Sent:** Wednesday, 20 November 2013 8:27 AM  
**To:** Wael Saleh  
**Subject:** FW: Amendments to ERM Symphony SRNs

Hi Wael,

Could you please take care of this.

Thanks  
Barbara

---

From: Kate Fox [Kate.Fox@erm.com]  
Sent: Tuesday, 19 November 2013 5:40 PM  
To: Barbara Hanna  
Cc: ERM Australia Project Symphony MacGen  
Subject: RE: Amendments to ERM Symphony SRNs

Hi Barbara,

Thanks for that. I have a few more requests!

1) Instead of analysing for Cations and Anions, we would now like to analyse for Electrical Conductivity. So far, I think it's only the following which have been analysed for Cations and Anions:

- ES1324726-016
- ES1324726-017
- ES1324729-016
- ES1324838-001

If these could be analysed for Electrical Conductivity as well, that would be great. Going forward samples will only be analysed for Electrical Conductivity.

2) Please analyse ES1324729-007 for Electrical Conductivity.

3) Please add analysis of Metals(8), TRH, BTEX, PAH, Phenols to:

- ES1324840-001
- ES1324840-002
- ES1324840-003
- ES1324840-004
- ES1324840-005
- ES1324840-006

4) Please rename the following IDs:

Lab Sample ID	Current ID	Correct ID
ES1324729-017	TRIP SPIKE	TS_051113_SM
ES1324729-018	TRIP BLANK	TB_051113_SM
ES1324729-019	TSC	TSC_051113
ES1324729-020	R01_071113	R01_071113_SM

Many thanks,  
Please let me know if you have any questions.

Kate

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From: Barbara Hanna [mailto:Barbara.Hanna@alsglobal.com]  
Sent: Tuesday, November 19, 2013 10:14 AM  
To: Wael Saleh  
Cc: ERM Australia Project Symphony MacGen; Kate Fox  
Subject: RE: Amendments to ERM Symphony SRNs

Hi Wael,

Could you please take care of this.

Thanks!!

Kind Regards

**Barbara Hanna**

**Client Services Manager**  
**ALS | Environmental Division**

277-289 Woodpark Road  
Smithfield NSW 2164 Australia

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*Please see our latest [EnviroMail 68 - Sampling and Analysis Implications of the new NEPM - July 2013](#)*

*[EnviroMail 69 - Testing Requirements of the new NEPM - July 2013](#)*

*[EnviroMail 70 - Variation of Naphthalene by SVOC and VOC Methods in Water - July 2013](#)*

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Please consider the environment before printing this email.

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From: Kate Fox [mailto:Kate.Fox@erm.com]  
Sent: Monday, 18 November 2013 6:20 PM  
To: Barbara Hanna

Cc: ERM Australia Project Symphony MacGen  
Subject: Amendments to ERM Symphony SRNs

Hi Barbara,

I'm just going through some SRNs for the Symphony Project. Could you please amend the Sample ID on the following:

Lab Sample ID	Current ID	Correct ID
ES1324840-011	TRIP SPIKE (TS4)	TS4_151113
ES1324840-012	BLANK	TB_151113
ES1324840-013	TSC 4	TSC4_151113
ES1324841-008	LI_MW8_0.5	LI_MW08_0.5

Many thanks,  
Kate



**Kate Fox**  
Environmental Resources Management  
Level 1, 60 Leichhardt Street  
Spring Hill, Brisbane, QLD, 4000

Switch: +61 7 3839 8393 | Direct : +61 7 3007 8439 | [www.erm.com](http://www.erm.com)

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**SAMPLE RECEIPT NOTIFICATION (SRN)****Comprehensive Report**

**Work Order** : **ES1324729**

**Client** : **ENVIRO RESOURCES MANAGEMENT**      **Laboratory** : Environmental Division Sydney

**Contact** : MR JOSEPH FERRING      **Contact** : Barbara Hanna  
**Address** : GROUND FLOOR      **Address** : 277-289 Woodpark Road Smithfield  
33 SAUNDERS STREET, PYRMONT      NSW Australia 2164  
NSW 2009  
LOCKED BAG 24  
BROADWAY NSW, AUSTRALIA 2007

**E-mail** : joseph.ferring@erm.com      **E-mail** : Barbara.Hanna@alsglobal.com  
**Telephone** : +61 02 8584 8888      **Telephone** : +61 2 8784 8555  
**Facsimile** : +61 02 8584 8800      **Facsimile** : +61 2 8784 8555

**Project** : Project Symphony      **Page** : 1 of 4  
**Order number** : 0224193  
**C-O-C number** : ----      **Quote number** : ES2013ENVRES0369 (SY/794/13)  
**Site** : BAYS WATER  
**Sampler** : AM      **QC Level** : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

**Dates**

**Date Samples Received** : 14-NOV-2013      **Issue Date** : 21-NOV-2013 11:22  
**Client Requested Due Date** : 25-NOV-2013      **Scheduled Reporting Date** : **25-NOV-2013**

**Delivery Details**

**Mode of Delivery** : Carrier      **Temperature** : 4.9°C SYD - Ice present  
**No. of coolers/boxes** : 1 HARD      **No. of samples received** : 20  
**Security Seal** : Intact.      **No. of samples analysed** : 20

**General Comments**

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos and Particle Sizing analysis will be conducted by ALS Newcastle.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Breaches in recommended extraction / analysis holding times may occur. Please refer to the 'Proactive Holding Time Report' below for further details. Please contact ALS if further information is required.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

### Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - EA010 (solids): Electrical Conductivity (1:5) Electrical Conductivity (1:5)	SOIL - EA150* Particle Size Analysis by Sieving (Default sieves from SOIL - EA200	Asbestos Identification in Soils SOIL - ED007	CEC / Exchangeable Cations (ED007) -All	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP004 (Carbon) Total Organic Carbon (Calc.)	SOIL - EP066 (solids) Polychlorinated Biphenyls by GC/MS
ES1324729-001	07-NOV-2013 15:00	BA_MW01_0.1	✓				✓	✓		
ES1324729-002	07-NOV-2013 15:00	BC_MW02_0.3				✓				
ES1324729-003	07-NOV-2013 15:00	BC_MW04_0.3				✓				
ES1324729-004	07-NOV-2013 15:00	BC_MW01_0.3	✓		✓	✓	✓		✓	
ES1324729-005	07-NOV-2013 15:00	BC_SB03_0.1				✓				
ES1324729-006	07-NOV-2013 15:00	BC_SB04_0.1				✓				
ES1324729-007	07-NOV-2013 15:00	BH_SB05_0.1	✓	✓		✓	✓			
ES1324729-008	07-NOV-2013 15:00	BG_MW01_0.2				✓				✓
ES1324729-009	07-NOV-2013 15:00	BG_MW03_0.2				✓				✓
ES1324729-010	07-NOV-2013 15:00	BG_MW03_1.5	✓		✓		✓		✓	
ES1324729-011	07-NOV-2013 15:00	BG_MW04_0.2				✓				✓
ES1324729-012	07-NOV-2013 15:00	BG_MW05_0.2				✓				✓
ES1324729-013	07-NOV-2013 15:00	BG_MW06_0.2				✓				✓
ES1324729-014	07-NOV-2013 15:00	BG_MW07_0.2				✓				✓
ES1324729-015	07-NOV-2013 15:00	BG_MW02_0.2				✓				✓
ES1324729-016	07-NOV-2013 15:00	BH_SB06_0.25	✓	✓		✓	✓			✓

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - NT-1S Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S Major Anions (Cl, SO4)	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-24 TRH/BTEXN/PAH + Phenols	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1324729-001	07-NOV-2013 15:00	BA_MW01_0.1					✓	
ES1324729-002	07-NOV-2013 15:00	BC_MW02_0.3						✓
ES1324729-003	07-NOV-2013 15:00	BC_MW04_0.3						✓
ES1324729-004	07-NOV-2013 15:00	BC_MW01_0.3						✓
ES1324729-005	07-NOV-2013 15:00	BC_SB03_0.1						✓
ES1324729-006	07-NOV-2013 15:00	BC_SB04_0.1						✓
ES1324729-007	07-NOV-2013 15:00	BH_SB05_0.1						✓
ES1324729-008	07-NOV-2013 15:00	BG_MW01_0.2	✓					✓



			SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - NT-1S Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S Major Anions (Cl, SO4)	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-24 TRH/BTEXN/PAH + Phenols	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1324729-009	07-NOV-2013 15:00	BG_MW03_0.2	✓					✓
ES1324729-011	07-NOV-2013 15:00	BG_MW04_0.2	✓					✓
ES1324729-012	07-NOV-2013 15:00	BG_MW05_0.2	✓					✓
ES1324729-013	07-NOV-2013 15:00	BG_MW06_0.2	✓					✓
ES1324729-014	07-NOV-2013 15:00	BG_MW07_0.2	✓					✓
ES1324729-015	07-NOV-2013 15:00	BG_MW02_0.2	✓					✓
ES1324729-016	07-NOV-2013 15:00	BH_SB06_0.25		✓	✓			✓
ES1324729-017	05-NOV-2013 15:00	TS_051113_SM				✓		
ES1324729-018	05-NOV-2013 15:00	TB_051113_SM				✓		
ES1324729-020	05-NOV-2013 15:00	TSC_051113				✓		

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP066-PCB-WA Polychlorinated Biphenyls (PCB)	WATER - EP074 (water) Volatile Organic Compounds	WATER - W-27T TRH/BTEXN/PAH/Phenols/Total 8 Metals
ES1324729-019	07-NOV-2013 15:00	R01_071113_SM	✓	✓	✓

### Proactive Holding Time Report

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



## Requested Deliverables

### JOHN EWING

- *AU Certificate of Analysis - NATA ( COA )	Email	john.ewing@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	john.ewing@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	john.ewing@erm.com
- Attachment - Report ( SUBCO )	Email	john.ewing@erm.com
- Chain of Custody (CoC) ( COC )	Email	john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	john.ewing@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	john.ewing@erm.com
- EDI Format - XTab ( XTAB )	Email	john.ewing@erm.com

### MR JOSEPH FERRING

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Attachment - Report ( SUBCO )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTAB )	Email	joseph.ferring@erm.com

### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1324729</b>	Page	: 1 of 28
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193	Date Samples Received	: 14-NOV-2013
C-O-C number	: ----	Issue Date	: 28-NOV-2013
Sampler	: AM	No. of samples received	: 20
Site	: BAYS WATER	No. of samples analysed	: 20
Quote number	: SY/794/13		

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



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

### Signatories

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

#### Signatories

#### Position

#### Accreditation Category

Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Edwandy Fadjjar	Organic Coordinator	Sydney Organics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BA_MW01_0.1	BC_MW02_0.3	BC_MW04_0.3	BC_MW01_0.3	BC_SB03_0.1
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-001	ES1324729-002	ES1324729-003	ES1324729-004	ES1324729-005
<b>EA150: Particle Sizing</b>								
+75µm	----	1	%	----	----	----	30	----
+150µm	----	1	%	----	----	----	22	----
+300µm	----	1	%	----	----	----	19	----
+425µm	----	1	%	----	----	----	16	----
+600µm	----	1	%	----	----	----	14	----
+1180µm	----	1	%	----	----	----	11	----
+2.36mm	----	1	%	----	----	----	7	----
+4.75mm	----	1	%	----	----	----	4	----
+9.5mm	----	1	%	----	----	----	<1	----
+19.0mm	----	1	%	----	----	----	<1	----
+37.5mm	----	1	%	----	----	----	<1	----
+75.0mm	----	1	%	----	----	----	<1	----
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	6.4	----	----	8.7	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	18.1	13.3	19.6	14.2	21.7
<b>EA150: Soil Classification based on Particle Size</b>								
Fines (<75 µm)	----	1	%	----	----	----	70	----
Sand (>75 µm)	----	1	%	----	----	----	23	----
Gravel (>2mm)	----	1	%	----	----	----	7	----
Cobbles (>6cm)	----	1	%	----	----	----	<1	----
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	No	No	No
Asbestos Type	1332-21-4	0.1	--	----	-	-	-	-
Sample weight (dry)	----	0.01	g	----	431	283	523	350
APPROVED IDENTIFIER:	----	-	--	----	C.OWLER	C.OWLER	C.OWLER	C.OWLER
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	12.7	----	----	23.9	----
Exchangeable Magnesium	----	0.1	meq/100g	9.7	----	----	1.4	----
Exchangeable Potassium	----	0.1	meq/100g	1.6	----	----	0.3	----
Exchangeable Sodium	----	0.1	meq/100g	0.3	----	----	<0.1	----
Cation Exchange Capacity	----	0.1	meq/100g	24.2	----	----	25.7	----
<b>EG005T: Total Metals by ICP-AES</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BA_MW01_0.1	BC_MW02_0.3	BC_MW04_0.3	BC_MW01_0.3	BC_SB03_0.1
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-001	ES1324729-002	ES1324729-003	ES1324729-004	ES1324729-005
<b>EG005T: Total Metals by ICP-AES - Continued</b>								
Arsenic	7440-38-2	5	mg/kg	10	----	----	----	----
Barium	7440-39-3	10	mg/kg	130	----	----	----	----
Beryllium	7440-41-7	1	mg/kg	1	----	----	----	----
Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	34	----	----	----	----
Cobalt	7440-48-4	2	mg/kg	11	----	----	----	----
Copper	7440-50-8	5	mg/kg	23	----	----	----	----
Lead	7439-92-1	5	mg/kg	19	----	----	----	----
Manganese	7439-96-5	5	mg/kg	227	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
Nickel	7440-02-0	2	mg/kg	26	----	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
Vanadium	7440-62-2	5	mg/kg	86	----	----	----	----
Zinc	7440-66-6	5	mg/kg	75	----	----	----	----
Thallium	7440-28-0	5	mg/kg	<5	----	----	----	----
Arsenic	7440-38-2	5	mg/kg	----	7	6	6	14
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	18	22	18	24
Copper	7440-50-8	5	mg/kg	----	19	20	17	24
Lead	7439-92-1	5	mg/kg	----	12	12	10	19
Nickel	7440-02-0	2	mg/kg	----	17	16	21	18
Zinc	7440-66-6	5	mg/kg	----	60	65	50	76
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
<b>EP004: Organic Matter</b>								
Organic Matter	----	0.5	%	----	----	----	0.6	----
Total Organic Carbon	----	0.5	%	----	----	----	<0.5	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BA_MW01_0.1	BC_MW02_0.3	BC_MW04_0.3	BC_MW01_0.3	BC_SB03_0.1
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-001	ES1324729-002	ES1324729-003	ES1324729-004	ES1324729-005
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BA_MW01_0.1	BC_MW02_0.3	BC_MW04_0.3	BC_MW01_0.3	BC_SB03_0.1
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-001	ES1324729-002	ES1324729-003	ES1324729-004	ES1324729-005
<b>EP080/071: Total Petroleum Hydrocarbons - Continued</b>								
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	101	98.3	101	92.2	102
2-Chlorophenol-D4	93951-73-6	0.1	%	111	107	109	101	112
2,4,6-Tribromophenol	118-79-6	0.1	%	117	105	109	99.6	119
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	113	107	112	102	116
Anthracene-d10	1719-06-8	0.1	%	100	95.7	100	92.4	103
4-Terphenyl-d14	1718-51-0	0.1	%	99.8	97.0	102	93.0	102
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	96.4	98.9	94.0	100	105
Toluene-D8	2037-26-5	0.1	%	73.9	104	86.2	101	96.5
4-Bromofluorobenzene	460-00-4	0.1	%	79.3	110	88.9	96.3	95.1



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BC_SB04_0.1	BH_SB05_0.1	BG_MW01_0.2	BG_MW03_0.2	BG_MW03_1.5
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-006	ES1324729-007	ES1324729-008	ES1324729-009	ES1324729-010
<b>EA150: Particle Sizing</b>								
+75µm	----	1	%	----	----	----	----	44
+150µm	----	1	%	----	----	----	----	42
+300µm	----	1	%	----	----	----	----	42
+425µm	----	1	%	----	----	----	----	41
+600µm	----	1	%	----	----	----	----	41
+1180µm	----	1	%	----	----	----	----	40
+2.36mm	----	1	%	----	----	----	----	37
+4.75mm	----	1	%	----	----	----	----	29
+9.5mm	----	1	%	----	----	----	----	17
+19.0mm	----	1	%	----	----	----	----	<1
+37.5mm	----	1	%	----	----	----	----	<1
+75.0mm	----	1	%	----	----	----	----	<1
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	----	7.9	----	----	4.0
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	5210	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	9.0	15.6	16.8	17.5	----
<b>EA150: Soil Classification based on Particle Size</b>								
Fines (<75 µm)	----	1	%	----	----	----	----	56
Sand (>75 µm)	----	1	%	----	----	----	----	7
Gravel (>2mm)	----	1	%	----	----	----	----	37
Cobbles (>6cm)	----	1	%	----	----	----	----	<1
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	----
Asbestos Type	1332-21-4	0.1	--	-	-	-	-	----
Sample weight (dry)	----	0.01	g	280	328	388	365	----
APPROVED IDENTIFIER:	----	-	--	C.OWLER	C.OWLER	C.OWLER	C.OWLER	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	----	34.9	----	----	17.4
Exchangeable Magnesium	----	0.1	meq/100g	----	9.0	----	----	1.9
Exchangeable Potassium	----	0.1	meq/100g	----	0.5	----	----	0.2
Exchangeable Sodium	----	0.1	meq/100g	----	1.6	----	----	0.1



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BC_SB04_0.1	BH_SB05_0.1	BG_MW01_0.2	BG_MW03_0.2	BG_MW03_1.5
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-006	ES1324729-007	ES1324729-008	ES1324729-009	ES1324729-010
<b>ED007: Exchangeable Cations - Continued</b>								
Cation Exchange Capacity	----	0.1	meq/100g	----	46.1	----	----	19.6
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	14	9	10	14	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	26	25	18	24	----
Copper	7440-50-8	5	mg/kg	26	41	22	16	----
Lead	7439-92-1	5	mg/kg	21	20	18	18	----
Nickel	7440-02-0	2	mg/kg	22	25	21	16	----
Zinc	7440-66-6	5	mg/kg	77	136	406	62	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
<b>EP004: Organic Matter</b>								
Organic Matter	----	0.5	%	----	----	----	----	1.7
Total Organic Carbon	----	0.5	%	----	----	----	----	1.0
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	<0.1	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	----	<0.5	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	<0.5	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	<0.5	<0.5	----
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	<0.5	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	<0.5	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	<0.5	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	<0.5	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	<5	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	<5	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	<5	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	<5	<5	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	<0.5	<0.5	----





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BC_SB04_0.1	BH_SB05_0.1	BG_MW01_0.2	BG_MW03_0.2	BG_MW03_1.5
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-006	ES1324729-007	ES1324729-008	ES1324729-009	ES1324729-010
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	----	----	<0.5	<0.5	----
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	----	<0.5	<0.5	----
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	----	<5	<5	----
Chloromethane	74-87-3	5	mg/kg	----	----	<5	<5	----
Vinyl chloride	75-01-4	5	mg/kg	----	----	<5	<5	----
Bromomethane	74-83-9	5	mg/kg	----	----	<5	<5	----
Chloroethane	75-00-3	5	mg/kg	----	----	<5	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	<5	<5	----
1,1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	<0.5	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg	----	----	<0.5	<0.5	----
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	<0.5	<0.5	----
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	<0.5	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	<0.5	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg	----	----	<0.5	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	<0.5	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	<0.5	<0.5	----
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	<0.5	<0.5	----
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	<0.5	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	<0.5	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	<0.5	<0.5	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BC_SB04_0.1	BH_SB05_0.1	BG_MW01_0.2	BG_MW03_0.2	BG_MW03_1.5
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-006	ES1324729-007	ES1324729-008	ES1324729-009	ES1324729-010
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	<0.5	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg	----	----	<0.5	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	<0.5	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	<0.5	<0.5	----
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	<0.5	<0.5	----
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	<0.5	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	<0.5	<0.5	----
Bromoform	75-25-2	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	----	<5	<5	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BC_SB04_0.1	BH_SB05_0.1	BG_MW01_0.2	BG_MW03_0.2	BG_MW03_1.5
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-006	ES1324729-007	ES1324729-008	ES1324729-009	ES1324729-010
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	<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	----
Chrysene	218-01-9	0.5	mg/kg	<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	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<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	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<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	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	----
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BC_SB04_0.1	BH_SB05_0.1	BG_MW01_0.2	BG_MW03_0.2	BG_MW03_1.5
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-006	ES1324729-007	ES1324729-008	ES1324729-009	ES1324729-010
<b>EP080: BTEXN</b>								
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	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	65.9	64.0	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	110	100	----
Toluene-D8	2037-26-5	0.1	%	----	----	86.8	78.2	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	86.8	80.0	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	97.2	102	99.8	99.0	----
2-Chlorophenol-D4	93951-73-6	0.1	%	105	111	109	108	----
2,4,6-Tribromophenol	118-79-6	0.1	%	110	112	111	114	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	108	112	111	111	----
Anthracene-d10	1719-06-8	0.1	%	94.8	99.5	98.6	97.8	----
4-Terphenyl-d14	1718-51-0	0.1	%	94.2	98.8	96.5	97.0	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	92.9	88.6	113	103	----
Toluene-D8	2037-26-5	0.1	%	88.8	76.6	82.2	74.1	----
4-Bromofluorobenzene	460-00-4	0.1	%	86.6	82.4	86.4	79.0	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_0.2	BG_MW05_0.2	BG_MW06_0.2	BG_MW07_0.2	BG_MW02_0.2
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-011	ES1324729-012	ES1324729-013	ES1324729-014	ES1324729-015
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	16.3	17.0	12.8	14.0	6.5
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	0.1	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	253	380	525	489	812
APPROVED IDENTIFIER:	----	-	--	C.OWLER	C.OWLER	C.OWLER	C.OWLER	C.OWLER
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	10	<5	6	8	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	19	29	17	7	16
Copper	7440-50-8	5	mg/kg	19	25	14	18	9
Lead	7439-92-1	5	mg/kg	17	9	9	8	8
Nickel	7440-02-0	2	mg/kg	17	33	18	8	13
Zinc	7440-66-6	5	mg/kg	57	67	58	54	41
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	<5	<5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_0.2	BG_MW05_0.2	BG_MW06_0.2	BG_MW07_0.2	BG_MW02_0.2
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-011	ES1324729-012	ES1324729-013	ES1324729-014	ES1324729-015
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	<5	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_0.2	BG_MW05_0.2	BG_MW06_0.2	BG_MW07_0.2	BG_MW02_0.2
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-011	ES1324729-012	ES1324729-013	ES1324729-014	ES1324729-015
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_0.2	BG_MW05_0.2	BG_MW06_0.2	BG_MW07_0.2	BG_MW02_0.2
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-011	ES1324729-012	ES1324729-013	ES1324729-014	ES1324729-015
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<b>140</b>	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<b>100</b>	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<b>240</b>	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<b>130</b>	<b>200</b>	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<b>130</b>	<b>200</b>	<50	<50





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_0.2	BG_MW05_0.2	BG_MW06_0.2	BG_MW07_0.2	BG_MW02_0.2
				07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00	07-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324729-011	ES1324729-012	ES1324729-013	ES1324729-014	ES1324729-015
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued</b>								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	62.2	63.1	62.3	60.3	61.4
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	112	108	111	106	103
Toluene-D8	2037-26-5	0.1	%	96.8	84.6	86.0	88.6	82.5
4-Bromofluorobenzene	460-00-4	0.1	%	94.7	87.7	87.7	83.4	84.0
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	97.9	96.4	94.5	102	98.3
2-Chlorophenol-D4	93951-73-6	0.1	%	107	106	103	111	106
2,4,6-Tribromophenol	118-79-6	0.1	%	114	109	110	119	106
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	110	110	106	114	108
Anthracene-d10	1719-06-8	0.1	%	96.5	96.8	92.3	101	96.0
4-Terphenyl-d14	1718-51-0	0.1	%	96.2	96.6	92.5	99.5	95.0
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	115	112	114	109	106
Toluene-D8	2037-26-5	0.1	%	91.6	80.2	81.4	83.9	78.2
4-Bromofluorobenzene	460-00-4	0.1	%	94.8	86.3	87.3	83.4	82.9



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BH_SB06_0.25	TS_051113_SM	TB_051113_SM	TSC_051113	----
				07-NOV-2013 15:00	05-NOV-2013 15:00	05-NOV-2013 15:00	05-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1324729-016	ES1324729-017	ES1324729-018	ES1324729-020	----
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	8.7	----	----	----	----
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	182	----	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	12.7	----	----	----	----
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	----	----	----
Asbestos Type	1332-21-4	0.1	--	-	----	----	----	----
Sample weight (dry)	----	0.01	g	543	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	C.OWLER	----	----	----	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	10.0	----	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	2.8	----	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	0.2	----	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	0.5	----	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	13.6	----	----	----	----
<b>ED040S : Soluble Sulfate by ICPAES</b>								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	80	----	----	----	----
<b>ED045G: Chloride Discrete analyser</b>								
Chloride	16887-00-6	10	mg/kg	150	----	----	----	----
<b>ED093S: Soluble Major Cations</b>								
Calcium	7440-70-2	10	mg/kg	30	----	----	----	----
Magnesium	7439-95-4	10	mg/kg	60	----	----	----	----
Sodium	7440-23-5	10	mg/kg	140	----	----	----	----
Potassium	7440-09-7	10	mg/kg	160	----	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	15	----	----	----	----
Copper	7440-50-8	5	mg/kg	16	----	----	----	----
Lead	7439-92-1	5	mg/kg	9	----	----	----	----
Nickel	7440-02-0	2	mg/kg	17	----	----	----	----
Zinc	7440-66-6	5	mg/kg	43	----	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BH_SB06_0.25	TS_051113_SM	TB_051113_SM	TSC_051113	----
				07-NOV-2013 15:00	05-NOV-2013 15:00	05-NOV-2013 15:00	05-NOV-2013 15:00	----
				ES1324729-016	ES1324729-017	ES1324729-018	ES1324729-020	----
Compound	CAS Number	LOR	Unit					
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	----	----	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	----	----	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	----	----	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	----	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	----	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BH_SB06_0.25	TS_051113_SM	TB_051113_SM	TSC_051113	----
				07-NOV-2013 15:00	05-NOV-2013 15:00	05-NOV-2013 15:00	05-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1324729-016	ES1324729-017	ES1324729-018	ES1324729-020	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	69	<10	104	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	76	<10	113	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	44	<10	72	----
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	0.7	<0.2	0.8	----
Toluene	108-88-3	0.5	mg/kg	<0.5	16.0	<0.5	21.8	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.0	<0.5	2.4	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	9.4	<0.5	11.4	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	3.7	<0.5	4.5	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	13.1	<0.5	15.9	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	31.8	<0.2	40.9	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	99.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	108	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	108	----	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	111	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	99.0	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	98.4	----	----	----	----



### Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

<b>BH_SB06_0.25</b>	<b>TS_051113_SM</b>	<b>TB_051113_SM</b>	<b>TSC_051113</b>	----
07-NOV-2013 15:00	05-NOV-2013 15:00	05-NOV-2013 15:00	05-NOV-2013 15:00	----

Client sampling date / time

<b>ES1324729-016</b>	<b>ES1324729-017</b>	<b>ES1324729-018</b>	<b>ES1324729-020</b>	----
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Compound	CAS Number	LOR	Unit
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#### EP075(SIM)T: PAH Surrogates - Continued

#### EP080S: TPH(V)/BTEX Surrogates

Compound	CAS Number	LOR	Unit	BH_SB06_0.25	TS_051113_SM	TB_051113_SM	TSC_051113	----
<b>1,2-Dichloroethane-D4</b>	17060-07-0	0.1	%	<b>91.6</b>	<b>96.4</b>	<b>91.7</b>	<b>95.4</b>	----
<b>Toluene-D8</b>	2037-26-5	0.1	%	<b>73.8</b>	<b>88.7</b>	<b>74.5</b>	<b>107</b>	----
<b>4-Bromofluorobenzene</b>	460-00-4	0.1	%	<b>84.3</b>	<b>93.1</b>	<b>80.0</b>	<b>105</b>	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_071113\_SM

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Client sampling date / time

07-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1324729-019	---	---	---	---
<b>EG020T: Total Metals by ICP-MS</b>								
Arsenic	7440-38-2	0.001	mg/L	<0.001	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	---	---	---	---
Chromium	7440-47-3	0.001	mg/L	<0.001	---	---	---	---
Copper	7440-50-8	0.001	mg/L	<0.001	---	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	---	---	---	---
Zinc	7440-66-6	0.005	mg/L	<0.005	---	---	---	---
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	---	---	---	---
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	---	1	µg/L	<1	---	---	---	---
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	5	µg/L	<5	---	---	---	---
Isopropylbenzene	98-82-8	5	µg/L	<5	---	---	---	---
n-Propylbenzene	103-65-1	5	µg/L	<5	---	---	---	---
1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	---	---	---	---
sec-Butylbenzene	135-98-8	5	µg/L	<5	---	---	---	---
1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	---	---	---	---
tert-Butylbenzene	98-06-6	5	µg/L	<5	---	---	---	---
p-Isopropyltoluene	99-87-6	5	µg/L	<5	---	---	---	---
n-Butylbenzene	104-51-8	5	µg/L	<5	---	---	---	---
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	50	µg/L	<50	---	---	---	---
2-Butanone (MEK)	78-93-3	50	µg/L	<50	---	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	---	---	---	---
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	---	---	---	---
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	5	µg/L	<5	---	---	---	---
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	5	µg/L	<5	---	---	---	---
1,2-Dichloropropane	78-87-5	5	µg/L	<5	---	---	---	---
cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	---	---	---	---
trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_071113\_SM

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Client sampling date / time

07-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1324729-019	---	---	---	---
<b>EP074D: Fumigants - Continued</b>								
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	---	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	---	---	---	---
Chloromethane	74-87-3	50	µg/L	<50	---	---	---	---
Vinyl chloride	75-01-4	50	µg/L	<50	---	---	---	---
Bromomethane	74-83-9	50	µg/L	<50	---	---	---	---
Chloroethane	75-00-3	50	µg/L	<50	---	---	---	---
Trichlorofluoromethane	75-69-4	50	µg/L	<50	---	---	---	---
1.1-Dichloroethene	75-35-4	5	µg/L	<5	---	---	---	---
Iodomethane	74-88-4	5	µg/L	<5	---	---	---	---
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	---	---	---	---
1.1-Dichloroethane	75-34-3	5	µg/L	<5	---	---	---	---
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	---	---	---	---
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	---	---	---	---
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	---	---	---	---
Carbon Tetrachloride	56-23-5	5	µg/L	<5	---	---	---	---
1.2-Dichloroethane	107-06-2	5	µg/L	<5	---	---	---	---
Trichloroethene	79-01-6	5	µg/L	<5	---	---	---	---
Dibromomethane	74-95-3	5	µg/L	<5	---	---	---	---
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	---	---	---	---
1.3-Dichloropropane	142-28-9	5	µg/L	<5	---	---	---	---
Tetrachloroethene	127-18-4	5	µg/L	<5	---	---	---	---
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	---	---	---	---
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	---	---	---	---
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	---	---	---	---
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	---	---	---	---
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	---	---	---	---
Pentachloroethane	76-01-7	5	µg/L	<5	---	---	---	---
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	---	---	---	---
Hexachlorobutadiene	87-68-3	5	µg/L	<5	---	---	---	---
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	5	µg/L	<5	---	---	---	---
Bromobenzene	108-86-1	5	µg/L	<5	---	---	---	---
2-Chlorotoluene	95-49-8	5	µg/L	<5	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_071113\_SM

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Client sampling date / time

07-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1324729-019	---	---	---	---
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
4-Chlorotoluene	106-43-4	5	µg/L	<5	---	---	---	---
1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	---	---	---	---
1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	---	---	---	---
1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	---	---	---	---
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	5	µg/L	<5	---	---	---	---
Bromodichloromethane	75-27-4	5	µg/L	<5	---	---	---	---
Dibromochloromethane	124-48-1	5	µg/L	<5	---	---	---	---
Bromoform	75-25-2	5	µg/L	<5	---	---	---	---
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	7	µg/L	<7	---	---	---	---
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	1.0	µg/L	<1.0	---	---	---	---
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	---	---	---	---
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	---	---	---	---
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	---	---	---	---
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	---	---	---	---
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	---	---	---	---
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	---	---	---	---
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	---	---	---	---
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	---	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	---	---	---	---





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_071113\_SM

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Client sampling date / time

07-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1324729-019	---	---	---	---
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### EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued

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	<0.6	---	---	---	---
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	---	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	---	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	---	---	---	---

### EP080/071: Total Petroleum Hydrocarbons

C6 - C9 Fraction	----	20	µg/L	<20	---	---	---	---
C10 - C14 Fraction	----	50	µg/L	<50	---	---	---	---
C15 - C28 Fraction	----	100	µg/L	<100	---	---	---	---
C29 - C36 Fraction	----	50	µg/L	<50	---	---	---	---
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	---	---	---	---

### EP080/071: Total Recoverable Hydrocarbons - NEPM 2013

C6 - C10 Fraction	C6_C10	20	µg/L	<20	---	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	---	---	---	---
>C10 - C16 Fraction	>C10_C16	100	µg/L	<100	---	---	---	---
>C16 - C34 Fraction	----	100	µg/L	<100	---	---	---	---
>C34 - C40 Fraction	----	100	µg/L	<100	---	---	---	---
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	---	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	---	---	---	---

### EP080: BTEXN

Benzene	71-43-2	1	µg/L	<1	---	---	---	---
Toluene	108-88-3	2	µg/L	<2	---	---	---	---
Ethylbenzene	100-41-4	2	µg/L	<2	---	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	---	---	---	---
ortho-Xylene	95-47-6	2	µg/L	<2	---	---	---	---



## Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Client sample ID

**R01\_071113\_SM**

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Client sampling date / time

07-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1324729-019	----	----	----	----
<b>EP080: BTEXN - Continued</b>								
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	64.8	----	----	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	101	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	117	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	103	----	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	31.5	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	55.0	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	58.6	----	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	64.0	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	67.6	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	77.9	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	99.5	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	99.0	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	93.2	----	----	----	----



## Analytical Results

### Descriptive Results

Sub-Matrix: **SOIL**

<i>Method: Compound</i>	<i>Client sample ID - Client sampling date / time</i>	<i>Analytical Results</i>
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BC_MW02_0.3 - 07-NOV-2013 15:00	Pale orange clay soil with a trace of vegetation.
EA200: Description	BC_MW04_0.3 - 07-NOV-2013 15:00	Pale orange-brown clay soil with some orange rocks plus a trace of vegetation.
EA200: Description	BC_MW01_0.3 - 07-NOV-2013 15:00	Pale brown clay soil with some quartz grains plus a trace of vegetation.
EA200: Description	BC_SB03_0.1 - 07-NOV-2013 15:00	Mid brown clay soil with some small grey rocks plus some vegetation.
EA200: Description	BC_SB04_0.1 - 07-NOV-2013 15:00	Mid brown clay soil with some small grey rocks plus some vegetation.
EA200: Description	BH_SB05_0.1 - 07-NOV-2013 15:00	Pale grey clay soil with a trace of vegetation.
EA200: Description	BG_MW01_0.2 - 07-NOV-2013 15:00	Pale brown clay soil with a trace of vegetation.
EA200: Description	BG_MW03_0.2 - 07-NOV-2013 15:00	Pale brown clay soil with a trace of vegetation.
EA200: Description	BG_MW04_0.2 - 07-NOV-2013 15:00	Mid brown clay soil with some vegetation.
EA200: Description	BG_MW05_0.2 - 07-NOV-2013 15:00	Mid brown clay soil with some vegetation.
EA200: Description	BG_MW06_0.2 - 07-NOV-2013 15:00	Mid brown clay soil with some vegetation plus some small red rocks.
EA200: Description	BG_MW07_0.2 - 07-NOV-2013 15:00	Pale brown clay soil with some brown rocks plus some quartz grains plus a trace of vegetation.
EA200: Description	BG_MW02_0.2 - 07-NOV-2013 15:00	Pale brown clay soil with some brown and red rocks plus some slag and quartz grains plus a trace of vegetation.
EA200: Description	BH_SB06_0.25 - 07-NOV-2013 15:00	Pale orange clay soil with some red rocks plus some quartz grains and a trace of vegetation.



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	28.5	129
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	78.3	133.2
Toluene-D8	2037-26-5	79.1	128.9
4-Bromofluorobenzene	460-00-4	80.8	123.7
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10.0	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27.4	113
4-Terphenyl-d14	1718-51-0	32	112
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

# Certificate of Analysis

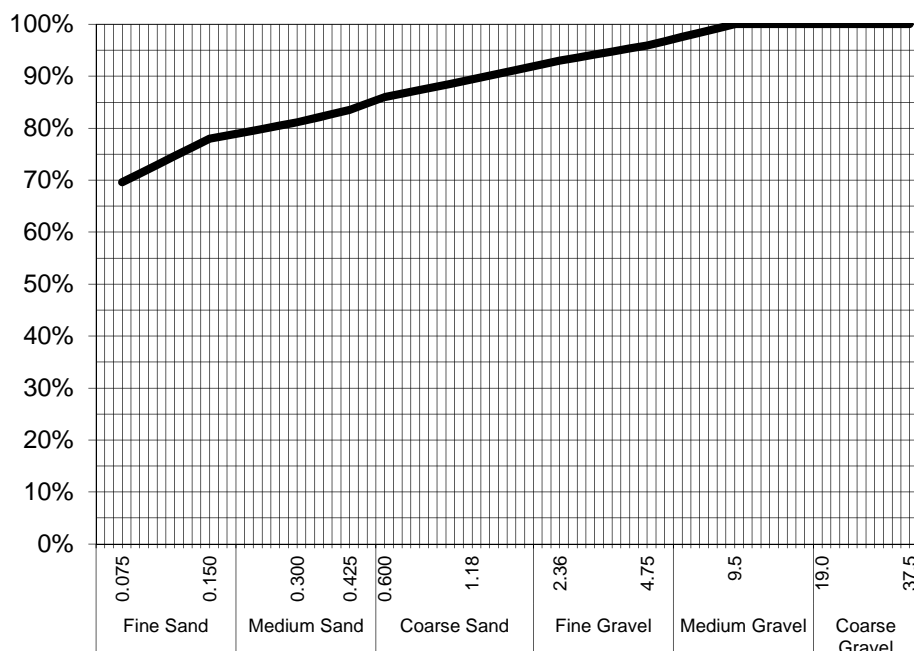
ALS Laboratory Group Pty Ltd  
5 Rosegum Road  
Warabrook, NSW 2304  
pH 02 4968 9433  
fax 02 4968 0349  
samples.newcastle@alsenviro.com

**ALS Environmental**  
**Newcastle, NSW**



**CLIENT:** Joseph Ferring **DATE REPORTED:** 27-Nov-2013  
**COMPANY:** Enviro Resources Management **DATE RECEIVED:** 14-Nov-2013  
**ADDRESS:** Ground Floor **REPORT NO:** ES1324729-004 / PSD  
33 Saunders Street, Pyrmont  
NSW 2009  
**PROJECT:** Project Symphony **SAMPLE ID:** BC\_MW01\_0.3

## Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	96%
2.36	93%
1.18	89%
0.600	86%
0.425	84%
0.300	81%
0.150	78%
0.075	70%

Samples analysed as received.

## Sample Comments:

**Loss on Pretreatment** NA

**Sample Description:** Fines and sand

**Test Method:** AS1289.3.6.1

**Analysed:** 25-Nov-13

**Limit of Reporting:** 1%

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**Hamish Murray**  
Laboratory Supervisor, Newcastle  
**Authorised Signatory**

# Certificate of Analysis

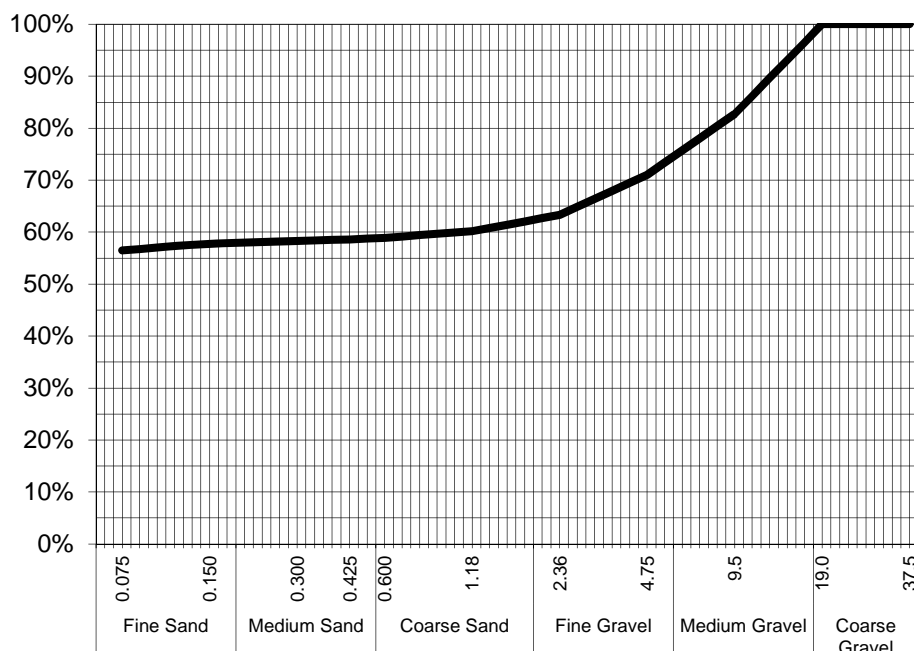
ALS Laboratory Group Pty Ltd  
5 Rosegum Road  
Warabrook, NSW 2304  
pH 02 4968 9433  
fax 02 4968 0349  
samples.newcastle@alsenviro.com

**ALS Environmental**  
**Newcastle, NSW**



**CLIENT:** Joseph Ferring **DATE REPORTED:** 27-Nov-2013  
**COMPANY:** Enviro Resources Management **DATE RECEIVED:** 14-Nov-2013  
**ADDRESS:** Ground Floor **REPORT NO:** ES1324729-010 / PSD  
33 Saunders Street, Pyrmont  
NSW 2009  
**PROJECT:** Project Symphony **SAMPLE ID:** BG\_MW03\_1.5

## Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	83%
4.75	71%
2.36	63%
1.18	60%
0.600	59%
0.425	59%
0.300	58%
0.150	58%
0.075	57%

Samples analysed as received.

## Sample Comments:

**Loss on Pretreatment** NA

**Sample Description:** Fines and gravel

**Test Method:** AS1289.3.6.1

**Analysed:** 25-Nov-13

**Limit of Reporting:** 1%

**NATA Accreditation: 825 Site: Newcastle**  
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**Hamish Murray**  
Laboratory Supervisor, Newcastle  
**Authorised Signatory**

## QUALITY CONTROL REPORT

Work Order	: <b>ES1324729</b>	Page	: 1 of 28
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYS WATER	Date Samples Received	: 14-NOV-2013
C-O-C number	: ----	Issue Date	: 28-NOV-2013
Sampler	: AM	No. of samples received	: 20
Order number	: 0224193	No. of samples analysed	: 20
Quote number	: SY/794/13		

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



## 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



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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>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Edwandy Fadjjar	Organic Coordinator	Sydney Organics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics





### 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

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3163978)</b>									
ES1324349-071	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.7	7.8	0.0	0% - 20%
ES1324729-007	BH_SB05_0.1	EA002: pH Value	----	0.1	pH Unit	7.9	7.9	0.0	0% - 20%
<b>EA010: Conductivity (QC Lot: 3173376)</b>									
ES1324883-002	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	92	94	1.3	0% - 20%
ES1324883-012	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	30	31	0.0	0% - 20%
<b>EA010: Conductivity (QC Lot: 3177073)</b>									
ES1324729-007	BH_SB05_0.1	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	5210	5140	1.4	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3164563)</b>									
ES1324729-002	BC_MW02_0.3	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.3	11.7	12.6	0% - 50%
ES1324729-014	BG_MW07_0.2	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.0	12.7	9.8	0% - 50%
<b>ED007: Exchangeable Cations (QC Lot: 3161477)</b>									
ES1324436-001	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	5.5	5.4	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.1	0.1	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	5.9	5.9	0.0	0% - 20%
ES1324590-008	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	7.1	6.8	4.1	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	5.9	5.8	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	13.6	13.3	2.6	0% - 20%
<b>ED040S: Soluble Major Anions (QC Lot: 3163979)</b>									
ES1324933-001	Anonymous	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	20	20	0.0	0% - 20%
ES1324935-010	Anonymous	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	20	20	0.0	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 3163981)</b>									
ES1324726-016	Anonymous	ED045G: Chloride	16887-00-6	10	mg/kg	40	50	0.0	No Limit
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3170993)</b>									
ES1324726-017	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	100	90	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	17	15	13.9	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	14	14	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	20	21	8.1	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	11	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3170993) - continued</b>									
ES1324726-017	Anonymous	EG005T: Copper	7440-50-8	5	mg/kg	21	19	9.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	24	16	42.5	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	126	113	10.3	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	29	30	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	3680	4010	8.6	0% - 20%
		EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
ES1324729-005	BC_SB03_0.1	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	120	140	17.0	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	24	24	0.0	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	7	7	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	18	18	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	14	15	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	24	23	5.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	22	13.3	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	169	163	3.2	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	54	59	9.3	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	76	65	14.5	0% - 50%
		EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
		<b>EG005T: Total Metals by ICP-AES (QC Lot: 3170995)</b>							
ES1324729-016	BH_SB06_0.25	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	19	23.1	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	17	18	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	20	21.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	11	16.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	43	45	5.8	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
ES1324838-005	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	21	22	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	10	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	18	19	6.1	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	28	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	24	25	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	48	48	0.0	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3170994)</b>									



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 (%)
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3170994) - continued</b>									
ES1324726-017	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1324729-005	BC_SB03_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP004: Organic Matter (QC Lot: 3162814)</b>									
ES1324728-001	Anonymous	EP004: Organic Matter	----	0.5	%	6.0	5.8	3.5	0% - 50%
		EP004: Total Organic Carbon	----	0.5	%	3.5	3.4	3.5	No Limit
ES1324746-008	Anonymous	EP004: Organic Matter	----	0.5	%	0.7	0.7	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3166266)</b>									
ES1324722-002	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1324729-008	BG_MW01_0.2	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3161744)</b>									
ES1324729-008	BG_MW01_0.2	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074B: Oxygenated Compounds (QC Lot: 3161744)</b>									
ES1324729-008	BG_MW01_0.2	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3161744)</b>									
ES1324729-008	BG_MW01_0.2	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3161744)</b>									
ES1324729-008	BG_MW01_0.2	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3161744)</b>									
ES1324729-008	BG_MW01_0.2	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3161744) - continued</b>									
ES1324729-008	BG_MW01_0.2	EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3161744)</b>									
ES1324729-008	BG_MW01_0.2	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3161744)</b>									
ES1324729-008	BG_MW01_0.2	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3161744)</b>									
ES1324729-008	BG_MW01_0.2	EP074: Naphthalene	91-20-3	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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3166268)</b>									
ES1324729-001	BA_MW01_0.1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
ES1324729-011	BG_MW04_0.2	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3166268)</b>									
ES1324729-001	BA_MW01_0.1	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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3166268) - continued</b>									
ES1324729-001	BA_MW01_0.1	EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1324729-011	BG_MW04_0.2	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3161743)</b>									
ES1324729-008	BG_MW01_0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1324729-011	BG_MW04_0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3166267)</b>									
ES1324729-001	BA_MW01_0.1	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
ES1324729-011	BG_MW04_0.2	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3161743)</b>									
ES1324729-008	BG_MW01_0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1324729-011	BG_MW04_0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166267)</b>									
ES1324729-001	BA_MW01_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	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 (%)
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166267) - continued</b>									
ES1324729-011	BG_MW04_0.2	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3161743)</b>									
ES1324729-008	BG_MW01_0.2	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
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1324729-011	BG_MW04_0.2	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
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
<b>Sub-Matrix: WATER</b>									
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 (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 3167670)</b>									
ES1324726-024	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
ES1325020-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0004	0.0004	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.016	0.019	18.1	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.829	0.980	16.6	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.018	0.017	0.0	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.014	0.016	13.0	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	1.18	1.36	14.0	0% - 20%
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3163263)</b>									
EP1308602-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES1324749-003	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3168842)</b>									
ES1324853-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<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 (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3168842) - continued</b>									
ES1324853-001	Anonymous	EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES1324853-005	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit		
<b>EP074B: Oxygenated Compounds (QC Lot: 3168842)</b>									
ES1324853-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES1324853-005	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3168842)</b>									
ES1324853-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES1324853-005	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3168842)</b>									
ES1324853-001	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES1324853-005	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3168842)</b>									
ES1324853-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3168842) - continued</b>									
ES1324853-001	Anonymous	EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit		
ES1324853-005	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	65	65	0.0	0% - 50%
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3168842) - continued</b>									
ES1324853-005	Anonymous	EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3168842)</b>									
ES1324853-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES1324853-005	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3168842)</b>									
ES1324853-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES1324853-005	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<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 (%)
<b>EP074G: Trihalomethanes (QC Lot: 3168842) - continued</b>									
ES1324853-005	Anonymous	EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3168842)</b>									
ES1324853-001	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit
ES1324853-005	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3168843)</b>									
ES1324853-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES1324853-005	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	50	70	20.4	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3168843)</b>									
ES1324853-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES1324853-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	50	70	24.2	No Limit
<b>EP080: BTEXN (QC Lot: 3168843)</b>									
ES1324853-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES1324853-005	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA010: Conductivity (QCLot: 3173376)</b>									
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	101	70	130	
<b>EA010: Conductivity (QCLot: 3177073)</b>									
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	115	70	130	
<b>ED007: Exchangeable Cations (QCLot: 3161477)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>ED040S: Soluble Major Anions (QCLot: 3163979)</b>									
ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	<10	750 mg/kg	90.3	84	112	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3163981)</b>									
ED045G: Chloride	16887-00-6	10	mg/kg	<10	5000 mg/kg	99.8	79	125	
<b>ED093S: Soluble Major Cations (QCLot: 3163980)</b>									
ED093S: Calcium	7440-70-2	10	mg/kg	<10	250 mg/kg	94.4	85	113	
ED093S: Magnesium	7439-95-4	10	mg/kg	<10	250 mg/kg	92.2	86	116	
ED093S: Sodium	7440-23-5	10	mg/kg	<10	250 mg/kg	94.5	80	112	
ED093S: Potassium	7440-09-7	10	mg/kg	<10	250 mg/kg	93.4	88	114	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170993)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	106	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	108	83	129	
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	107	88	130	
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	114	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	106	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	113	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	103	81	123	
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	109	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	102	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	113	84	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	89.9	75	131	
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	110	95	129	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	109	81	133	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170993) - continued</b>									
EG005T: Thallium	7440-28-0	5	mg/kg	<5	5.96 mg/kg	109	70	130	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	105	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	101	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	114	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	108	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	101	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	113	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	113	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170994)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	93.8	66	112	
<b>EP004: Organic Matter (QCLot: 3162814)</b>									
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	# 110	85	105	
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	# 110	84	106	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3166266)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	85.3	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3161744)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	102	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	100	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	95.3	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	95.8	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	98.5	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	94.8	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	98.7	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	96.6	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	96.1	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3161744)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	103	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	111	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	98.7	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	114	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3161744)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	104	54	126	
<b>EP074D: Fumigants (QCLot: 3161744)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074D: Fumigants (QCLot: 3161744) - continued</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	85.4	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	97.8	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	99.3	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	105	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	99.8	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3161744)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	47.7	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	70.5	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	97.4	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	73.6	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	86.8	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	91.2	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	93.2	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	90.8	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	92.3	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	100	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	99.0	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	86.4	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	95.7	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	109	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	108	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	99.2	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	103	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	106	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	105	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	98.0	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	99.8	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	90.9	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	107	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	110	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	116	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	116	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	112	53	129	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3161744) - continued</b>									
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	97.1	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3161744)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	102	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	101	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	99.7	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	99.9	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	102	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	101	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	102	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	94.5	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	100	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3161744)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	101	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	114	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	115	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	123	60	126	
<b>EP074H: Naphthalene (QCLot: 3161744)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	100	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3166268)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	102	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	102	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	107	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	112	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	86.5	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	103	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	99.7	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	104	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	99.0	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	97.9	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	98.2	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	36.0	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3166268)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	105	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	112	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	110	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	113	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	107	79	123	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3166268) - continued</b>									
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	106	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	107	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	108	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	105	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	109	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	102	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	109	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	104	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	94.3	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	92.8	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	94.3	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3161743)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	85.1	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166267)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	97.7	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	98.0	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	83.9	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3161743)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	81.1	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166267)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	98.5	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	93.0	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	67.3	63	131	
<b>EP080: BTEXN (QCLot: 3161743)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	97.1	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.2	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	87.2	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	87.1	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	91.5	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	95.4	62	138	

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 3167670)</b>									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	84.7	79	121	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	87.9	82	114	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 3167670) - continued</b>									
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	88.2	83	117	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.1	85	115	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.8	83	117	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	85.1	76	118	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3163263)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	112	77	115	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169067)</b>									
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	76.3	61.6	107	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3168842)</b>									
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	115	74	118	
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	# 121	75	121	
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	112	67	123	
EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	112	70	122	
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	117	69	123	
EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	114	71	121	
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	116	70	122	
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	114	67	123	
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	113	62	126	
<b>EP074B: Oxygenated Compounds (QCLot: 3168842)</b>									
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	95.6	61.4	134	
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	104	73.6	130	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	106	61	139	
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	107	65	137	
<b>EP074C: Sulfonated Compounds (QCLot: 3168842)</b>									
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	94.4	72.8	127	
<b>EP074D: Fumigants (QCLot: 3168842)</b>									
EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	99.2	61	119	
EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	107	76	120	
EP074: cis-1,3-Dichloropropylene	10061-01-5	10	µg/L	<10	10 µg/L	98.0	62	120	
EP074: trans-1,3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	88.0	61	119	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	116	69	117	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3168842)</b>									
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	65.9	60.6	138	
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	81.0	67.4	130	
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	77.4	69.4	129	
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	87.7	56	140	
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	95.8	63	135	
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	99.6	65	131	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3168842) - continued</b>									
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	103	69	123	
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	101	70.2	128	
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	105	71	119	
EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	102	75	119	
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	110	77	117	
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	104	61	119	
EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	98.0	73	119	
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	101	63	121	
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	97.7	78	122	
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	108	74	120	
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	108	74	118	
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	117	75	123	
EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	110	79	121	
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	# 125	72	124	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	112	66	114	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	100	60	120	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	94.8	70.6	128	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	117	70	124	
EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	109	74	128	
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	97.9	71.8	126	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	93.8	66.4	136	
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	124	58	132	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3168842)</b>									
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	114	80	118	
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	111	76	116	
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	110	71	121	
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	107	71	121	
EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	110	74	120	
EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	112	72	120	
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	109	77	117	
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	114	60	126	
EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	108	67	125	
<b>EP074G: Trihalomethanes (QCLot: 3168842)</b>									
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	101	76	118	
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	96.8	64	118	
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	# 116	65	115	
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	113	73.5	126	
<b>EP074H: Naphthalene (QCLot: 3168842)</b>									
EP074: Naphthalene	91-20-3	7	µg/L	<7	10 µg/L	98.0	61	125	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3169069)</b>									
EP075(SIM): Phenol	108-95-2	0.2	µg/L	----	5 µg/L	33.4	24.5	61.9	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L	----	5 µg/L	74.3	63.8	110	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L	----	5 µg/L	70.5	55.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	µg/L	----	10 µg/L	62.8	42.5	114	
		2	µg/L	<2.0	----	----	----	----	
EP075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L	----	5 µg/L	79.4	62.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.2	µg/L	----	5 µg/L	70.2	59.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.2	µg/L	----	5 µg/L	69.4	59.3	122	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.2	µg/L	----	5 µg/L	74.0	64.3	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L	----	5 µg/L	72.2	63	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.2	µg/L	----	5 µg/L	63.1	58.7	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.2	µg/L	----	5 µg/L	81.4	50	108	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L	----	10 µg/L	56.2	8.7	95	
		2	µg/L	<2.0	----	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3169069)</b>									
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	5 µg/L	72.3	58.6	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	5 µg/L	73.7	63.6	114	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	5 µg/L	74.7	62.2	113	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	5 µg/L	75.6	63.9	115	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	5 µg/L	93.6	62.6	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	5 µg/L	95.2	64.3	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	5 µg/L	93.5	63.6	118	
		1	µg/L	<1.0	----	----	----	----	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3169069) - continued</b>									
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	5 µg/L	92.8	63.1	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	5 µg/L	74.0	64.1	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	5 µg/L	83.2	62.5	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	5 µg/L	73.2	61.7	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	5 µg/L	91.4	61.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	5 µg/L	77.0	63.3	117	
		0.5	µg/L	<0.5	----	----	----	----	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	5 µg/L	69.1	59.9	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	----	5 µg/L	67.2	61.2	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	5 µg/L	67.4	59.1	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	1	µg/L	<1.0	----	----	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3168843)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	105	75	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3169068)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	94.4	59	129	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	101	71	131	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	91.8	62	120	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3168843)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	107	75	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3169068)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	97.0	58.9	131	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	97.1	73.9	138	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
		50	µg/L	----	1500 µg/L	98.8	67	127	
<b>EP080: BTEXN (QCLot: 3168843)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	99.5	70	124	
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	113	65	129	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	102	70	120	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	101	69	121	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	72	122	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP080: BTEXN (QCLot: 3168843) - continued</b>								
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	87.8	70	124

### 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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%)	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3163981)</b>							
ES1324726-016	Anonymous	ED045G: Chloride	16887-00-6	1250 mg/kg	101	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170993)</b>							
ES1324726-017	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	106	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.6	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	105	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	99.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	109	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	103	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	# Not Determined	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995)</b>							
ES1324729-016	BH_SB06_0.25	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	112	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	105	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	105	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	97.4	70	130
		<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170994)</b>					
ES1324726-017	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	106	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3166266)</b>							
ES1324722-002	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	83.6	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3161744)</b>							
ES1324729-008	BG_MW01_0.2	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	87.4	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	84.1	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3161744)</b>							



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3161744) - continued</b>								
ES1324729-008	BG_MW01_0.2	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	89.0	70	130	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3166268)</b>								
ES1324729-001	BA_MW01_0.1	EP075(SIM): Phenol	108-95-2	10 mg/kg	98.2	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	99.7	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	98.4	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	98.3	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	108	20	130	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3166268)</b>								
ES1324729-001	BA_MW01_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	105	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	113	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3161743)</b>								
ES1324729-008	BG_MW01_0.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	124	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166267)</b>								
ES1324729-001	BA_MW01_0.1	EP071: C10 - C14 Fraction	----	640 mg/kg	81.6	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	82.3	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	72.0	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3161743)</b>								
ES1324729-008	BG_MW01_0.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	121	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166267)</b>								
ES1324729-001	BA_MW01_0.1	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	104	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	75.6	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	55.7	52	132	
<b>EP080: BTEXN (QCLot: 3161743)</b>								
ES1324729-008	BG_MW01_0.2	EP080: Benzene	71-43-2	2.5 mg/kg	107	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	107	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	113	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	114	70	130	
EP080: Naphthalene	91-20-3	2.5 mg/kg	106	70	130			

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 3167670)</b>							
ES1324729-019	R01_071113_SM	EG020A-T: Arsenic	7440-38-2	1 mg/L	113	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	70	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report				
				Spike	Spike Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 3167670) - continued</b>								
ES1324729-019	R01_071113_SM	EG020A-T: Copper	7440-50-8	1 mg/L	115	70	130	
		EG020A-T: Lead	7439-92-1	1 mg/L	110	70	130	
		EG020A-T: Nickel	7440-02-0	1 mg/L	117	70	130	
		EG020A-T: Zinc	7440-66-6	1 mg/L	108	70	130	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3163263)</b>								
EP1308602-002	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	78.8	70	130	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3168842)</b>								
ES1324853-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	104	70	130	
		EP074: Trichloroethene	79-01-6	25 µg/L	111	70	130	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3168842)</b>								
ES1324853-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	126	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3168843)</b>								
ES1324853-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	121	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3168843)</b>								
ES1324853-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	120	70	130	
<b>EP080: BTEXN (QCLot: 3168843)</b>								
ES1324853-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	113	70	130	
		EP080: Toluene	108-88-3	25 µg/L	117	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	119	70	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	116	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	123	70	130	
	EP080: Naphthalene	91-20-3	25 µg/L	116	70	130		

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3161743)</b>										
ES1324729-008	BG_MW01_0.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	124	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3161743)</b>										
ES1324729-008	BG_MW01_0.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	121	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3161743)</b>										



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
					MS	MSD	Low	High	Value	Control Limit	
<b>EP080: BTEXN (QCLot: 3161743) - continued</b>											
ES1324729-008	BG_MW01_0.2	EP080: Benzene	71-43-2	2.5 mg/kg	107	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	107	----	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	113	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	114	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	106	----	70	130	----	----	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3161744)</b>											
ES1324729-008	BG_MW01_0.2	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	87.4	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	84.1	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3161744)</b>											
ES1324729-008	BG_MW01_0.2	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	89.0	----	70	130	----	----	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3163981)</b>											
ES1324726-016	Anonymous	ED045G: Chloride	16887-00-6	1250 mg/kg	101	----	70	130	----	----	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3166266)</b>											
ES1324722-002	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	83.6	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166267)</b>											
ES1324729-001	BA_MW01_0.1	EP071: C10 - C14 Fraction	----	640 mg/kg	81.6	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	82.3	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	72.0	----	52	132	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166267)</b>											
ES1324729-001	BA_MW01_0.1	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	104	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	75.6	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	55.7	----	52	132	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3166268)</b>											
ES1324729-001	BA_MW01_0.1	EP075(SIM): Phenol	108-95-2	10 mg/kg	98.2	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	99.7	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	98.4	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	98.3	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	108	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3166268)</b>											
ES1324729-001	BA_MW01_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	105	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	113	----	70	130	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170993)</b>											
ES1324726-017	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	106	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.6	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	104	----	70	130	----	----	





Sub-Matrix: **SOIL**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170993) - continued</b>										
ES1324726-017	Anonymous	EG005T: Copper	7440-50-8	125 mg/kg	105	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	99.8	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	109	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	103	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	# Not Determined	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170994)</b>										
ES1324726-017	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	106	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995)</b>										
ES1324729-016	BH_SB06_0.25	EG005T: Arsenic	7440-38-2	50 mg/kg	108	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	112	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	105	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	105	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	104	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	97.4	----	70	130	----	----

Sub-Matrix: **WATER**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3163263)</b>										
EP1308602-002	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	78.8	----	70	130	----	----
<b>EG020T: Total Metals by ICP-MS (QCLot: 3167670)</b>										
ES1324729-019	R01_071113_SM	EG020A-T: Arsenic	7440-38-2	1 mg/L	113	----	70	130	----	----
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	----	70	130	----	----
		EG020A-T: Copper	7440-50-8	1 mg/L	115	----	70	130	----	----
		EG020A-T: Lead	7439-92-1	1 mg/L	110	----	70	130	----	----
		EG020A-T: Nickel	7440-02-0	1 mg/L	117	----	70	130	----	----
		EG020A-T: Zinc	7440-66-6	1 mg/L	108	----	70	130	----	----
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3168842)</b>										
ES1324853-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	104	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	25 µg/L	111	----	70	130	----	----
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3168842)</b>										
ES1324853-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	126	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3168843)</b>										
ES1324853-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	121	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3168843)</b>										
ES1324853-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	120	----	70	130	----	----



Sub-Matrix: **WATER**

				<i>Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report</i>						
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Spike</i>	<i>Spike Recovery (%)</i>		<i>Recovery Limits (%)</i>		<i>RPDs (%)</i>	
				<i>Concentration</i>	<i>MS</i>	<i>MSD</i>	<i>Low</i>	<i>High</i>	<i>Value</i>	<i>Control Limit</i>
<b>EP080: BTEXN (QCLot: 3168843)</b>										
ES1324853-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	113	----	70	130	----	----
		EP080: Toluene	108-88-3	25 µg/L	117	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	25 µg/L	119	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	116	----	70	130	----	----
			106-42-3							
		EP080: ortho-Xylene	95-47-6	25 µg/L	123	----	70	130	----	----
		EP080: Naphthalene	91-20-3	25 µg/L	116	----	70	130	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1324729</b>	Page	: 1 of 17
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYS WATER	Date Samples Received	: 14-NOV-2013
C-O-C number	: ----	Issue Date	: 28-NOV-2013
Sampler	: AM	No. of samples received	: 20
Order number	: 0224193	No. of samples analysed	: 20
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA002 : pH (Soils)</b>							
<b>Soil Glass Jar - Unpreserved (EA002)</b> BA_MW01_0.1, BC_MW01_0.3, BH_SB05_0.1, BG_MW03_1.5, BH_SB06_0.25	<b>07-NOV-2013</b>	<b>18-NOV-2013</b>	14-NOV-2013	*	<b>18-NOV-2013</b>	19-NOV-2013	✓
<b>EA010: Conductivity</b>							
<b>Soil Glass Jar - Unpreserved (EA010)</b> BH_SB05_0.1, BH_SB06_0.25	<b>07-NOV-2013</b>	<b>22-NOV-2013</b>	14-NOV-2013	*	<b>22-NOV-2013</b>	20-DEC-2013	✓
<b>EA055: Moisture Content</b>							
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BA_MW01_0.1, BC_MW02_0.3, BC_MW04_0.3, BC_MW01_0.3, BC_SB03_0.1, BC_SB04_0.1, BH_SB05_0.1, BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2, BH_SB06_0.25	<b>07-NOV-2013</b>	----	----	----	<b>18-NOV-2013</b>	21-NOV-2013	✓
<b>EA150: Particle Sizing</b>							
<b>Snap Lock Bag (EA150)</b> BC_MW01_0.3, BG_MW03_1.5	<b>07-NOV-2013</b>	---	06-MAY-2014	----	<b>27-NOV-2013</b>	26-MAY-2014	✓
<b>EA150: Soil Classification based on Particle Size</b>							
<b>Snap Lock Bag (EA150)</b> BC_MW01_0.3, BG_MW03_1.5	<b>07-NOV-2013</b>	---	06-MAY-2014	----	<b>27-NOV-2013</b>	26-MAY-2014	✓
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>							
<b>Snap Lock Bag (EA200)</b> BC_MW02_0.3, BC_MW04_0.3, BC_MW01_0.3, BC_SB03_0.1, BC_SB04_0.1, BH_SB05_0.1, BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2, BH_SB06_0.25	<b>07-NOV-2013</b>	---	06-MAY-2014	----	<b>28-NOV-2013</b>	27-MAY-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>ED007: Exchangeable Cations</b>							
<b>Soil Glass Jar - Unpreserved (ED007)</b> BA_MW01_0.1, BC_MW01_0.3, BH_SB05_0.1, BG_MW03_1.5, BH_SB06_0.25	07-NOV-2013	15-NOV-2013	05-DEC-2013	✓	19-NOV-2013	05-DEC-2013	✓
<b>ED040S : Soluble Sulfate by ICPAES</b>							
<b>Soil Glass Jar - Unpreserved (ED040S)</b> BH_SB06_0.25	07-NOV-2013	18-NOV-2013	05-DEC-2013	✓	18-NOV-2013	16-DEC-2013	✓
<b>ED045G: Chloride Discrete analyser</b>							
<b>Soil Glass Jar - Unpreserved (ED045G)</b> BH_SB06_0.25	07-NOV-2013	18-NOV-2013	05-DEC-2013	✓	18-NOV-2013	16-DEC-2013	✓
<b>ED093S: Soluble Major Cations</b>							
<b>Soil Glass Jar - Unpreserved (ED093S)</b> BH_SB06_0.25	07-NOV-2013	18-NOV-2013	06-MAY-2014	✓	18-NOV-2013	06-MAY-2014	✓
<b>EG005T: Total Metals by ICP-AES</b>							
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BA_MW01_0.1, BC_MW02_0.3, BC_MW04_0.3, BC_MW01_0.3, BC_SB03_0.1, BC_SB04_0.1, BH_SB05_0.1, BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2, BH_SB06_0.25	07-NOV-2013	21-NOV-2013	06-MAY-2014	✓	22-NOV-2013	06-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BC_MW02_0.3, BC_MW04_0.3, BC_MW01_0.3, BC_SB03_0.1, BC_SB04_0.1, BH_SB05_0.1, BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2, BH_SB06_0.25	07-NOV-2013	21-NOV-2013	05-DEC-2013	✓	22-NOV-2013	05-DEC-2013	✓
<b>EP004: Organic Matter</b>							
<b>Soil Glass Jar - Unpreserved (EP004)</b> BC_MW01_0.3, BG_MW03_1.5	07-NOV-2013	19-NOV-2013	05-DEC-2013	✓	16-NOV-2013	05-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
<b>Soil Glass Jar - Unpreserved (EP066)</b> BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2	07-NOV-2013	19-NOV-2013	21-NOV-2013	✓	20-NOV-2013	29-DEC-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>Soil Glass Jar - Unpreserved (EP071)</b>								
BA_MW01_0.1, BC_MW04_0.3, BC_SB03_0.1, BH_SB05_0.1, BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2, BH_SB06_0.25	BC_MW02_0.3, BC_MW01_0.3, BC_SB04_0.1, BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>EP074D: Fumigants</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	07-NOV-2013	18-NOV-2013	14-NOV-2013	*	19-NOV-2013	14-NOV-2013	*
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	07-NOV-2013	18-NOV-2013	14-NOV-2013	*	19-NOV-2013	14-NOV-2013	*
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	07-NOV-2013	18-NOV-2013	14-NOV-2013	*	19-NOV-2013	14-NOV-2013	*
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	07-NOV-2013	18-NOV-2013	14-NOV-2013	*	19-NOV-2013	14-NOV-2013	*
<b>EP074H: Naphthalene</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	07-NOV-2013	18-NOV-2013	14-NOV-2013	*	19-NOV-2013	14-NOV-2013	*



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074B: Oxygenated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	07-NOV-2013	18-NOV-2013	14-NOV-2013	✘	19-NOV-2013	14-NOV-2013	✘
<b>EP074C: Sulfonated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	07-NOV-2013	18-NOV-2013	14-NOV-2013	✘	19-NOV-2013	14-NOV-2013	✘
<b>EP074G: Trihalomethanes</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	07-NOV-2013	18-NOV-2013	14-NOV-2013	✘	19-NOV-2013	14-NOV-2013	✘
<b>EP075(SIM)A: Phenolic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BA_MW01_0.1, BC_MW04_0.3, BC_SB03_0.1, BH_SB05_0.1, BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2, BH_SB06_0.25	BC_MW02_0.3, BC_MW01_0.3, BC_SB04_0.1, BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	07-NOV-2013	20-NOV-2013	21-NOV-2013	✔	20-NOV-2013	30-DEC-2013	✔
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BA_MW01_0.1, BC_MW04_0.3, BC_SB03_0.1, BH_SB05_0.1, BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2, BH_SB06_0.25	BC_MW02_0.3, BC_MW01_0.3, BC_SB04_0.1, BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2	07-NOV-2013	20-NOV-2013	21-NOV-2013	✔	20-NOV-2013	30-DEC-2013	✔



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> TS_051113_SM, TSC_051113	TB_051113_SM,	05-NOV-2013	18-NOV-2013	19-NOV-2013	✓	19-NOV-2013	19-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BA_MW01_0.1, BC_MW04_0.3, BC_SB03_0.1, BH_SB05_0.1, BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2, BH_SB06_0.25	BC_MW02_0.3, BC_MW01_0.3, BC_SB04_0.1, BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2,	07-NOV-2013	18-NOV-2013	21-NOV-2013	✓	19-NOV-2013	21-NOV-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> TS_051113_SM, TSC_051113	TB_051113_SM,	05-NOV-2013	18-NOV-2013	19-NOV-2013	✓	19-NOV-2013	19-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BA_MW01_0.1, BC_MW04_0.3, BC_SB03_0.1, BH_SB05_0.1, BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2, BH_SB06_0.25	BC_MW02_0.3, BC_MW01_0.3, BC_SB04_0.1, BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2,	07-NOV-2013	18-NOV-2013	21-NOV-2013	✓	19-NOV-2013	21-NOV-2013	✓

Matrix: **WATER**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG020T: Total Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG020A-T)</b> R01_071113_SM		07-NOV-2013	20-NOV-2013	06-MAY-2014	✓	20-NOV-2013	06-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG035T)</b> R01_071113_SM		07-NOV-2013	----	----	----	18-NOV-2013	05-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
<b>Amber Glass Bottle - Unpreserved (EP066)</b> R01_071113_SM		07-NOV-2013	21-NOV-2013	14-NOV-2013	*	21-NOV-2013	31-DEC-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> R01_071113_SM		07-NOV-2013	21-NOV-2013	14-NOV-2013	*	21-NOV-2013	31-DEC-2013	✓





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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074D: Fumigants</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓
<b>EP074F: Halogenated Aromatic Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓
<b>EP074H: Naphthalene</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓
<b>EP074B: Oxygenated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓
<b>EP074C: Sulfonated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓
<b>EP074G: Trihalomethanes</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_071113_SM	07-NOV-2013	21-NOV-2013	14-NOV-2013	*	21-NOV-2013	31-DEC-2013	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_071113_SM	07-NOV-2013	21-NOV-2013	14-NOV-2013	*	21-NOV-2013	31-DEC-2013	✓
<b>EP080: BTEXN</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R01_071113_SM	07-NOV-2013	20-NOV-2013	21-NOV-2013	✓	20-NOV-2013	21-NOV-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Chloride Soluble By Discrete Analyser	ED045G	1	3	33.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (1:5)	EA010	3	20	15.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	2	12	16.7	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	39	10.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Cations - soluble by ICP-AES	ED093S	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	3	66.7	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (1:5)	EA010	2	20	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	12	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Cations - soluble by ICP-AES	ED093S	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (1:5)	EA010	2	20	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	12	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Method Blanks (MB) - Continued</b>							
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Chloride Soluble By Discrete Analyser	ED045G	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	12	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Method Blanks (MB) - Continued</b>							
Volatile Organic Compounds	EP074	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Electrical Conductivity (1:5)	EA010	SOIL	(APHA 21st ed., 2510) Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 104)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Particle Size Analysis (Sieving)	EA150	SOIL	Particle Size Analysis by Sieving according to AS1289.3.6.1 - 2009
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
Major Anions - Soluble	ED040S	SOIL	In-house. Soluble Anions are determined off a 1:5 soil / water extract by ICPAES.
Chloride Soluble By Discrete Analyser	ED045G	SOIL	APHA 21st edition 4500-Cl- E. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm. Analysis is performed on a 1:5 soil / water leachate.
Cations - soluble by ICP-AES	ED093S	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 (ICPAES) Water extracts of the soil are analyzed for major cations by ICPAES. 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 (2013) Schedule B(3)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Organic Matter	EP004	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
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 (2013) Schedule B(3) (Method 504)
TPH - Semivolatle 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 (2013) Schedule B(3) (Method 506.1)



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) Schedule B(3) (Method 501)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Polychlorinated Biphenyls (PCB)	EP066	WATER	USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Volatile Organic Compounds	EP074	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	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 (2013) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.



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 (2013) Schedule B(3) (Method 202)
Organic Matter	EP004-PR	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
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 <sub>2</sub> SO <sub>4</sub> 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 <sub>2</sub> SO <sub>4</sub> 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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3) (Appdx. 2)
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 100 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 (2013) 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: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP004: Organic Matter	3774212-002	----	Organic Matter	----	110 %	85-105%	Recovery greater than upper control limit
EP004: Organic Matter	3774212-002	----	Total Organic Carbon	----	110 %	84-106%	Recovery greater than upper control limit
<b>Matrix Spike (MS) Recoveries</b>							
EG005T: Total Metals by ICP-AES	ES1324726-017	Anonymous	Zinc	7440-66-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP074A: Monocyclic Aromatic Hydrocarbons	3781555-002	----	Isopropylbenzene	98-82-8	121 %	75-121%	Recovery greater than upper control limit
EP074E: Halogenated Aliphatic Compounds	3781555-002	----	Tetrachloroethene	127-18-4	125 %	72-124%	Recovery greater than upper control limit
EP074G: Trihalomethanes	3781555-002	----	Dibromochloromethane	124-48-1	116 %	65-115%	Recovery greater than upper control limit

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

#### Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Samples Submitted</b>							
EP080S: TPH(V)/BTEX Surrogates	ES1324729-001	BA_MW01_0.1	Toluene-D8	2037-26-5	73.9 %	73.9-132.1 %	Recovery less than lower data quality objective
EP080S: TPH(V)/BTEX Surrogates	ES1324729-016	BH_SB06_0.25	Toluene-D8	2037-26-5	73.8 %	73.9-132.1 %	Recovery less than lower 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.

Matrix: **SOIL**





Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA002 : pH (Soils)</b>						
<b>Soil Glass Jar - Unpreserved</b> BA_MW01_0.1, BC_MW01_0.3, BH_SB05_0.1, BG_MW03_1.5, BH_SB06_0.25	18-NOV-2013	14-NOV-2013	4	----	----	----
<b>EA010: Conductivity</b>						
<b>Soil Glass Jar - Unpreserved</b> BH_SB05_0.1, BH_SB06_0.25	22-NOV-2013	14-NOV-2013	8	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>						
<b>Soil Glass Jar - Unpreserved</b> BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2	18-NOV-2013	14-NOV-2013	4	19-NOV-2013	14-NOV-2013	5
<b>EP074B: Oxygenated Compounds</b>						
<b>Soil Glass Jar - Unpreserved</b> BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2	18-NOV-2013	14-NOV-2013	4	19-NOV-2013	14-NOV-2013	5
<b>EP074C: Sulfonated Compounds</b>						
<b>Soil Glass Jar - Unpreserved</b> BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2	18-NOV-2013	14-NOV-2013	4	19-NOV-2013	14-NOV-2013	5
<b>EP074D: Fumigants</b>						
<b>Soil Glass Jar - Unpreserved</b> BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2	18-NOV-2013	14-NOV-2013	4	19-NOV-2013	14-NOV-2013	5
<b>EP074E: Halogenated Aliphatic Compounds</b>						
<b>Soil Glass Jar - Unpreserved</b> BG_MW01_0.2, BG_MW03_0.2, BG_MW04_0.2, BG_MW05_0.2, BG_MW06_0.2, BG_MW07_0.2, BG_MW02_0.2	18-NOV-2013	14-NOV-2013	4	19-NOV-2013	14-NOV-2013	5
<b>EP074F: Halogenated Aromatic Compounds</b>						



Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074F: Halogenated Aromatic Compounds - Analysis Holding Time Compliance</b>						
<b>Soil Glass Jar - Unpreserved</b> BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2 BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	18-NOV-2013	14-NOV-2013	4	19-NOV-2013	14-NOV-2013	5
<b>EP074G: Trihalomethanes</b>						
<b>Soil Glass Jar - Unpreserved</b> BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2 BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	18-NOV-2013	14-NOV-2013	4	19-NOV-2013	14-NOV-2013	5
<b>EP074H: Naphthalene</b>						
<b>Soil Glass Jar - Unpreserved</b> BG_MW01_0.2, BG_MW04_0.2, BG_MW06_0.2, BG_MW02_0.2 BG_MW03_0.2, BG_MW05_0.2, BG_MW07_0.2	18-NOV-2013	14-NOV-2013	4	19-NOV-2013	14-NOV-2013	5

Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP066: Polychlorinated Biphenyls (PCB)</b>						
<b>Amber Glass Bottle - Unpreserved</b> R01_071113_SM	21-NOV-2013	14-NOV-2013	7	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>						
<b>Amber Glass Bottle - Unpreserved</b> R01_071113_SM	21-NOV-2013	14-NOV-2013	7	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>						
<b>Amber Glass Bottle - Unpreserved</b> R01_071113_SM	21-NOV-2013	14-NOV-2013	7	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>						
<b>Amber Glass Bottle - Unpreserved</b> R01_071113_SM	21-NOV-2013	14-NOV-2013	7	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>						
<b>Amber Glass Bottle - Unpreserved</b> R01_071113_SM	21-NOV-2013	14-NOV-2013	7	----	----	----

**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.**
-

**ALS Laboratory**  
 CHAIN OF CUSTODY  
 Please tick →

**CLIENT:** ERM  
**OFFICE:** Sydney  
**PROJECT:** Project Stephany  
**ORDER NUMBER:** 0224193  
**PROJECT MANAGER:** S.F.  
**SAMPLER:** A. Morris

**TURNAROUND REQUIREMENTS:**  
 Standard TAT (List due date):  
 Non Standard or urgent TAT (List due date):  
**ALS QUOTE NO.:** SY79473  
**SITE:** BAYSWATER/IDDELL  
**CONTACT PH:**  
**SAMPLER MOBILE:** 0434181944  
**RELINQUISHED BY:**  
**EDD FORMAT (or default):**

**FOR LABORATORY USE ONLY (Circle):**  
 Custody Seal Intact:  Yes  No  
 Free Ice / frozen Ice bricks present upon receipt:  Yes  No  
 Random Sample Temperature on receipt:  K-9  °C  
 Other comment:    
**RECEIVED BY:** Remingh  
**DATE/TIME:** 15/11/13 16:50  
**RELINQUISHED BY:**  
**DATE/TIME:**

**COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:**

**ANALYSIS REQUIRED INCLUDING SUITES (MS, Suite Codes must be listed to attract suite price):**  
 Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to cores below)	TOTAL CONTAINERS	S-2 Metals (As, Ba, Pb, Zn, Hg)	17 Metals (As, Ba, Bi, Cd, Co, Cr, Cu, Mn, Ni, Pd, V, Zn, B)	Mo, Ti, Se	5-24 TRHCs, PAHs, D40/BTEX, PAHs, Phenols	VOC Target Scan	PCB	PH/STX	Exchangeable cations (ED07)	PFOA/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Carbon (EPO4)	Comments on likely contaminant levels, dilutions, or samples requiring specific GC analysis etc.
1	BV-SB08-2.0	15/11/13	SOIL	1 glass jar	1	X	X	X	X	X	X	X	X	X	X	X	X	HOLD
17	BQ-MW10-2.0				1	X	X	X	X	X	X	X	X	X	X	X	X	Prep 13/11/13
2	BQ-MW10-3.5				1	X	X	X	X	X	X	X	X	X	X	X	X	

Environmental Division  
 Sydney  
 Work Order  
**ES1324837**



Telephone : + 61-2-8784 8555

**Water Containing Cores:** P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORG = Nitric Preserved ORG; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AT = Airtight Unpreserved Plastic  
**V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial; SC = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Specialisation bottle; SP = Sulfuric  
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Starch Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.**

**CHAIN OF CUSTODY**  
ALS Laboratory please link to →

ALS is an ISO 17025 certified laboratory. We are committed to providing accurate and reliable results. Our services include environmental testing, construction materials testing, and forensic testing. We are a member of the American Society for Testing and Materials (ASTM) and the International Organization of Standardization (ISO).

For more information, please visit our website at [www.als.com](http://www.als.com) or call us at 1-800-541-4534.

**CLIENT:** \_\_\_\_\_

**OFFICE:** \_\_\_\_\_

**PROJECT:** Project Symphony

**ORDER NUMBER:** \_\_\_\_\_

**PROJECT MANAGER:** Joe Ferris

**SAMPLER:** Tom Cuthbert

**CONTACT PH:** \_\_\_\_\_

**SAMPLER MOBILE:** \_\_\_\_\_

**EDD FORMAT (or default):** John.ewing@cm.com

**COC emailed to ALS? (YES / NO):** YES

**Email Reports to (will default to PM if no other addresses are listed):** \_\_\_\_\_

**Email Invoice to (will default to PM if no other addresses are listed):** \_\_\_\_\_

**TURNAROUND REQUIREMENTS:**  Standard TAT (List due date): \_\_\_\_\_  
 Non Standard or urgent TAT (List due date): \_\_\_\_\_

**ALS QUOTE NO.:** SY790113

**SITE:** BAYSWATER / \_\_\_\_\_

**FOR LABORATORY USE ONLY (Circle):**  
 Custody Seal Intact?  No  NA  
 Free box / totem ice bricks present upon receipt?  No  NA  
 Random Sample Temperature on Receipt: \_\_\_\_\_ °C  
 Other comment: \_\_\_\_\_

**RECEIVED BY:** Tom Cuthbert  
**DATE/TIME:** 15/11/13

**RECEIVED BY:** Roy Nosh  
**DATE/TIME:** 15/11/13

**COMMENT/SPECIAL HANDLING/STORAGE OR DISPOSAL:**

ALS USE	SAMPLE ID	DATE / TIME	MATRIX	CONTAINER INFORMATION		ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite price) where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).	Additional Information
				TYPE & PRESERVATIVE CODES BELOW	(refer to TOTAL CONTAINERS)		
	3 BK-MW01-5.0		SOIL		1	6-2 Metals (As, Ba, Pb, Zn, Cr, Cu, Ni, Mo, Ti, Se) S-24 TRH(CS, Cd, Pb, V, Zn, Bi, Mn, Ni, Pb, Cr, Cu, Be, Cd, Co, Cr, Cu, Pb, Zn, Hg) 17 Metals (As, Ba, Pb, Zn, Cr, Cu, Ni, Mo, Ti, Se) S-24 TRH(CS, Cd, Pb, V, Zn, Bi, Mn, Ni, Pb, Cr, Cu, Be, Cd, Co, Cr, Cu, Pb, Zn, Hg) Phenols VOC Target Scan PCB OH (1:5) Exchangeable cations (ED07) PFOS/PFOA Asbestos (absence/presence) Particle Sizing to 75µm (Stove) Organic Matter plus Carbon (EPO4)	Comments on likely contaminants, methods, or samples requiring specific QC analysis etc.
	4 BK-MW02-5.9				1		
	5 BK-MW03-5.7				1		
	6 BK-MW04-0.9				1		
	7 BE-MW08-5.2				1		

**Water Container Codes:** P = Unpreserved Plastic; N = Nitric Preserved Plastic; CR = Nitric Preserved CR; S = Sodium Hydroxide Preserved Plastic; AU = Amber Glass Unpreserved Plastic; V = VOA Vial HCl Preserved; VS = VOA Vial Sodium Borohydride Preserved; VS = VOA Vial Sulfide Preserved; AV = Ambient Unpreserved Vial; SG = Sulfide Preserved Amber Glass; H = HCl Preserved Plastic; MG = HCl Preserved Specimen Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;  
**Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Storage Bottle; ABS = Plastic Box for Acid Substrate; U = Unpreserved Box**



**CHAIN OF CUSTODY**

LABORATORY: **ALS**  
 ALS Laboratory:  
 please tick →

LABORATORY: **ALS**  
 ALS Laboratory:  
 please tick →

LABORATORY: **ALS**  
 ALS Laboratory:  
 please tick →

LABORATORY: **ALS**  
 ALS Laboratory:  
 please tick →

LABORATORY: **ALS**  
 ALS Laboratory:  
 please tick →

**CLIENT:** ERM  
**OFFICE:** Sydney  
**PROJECT:** Project Symphony  
**ORDER NUMBER:** 0224193  
**PROJECT MANAGER:** JOSEPH FERRING  
**SAMPLER:** STEPHEN MULLIGAN  
**COC emailed to ALS?** ( YES / NO )  
**RECEIVED BY:** Stephen Mulligan  
**DATE/TIME:** 15/11/13 16:50  
**RELINQUISHED BY:** Stephen Mulligan  
**DATE/TIME:** 15/11/13 16:50

**TURNAROUND REQUIREMENTS:**  
 Standard TAT (List due date)  
 Non Standard or urgent TAT (List due date):  
 (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

**ALS QUOTE NO.:** S1779413  
**SITE:** BAYSWATER LIDDELL  
**CONTACT PH:**  
**SAMPLER MOBILE:** 0416 088 758  
**EDD FORMAT (or default):** john.ewing@erm.com

**FOR LABORATORY USE ONLY (Circle):**  
 Custody Seal Intact:  Yes  No  
 Free Ice / frozen ice bricks present upon receipt:  Yes  No  
 Random Sample Temperature on Receipt:  Yes  No  
 Other comment: 49 °C

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	CONTAINER INFORMATION (refer to TOTAL CONTAINERS)	ANALYSIS REQUIRED INCLUDING SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottles required) or Dissolved (filtered soils required).	Additional Information
8	BE_MW08_0.5	15/11/13	soil	1 Jar + 1 Bag	2	S-24 TR(HC), S-24 TR(HC), PAH, Phenols, VOC Target Scan, PCB, PH (1:5), Exchangeable (ED07), PFOS/PFOA, Asbestos (absence/presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EP04)	Contains embryo contaminant levels. Callus for analysis requiring specific protocols etc.
9	BE_MW07_0.5	15/11/13	soil	1 Jar + 1 Bag	2	S-24 TR(HC), S-24 TR(HC), PAH, Phenols, VOC Target Scan, PCB, PH (1:5), Exchangeable (ED07), PFOS/PFOA, Asbestos (absence/presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EP04)	
10	BE_MW06_0.1	15/11/13	soil	1 Jar + 1 Bag	2	S-24 TR(HC), S-24 TR(HC), PAH, Phenols, VOC Target Scan, PCB, PH (1:5), Exchangeable (ED07), PFOS/PFOA, Asbestos (absence/presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EP04)	
11	BE_MW05_0.1	15/11/13	soil	1 Jar + 1 Bag	2	S-24 TR(HC), S-24 TR(HC), PAH, Phenols, VOC Target Scan, PCB, PH (1:5), Exchangeable (ED07), PFOS/PFOA, Asbestos (absence/presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EP04)	
12	BE_MW05_1.5	15/11/13	soil	1 Jar + 1 Bag	2	S-24 TR(HC), S-24 TR(HC), PAH, Phenols, VOC Target Scan, PCB, PH (1:5), Exchangeable (ED07), PFOS/PFOA, Asbestos (absence/presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EP04)	
13	BE_MW04_1.0	15/11/13	soil	1 Jar + 1 Bag	2	S-24 TR(HC), S-24 TR(HC), PAH, Phenols, VOC Target Scan, PCB, PH (1:5), Exchangeable (ED07), PFOS/PFOA, Asbestos (absence/presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EP04)	
14	DOL15113_SM	15/11/13	soil	1 Jar	1	S-24 TR(HC), S-24 TR(HC), PAH, Phenols, VOC Target Scan, PCB, PH (1:5), Exchangeable (ED07), PFOS/PFOA, Asbestos (absence/presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EP04)	
15	BE_MW02_0.1	15/11/13	soil	1 Jar + 1 Bag	2	S-24 TR(HC), S-24 TR(HC), PAH, Phenols, VOC Target Scan, PCB, PH (1:5), Exchangeable (ED07), PFOS/PFOA, Asbestos (absence/presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EP04)	
16	BE_MW01_0.1	15/11/13	soil	1 Jar + 1 Bag	2	S-24 TR(HC), S-24 TR(HC), PAH, Phenols, VOC Target Scan, PCB, PH (1:5), Exchangeable (ED07), PFOS/PFOA, Asbestos (absence/presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EP04)	

**COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:**

**WATER CONTAINER CODES:** P = Unpreserved Plastic; N = Nitrite Preserved Plastic; OTC = Nitric Preserved Plastic; OTC = Nitric Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Air-tight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Acid Preserved; AV = Air-tight Unpreserved Vial SQ = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Ascorbate Preserved Bottle; E = EDTA Preserved Bottle; ST = Stable Bottle; ASS = Plastic Bag for Acid Sulphate Soils; U = Unpreserved Bag.

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

<b>Work Order</b> : <b>ES1324837</b>	
<b>Client</b> : <b>ENVIRO RESOURCES MANAGEMENT</b> <b>Contact</b> : MR JOSEPH FERRING <b>Address</b> : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Laboratory</b> : Environmental Division Sydney  <b>Contact</b> : Barbara Hanna <b>Address</b> : 277-289 Woodpark Road Smithfield NSW Australia 2164  <b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800  <b>Project</b> : PROJECT SYMPHONY <b>Order number</b> : 0224193 <b>C-O-C number</b> : ---- <b>Site</b> : BAYSWATER <b>Sampler</b> : AM
<b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800	<b>E-mail</b> : Barbara.Hanna@alsglobal.com <b>Telephone</b> : +61 2 8784 8555 <b>Facsimile</b> : +61 2 8784 8555  <b>Page</b> : 1 of 3  <b>Quote number</b> : ES2013ENVRES0369 (SY/794/13)  <b>QC Level</b> : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

#### Dates

<b>Date Samples Received</b> : 15-NOV-2013 <b>Client Requested Due Date</b> : 26-NOV-2013	<b>Issue Date</b> : 18-NOV-2013 14:32 <b>Scheduled Reporting Date</b> : <b>26-NOV-2013</b>
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#### Delivery Details

<b>Mode of Delivery</b> : Carrier <b>No. of coolers/boxes</b> : 1 HARD <b>Security Seal</b> : Intact.	<b>Temperature</b> : 4.7' C - Ice present <b>No. of samples received</b> : 17 <b>No. of samples analysed</b> : 15
---	---

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos and PSD analysis will be conducted by ALS Newcastle.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exist.

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA150* Particle Size Analysis by Sieving (Default sieves from SOIL - EA200 Asbestos Identification in Soils	SOIL - ED007 Def CEC / Exchangeable Cations (ED007) -Default	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP004 (Carbon) Total Organic Carbon (Calc.)	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS
ES1324837-001	[ 15-NOV-2013 ]	BV_SB08_2.0							✓
ES1324837-002	[ 15-NOV-2013 ]	BQ_MW10_3.5		✓		✓	✓	✓	
ES1324837-008	[ 15-NOV-2013 ]	BE_MW08_0.5			✓				
ES1324837-009	[ 15-NOV-2013 ]	BE_MW07_0.5			✓				
ES1324837-010	[ 15-NOV-2013 ]	BE_MW06_0.1			✓				
ES1324837-011	[ 15-NOV-2013 ]	BE_MW05_0.1			✓				
ES1324837-012	[ 15-NOV-2013 ]	BE_MW05_1.5		✓	✓	✓		✓	
ES1324837-013	[ 15-NOV-2013 ]	BE_MW04_1.0			✓				
ES1324837-015	[ 15-NOV-2013 ]	BE_MW02_0.1	✓						
ES1324837-016	[ 15-NOV-2013 ]	BE_MW01_0.1			✓				
ES1324837-017	[ 15-NOV-2013 ]	BQ_MW10_2.0	✓						

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-01 7 Metals (incl. Digestion)	SOIL - S-24 TRHIBTEXN/PAH + Phenols	SOIL - S-27 TRHIBTEXN/PAH/Phenols/8Metals
ES1324837-001	[ 15-NOV-2013 ]	BV_SB08_2.0	✓			✓
ES1324837-002	[ 15-NOV-2013 ]	BQ_MW10_3.5		✓	✓	
ES1324837-003	[ 15-NOV-2013 ]	BK_MW01_5.0	✓			✓
ES1324837-004	[ 15-NOV-2013 ]	BK_MW02_5.9	✓			✓
ES1324837-005	[ 15-NOV-2013 ]	BK_MW03_5.7	✓			✓
ES1324837-006	[ 15-NOV-2013 ]	BK_MW04_0.9	✓			✓
ES1324837-007	[ 15-NOV-2013 ]	BE_MW08_5.2				✓
ES1324837-008	[ 15-NOV-2013 ]	BE_MW08_0.5				✓
ES1324837-009	[ 15-NOV-2013 ]	BE_MW07_0.5				✓
ES1324837-010	[ 15-NOV-2013 ]	BE_MW06_0.1				✓
ES1324837-011	[ 15-NOV-2013 ]	BE_MW05_0.1				✓
ES1324837-013	[ 15-NOV-2013 ]	BE_MW04_1.0				✓
ES1324837-014	[ 15-NOV-2013 ]	D01_151113_SM				✓





ES1324837-016	[ 15-NOV-2013 ]	BE_MW01_0.1	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-01 7 Metals (incl. Digestion)	SOIL - S-24 TRH/BTEX/NPAH + Phenols	SOIL - S-27 TRH/BTEX/NPAH/Phenols/8Metals	✓
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### Proactive Holding Time Report

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

### Requested Deliverables

#### MR JOSEPH FERRING

- |  |       |                        |
|--|-------|------------------------|
| - *AU Certificate of Analysis - NATA ( COA )                     | Email | joseph.ferring@erm.com |
| - *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )    | Email | joseph.ferring@erm.com |
| - *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )            | Email | joseph.ferring@erm.com |
| - A4 - AU Sample Receipt Notification - Environmental HT ( SRN ) | Email | joseph.ferring@erm.com |
| - Attachment - Report ( SUBCO )                                  | Email | joseph.ferring@erm.com |
| - Chain of Custody (CoC) ( COC )                                 | Email | joseph.ferring@erm.com |
| - EDI Format - ENMRG ( ENMRG )                                   | Email | joseph.ferring@erm.com |
| - EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )                     | Email | joseph.ferring@erm.com |
| - EDI Format - ESDAT ( ESDAT )                                   | Email | joseph.ferring@erm.com |
| - EDI Format - XTab ( XTAB )                                     | Email | joseph.ferring@erm.com |

#### THE ACCOUNTS PAYABLE

- |                               |       |                     |
|-------------------------------|-------|---------------------|
| - A4 - AU Tax Invoice ( INV ) | Email | au.accounts@erm.com |
|-------------------------------|-------|---------------------|

## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1324837</b>	Page	: 1 of 18
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193	Date Samples Received	: 15-NOV-2013
C-O-C number	: ----	Issue Date	: 02-DEC-2013
Sampler	: AM	No. of samples received	: 17
Site	: BAYSWATER	No. of samples analysed	: 15
Quote number	: SY/794/13		

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



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

## Signatories

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

Signatories	Position	Accreditation Category
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB08_2.0	BQ_MW10_3.5	BK_MW01_5.0	BK_MW02_5.9	BK_MW03_5.7
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-001	ES1324837-002	ES1324837-003	ES1324837-004	ES1324837-005
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	----	6.6	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	14.4	18.9	7.7	14.4	15.8
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	----	14.0	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	----	6.9	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	----	0.3	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	----	0.6	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	----	21.8	----	----	----
Exchangeable Aluminium	----	0.1	meq/100g	----	<0.1	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Barium	7440-39-3	10	mg/kg	----	240	----	----	----
Beryllium	7440-41-7	1	mg/kg	----	<1	----	----	----
Boron	7440-42-8	50	mg/kg	----	<50	----	----	----
Cobalt	7440-48-4	2	mg/kg	----	6	----	----	----
Manganese	7439-96-5	5	mg/kg	----	73	----	----	----
Molybdenum	7439-98-7	2	mg/kg	----	2	----	----	----
Selenium	7782-49-2	5	mg/kg	----	<5	----	----	----
Vanadium	7440-62-2	5	mg/kg	----	63	----	----	----
Thallium	7440-28-0	5	mg/kg	----	<5	----	----	----
Arsenic	7440-38-2	5	mg/kg	10	18	11	9	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	20	25	10	13	7
Copper	7440-50-8	5	mg/kg	20	25	12	21	9
Lead	7439-92-1	5	mg/kg	27	17	15	12	6
Nickel	7440-02-0	2	mg/kg	8	18	14	14	4
Zinc	7440-66-6	5	mg/kg	45	84	55	65	15
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
<b>EP004: Organic Matter</b>								
Organic Matter	----	0.5	%	----	0.7	----	----	----
Total Organic Carbon	----	0.5	%	----	<0.5	----	----	----
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB08_2.0	BQ_MW10_3.5	BK_MW01_5.0	BK_MW02_5.9	BK_MW03_5.7
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-001	ES1324837-002	ES1324837-003	ES1324837-004	ES1324837-005
<b>EP066: Polychlorinated Biphenyls (PCB) - Continued</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	<5	<5	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	----	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	----	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg	<5	----	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	----	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	<5	<5	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB08_2.0	BQ_MW10_3.5	BK_MW01_5.0	BK_MW02_5.9	BK_MW03_5.7
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-001	ES1324837-002	ES1324837-003	ES1324837-004	ES1324837-005
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB08_2.0	BQ_MW10_3.5	BK_MW01_5.0	BK_MW02_5.9	BK_MW03_5.7
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-001	ES1324837-002	ES1324837-003	ES1324837-004	ES1324837-005
<b>EP074G: Trihalomethanes - Continued</b>								
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	----	<5	<5	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB08_2.0	BQ_MW10_3.5	BK_MW01_5.0	BK_MW02_5.9	BK_MW03_5.7
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-001	ES1324837-002	ES1324837-003	ES1324837-004	ES1324837-005
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	<b>64.4</b>	----	----	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	<b>104</b>	----	<b>96.0</b>	<b>101</b>	<b>96.8</b>
Toluene-D8	2037-26-5	0.1	%	<b>106</b>	----	<b>98.6</b>	<b>106</b>	<b>106</b>





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB08_2.0	BQ_MW10_3.5	BK_MW01_5.0	BK_MW02_5.9	BK_MW03_5.7
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-001	ES1324837-002	ES1324837-003	ES1324837-004	ES1324837-005
<b>EP074S: VOC Surrogates - Continued</b>								
4-Bromofluorobenzene	460-00-4	0.1	%	88.9	----	84.1	89.9	92.1
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	99.8	99.8	101	90.3	97.8
2-Chlorophenol-D4	93951-73-6	0.1	%	104	102	107	93.6	96.6
2,4,6-Tribromophenol	118-79-6	0.1	%	85.5	77.0	80.2	74.5	83.5
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	90.7	84.0	91.2	84.1	91.6
Anthracene-d10	1719-06-8	0.1	%	91.3	84.0	92.4	84.2	91.3
4-Terphenyl-d14	1718-51-0	0.1	%	96.6	89.0	98.5	89.6	97.1
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	117	90.0	108	115	109
Toluene-D8	2037-26-5	0.1	%	114	80.5	105	114	113
4-Bromofluorobenzene	460-00-4	0.1	%	96.0	84.7	87.8	92.1	96.8



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BK_MW04_0.9	BE_MW08_5.2	BE_MW08_0.5	BE_MW07_0.5	BE_MW06_0.1
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-006	ES1324837-007	ES1324837-008	ES1324837-009	ES1324837-010
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	14.0	12.7	19.0	13.3	12.6
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	No	No	No
Asbestos Type	1332-21-4	0.1	--	----	----	-	-	-
Sample weight (dry)	----	0.01	g	----	----	303	305	594
APPROVED IDENTIFIER:	----	-	--	----	----	C.OWLER	C.OWLER	C.OWLER
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	12	6	<5	12	10
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	10	11	18	15	17
Copper	7440-50-8	5	mg/kg	23	14	16	27	21
Lead	7439-92-1	5	mg/kg	13	<5	13	14	17
Nickel	7440-02-0	2	mg/kg	18	15	9	17	18
Zinc	7440-66-6	5	mg/kg	89	53	46	59	63
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	----	----	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BK_MW04_0.9	BE_MW08_5.2	BE_MW08_0.5	BE_MW07_0.5	BE_MW06_0.1
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
				ES1324837-006	ES1324837-007	ES1324837-008	ES1324837-009	ES1324837-010
Compound	CAS Number	LOR	Unit					
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	----	----	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	----	----	----
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	----	----	----
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	----	----	----
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	----	----	----
Chloromethane	74-87-3	5	mg/kg	<5	----	----	----	----
Vinyl chloride	75-01-4	5	mg/kg	<5	----	----	----	----
Bromomethane	74-83-9	5	mg/kg	<5	----	----	----	----
Chloroethane	75-00-3	5	mg/kg	<5	----	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	----	----	----
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	----	----	----
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	----	----	----
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	----	----	----
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	----	----	----
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	----	----	----
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	----	----	----
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	----	----	----
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	----	----	----
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	----	----	----
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	----	----	----	----
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	----	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	----	----	----	----
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	----	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	----	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BK_MW04_0.9	BE_MW08_5.2	BE_MW08_0.5	BE_MW07_0.5	BE_MW06_0.1
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-006	ES1324837-007	ES1324837-008	ES1324837-009	ES1324837-010
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	----	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	----	----	----
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	----	----	----
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	----	----	----
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	----	----	----
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	----	----	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	----	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	1.0
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BK_MW04_0.9	BE_MW08_5.2	BE_MW08_0.5	BE_MW07_0.5	BE_MW06_0.1
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-006	ES1324837-007	ES1324837-008	ES1324837-009	ES1324837-010
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BK_MW04_0.9	BE_MW08_5.2	BE_MW08_0.5	BE_MW07_0.5	BE_MW06_0.1
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-006	ES1324837-007	ES1324837-008	ES1324837-009	ES1324837-010
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	92.3	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	85.1	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	80.1	----	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	89.9	91.3	86.1	94.6	93.1
2-Chlorophenol-D4	93951-73-6	0.1	%	100	103	102	95.7	102
2,4,6-Tribromophenol	118-79-6	0.1	%	75.2	73.6	75.6	72.3	79.7
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	84.2	82.1	85.9	81.7	87.2
Anthracene-d10	1719-06-8	0.1	%	85.1	82.7	87.1	82.0	87.0
4-Terphenyl-d14	1718-51-0	0.1	%	91.0	87.5	90.9	86.8	93.7
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	104	92.5	84.7	94.2	99.9
Toluene-D8	2037-26-5	0.1	%	91.8	89.6	83.6	92.3	99.5
4-Bromofluorobenzene	460-00-4	0.1	%	83.2	91.9	89.4	94.7	97.8



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BE_MW05_0.1	BE_MW05_1.5	BE_MW04_1.0	D01_151113_SM	BE_MW01_0.1
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-011	ES1324837-012	ES1324837-013	ES1324837-014	ES1324837-016
<b>EA150: Particle Sizing</b>								
+75µm	----	1	%	----	18	----	----	----
+150µm	----	1	%	----	13	----	----	----
+300µm	----	1	%	----	12	----	----	----
+425µm	----	1	%	----	12	----	----	----
+600µm	----	1	%	----	12	----	----	----
+1180µm	----	1	%	----	11	----	----	----
+2.36mm	----	1	%	----	11	----	----	----
+4.75mm	----	1	%	----	10	----	----	----
+9.5mm	----	1	%	----	9	----	----	----
+19.0mm	----	1	%	----	<1	----	----	----
+37.5mm	----	1	%	----	<1	----	----	----
+75.0mm	----	1	%	----	<1	----	----	----
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	----	7.6	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	13.6	----	17.7	18.5	11.2
<b>EA150: Soil Classification based on Particle Size</b>								
Fines (<75 µm)	----	1	%	----	82	----	----	----
Sand (>75 µm)	----	1	%	----	7	----	----	----
Gravel (>2mm)	----	1	%	----	11	----	----	----
Cobbles (>6cm)	----	1	%	----	<1	----	----	----
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	----	Yes
Asbestos Type	1332-21-4	0.1	--	-	----	-	----	Am
Sample weight (dry)	----	0.01	g	422	----	253	----	412
APPROVED IDENTIFIER:	----	-	--	C.OWLER	----	C.OWLER	----	C.OWLER
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	----	12.7	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	----	7.3	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	----	0.2	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	----	0.6	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	----	20.8	----	----	----
Exchangeable Aluminium	----	0.1	meq/100g	----	<0.1	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BE_MW05_0.1	BE_MW05_1.5	BE_MW04_1.0	D01_151113_SM	BE_MW01_0.1
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-011	ES1324837-012	ES1324837-013	ES1324837-014	ES1324837-016
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	15	----	7	8	19
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	18	----	16	16	24
Copper	7440-50-8	5	mg/kg	22	----	20	22	26
Lead	7439-92-1	5	mg/kg	18	----	11	12	17
Nickel	7440-02-0	2	mg/kg	14	----	17	20	16
Zinc	7440-66-6	5	mg/kg	52	----	66	68	81
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
<b>EP004: Organic Matter</b>								
Organic Matter	----	0.5	%	----	0.9	----	----	----
Total Organic Carbon	----	0.5	%	----	0.5	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	----	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BE_MW05_0.1	BE_MW05_1.5	BE_MW04_1.0	D01_151113_SM	BE_MW01_0.1
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-011	ES1324837-012	ES1324837-013	ES1324837-014	ES1324837-016
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
Pyrene	129-00-0	0.5	mg/kg	<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
Chrysene	218-01-9	0.5	mg/kg	<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
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<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
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<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
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	----	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	----	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	<50	<50	<50
<b>EP080: BTEXN</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BE_MW05_0.1	BE_MW05_1.5	BE_MW04_1.0	D01_151113_SM	BE_MW01_0.1
				[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]	[15-NOV-2013]
Compound	CAS Number	LOR	Unit	ES1324837-011	ES1324837-012	ES1324837-013	ES1324837-014	ES1324837-016
<b>EP080: BTEXN - Continued</b>								
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	<1	<1
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	78.7	----	87.1	78.6	84.8
2-Chlorophenol-D4	93951-73-6	0.1	%	91.0	----	99.3	86.9	96.0
2.4.6-Tribromophenol	118-79-6	0.1	%	72.9	----	76.0	75.9	74.8
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	81.6	----	82.6	82.0	76.7
Anthracene-d10	1719-06-8	0.1	%	82.5	----	84.3	84.2	84.6
4-Terphenyl-d14	1718-51-0	0.1	%	87.2	----	88.7	88.6	90.3
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	97.3	----	92.0	93.1	99.3
Toluene-D8	2037-26-5	0.1	%	90.4	----	90.3	90.4	94.2
4-Bromofluorobenzene	460-00-4	0.1	%	90.3	----	91.8	93.0	92.6

## Analytical Results

### Descriptive Results

Sub-Matrix: SOIL

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BE_MW08_0.5 - [15-NOV-2013]	Pale brown clay soil with some brown and red rocks plus a trace of vegetation
EA200: Description	BE_MW07_0.5 - [15-NOV-2013]	Pale orange and brown clay soil with some brown and red rocks plus a trace of vegetation
EA200: Description	BE_MW06_0.1 - [15-NOV-2013]	Mid brown clay soil with some vegetation
EA200: Description	BE_MW05_0.1 - [15-NOV-2013]	Mid brown clay soil with some vegetation
EA200: Description	BE_MW04_1.0 - [15-NOV-2013]	Pale orange and brown clay soil with some brown and red rocks plus a trace of vegetation
EA200: Description	BE_MW01_0.1 - [15-NOV-2013]	Mid brown clay soil with some small grey rocks plus two small friable asbestos fibre bundles approx 3 x 0.5 x 0.5mm



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

# Certificate of Analysis

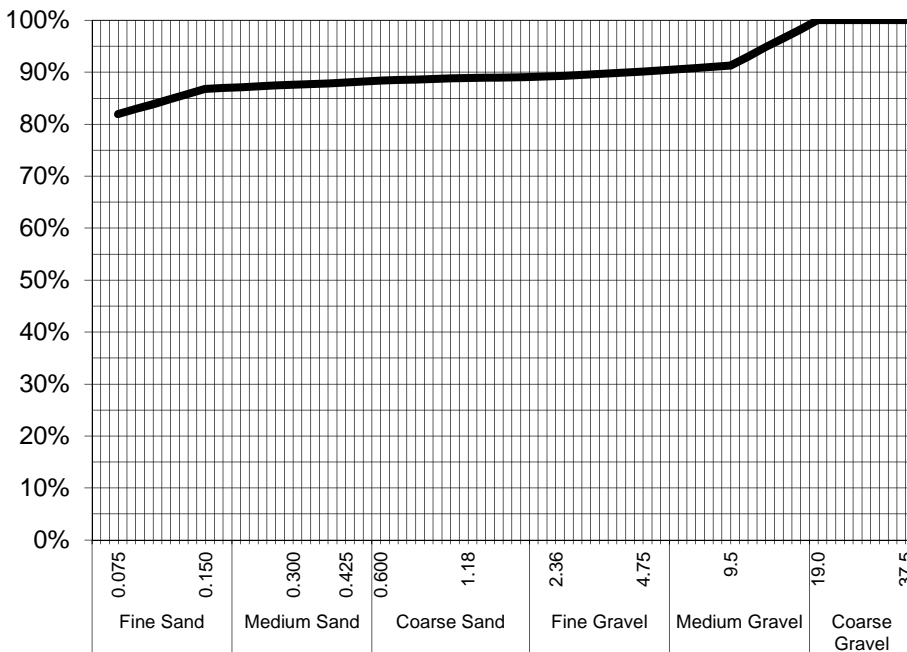
ALS Laboratory Group Pty Ltd  
 5 Rosegum Road  
 Warabrook, NSW 2304  
 pH 02 4968 9433  
 fax 02 4968 0349  
 samples.newcastle@alsenviro.com

**ALS Environmental**  
**Newcastle, NSW**



**CLIENT:** Joseph Ferring **DATE REPORTED:** 29-Nov-2013  
**COMPANY:** Enviro Resources Management **DATE RECEIVED:** 15-Nov-2013  
**ADDRESS:** Ground Floor **REPORT NO:** ES1324837-012 / PSD  
 33 Saunders Street, Pyrmont  
 NSW 2009  
**PROJECT:** Project Symphony **SAMPLE ID:** BE\_MW05\_1.5

## Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	91%
4.75	90%
2.36	89%
1.18	89%
0.600	88%
0.425	88%
0.300	88%
0.150	87%
0.075	82%

Samples analysed as received.

## Sample Comments:

**Analysed:** 27-Nov-13

**Loss on Pretreatment:** NA

**Limit of Reporting:** 1%

**Sample Description:** Fines, gravel and sand

**Test Method:** AS1289.3.6.1

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**Hamish Murray**  
 Laboratory Supervisor, Newcastle  
**Authorised Signatory**

## QUALITY CONTROL REPORT

Work Order	: <b>ES1324837</b>	Page	: 1 of 18
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 15-NOV-2013
C-O-C number	: ----	Issue Date	: 02-DEC-2013
Sampler	: AM	No. of samples received	: 17
Order number	: 0224193	No. of samples analysed	: 15
Quote number	: SY/794/13		

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



## 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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3168503)</b>									
EB1328193-059	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.7	7.5	2.8	0% - 20%
EB1328193-069	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.4	5.4	0.0	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3167934)</b>									
ES1324834-008	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	27.5	25.8	6.2	0% - 20%
ES1324837-009	BE_MW07_0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.3	12.5	6.0	0% - 50%
<b>ED007: Exchangeable Cations (QC Lot: 3173305)</b>									
ES1324837-002	BQ_MW10_3.5	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.0	14.2	1.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	6.9	7.0	1.7	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.6	0.7	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	21.8	22.2	1.8	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1325017-001	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.2	14.5	2.3	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.6	7.6	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.7	0.7	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.4	0.4	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	23.0	23.2	1.2	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3168870)</b>									
ES1324837-001	BV_SB08_2.0	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	30	20	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	20	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	4	4	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	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	10	11	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	20	20	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	27	24	9.9	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	43	45	5.4	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	38	39	3.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	45	44	0.0	No Limit
		EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
ES1325002-002	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3168870) - continued</b>									
ES1325002-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	<10	<10	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	2	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	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	<5	<5	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	10	8	15.2	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	6	6	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit
EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3170995)</b>									
ES1324729-016	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	19	23.1	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	17	18	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	20	21.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	11	16.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	43	45	5.8	No Limit
ES1324838-005	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	21	22	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	10	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	18	19	6.1	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	28	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	24	25	0.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	48	48	0.0	No Limit		
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3168871)</b>									
ES1324837-001	BV_SB08_2.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325002-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3170996)</b>									
ES1324729-016	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1324838-005	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP004: Organic Matter (QC Lot: 3178206)</b>									
ES1324837-002	BQ_MW10_3.5	EP004: Organic Matter	----	0.5	%	0.7	0.6	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<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 (%)
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3169636)</b>									
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325002-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3166173)</b>									
ES1324837-001	BV_SB08_2.0	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3166173)</b>									
ES1324837-001	BV_SB08_2.0	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3166173)</b>									
ES1324837-001	BV_SB08_2.0	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3166173)</b>									
ES1324837-001	BV_SB08_2.0	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166173)</b>									
ES1324837-001	BV_SB08_2.0	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166173) - continued</b>									
ES1324837-001	BV_SB08_2.0	EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3166173)</b>									
ES1324837-001	BV_SB08_2.0	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3166173)</b>									
ES1324837-001	BV_SB08_2.0	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3166173)</b>									
ES1324837-001	BV_SB08_2.0	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3169697)</b>									
ES1325053-002	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3169697) - continued</b>									
ES1325053-002	Anonymous	EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES1325053-008	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3169697)</b>							
ES1325053-002	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		ES1325053-008	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	7.0	5.3
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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3169697) - continued</b>									
ES1325053-008	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	7.0	5.3	27.6	0% - 50%
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3166172)</b>									
ES1324837-001	BV_SB08_2.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1324838-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3169696)</b>									
ES1325053-002	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
ES1325053-008	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	160	150	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	430	400	7.1	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166172)</b>									
ES1324837-001	BV_SB08_2.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1324838-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3169696)</b>									
ES1325053-002	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1325053-008	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	410	370	10.3	No Limit
<b>EP080: BTEXN (QC Lot: 3166172)</b>									
ES1324837-001	BV_SB08_2.0	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



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 (%)
<b>EP080: BTEXN (QC Lot: 3166172) - continued</b>									
ES1324837-001	BV_SB08_2.0	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1324838-002	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	0.6	<0.5	24.7	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>ED007: Exchangeable Cations (QCLot: 3173305)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168870)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	110	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	107	83	129	
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	116	88	130	
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	103	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	116	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	107	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	118	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	104	81	123	
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	116	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	120	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	113	84	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	108	75	131	
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	114	95	129	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133	
EG005T: Thallium	7440-28-0	5	mg/kg	<5	5.96 mg/kg	108	70	130	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	105	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	101	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	114	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	108	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	101	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	113	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	113	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168871)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	94.0	66	112	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170996)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170996) - continued</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	93.0	66	112	
<b>EP004: Organic Matter (QCLot: 3178206)</b>									
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	99.9	85	105	
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	99.8	84	106	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	84.8	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3166173)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	82.8	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	97.4	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	96.1	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	99.4	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	101	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	98.5	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	100	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	97.9	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	83.3	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3166173)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	34.7	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	83.1	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	83.9	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	75.8	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3166173)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	113	54	126	
<b>EP074D: Fumigants (QCLot: 3166173)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	86.7	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	92.1	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	82.4	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	79.5	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	87.2	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166173)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	54.7	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	85.6	41	141	
		5	mg/kg	<5	----	----	----	----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166173) - continued</b>									
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	86.9	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	91.5	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	119	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	114	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	113	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	109	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	91.4	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	103	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	93.4	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	108	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	93.6	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	106	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	97.2	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	101	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	89.8	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	93.2	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	86.8	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	90.1	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	96.2	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	67.5	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	59.0	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	86.3	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	84.3	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	101	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	101	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	114	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166173)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	94.2	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	91.6	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	96.6	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	93.7	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	88.8	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	91.5	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	88.0	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	76.4	54	134	





Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166173) - continued</b>									
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	84.2	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3166173)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	99.7	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	98.2	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	106	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	105	60	126	
<b>EP074H: Naphthalene (QCLot: 3166173)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	102	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3169697)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	99.5	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	106	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	108	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	105	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	88.9	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	92.3	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	87.8	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	95.6	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	99.6	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	81.2	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	82.5	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	32.5	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3169697)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	96.8	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	98.0	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	100	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	105	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	98.6	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	107	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	101	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	102	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	103	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	106	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	102	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	106	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	98.7	76	122	
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	96.4	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	95.4	71.7	113	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3169697) - continued</b>								
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	96.3	72.4	114
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166172)</b>								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	79.1	68.4	128
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3169696)</b>								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	107	71	131
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	102	74	138
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	82.9	64	128
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166172)</b>								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	76.6	68.4	128
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3169696)</b>								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	101	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	96.6	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
		50	mg/kg	----	150 mg/kg	75.5	63	131
<b>EP080: BTEXN (QCLot: 3166172)</b>								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	69.3	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	75.3	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	62.9	58	118
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	67.2	60	120
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	71.6	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	67.0	62	138

### 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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%)	Recovery Limits (%)	
					MS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168870)</b>							
ES1324837-001	BV_SB08_2.0	EG005T: Arsenic	7440-38-2	50 mg/kg	107	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.3	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	102	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	105	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	95.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	99.3	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	108	70	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168870) - continued</b>							
ES1324837-001	BV_SB08_2.0	EG005T: Zinc	7440-66-6	125 mg/kg	97.4	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995)</b>							
ES1324729-016	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	112	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	105	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	105	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	97.4	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168871)</b>							
ES1324837-001	BV_SB08_2.0	EG035T: Mercury	7439-97-6	5 mg/kg	93.9	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170996)</b>							
ES1324729-016	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	106	70	130
<b>EP004: Organic Matter (QCLot: 3178206)</b>							
ES1324837-012	BE_MW05_1.5	EP004: Organic Matter	----	4.58 %	11.2	----	----
		EP004: Total Organic Carbon	----	2.66 %	11.2	----	----
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>							
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	81.6	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166173)</b>							
ES1324837-001	BV_SB08_2.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	87.7	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	74.0	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166173)</b>							
ES1324837-001	BV_SB08_2.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	85.0	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3169697)</b>							
ES1325053-002	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	77.9	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	85.0	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	78.1	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	72.5	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	44.6	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3169697)</b>							
ES1325053-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	83.4	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	82.6	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166172)</b>							
ES1324837-001	BV_SB08_2.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	98.1	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3169696)</b>							



Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3169696) - continued</b>								
ES1325053-002	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	96.7	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	90.4	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	75.5	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166172)</b>								
ES1324837-001	BV_SB08_2.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	95.2	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3169696)</b>								
ES1325053-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	120	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	81.4	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	57.0	52	132	
<b>EP080: BTEXN (QCLot: 3166172)</b>								
ES1324837-001	BV_SB08_2.0	EP080: Benzene	71-43-2	2.5 mg/kg	82.2	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	91.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	84.0	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	80.7	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.8	70	130	
EP080: Naphthalene	91-20-3	2.5 mg/kg	94.0	70	130			

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166172)</b>											
ES1324837-001	BV_SB08_2.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	98.1	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166172)</b>											
ES1324837-001	BV_SB08_2.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	95.2	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3166172)</b>											
ES1324837-001	BV_SB08_2.0	EP080: Benzene	71-43-2	2.5 mg/kg	82.2	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	91.9	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	84.0	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	80.7	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.8	----	70	130	----	----	
EP080: Naphthalene	91-20-3	2.5 mg/kg	94.0	----	70	130	----	----			



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166173)</b>										
ES1324837-001	BV_SB08_2.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	87.7	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	74.0	----	70	130	----	----
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166173)</b>										
ES1324837-001	BV_SB08_2.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	85.0	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168870)</b>										
ES1324837-001	BV_SB08_2.0	EG005T: Arsenic	7440-38-2	50 mg/kg	107	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.3	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	102	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	105	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	95.4	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	99.3	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	108	----	70	130	----	----
EG005T: Zinc	7440-66-6	125 mg/kg	97.4	----	70	130	----	----		
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168871)</b>										
ES1324837-001	BV_SB08_2.0	EG035T: Mercury	7439-97-6	5 mg/kg	93.9	----	70	130	----	----
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>										
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	81.6	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3169696)</b>										
ES1325053-002	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	96.7	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	90.4	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	75.5	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3169696)</b>										
ES1325053-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	120	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	81.4	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	57.0	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3169697)</b>										
ES1325053-002	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	77.9	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	85.0	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	78.1	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	72.5	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	44.6	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3169697)</b>										
ES1325053-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	83.4	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	82.6	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995)</b>										
ES1324729-016	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	----	70	130	----	----



Sub-Matrix: **SOIL**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995) - continued</b>										
ES1324729-016	Anonymous	EG005T: Chromium	7440-47-3	50 mg/kg	112	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	105	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	105	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	104	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	97.4	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170996)</b>										
ES1324729-016	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	106	----	70	130	----	----
<b>EP004: Organic Matter (QCLot: 3178206)</b>										
ES1324837-012	BE_MW05_1.5	EP004: Organic Matter	----	4.58 %	11.2	----	----	----	----	----
		EP004: Total Organic Carbon	----	2.66 %	11.2	----	----	----	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1324837</b>	Page	: 1 of 10
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 15-NOV-2013
C-O-C number	: ----	Issue Date	: 02-DEC-2013
Sampler	: AM	No. of samples received	: 17
Order number	: 0224193	No. of samples analysed	: 15
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA002 : pH (Soils)</b>							
<b>Soil Glass Jar - Unpreserved (EA002)</b> BQ_MW10_3.5, BE_MW05_1.5	15-NOV-2013	21-NOV-2013	22-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EA055: Moisture Content</b>							
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BV_SB08_2.0, BK_MW01_5.0, BK_MW03_5.7, BE_MW08_5.2, BE_MW07_0.5, BE_MW05_0.1, D01_151113_SM, BQ_MW10_3.5, BK_MW02_5.9, BK_MW04_0.9, BE_MW08_0.5, BE_MW06_0.1, BE_MW04_1.0, BE_MW01_0.1	15-NOV-2013	----	----	----	20-NOV-2013	29-NOV-2013	✓
<b>EA150: Particle Sizing</b>							
<b>Snap Lock Bag (EA150)</b> BE_MW05_1.5	15-NOV-2013	---	14-MAY-2014	----	28-NOV-2013	27-MAY-2014	✓
<b>EA150: Soil Classification based on Particle Size</b>							
<b>Snap Lock Bag (EA150)</b> BE_MW05_1.5	15-NOV-2013	---	14-MAY-2014	----	28-NOV-2013	27-MAY-2014	✓
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>							
<b>Snap Lock Bag (EA200)</b> BE_MW08_0.5, BE_MW06_0.1, BE_MW04_1.0, BE_MW07_0.5, BE_MW05_0.1, BE_MW01_0.1	15-NOV-2013	---	14-MAY-2014	----	02-DEC-2013	31-MAY-2014	✓
<b>ED007: Exchangeable Cations</b>							
<b>Soil Glass Jar - Unpreserved (ED007)</b> BQ_MW10_3.5, BE_MW05_1.5	15-NOV-2013	25-NOV-2013	13-DEC-2013	✓	25-NOV-2013	13-DEC-2013	✓





Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BV_SB08_2.0, BQ_MW10_3.5, BK_MW01_5.0, BK_MW02_5.9, BK_MW03_5.7, BK_MW04_0.9, BE_MW08_5.2, BE_MW08_0.5, BE_MW07_0.5	15-NOV-2013	20-NOV-2013	14-MAY-2014	✓	21-NOV-2013	14-MAY-2014	✓	
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BE_MW06_0.1, BE_MW05_0.1, BE_MW04_1.0, D01_151113_SM, BE_MW01_0.1	15-NOV-2013	21-NOV-2013	14-MAY-2014	✓	22-NOV-2013	14-MAY-2014	✓	
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BV_SB08_2.0, BK_MW01_5.0, BK_MW02_5.9, BK_MW03_5.7, BK_MW04_0.9, BE_MW08_5.2, BE_MW08_0.5, BE_MW07_0.5	15-NOV-2013	20-NOV-2013	13-DEC-2013	✓	21-NOV-2013	13-DEC-2013	✓	
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BE_MW06_0.1, BE_MW05_0.1, BE_MW04_1.0, D01_151113_SM, BE_MW01_0.1	15-NOV-2013	21-NOV-2013	13-DEC-2013	✓	22-NOV-2013	13-DEC-2013	✓	
<b>EP004: Organic Matter</b>								
<b>Soil Glass Jar - Unpreserved (EP004)</b> BQ_MW10_3.5, BE_MW05_1.5	15-NOV-2013	26-NOV-2013	13-DEC-2013	✓	26-NOV-2013	13-DEC-2013	✓	
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
<b>Soil Glass Jar - Unpreserved (EP066)</b> BV_SB08_2.0	15-NOV-2013	21-NOV-2013	29-NOV-2013	✓	22-NOV-2013	31-DEC-2013	✓	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP071)</b> BV_SB08_2.0, BQ_MW10_3.5, BK_MW01_5.0, BK_MW02_5.9, BK_MW03_5.7, BK_MW04_0.9, BE_MW08_5.2, BE_MW08_0.5, BE_MW07_0.5, BE_MW06_0.1, BE_MW05_0.1, BE_MW04_1.0, D01_151113_SM, BE_MW01_0.1	15-NOV-2013	22-NOV-2013	29-NOV-2013	✓	22-NOV-2013	01-JAN-2014	✓	
<b>EP074D: Fumigants</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_2.0, BK_MW01_5.0, BK_MW02_5.9, BK_MW03_5.7, BK_MW04_0.9	15-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓	



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_2.0, BK_MW02_5.9, BK_MW04_0.9	BK_MW01_5.0, BK_MW03_5.7	15-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_2.0, BK_MW02_5.9, BK_MW04_0.9	BK_MW01_5.0, BK_MW03_5.7	15-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_2.0, BK_MW02_5.9, BK_MW04_0.9	BK_MW01_5.0, BK_MW03_5.7	15-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓
<b>EP074H: Naphthalene</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_2.0, BK_MW02_5.9, BK_MW04_0.9	BK_MW01_5.0, BK_MW03_5.7	15-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓
<b>EP074B: Oxygenated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_2.0, BK_MW02_5.9, BK_MW04_0.9	BK_MW01_5.0, BK_MW03_5.7	15-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓
<b>EP074C: Sulfonated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_2.0, BK_MW02_5.9, BK_MW04_0.9	BK_MW01_5.0, BK_MW03_5.7	15-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓
<b>EP074G: Trihalomethanes</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_2.0, BK_MW02_5.9, BK_MW04_0.9	BK_MW01_5.0, BK_MW03_5.7	15-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP075(SIM)A: Phenolic Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b>							
BV_SB08_2.0, BQ_MW10_3.5,	15-NOV-2013	22-NOV-2013	29-NOV-2013	✓	22-NOV-2013	01-JAN-2014	✓
BK_MW01_5.0, BK_MW02_5.9,							
BK_MW03_5.7, BK_MW04_0.9,							
BE_MW08_5.2, BE_MW08_0.5,							
BE_MW07_0.5, BE_MW06_0.1,							
BE_MW05_0.1, BE_MW04_1.0,							
D01_151113_SM, BE_MW01_0.1							
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b>							
BV_SB08_2.0, BQ_MW10_3.5,	15-NOV-2013	22-NOV-2013	29-NOV-2013	✓	22-NOV-2013	01-JAN-2014	✓
BK_MW01_5.0, BK_MW02_5.9,							
BK_MW03_5.7, BK_MW04_0.9,							
BE_MW08_5.2, BE_MW08_0.5,							
BE_MW07_0.5, BE_MW06_0.1,							
BE_MW05_0.1, BE_MW04_1.0,							
D01_151113_SM, BE_MW01_0.1							
<b>EP080: BTEXN</b>							
<b>Soil Glass Jar - Unpreserved (EP080)</b>							
BV_SB08_2.0, BQ_MW10_3.5,	15-NOV-2013	19-NOV-2013	29-NOV-2013	✓	21-NOV-2013	29-NOV-2013	✓
BK_MW01_5.0, BK_MW02_5.9,							
BK_MW03_5.7, BK_MW04_0.9,							
BE_MW08_5.2, BE_MW08_0.5,							
BE_MW07_0.5, BE_MW06_0.1,							
BE_MW05_0.1, BE_MW04_1.0,							
D01_151113_SM, BE_MW01_0.1							
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved (EP080)</b>							
BV_SB08_2.0, BQ_MW10_3.5,	15-NOV-2013	19-NOV-2013	29-NOV-2013	✓	21-NOV-2013	29-NOV-2013	✓
BK_MW01_5.0, BK_MW02_5.9,							
BK_MW03_5.7, BK_MW04_0.9,							
BE_MW08_5.2, BE_MW08_0.5,							
BE_MW07_0.5, BE_MW06_0.1,							
BE_MW05_0.1, BE_MW04_1.0,							
D01_151113_SM, BE_MW01_0.1							



## 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	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Exchangeable Cations	ED007	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	37	10.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	39	10.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	10	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Exchangeable Cations	ED007	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	37	5.4	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Exchangeable Cations	ED007	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	37	5.4	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	37	5.4	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Total Metals by ICP-AES	EG005T	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Particle Size Analysis (Sieving)	EA150	SOIL	Particle Size Analysis by Sieving according to AS1289.3.6.1 - 2009
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Organic Matter	EP004	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
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 (2013) Schedule B(3) (Method 504)
TPH - Semivolatle 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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) Schedule B(3) (Method 501)
Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) Schedule B(3) (Method 202)
Organic Matter	EP004-PR	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
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 <sub>2</sub> SO <sub>4</sub> 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 <sub>2</sub> SO <sub>4</sub> 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.



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## 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.
-





# CHAIN OF CUSTODY

ALS Laboratory  
 1401-1407 27th Street, North York, ON, Canada  
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 Tel: 416-291-2311  
 Fax: 416-291-2312  
 Email: info@als.com

CLIENT: **ERM**  
 OFFICE: **Sydney**  
 PROJECT: **Project Sydney**  
 ORDER NUMBER: **0224193**  
 PROJECT MANAGER: **JOSEPH FERRICK**  
 SAMPLER: **STEPHEN MULLIGAN**  
 COC emailed to ALS? (YES / NO):  
 Email Reports to (will default to PM if no other addresses are listed): **John.mulligan@erm.com**  
 Email Invoices to (will default to PM if no other addresses are listed):  
 COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:  
 (Standard TAT may be longer for some tests e.g. Urea, Trace Metals)  
 ALS QUOTE NO: **SV79413**  
 BAYSWATER / LIDDELL  
 Site: **BAYSWATER / LIDDELL**  
 Relinquished by: **Stephen Mulligan** DATE/TIME: **15/11/13 1650**  
 Received by: **Kevin SGL** DATE/TIME: **15/11/13 19:15**

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)	CONTAINER INFORMATION	ANALYSIS REQUIRED	Additional Information															
	LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	(refer to)	TOTAL CONTAINERS	5-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Se, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	5-24 TRH (CS-C40)/BTEXM, PAH, Phenols	VOC Target Scan	PCB	pH (±5)	Exchangeable cations (ED007)	PFS/PPOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)	
	1	BQ_MUD01_0.1	14/11/13	SOIL	1 Jar + 1 bag		2	X	X	X	X	X	X	X	X	X	X	X	
	2	BP_MUD02_02	14/11/13		1 Jar + 1 bag		2	X	X	X	X	X	X	X	X	X	X	X	
	3	BP_MUD4_05	14/11/13		1 Jar + 1 bag		2	X	X	X	X	X	X	X	X	X	X	X	
	4	BP_MUD05_0.1	14/11/13		1 Jar + 1 bag		2	X	X	X	X	X	X	X	X	X	X	X	
	5	BP_MUD05_1.0	14/11/13		1 Jar + 1 bag		2	X	X	X	X	X	X	X	X	X	X	X	
	6	BL_SRD3_0.1	14/11/13		1 Jar + 1 bag		2	X	X	X	X	X	X	X	X	X	X	X	
	7	D01_141113_SM	14/11/13		1 Jar		1	X	X	X	X	X	X	X	X	X	X	X	

Water Contaminant Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; CRG = Nitric Preserved CRG; SM = Sediment Hydroxide Preserved; S = Sediment Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AF = Airtight Unpreserved Plastic; V = VOA Vial HQ Preserved; VB = VOA Vial Sediment Biphosphate Preserved; VS = VOA Vial Sediment Preserved; AV = Airtight Unpreserved Vial; SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Specimen bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Stable Bottle; AS5 = Plastic Bag for Acid Stabilized Solids; U = Unpreserved Bag

Environmental Division  
 Sydney  
 Work Order  
**ES1324838**  
 Telephone : + 61-2-8784 8555

## Wael Saleh

---

**From:** Barbara Hanna  
**Sent:** Wednesday, 20 November 2013 8:27 AM  
**To:** Wael Saleh  
**Subject:** FW: Amendments to ERM Symphony SRNs

Hi Wael,

Could you please take care of this.

Thanks  
Barbara

---

From: Kate Fox [Kate.Fox@erm.com]  
Sent: Tuesday, 19 November 2013 5:40 PM  
To: Barbara Hanna  
Cc: ERM Australia Project Symphony MacGen  
Subject: RE: Amendments to ERM Symphony SRNs

Hi Barbara,

Thanks for that. I have a few more requests!

- 1) Instead of analysing for Cations and Anions, we would now like to analyse for Electrical Conductivity. So far, I think it's only the following which have been analysed for Cations and Anions:
  - ES1324726-016
  - ES1324726-017
  - ES1324729-016
  - ES1324838-001If these could be analysed for Electrical Conductivity as well, that would be great. Going forward samples will only be analysed for Electrical Conductivity.
  
- 2) Please analyse ES1324729-007 for Electrical Conductivity.
  
- 3) Please add analysis of Metals(8), TRH, BTEX, PAH, Phenols to:
  - ES1324840-001
  - ES1324840-002
  - ES1324840-003
  - ES1324840-004
  - ES1324840-005
  - ES1324840-006
  
- 4) Please rename the following IDs:

<b>Lab Sample ID</b>	<b>Current ID</b>	<b>Correct ID</b>
ES1324729-017	TRIP SPIKE	TS_051113_SM
ES1324729-018	TRIP BLANK	TB_051113_SM
ES1324729-019	TSC	TSC_051113
ES1324729-020	R01_071113	R01_071113_SM

Many thanks,  
Please let me know if you have any questions.

Kate

---

From: Barbara Hanna [mailto:Barbara.Hanna@alsglobal.com]  
Sent: Tuesday, November 19, 2013 10:14 AM  
To: Wael Saleh  
Cc: ERM Australia Project Symphony MacGen; Kate Fox  
Subject: RE: Amendments to ERM Symphony SRNs

Hi Wael,

Could you please take care of this.

Thanks!!

Kind Regards

**Barbara Hanna**

**Client Services Manager**  
**ALS | Environmental Division**

277-289 Woodpark Road  
Smithfield NSW 2164 Australia

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*Please see our latest [EnviroMail 68 - Sampling and Analysis Implications of the new NEPM - July 2013](#)*

*[EnviroMail 69 - Testing Requirements of the new NEPM - July 2013](#)*

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 Please consider the environment before printing this email.

---

From: Kate Fox [mailto:Kate.Fox@erm.com]  
Sent: Monday, 18 November 2013 6:20 PM  
To: Barbara Hanna

Cc: ERM Australia Project Symphony MacGen  
Subject: Amendments to ERM Symphony SRNs

Hi Barbara,

I'm just going through some SRNs for the Symphony Project. Could you please amend the Sample ID on the following:

Lab Sample ID	Current ID	Correct ID
ES1324840-011	TRIP SPIKE (TS4)	TS4_151113
ES1324840-012	BLANK	TB_151113
ES1324840-013	TSC 4	TSC4_151113
ES1324841-008	LI_MW8_0.5	LI_MW08_0.5

Many thanks,  
Kate



**Kate Fox**  
Environmental Resources Management  
Level 1, 60 Leichhardt Street  
Spring Hill, Brisbane, QLD, 4000

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**SAMPLE RECEIPT NOTIFICATION (SRN)****Comprehensive Report**

<b>Work Order</b>	: <b>ES1324838</b>		
<b>Client</b>	: <b>ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	: Environmental Division Sydney
<b>Contact</b>	: MR JOSEPH FERRING	<b>Contact</b>	: Barbara Hanna
<b>Address</b>	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Address</b>	: 277-289 Woodpark Road Smithfield NSW Australia 2164
<b>E-mail</b>	: joseph.ferring@erm.com	<b>E-mail</b>	: Barbara.Hanna@alsglobal.com
<b>Telephone</b>	: +61 02 8584 8888	<b>Telephone</b>	: +61 2 8784 8555
<b>Facsimile</b>	: +61 02 8584 8800	<b>Facsimile</b>	: +61 2 8784 8555
<b>Project</b>	: PROJECT SYMPHONY	<b>Page</b>	: 1 of 3
<b>Order number</b>	: 0224193		
<b>C-O-C number</b>	: ----	<b>Quote number</b>	: ES2013ENVRES0369 (SY/794/13)
<b>Site</b>	: ----		
<b>Sampler</b>	: SM	<b>QC Level</b>	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

**Dates**

<b>Date Samples Received</b>	: 15-NOV-2013	<b>Issue Date</b>	: 21-NOV-2013 11:20
<b>Client Requested Due Date</b>	: 26-NOV-2013	<b>Scheduled Reporting Date</b>	: <b>26-NOV-2013</b>

**Delivery Details**

<b>Mode of Delivery</b>	: Carrier	<b>Temperature</b>	: 4.9° C - Ice present
<b>No. of coolers/boxes</b>	: 1 HARD	<b>No. of samples received</b>	: 7
<b>Security Seal</b>	: Intact.	<b>No. of samples analysed</b>	: 7

**General Comments**

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos and PSD analysis will be conducted by ALS Newcastle.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - EA010 (solids): Electrical Conductivity (1:5)	SOIL - EA150* Particle Size Analysis by Sieving (Default sieves from SOIL - EA200)	SOIL - EA200 Asbestos Identification in Soils	SOIL - ED007 Def CEC / Exchangeable Cations (ED007) -Default	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP004 (Carbon) Total Organic Carbon (Calc.)	SOIL - EP066 (solids) Polychlorinated Biphenyls by GC/MS
ES1324838-001	14-NOV-2013 15:00	BQ_MW01_0.1	✓	✓		✓	✓	✓		
ES1324838-005	14-NOV-2013 15:00	BP_MW05_1.0	✓		✓		✓		✓	
ES1324838-006	14-NOV-2013 15:00	BL_SB03_0.1				✓				✓

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - NT-1S Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S Major Anions (Cl, SO4)	SOIL - S-01 7 Metals (incl. Digestion)	SOIL - S-24 TRH/BTEX/NPAH + Phenols	SOIL - S-27 TRH/BTEX/NPAH/Phenols/8Metals
ES1324838-001	14-NOV-2013 15:00	BQ_MW01_0.1		✓	✓	✓	✓	
ES1324838-002	14-NOV-2013 15:00	BP_MW02_0.2	✓					✓
ES1324838-003	14-NOV-2013 15:00	BP_MW04_0.5	✓					✓
ES1324838-004	14-NOV-2013 15:00	BP_MW05_0.1	✓					✓
ES1324838-005	14-NOV-2013 15:00	BP_MW05_1.0	✓					✓
ES1324838-006	14-NOV-2013 15:00	BL_SB03_0.1						✓
ES1324838-007	14-NOV-2013 15:00	D01_141113_SM	✓					✓

## Proactive Holding Time Report

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



## *Requested Deliverables*

### **JOHN EWING**

- *AU Certificate of Analysis - NATA ( COA )	Email	john.ewing@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	john.ewing@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	john.ewing@erm.com
- Attachment - Report ( SUBCO )	Email	john.ewing@erm.com
- Chain of Custody (CoC) ( COC )	Email	john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	john.ewing@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	john.ewing@erm.com
- EDI Format - XTab ( XTAB )	Email	john.ewing@erm.com

### **MR JOSEPH FERRING**

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Attachment - Report ( SUBCO )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTAB )	Email	joseph.ferring@erm.com

### **THE ACCOUNTS PAYABLE**

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1324838</b>	Page	: 1 of 16
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193	Date Samples Received	: 15-NOV-2013
C-O-C number	: ----	Issue Date	: 28-NOV-2013
Sampler	: SM	No. of samples received	: 7
Site	: ----	No. of samples analysed	: 7
Quote number	: SY/794/13		

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





## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**
- **EG005T: Poor precision and spike recovery was obtained for some elements on sample ES1325454 #001 due to sample heterogeneity. Results have been confirmed by re-extraction and re-analysis.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

## Signatories

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

Signatories	Position	Accreditation Category
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Shaun Spooner	Laboratory Technician	Newcastle - Asbestos
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_0.1	BP_MW02_0.2	BP_MW04_0.5	BP_MW05_0.1	BP_MW05_1.0
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324838-001	ES1324838-002	ES1324838-003	ES1324838-004	ES1324838-005
<b>EA150: Particle Sizing</b>								
+75µm	----	1	%	----	----	----	----	14
+150µm	----	1	%	----	----	----	----	14
+300µm	----	1	%	----	----	----	----	13
+425µm	----	1	%	----	----	----	----	13
+600µm	----	1	%	----	----	----	----	13
+1180µm	----	1	%	----	----	----	----	13
+2.36mm	----	1	%	----	----	----	----	12
+4.75mm	----	1	%	----	----	----	----	10
+9.5mm	----	1	%	----	----	----	----	7
+19.0mm	----	1	%	----	----	----	----	<1
+37.5mm	----	1	%	----	----	----	----	<1
+75.0mm	----	1	%	----	----	----	----	<1
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	6.7	----	----	----	4.5
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	24	----	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	14.6	21.7	16.3	20.7	16.0
<b>EA150: Soil Classification based on Particle Size</b>								
Fines (<75 µm)	----	1	%	----	----	----	----	86
Sand (>75 µm)	----	1	%	----	----	----	----	2
Gravel (>2mm)	----	1	%	----	----	----	----	12
Cobbles (>6cm)	----	1	%	----	----	----	----	<1
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	----	----	----
Asbestos Type	1332-21-4	0.1	--	-	----	----	----	----
Sample weight (dry)	----	0.01	g	491	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	S.SPOONER	----	----	----	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	3.0	----	----	----	4.2
Exchangeable Magnesium	----	0.1	meq/100g	1.2	----	----	----	6.0
Exchangeable Potassium	----	0.1	meq/100g	0.2	----	----	----	0.3
Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	1.1



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_0.1	BP_MW02_0.2	BP_MW04_0.5	BP_MW05_0.1	BP_MW05_1.0
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324838-001	ES1324838-002	ES1324838-003	ES1324838-004	ES1324838-005
<b>ED007: Exchangeable Cations - Continued</b>								
Cation Exchange Capacity	----	0.1	meq/100g	4.5	----	----	----	11.7
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	0.2
<b>ED040S : Soluble Sulfate by ICPAES</b>								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	10	----	----	----	----
<b>ED045G: Chloride Discrete analyser</b>								
Chloride	16887-00-6	10	mg/kg	<10	----	----	----	----
<b>ED093S: Soluble Major Cations</b>								
Calcium	7440-70-2	10	mg/kg	<10	----	----	----	----
Magnesium	7439-95-4	10	mg/kg	<10	----	----	----	----
Sodium	7440-23-5	10	mg/kg	20	----	----	----	----
Potassium	7440-09-7	10	mg/kg	30	----	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Barium	7440-39-3	10	mg/kg	40	----	----	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
Cobalt	7440-48-4	2	mg/kg	4	----	----	----	----
Manganese	7439-96-5	5	mg/kg	135	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
Vanadium	7440-62-2	5	mg/kg	17	----	----	----	----
Thallium	7440-28-0	5	mg/kg	<5	----	----	----	----
Arsenic	7440-38-2	5	mg/kg	13	11	12	16	18
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	7	31	22	8	21
Copper	7440-50-8	5	mg/kg	5	23	14	22	28
Lead	7439-92-1	5	mg/kg	9	20	18	14	24
Nickel	7440-02-0	2	mg/kg	6	28	8	12	10
Zinc	7440-66-6	5	mg/kg	33	84	37	164	48
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	0.1	<0.1
<b>EP004: Organic Matter</b>								
Organic Matter	----	0.5	%	----	----	----	----	<0.5
Total Organic Carbon	----	0.5	%	----	----	----	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_0.1	BP_MW02_0.2	BP_MW04_0.5	BP_MW05_0.1	BP_MW05_1.0
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324838-001	ES1324838-002	ES1324838-003	ES1324838-004	ES1324838-005
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	----	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	<5	<5	<5	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	----	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	----	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg	----	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	----	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	----	<5	<5	<5	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_0.1	BP_MW02_0.2	BP_MW04_0.5	BP_MW05_0.1	BP_MW05_1.0
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324838-001	ES1324838-002	ES1324838-003	ES1324838-004	ES1324838-005
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_0.1	BP_MW02_0.2	BP_MW04_0.5	BP_MW05_0.1	BP_MW05_1.0
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324838-001	ES1324838-002	ES1324838-003	ES1324838-004	ES1324838-005
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	<5	<5	<5	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<b>0.6</b>	<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	<b>0.7</b>	<0.5	<b>3.4</b>	<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	<b>0.9</b>	<0.5	<b>3.3</b>	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<b>0.6</b>	<0.5	<b>2.2</b>	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<b>1.2</b>	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<b>0.5</b>	<0.5	<b>1.4</b>	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<b>1.1</b>	<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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<b>2.7</b>	<0.5	<b>13.2</b>	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.8</b>	<b>0.6</b>



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_0.1	BP_MW02_0.2	BP_MW04_0.5	BP_MW05_0.1	BP_MW05_1.0
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324838-001	ES1324838-002	ES1324838-003	ES1324838-004	ES1324838-005
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.3	1.2
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	120	<50
C15 - C28 Fraction	----	100	mg/kg	<100	310	<100	1940	<100
C29 - C36 Fraction	----	100	mg/kg	<100	180	<100	800	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	490	<50	2860	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	260	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	420	<100	2410	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	110	<100	400	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	530	<50	3070	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	260	<50
<b>EP080: BTEXN</b>								
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	0.6	<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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	0.6	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	0.6	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	87.1	81.4	70.6	88.6
Toluene-D8	2037-26-5	0.1	%	----	82.9	80.2	99.5	87.4
4-Bromofluorobenzene	460-00-4	0.1	%	----	72.2	76.4	91.1	79.4
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	85.0	85.0	93.5	87.9	76.6
2-Chlorophenol-D4	93951-73-6	0.1	%	93.2	92.5	105	92.5	84.0
2,4,6-Tribromophenol	118-79-6	0.1	%	77.0	76.4	102	70.3	81.3



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_0.1	BP_MW02_0.2	BP_MW04_0.5	BP_MW05_0.1	BP_MW05_1.0
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324838-001	ES1324838-002	ES1324838-003	ES1324838-004	ES1324838-005
<b>EP075(SIM)S: Phenolic Compound Surrogates - Continued</b>								
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	79.2	85.1	93.9	87.6	90.8
Anthracene-d10	1719-06-8	0.1	%	83.7	81.6	92.8	94.8	86.7
4-Terphenyl-d14	1718-51-0	0.1	%	87.9	86.8	98.6	84.9	95.1
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	88.4	98.4	91.4	79.0	100
Toluene-D8	2037-26-5	0.1	%	78.5	88.5	86.2	107	93.5
4-Bromofluorobenzene	460-00-4	0.1	%	86.2	73.9	80.7	103	81.4





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BL_SB03_0.1	D01_141113_SM	---	---	---
				14-NOV-2013 15:00	14-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1324838-006	ES1324838-007	---	---	---
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	---	1.0	%	16.6	18.4	---	---	---
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	---	---	---	---
Asbestos Type	1332-21-4	0.1	--	-	---	---	---	---
Sample weight (dry)	---	0.01	g	291	---	---	---	---
APPROVED IDENTIFIER:	---	-	--	S.SPOONER	---	---	---	---
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	6	7	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	<1	---	---	---
Chromium	7440-47-3	2	mg/kg	14	7	---	---	---
Copper	7440-50-8	5	mg/kg	17	18	---	---	---
Lead	7439-92-1	5	mg/kg	12	12	---	---	---
Nickel	7440-02-0	2	mg/kg	18	12	---	---	---
Zinc	7440-66-6	5	mg/kg	69	142	---	---	---
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	0.1	---	---	---
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	---	0.1	mg/kg	<0.1	---	---	---	---
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	---	<0.5	---	---	---
Isopropylbenzene	98-82-8	0.5	mg/kg	---	<0.5	---	---	---
n-Propylbenzene	103-65-1	0.5	mg/kg	---	<0.5	---	---	---
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	---	<0.5	---	---	---
sec-Butylbenzene	135-98-8	0.5	mg/kg	---	<0.5	---	---	---
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	---	<0.5	---	---	---
tert-Butylbenzene	98-06-6	0.5	mg/kg	---	<0.5	---	---	---
p-Isopropyltoluene	99-87-6	0.5	mg/kg	---	<0.5	---	---	---
n-Butylbenzene	104-51-8	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	---	<5	---	---	---
2-Butanone (MEK)	78-93-3	5	mg/kg	---	<5	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	---	<5	---	---	---
2-Hexanone (MBK)	591-78-6	5	mg/kg	---	<5	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BL_SB03_0.1	D01_141113_SM	---	---	---
				14-NOV-2013 15:00	14-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1324838-006	ES1324838-007	---	---	---
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	---	<0.5	---	---	---
1,2-Dichloropropane	78-87-5	0.5	mg/kg	---	<0.5	---	---	---
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	---	<0.5	---	---	---
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	---	<0.5	---	---	---
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	---	<5	---	---	---
Chloromethane	74-87-3	5	mg/kg	---	<5	---	---	---
Vinyl chloride	75-01-4	5	mg/kg	---	<5	---	---	---
Bromomethane	74-83-9	5	mg/kg	---	<5	---	---	---
Chloroethane	75-00-3	5	mg/kg	---	<5	---	---	---
Trichlorofluoromethane	75-69-4	5	mg/kg	---	<5	---	---	---
1,1-Dichloroethene	75-35-4	0.5	mg/kg	---	<0.5	---	---	---
Iodomethane	74-88-4	0.5	mg/kg	---	<0.5	---	---	---
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	---	<0.5	---	---	---
1,1-Dichloroethane	75-34-3	0.5	mg/kg	---	<0.5	---	---	---
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	---	<0.5	---	---	---
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	---	<0.5	---	---	---
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	---	<0.5	---	---	---
Carbon Tetrachloride	56-23-5	0.5	mg/kg	---	<0.5	---	---	---
1,2-Dichloroethane	107-06-2	0.5	mg/kg	---	<0.5	---	---	---
Trichloroethene	79-01-6	0.5	mg/kg	---	<0.5	---	---	---
Dibromomethane	74-95-3	0.5	mg/kg	---	<0.5	---	---	---
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	---	<0.5	---	---	---
1,3-Dichloropropane	142-28-9	0.5	mg/kg	---	<0.5	---	---	---
Tetrachloroethene	127-18-4	0.5	mg/kg	---	<0.5	---	---	---
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	---	<0.5	---	---	---
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	---	<0.5	---	---	---
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	---	<0.5	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	---	<0.5	---	---	---
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	---	<0.5	---	---	---
Pentachloroethane	76-01-7	0.5	mg/kg	---	<0.5	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BL_SB03_0.1	D01_141113_SM	---	---	---
				14-NOV-2013 15:00	14-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1324838-006	ES1324838-007	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	---	<0.5	---	---	---
Hexachlorobutadiene	87-68-3	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	---	<0.5	---	---	---
Bromobenzene	108-86-1	0.5	mg/kg	---	<0.5	---	---	---
2-Chlorotoluene	95-49-8	0.5	mg/kg	---	<0.5	---	---	---
4-Chlorotoluene	106-43-4	0.5	mg/kg	---	<0.5	---	---	---
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	---	<0.5	---	---	---
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	---	<0.5	---	---	---
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	---	<0.5	---	---	---
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	---	<0.5	---	---	---
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	---	<0.5	---	---	---
Bromodichloromethane	75-27-4	0.5	mg/kg	---	<0.5	---	---	---
Dibromochloromethane	124-48-1	0.5	mg/kg	---	<0.5	---	---	---
Bromoform	75-25-2	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	---	<5	---	---	---
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	---	---	---
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	---	---	---
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	---	---	---
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	---	---	---
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	---	---	---
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	---	---	---
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	---	---	---
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	---	---	---
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	---	---	---
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	---	---	---
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	---	---	---
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time	BL_SB03_0.1	D01_141113_SM	---	---	---
14-NOV-2013 15:00	ES1324838-006	ES1324838-007	---	---	---

### EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued

Compound	CAS Number	LOR	Unit	ES1324838-006	ES1324838-007	---	---	---
Naphthalene	91-20-3	0.5	mg/kg	<0.5	0.5	---	---	---
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	---	---	---
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	---	---	---
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	---	---	---
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3.5	---	---	---
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	---	---	---
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3.5	---	---	---
Pyrene	129-00-0	0.5	mg/kg	<0.5	2.3	---	---	---
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.4	---	---	---
Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5	---	---	---
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	1.2	---	---	---
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	---	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	---	---	---
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	13.9	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.8	---	---	---
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.4	---	---	---

### EP080/071: Total Petroleum Hydrocarbons

C6 - C9 Fraction	----	10	mg/kg	<10	<10	---	---	---
C10 - C14 Fraction	----	50	mg/kg	<50	110	---	---	---
C15 - C28 Fraction	----	100	mg/kg	<100	1880	---	---	---
C29 - C36 Fraction	----	100	mg/kg	<100	780	---	---	---
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	2770	---	---	---

### EP080/071: Total Recoverable Hydrocarbons - NEPM 2013

C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	---	---	---
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	240	---	---	---
>C16 - C34 Fraction	----	100	mg/kg	<100	2400	---	---	---
>C34 - C40 Fraction	----	100	mg/kg	<100	370	---	---	---
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	3010	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BL_SB03_0.1	D01_141113_SM	---	---	---
				14-NOV-2013 15:00	14-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1324838-006	ES1324838-007	---	---	---
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued</b>								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	240	---	---	---
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	---	---	---
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	---	---	---
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	---	---	---
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	---	---	---
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	---	---	---
Naphthalene	91-20-3	1	mg/kg	<1	<1	---	---	---
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	60.3	---	---	---	---
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	---	74.6	---	---	---
Toluene-D8	2037-26-5	0.1	%	---	108	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	---	97.6	---	---	---
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	87.4	82.7	---	---	---
2-Chlorophenol-D4	93951-73-6	0.1	%	94.2	99.6	---	---	---
2,4,6-Tribromophenol	118-79-6	0.1	%	82.4	70.6	---	---	---
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	86.6	88.3	---	---	---
Anthracene-d10	1719-06-8	0.1	%	88.1	72.7	---	---	---
4-Terphenyl-d14	1718-51-0	0.1	%	90.4	84.9	---	---	---
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	96.9	84.2	---	---	---
Toluene-D8	2037-26-5	0.1	%	110	116	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	103	111	---	---	---



## Analytical Results

### Descriptive Results

Sub-Matrix: **SOIL**

<i>Method: Compound</i>	<i>Client sample ID - Client sampling date / time</i>	<i>Analytical Results</i>
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BQ_MW01_0.1 - 14-NOV-2013 15:00	Mid yellow - brown clay soil with grey and red rocks plus some quartz grains with plenty of vegetation.
EA200: Description	BL_SB03_0.1 - 14-NOV-2013 15:00	Mid brown clay soil with grey and orange rocks plus some vegetation.



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

# Certificate of Analysis

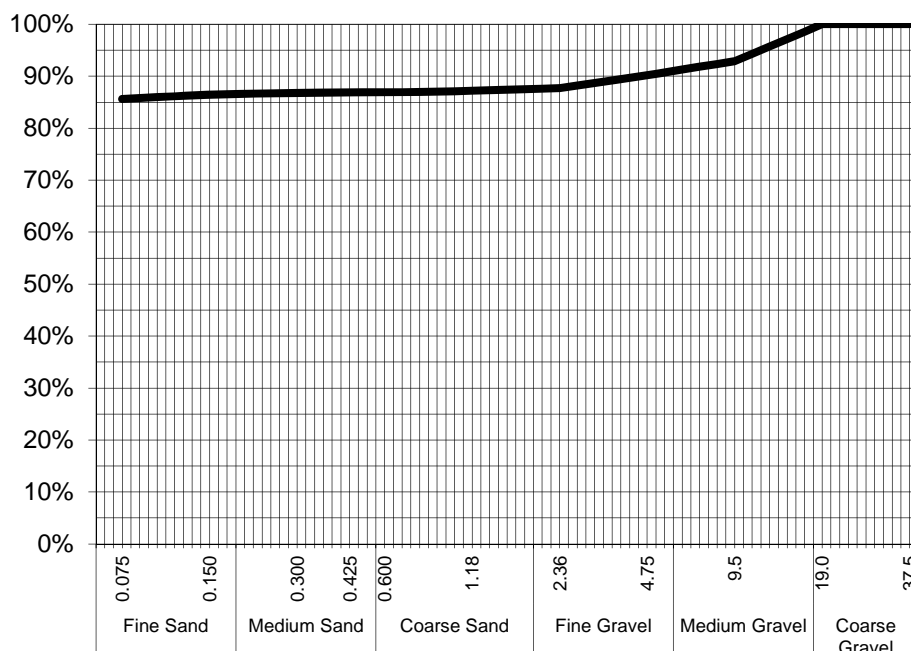
ALS Laboratory Group Pty Ltd  
 5 Rosegum Road  
 Warabrook, NSW 2304  
 pH 02 4968 9433  
 fax 02 4968 0349  
 samples.newcastle@alsenviro.com

**ALS Environmental**  
**Newcastle, NSW**



**CLIENT:** Joseph Ferring **DATE REPORTED:** 29-Nov-2013  
**COMPANY:** Enviro Resources Management **DATE RECEIVED:** 15-Nov-2013  
**ADDRESS:** Ground Floor **REPORT NO:** ES1324838-005 / PSD  
 33 Saunders Street, Pyrmont  
 NSW 2009  
**PROJECT:** Project Symphony **SAMPLE ID:** BP\_MW05\_1.0

## Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	93%
4.75	90%
2.36	88%
1.18	87%
0.600	87%
0.425	87%
0.300	87%
0.150	87%
0.075	86%

Samples analysed as received.

## Sample Comments:

**Analysed:** 27-Nov-13

**Loss on Pretreatment:** NA

**Limit of Reporting:** 1%

**Sample Description:** Fines and gravel

**Test Method:** AS1289.3.6.1

**Hamish Murray**  
 Laboratory Supervisor, Newcastle  
**Authorised Signatory**

**NATA Accreditation: 825 Site: Newcastle**  
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## QUALITY CONTROL REPORT

Work Order	: <b>ES1324838</b>	Page	: 1 of 19
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 15-NOV-2013
C-O-C number	: ----	Issue Date	: 28-NOV-2013
Sampler	: SM	No. of samples received	: 7
Order number	: 0224193	No. of samples analysed	: 7
Quote number	: SY/794/13		

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



## 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



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Laboratory 825

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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>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Shaun Spooner	Laboratory Technician	Newcastle - Asbestos
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3165542)</b>									
ES1324349-097	Anonymous	EA002: pH Value	----	0.1	pH Unit	8.5	8.3	2.8	0% - 20%
ES1324934-003	Anonymous	EA002: pH Value	----	0.1	pH Unit	4.8	4.8	0.0	0% - 20%
<b>EA010: Conductivity (QC Lot: 3172171)</b>									
ES1324838-001	BQ_MW01_0.1	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	24	25	4.1	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3167934)</b>									
ES1324834-008	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	27.5	25.8	6.2	0% - 20%
ES1324837-009	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.3	12.5	6.0	0% - 50%
<b>EA055: Moisture Content (QC Lot: 3167935)</b>									
ES1324838-004	BP_MW05_0.1	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	20.7	21.4	3.0	0% - 20%
ES1324840-009	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	15.8	16.7	5.6	0% - 50%
<b>ED007: Exchangeable Cations (QC Lot: 3173305)</b>									
ES1324837-002	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.0	14.2	1.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	6.9	7.0	1.7	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.6	0.7	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	21.8	22.2	1.8	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1325017-001	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.2	14.5	2.3	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.6	7.6	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.7	0.7	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.4	0.4	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	23.0	23.2	1.2	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>ED040S: Soluble Major Anions (QC Lot: 3165543)</b>									
ES1324911-001	Anonymous	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	<10	10	0.0	0% - 20%
ES1324934-003	Anonymous	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	50	50	0.0	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 3165545)</b>									
ES1324838-001	BQ_MW01_0.1	ED045G: Chloride	16887-00-6	10	mg/kg	<10	<10	0.0	No Limit
ES1324998-001	Anonymous	ED045G: Chloride	16887-00-6	10	mg/kg	1120	1290	13.8	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3170995)</b>									
ES1324729-016	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	50	70	22.9	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	19	23.1	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	10	8	20.8	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3170995) - continued</b>									
ES1324729-016	Anonymous	EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	17	18	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	20	21.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	11	16.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	116	130	11.8	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	41	47	14.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	43	45	5.8	No Limit
		EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit
EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
ES1324838-005	BP_MW05_1.0	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	110	90	26.6	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	21	22	0.0	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	3	3	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	2	2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	10	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	18	19	6.1	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	28	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	24	25	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	39	40	0.0	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	35	36	3.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	48	48	0.0	No Limit
EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit		
EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3174526)</b>									
ES1325454-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	216	437	# 67.4	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	146	32	# 129	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	16	9	55.3	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	33	16.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	85	81	4.5	0% - 50%
EG005T: Zinc	7440-66-6	5	mg/kg	335	360	7.0	0% - 20%		
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3170996)</b>									
ES1324729-016	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1324838-005	BP_MW05_1.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3174527)</b>									
ES1325454-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	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 (%)
<b>EP004: Organic Matter (QC Lot: 3178206)</b>									
ES1324837-002	Anonymous	EP004: Organic Matter	----	0.5	%	0.7	0.6	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3169636)</b>									
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325002-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3166173)</b>									
ES1324837-001	Anonymous	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074B: Oxygenated Compounds (QC Lot: 3166173)</b>									
ES1324837-001	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3166173)</b>									
ES1324837-001	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3166173)</b>									
ES1324837-001	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166173)</b>									
ES1324837-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166173) - continued</b>									
ES1324837-001	Anonymous	EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3166173)</b>									
ES1324837-001	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3166173)</b>									
ES1324837-001	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3166173)</b>									
ES1324837-001	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3166073)</b>									
ES1324838-001	BQ_MW01_0.1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3166073) - continued</b>									
ES1324838-001	BQ_MW01_0.1	EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES1324880-007	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3166073)</b>									
ES1324838-001	BQ_MW01_0.1	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3166073) - continued</b>									
ES1324880-007	Anonymous	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	0.6	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	3.6	3.8	5.1	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	1.6	1.7	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	1.3	1.4	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.0	1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.5	1.6	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	0.9	1.0	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
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	10.4	11.1	6.5	0% - 20%		
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3166072)</b>									
ES1324838-001	BQ_MW01_0.1	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
ES1324880-007	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	540	670	21.5	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	290	360	20.3	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	80	60	19.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3166172)</b>									
ES1324837-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1324838-002	BP_MW02_0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3168287)</b>									
ES1324880-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325014-006	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166072)</b>									
ES1324838-001	BQ_MW01_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1324880-007	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	720	960	28.5	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	150	160	7.6	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	130	150	14.2	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166172)</b>									





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 (%)	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166172) - continued</b>										
ES1324837-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1324838-002	BP_MW02_0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3168287)</b>										
ES1324880-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1325014-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3166172)</b>										
ES1324837-001	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	
ES1324838-002	BP_MW02_0.2	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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	0.6	<0.5	24.7	No Limit	
			106-42-3							
ES1324880-002	Anonymous	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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	
ES1325014-006	Anonymous		106-42-3							
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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	
ES1325014-006	Anonymous	EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	0.6	0.9	32.1	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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	



### 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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA010: Conductivity (QCLot: 3172171)</b>									
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	101	70	130	
<b>ED007: Exchangeable Cations (QCLot: 3173305)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>ED040S: Soluble Major Anions (QCLot: 3165543)</b>									
ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	<10	750 mg/kg	93.2	84	112	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3165545)</b>									
ED045G: Chloride	16887-00-6	10	mg/kg	<10	5000 mg/kg	102	79	125	
<b>ED093S: Soluble Major Cations (QCLot: 3165544)</b>									
ED093S: Calcium	7440-70-2	10	mg/kg	<10	250 mg/kg	96.6	85	113	
ED093S: Magnesium	7439-95-4	10	mg/kg	<10	250 mg/kg	97.5	86	116	
ED093S: Sodium	7440-23-5	10	mg/kg	<10	250 mg/kg	99.1	80	112	
ED093S: Potassium	7440-09-7	10	mg/kg	<10	250 mg/kg	94.9	88	114	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	105	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	106	83	129	
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	106	88	130	
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	101	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	114	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	105	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	108	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	101	81	123	
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	110	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	104	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	113	84	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	104	75	131	
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	109	95	129	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	113	81	133	
EG005T: Thallium	7440-28-0	5	mg/kg	<5	5.96 mg/kg	106	70	130	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3174526)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	115	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	107	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	121	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	114	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	108	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	118	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	113	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170996)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	93.0	66	112	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3174527)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	84.9	66	112	
<b>EP004: Organic Matter (QCLot: 3178206)</b>									
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	99.9	85	105	
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	99.8	84	106	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	84.8	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3166173)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	82.8	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	97.4	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	96.1	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	99.4	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	101	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	98.5	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	100	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	97.9	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	83.3	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3166173)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	34.7	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	83.1	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	83.9	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	75.8	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3166173)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	113	54	126	
<b>EP074D: Fumigants (QCLot: 3166173)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074D: Fumigants (QCLot: 3166173) - continued</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	86.7	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	92.1	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	82.4	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	79.5	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	87.2	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166173)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	54.7	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	85.6	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	86.9	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	91.5	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	119	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	114	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	113	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	109	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	91.4	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	103	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	93.4	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	108	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	93.6	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	106	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	97.2	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	101	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	89.8	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	93.2	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	86.8	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	90.1	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	96.2	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	67.5	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	59.0	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	86.3	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	84.3	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	101	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	101	53	129	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166173) - continued</b>									
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	114	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166173)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	94.2	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	91.6	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	96.6	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	93.7	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	88.8	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	91.5	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	88.0	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	76.4	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	84.2	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3166173)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	99.7	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	98.2	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	106	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	105	60	126	
<b>EP074H: Naphthalene (QCLot: 3166173)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	102	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3166073)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	97.3	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	93.4	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	110	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	109	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	84.2	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	87.2	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	88.1	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	88.2	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	88.6	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	83.4	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	83.8	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	25.1	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3166073)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	93.2	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	94.2	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	96.6	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	100	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	92.5	79	123	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3166073) - continued</b>									
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	102	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	94.9	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	96.1	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	96.6	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	101	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	94.1	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	101	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	92.3	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	86.7	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	86.1	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	85.2	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166072)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	78.4	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	85.2	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	78.2	64	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166172)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	79.1	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3168287)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	111	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166072)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	80.6	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	83.7	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	69.4	63	131	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166172)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	76.6	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3168287)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	113	68.4	128	
<b>EP080: BTEXN (QCLot: 3166172)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	69.3	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	75.3	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	62.9	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	67.2	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	71.6	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	67.0	62	138	
<b>EP080: BTEXN (QCLot: 3168287)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	88.4	62	116	



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
<b>EP080: BTEXN (QCLot: 3168287) - continued</b>								
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	93.4	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	99.6	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	101	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	103	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.2	62	138

### 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				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) Low High	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3165545)</b>							
ES1324838-001	BQ_MW01_0.1	ED045G: Chloride	16887-00-6	1250 mg/kg	99.9	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995)</b>							
ES1324729-016	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	112	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	105	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	105	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	104	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	97.4	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3174526)</b>							
ES1325454-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	99.2	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.3	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	# Not Determined	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	# 319	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	82.1	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	# 273	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	# 69.8	70	130
		<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170996)</b>					
ES1324729-016	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	106	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3174527)</b>							
ES1325454-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	96.2	70	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP004: Organic Matter (QCLot: 3178206)</b>							
ES1324837-012	Anonymous	EP004: Organic Matter	----	4.58 %	11.2	----	----
		EP004: Total Organic Carbon	----	2.66 %	11.2	----	----
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>							
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	81.6	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166173)</b>							
ES1324837-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	87.7	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	74.0	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166173)</b>							
ES1324837-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	85.0	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3166073)</b>							
ES1324838-001	BQ_MW01_0.1	EP075(SIM): Phenol	108-95-2	10 mg/kg	81.6	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	85.7	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	80.0	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	80.6	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	53.2	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3166073)</b>							
ES1324838-001	BQ_MW01_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	83.4	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	83.4	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166072)</b>							
ES1324838-001	BQ_MW01_0.1	EP071: C10 - C14 Fraction	----	640 mg/kg	102	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	97.4	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	84.7	52	132
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166172)</b>							
ES1324837-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	98.1	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3168287)</b>							
ES1324880-002	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	100	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166072)</b>							
ES1324838-001	BQ_MW01_0.1	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	99.5	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	79.8	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	63.8	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166172)</b>							
ES1324837-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	95.2	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3168287)</b>							
ES1324880-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	99.0	70	130
<b>EP080: BTEXN (QCLot: 3166172)</b>							





Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP080: BTEXN (QCLot: 3166172) - continued</b>								
ES1324837-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	82.2	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	91.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	84.0	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	80.7	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.8	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	94.0	70	130		
<b>EP080: BTEXN (QCLot: 3168287)</b>								
ES1324880-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	75.3	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	73.0	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	78.8	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	84.9	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	83.1	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	78.2	70	130		

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3165545)</b>										
ES1324838-001	BQ_MW01_0.1	ED045G: Chloride	16887-00-6	1250 mg/kg	99.9	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166072)</b>										
ES1324838-001	BQ_MW01_0.1	EP071: C10 - C14 Fraction	----	640 mg/kg	102	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	97.4	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	84.7	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166072)</b>										
ES1324838-001	BQ_MW01_0.1	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	99.5	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	79.8	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	63.8	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3166073)</b>										
ES1324838-001	BQ_MW01_0.1	EP075(SIM): Phenol	108-95-2	10 mg/kg	81.6	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	85.7	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	80.0	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	80.6	----	70	130	----	----



Sub-Matrix: SOIL

Laboratory sample ID					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Client sample ID	Method: Compound	CAS Number									
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3166073) - continued</b>											
ES1324838-001	BQ_MW01_0.1	EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	53.2	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3166073)</b>											
ES1324838-001	BQ_MW01_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	83.4	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	83.4	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166172)</b>											
ES1324837-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	98.1	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166172)</b>											
ES1324837-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	95.2	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3166172)</b>											
ES1324837-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	82.2	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	91.9	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	84.0	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	80.7	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.8	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	94.0	----	70	130	----	----	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166173)</b>											
ES1324837-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	87.7	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	74.0	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166173)</b>											
ES1324837-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	85.0	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3168287)</b>											
ES1324880-002	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	100	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3168287)</b>											
ES1324880-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	99.0	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3168287)</b>											
ES1324880-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	75.3	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	73.0	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	78.8	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	84.9	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	83.1	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	78.2	----	70	130	----	----	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>											
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	81.6	----	70	130	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995)</b>											
ES1324729-016	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	----	70	130	----	----	



Sub-Matrix: SOIL

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EG005T: Total Metals by ICP-AES (QCLot: 3170995) - continued</b>										
ES1324729-016	Anonymous	EG005T: Cadmium	7440-43-9	50 mg/kg	104	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	112	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	105	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	105	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	104	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	104	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	97.4	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3170996)</b>										
ES1324729-016	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	106	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3174526)</b>										
ES1325454-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	99.2	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.3	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	# Not Determined	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	# 319	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	82.1	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	# 273	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	# 69.8	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3174527)</b>										
ES1325454-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	96.2	----	70	130	----	----
<b>EP004: Organic Matter (QCLot: 3178206)</b>										
ES1324837-012	Anonymous	EP004: Organic Matter	----	4.58 %	11.2	----	----	----	----	----
		EP004: Total Organic Carbon	----	2.66 %	11.2	----	----	----	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1324838</b>	Page	: 1 of 10
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 15-NOV-2013
C-O-C number	: ----	Issue Date	: 28-NOV-2013
Sampler	: SM	No. of samples received	: 7
Order number	: 0224193	No. of samples analysed	: 7
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA002 : pH (Soils)</b>							
Soil Glass Jar - Unpreserved (EA002) BQ_MW01_0.1, BP_MW05_1.0	14-NOV-2013	19-NOV-2013	21-NOV-2013	✓	19-NOV-2013	19-NOV-2013	✓
<b>EA010: Conductivity</b>							
Soil Glass Jar - Unpreserved (EA010) BQ_MW01_0.1	14-NOV-2013	21-NOV-2013	21-NOV-2013	✓	21-NOV-2013	19-DEC-2013	✓
<b>EA055: Moisture Content</b>							
Soil Glass Jar - Unpreserved (EA055-103) BQ_MW01_0.1, BP_MW04_0.5, BP_MW05_1.0, D01_141113_SM BP_MW02_0.2, BP_MW05_0.1, BL_SB03_0.1	14-NOV-2013	----	----	----	20-NOV-2013	28-NOV-2013	✓
<b>EA150: Particle Sizing</b>							
Snap Lock Bag (EA150) BP_MW05_1.0	14-NOV-2013	---	13-MAY-2014	----	28-NOV-2013	27-MAY-2014	✓
<b>EA150: Soil Classification based on Particle Size</b>							
Snap Lock Bag (EA150) BP_MW05_1.0	14-NOV-2013	---	13-MAY-2014	----	28-NOV-2013	27-MAY-2014	✓
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>							
Snap Lock Bag (EA200) BQ_MW01_0.1, BL_SB03_0.1	14-NOV-2013	---	13-MAY-2014	----	27-NOV-2013	26-MAY-2014	✓
<b>ED007: Exchangeable Cations</b>							
Soil Glass Jar - Unpreserved (ED007) BQ_MW01_0.1, BP_MW05_1.0	14-NOV-2013	25-NOV-2013	12-DEC-2013	✓	25-NOV-2013	12-DEC-2013	✓
<b>ED040S : Soluble Sulfate by ICPAES</b>							
Soil Glass Jar - Unpreserved (ED040S) BQ_MW01_0.1	14-NOV-2013	19-NOV-2013	12-DEC-2013	✓	19-NOV-2013	17-DEC-2013	✓
<b>ED045G: Chloride Discrete analyser</b>							
Soil Glass Jar - Unpreserved (ED045G) BQ_MW01_0.1	14-NOV-2013	19-NOV-2013	12-DEC-2013	✓	19-NOV-2013	17-DEC-2013	✓
<b>ED093S: Soluble Major Cations</b>							
Soil Glass Jar - Unpreserved (ED093S) BQ_MW01_0.1	14-NOV-2013	19-NOV-2013	13-MAY-2014	✓	19-NOV-2013	13-MAY-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG005T: Total Metals by ICP-AES</b>							
Soil Glass Jar - Unpreserved (EG005T) BQ_MW01_0.1, BP_MW04_0.5, BP_MW05_1.0, BP_MW02_0.2, BP_MW05_0.1, BL_SB03_0.1	14-NOV-2013	21-NOV-2013	13-MAY-2014	✓	22-NOV-2013	13-MAY-2014	✓
Soil Glass Jar - Unpreserved (EG005T) D01_141113_SM	14-NOV-2013	22-NOV-2013	13-MAY-2014	✓	24-NOV-2013	13-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
Soil Glass Jar - Unpreserved (EG035T) BP_MW02_0.2, BP_MW05_0.1, BL_SB03_0.1 BP_MW04_0.5, BP_MW05_1.0	14-NOV-2013	21-NOV-2013	12-DEC-2013	✓	22-NOV-2013	12-DEC-2013	✓
Soil Glass Jar - Unpreserved (EG035T) D01_141113_SM	14-NOV-2013	22-NOV-2013	12-DEC-2013	✓	25-NOV-2013	12-DEC-2013	✓
<b>EP004: Organic Matter</b>							
Soil Glass Jar - Unpreserved (EP004) BP_MW05_1.0	14-NOV-2013	26-NOV-2013	12-DEC-2013	✓	26-NOV-2013	12-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
Soil Glass Jar - Unpreserved (EP066) BL_SB03_0.1	14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	22-NOV-2013	31-DEC-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP071) BQ_MW01_0.1, BP_MW04_0.5, BP_MW05_1.0, D01_141113_SM BP_MW02_0.2, BP_MW05_0.1, BL_SB03_0.1	14-NOV-2013	22-NOV-2013	28-NOV-2013	✓	22-NOV-2013	01-JAN-2014	✓
<b>EP074D: Fumigants</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM BP_MW04_0.5, BP_MW05_1.0	14-NOV-2013	19-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM BP_MW04_0.5, BP_MW05_1.0	14-NOV-2013	19-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074F: Halogenated Aromatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM BP_MW04_0.5, BP_MW05_1.0	14-NOV-2013	19-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM	BP_MW04_0.5, BP_MW05_1.0	14-NOV-2013	19-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074H: Naphthalene</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM	BP_MW04_0.5, BP_MW05_1.0	14-NOV-2013	19-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074B: Oxygenated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM	BP_MW04_0.5, BP_MW05_1.0	14-NOV-2013	19-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074C: Sulfonated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM	BP_MW04_0.5, BP_MW05_1.0	14-NOV-2013	19-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074G: Trihalomethanes</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM	BP_MW04_0.5, BP_MW05_1.0	14-NOV-2013	19-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BQ_MW01_0.1, BP_MW04_0.5, BP_MW05_1.0, D01_141113_SM	BP_MW02_0.2, BP_MW05_0.1, BL_SB03_0.1	14-NOV-2013	22-NOV-2013	28-NOV-2013	✓	22-NOV-2013	01-JAN-2014	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BQ_MW01_0.1, BP_MW04_0.5, BP_MW05_1.0, D01_141113_SM	BP_MW02_0.2, BP_MW05_0.1, BL_SB03_0.1	14-NOV-2013	22-NOV-2013	28-NOV-2013	✓	22-NOV-2013	01-JAN-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BQ_MW01_0.1, BP_MW04_0.5, BP_MW05_1.0,	BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM	14-NOV-2013	19-NOV-2013	28-NOV-2013	✓	21-NOV-2013	28-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BL_SB03_0.1		14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	25-NOV-2013	28-NOV-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BQ_MW01_0.1, BP_MW04_0.5, BP_MW05_1.0,	BP_MW02_0.2, BP_MW05_0.1, D01_141113_SM	14-NOV-2013	19-NOV-2013	28-NOV-2013	✓	21-NOV-2013	28-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BL_SB03_0.1		14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	25-NOV-2013	28-NOV-2013	✓





## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Chloride Soluble By Discrete Analyser	ED045G	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (1:5)	EA010	1	3	33.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	3	28	10.7	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	3	28	10.7	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	4	39	10.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	10	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Cations - soluble by ICP-AES	ED093S	1	1	100.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (1:5)	EA010	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	28	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	28	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Cations - soluble by ICP-AES	ED093S	1	1	100.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (1:5)	EA010	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Method Blanks (MB) - Continued</b>							
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	28	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	28	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Chloride Soluble By Discrete Analyser	ED045G	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	28	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	28	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Electrical Conductivity (1:5)	EA010	SOIL	(APHA 21st ed., 2510) Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 104)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Particle Size Analysis (Sieving)	EA150	SOIL	Particle Size Analysis by Sieving according to AS1289.3.6.1 - 2009
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
Major Anions - Soluble	ED040S	SOIL	In-house. Soluble Anions are determined off a 1:5 soil / water extract by ICPAES.
Chloride Soluble By Discrete Analyser	ED045G	SOIL	APHA 21st edition 4500-Cl- E. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm. Analysis is performed on a 1:5 soil / water leachate.
Cations - soluble by ICP-AES	ED093S	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 (ICPAES) Water extracts of the soil are analyzed for major cations by ICPAES. 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 (2013) Schedule B(3)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Organic Matter	EP004	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
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 (2013) Schedule B(3) (Method 504)
TPH - Semivolatle 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 (2013) Schedule B(3) (Method 506.1)



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) Schedule B(3) (Method 501)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) Schedule B(3) (Method 202)
Organic Matter	EP004-PR	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
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 <sub>2</sub> SO <sub>4</sub> 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 <sub>2</sub> SO <sub>4</sub> 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
<b>Duplicate (DUP) RPDs</b>							
EG005T: Total Metals by ICP-AES	ES1325454-001	Anonymous	<b>Chromium</b>	7440-47-3	67.4 %	0-20%	<b>RPD exceeds LOR based limits</b>
EG005T: Total Metals by ICP-AES	ES1325454-001	Anonymous	<b>Nickel</b>	7440-02-0	129 %	0-20%	<b>RPD exceeds LOR based limits</b>
<b>Matrix Spike (MS) Recoveries</b>							
EG005T: Total Metals by ICP-AES	ES1325454-001	Anonymous	<b>Chromium</b>	7440-47-3	Not Determined	----	<b>MS recovery not determined, background level greater than or equal to 4x spike level.</b>
EG005T: Total Metals by ICP-AES	ES1325454-001	Anonymous	<b>Copper</b>	7440-50-8	319 %	70-130%	<b>Recovery greater than upper data quality objective</b>
EG005T: Total Metals by ICP-AES	ES1325454-001	Anonymous	<b>Nickel</b>	7440-02-0	273 %	70-130%	<b>Recovery greater than upper data quality objective</b>
EG005T: Total Metals by ICP-AES	ES1325454-001	Anonymous	<b>Zinc</b>	7440-66-6	69.8 %	70-130%	<b>Recovery less than lower data quality objective</b>

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

#### Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

### Outliers : Analysis Holding Time Compliance

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

- 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

ALS Laboratory  
please tick ☐

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LABORATORY: 277 280 Woodson Road, Griffith NSW 2184  
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LABORATORY: 14-15 Dwyer Court, Brisbane QLD 4001  
Ph: 07 4707 0091 E: admin@als.com.au  
LABORATORY: 10 Kennedy Street, Redbank NSW 2150  
Ph: 02 8222 3132 E: admin@als.com.au

CLIENT: **ESM**

OFFICE: **Sydney**

PROJECT: **Project Symphony**

ORDER NUMBER: **D224193**

PROJECT MANAGER: **S. Ferris**

SAMPLER: **A. Marks**

COC emailed to ALS? (YES/NO) **(NO)**

Email Reports to (will default to PM if no other addresses are listed):

Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:  Standard TAT (last due date)  Non Standard or urgent TAT (last due date)

Standard TAT may be longer for some tests e.g. Ultra Trace Elements

ALS QUOTE NO.: **SY794113**

SITE: **BAYSWATER DEPOT**

CONTACT PH: **0434 481 914**

SAMPLER MOBILE: **REINQUISHED BY: [Signature]**

EDD FORMAT (or default): **15/11/13**

DATE/TIME: **15/11/13**

RECEIVED BY: **[Signature]**

DATE/TIME: **15/11/13 1650**

FOR LABORATORY USE ONLY (circle)

Quality Seal intact?  Yes  No

Freeze / Frozen Ice Bricks present upon receipt?  Yes  No

Random Sample Temperature on Receipt: **5°C**

Other comments: **None**

REINQUISHED BY: **[Signature]**

DATE/TIME: **15/11/13 14:15**

RECEIVED BY: **[Signature]**

DATE/TIME: **15/11/13 14:15**

ALS USE	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE CODES (below)	(refer to)	TOTAL CONTAINERS	ANALYSIS REQUIRED INCLUDING SUITES (NB, Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).	Additional Information
	1 <b>BG-MW07-1-6</b>	<b>14/11/13</b>	<b>SOIL</b>	<b>1 Class Sam</b>		<b>1</b>	S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	
	2 <b>BK-SB03-1-6</b>					<b>1</b>	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	
	3 <b>BK-SB03-2-5</b>					<b>1</b>	S-24 TRH (C6-C40)/BTEXN, PAH, Phenols	
	4 <b>BK-SB05-2-0</b>					<b>1</b>	VOC Target Scan	
	5 <b>BK-SB06-0-6</b>					<b>1</b>	PCB	
	6 <b>BK-SB07-2-1</b>					<b>1</b>	pH (1:5)	
	7 <b>TRH Spk 2</b>	<b>11/11/13</b>	<b>S</b>	<b>1 Glass Jar</b>		<b>1</b>	Exchangeable cations (ED007)	
	8 <b>TRH Blank S</b>	<b>8/11/13</b>	<b>S</b>	<b>1 Glass Jar</b>		<b>1</b>	PFOA/PFOA	
	9 <b>TRH Spk 5</b>	<b>8/11/13</b>	<b>S</b>	<b>1 Glass Jar</b>		<b>1</b>	Asbestos (absence/presence)	
	10 <b>TRH Spk Z</b>	<b>8/11/13</b>	<b>S</b>	<b>1 Glass Jar</b>		<b>1</b>	Particle Sizing to 75µm (Sieve)	
	11 <b>TRH Spk 2</b>	<b>11/11/13</b>	<b>S</b>	<b>1 Glass Jar</b>		<b>1</b>	Organic Matter plus Total Organic Carbon (EP004)	
	12 <b>TRH Spk 5</b>	<b>8/11/13</b>	<b>S</b>	<b>1 Glass Jar</b>		<b>1</b>	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.	

Environmental Division  
Sydney  
Work Order  
**ES1324839**

Telephone : + 61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; DIC = Nitric Preserved DIC; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Amber Unpreserved Plastic; V = VOA Val ICH Preserved; VA = VOA Val Sodium Bicarbonate Preserved; VS = VOA Val Sulfuric Preserved; AV = Airflow Unpreserved Val; SC = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Specimen Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Beakers; ST = Stain Glass; ASS = Plastic Bag for Acid Sulfate Soil; B = Unpreserved Bin.

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

<b>Work Order</b>	<b>: ES1324839</b>		
<b>Client</b>	<b>: ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	<b>: Environmental Division Sydney</b>
<b>Contact Address</b>	<b>: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</b>	<b>Contact Address</b>	<b>: Barbara Hanna 277-289 Woodpark Road Smithfield NSW Australia 2164</b>
<b>E-mail</b>	<b>: joseph.ferring@erm.com</b>	<b>E-mail</b>	<b>: Barbara.Hanna@alsglobal.com</b>
<b>Telephone</b>	<b>: +61 02 8584 8888</b>	<b>Telephone</b>	<b>: +61 2 8784 8555</b>
<b>Facsimile</b>	<b>: +61 02 8584 8800</b>	<b>Facsimile</b>	<b>: +61 2 8784 8555</b>
<b>Project</b>	<b>: PROJECT SYMPHONY</b>	<b>Page</b>	<b>: 1 of 2</b>
<b>Order number</b>	<b>: 0224193</b>	<b>Quote number</b>	<b>: ES2013ENVRES0369 (SY/794/13)</b>
<b>C-O-C number</b>	<b>: ----</b>	<b>QC Level</b>	<b>: NEPM 2013 Schedule B(3) and ALS QCS3 requirement</b>
<b>Site</b>	<b>: BAYSWATER</b>		
<b>Sampler</b>	<b>: AM</b>		

#### Dates

Date Samples Received	: 15-NOV-2013	Issue Date	: 18-NOV-2013 13:20
Client Requested Due Date	: 22-NOV-2013	Scheduled Reporting Date	: <b>22-NOV-2013</b>

#### Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.9' C - Ice present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 10
Security Seal	: Intact.	No. of samples analysed	: 8

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL	No analysis requested	SOIL - S-18 (NO MOIST)	TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-27	TRH/BTEXN/PAH/Phenols/8Metals
ES1324839-001	14-NOV-2013 15:00	BG_MW07_1.6						✓
ES1324839-002	14-NOV-2013 15:00	BK_SB03_1.6						✓
ES1324839-003	14-NOV-2013 15:00	BK_SB05_2.0						✓
ES1324839-004	14-NOV-2013 15:00	BK_SB06_0.6						✓
ES1324839-005	14-NOV-2013 15:00	BKSB07_2.9						✓
ES1324839-006	11-NOV-2013 15:00	TRIP SPK 2			✓			
ES1324839-007	08-NOV-2013 15:00	TRIP BLANK 5			✓			
ES1324839-008	11-NOV-2013 15:00	TSC 2			✓			
ES1324839-009	14-NOV-2013 15:00	BK_SB03_2.5	✓					
ES1324839-010	14-NOV-2013 15:00	BK_SB07_2.0	✓					

## Proactive Holding Time Report

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

## Requested Deliverables

### MR JOSEPH FERRING

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTAB )	Email	joseph.ferring@erm.com

### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

<b>Work Order</b> : <b>ES1324839</b> <b>Client</b> : <b>ENVIRO RESOURCES MANAGEMENT</b> <b>Contact</b> : MR JOSEPH FERRING <b>Address</b> : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007  <b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800 <b>Project</b> : PROJECT SYMPHONY <b>Order number</b> : 0224193 <b>C-O-C number</b> : ---- <b>Sampler</b> : AM <b>Site</b> : BAYSWATER  <b>Quote number</b> : SY/794/13	<b>Page</b> : 1 of 7  <b>Laboratory</b> : Environmental Division Sydney <b>Contact</b> : Barbara Hanna <b>Address</b> : 277-289 Woodpark Road Smithfield NSW Australia 2164  <b>E-mail</b> : Barbara.Hanna@alsglobal.com <b>Telephone</b> : +61 2 8784 8555 <b>Facsimile</b> : +61 2 8784 8555 <b>QC Level</b> : NEPM 2013 Schedule B(3) and ALS QCS3 requirement  <b>Date Samples Received</b> : 15-NOV-2013 <b>Issue Date</b> : 22-NOV-2013  <b>No. of samples received</b> : 10 <b>No. of samples analysed</b> : 8
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

### *Signatories*

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Edwandy Fadjar	Organic Coordinator	Sydney 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.

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EP080: The TRIP SPIKE and TRIP SPIKE CONTROL have been analysed for volatile TPH and BTEX only. The TRIP SPIKE and TRIP SPIKE CONTROL were prepared in the lab using reagent grade sand spiked with petrol. The TRIP SPIKE was dispatched from the lab and the TRIP SPIKE CONTROL retained. The spike samples were extracted and analysed concurrently with samples reported in this batch.**



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW07_1.6	BK_SB03_1.6	BK_SB05_2.0	BK_SB06_0.6	BKSB07_2.9
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324839-001	ES1324839-002	ES1324839-003	ES1324839-004	ES1324839-005
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	18.6	22.0	17.7	11.3	18.8
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	7	9	6	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	22	12	16	12	10
Copper	7440-50-8	5	mg/kg	14	12	11	16	11
Lead	7439-92-1	5	mg/kg	14	10	10	6	<5
Nickel	7440-02-0	2	mg/kg	14	6	8	14	4
Zinc	7440-66-6	5	mg/kg	90	44	39	36	18
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW07_1.6	BK_SB03_1.6	BK_SB05_2.0	BK_SB06_0.6	BKSB07_2.9
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324839-001	ES1324839-002	ES1324839-003	ES1324839-004	ES1324839-005
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW07_1.6	BK_SB03_1.6	BK_SB05_2.0	BK_SB06_0.6	BKSB07_2.9
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324839-001	ES1324839-002	ES1324839-003	ES1324839-004	ES1324839-005
<b>EP080: BTEXN - Continued</b>								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	97.9	88.5	91.4	90.5	69.7
2-Chlorophenol-D4	93951-73-6	0.1	%	100	90.3	89.8	85.2	91.9
2,4,6-Tribromophenol	118-79-6	0.1	%	77.2	79.8	72.3	71.3	67.8
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	77.7	94.3	81.5	82.2	91.2
Anthracene-d10	1719-06-8	0.1	%	77.8	79.1	78.2	82.2	79.5
4-Terphenyl-d14	1718-51-0	0.1	%	77.8	85.4	78.9	71.5	76.9
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	124	116	119	121	125
Toluene-D8	2037-26-5	0.1	%	109	105	108	108	111
4-Bromofluorobenzene	460-00-4	0.1	%	111	109	111	111	114



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TRIP SPK 2	TRIP BLANK 5	TSC 2	---	---
				11-NOV-2013 15:00	08-NOV-2013 15:00	11-NOV-2013 15:00	---	---
Compound	CAS Number	LOR	Unit	ES1324839-006	ES1324839-007	ES1324839-008	---	---
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	---	10	mg/kg	130	<10	117	---	---
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	142	<10	130	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	91	<10	76	---	---
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	1.2	<0.2	1.3	---	---
Toluene	108-88-3	0.5	mg/kg	25.3	<0.5	27.8	---	---
Ethylbenzene	100-41-4	0.5	mg/kg	3.2	<0.5	3.0	---	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	15.4	<0.5	15.4	---	---
ortho-Xylene	95-47-6	0.5	mg/kg	6.2	<0.5	6.1	---	---
^ Sum of BTEX	---	0.2	mg/kg	51.3	<0.2	53.6	---	---
^ Total Xylenes	1330-20-7	0.5	mg/kg	21.6	<0.5	21.5	---	---
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	---	---
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	117	121	118	---	---
Toluene-D8	2037-26-5	0.1	%	105	107	104	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	106	106	100	---	---



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1.2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>ES1324839</b>	Page	: 1 of 15
<b>Client</b>	: <b>ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	: Environmental Division Sydney
<b>Contact</b>	: MR JOSEPH FERRING	<b>Contact</b>	: Barbara Hanna
<b>Address</b>	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Address</b>	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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<b>Facsimile</b>	: +61 02 8584 8800	<b>Facsimile</b>	: +61 2 8784 8555
<b>Project</b>	: PROJECT SYMPHONY	<b>QC Level</b>	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Site</b>	: BAYSWATER	<b>Date Samples Received</b>	: 15-NOV-2013
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 22-NOV-2013
<b>Sampler</b>	: AM	<b>No. of samples received</b>	: 10
<b>Order number</b>	: 0224193	<b>No. of samples analysed</b>	: 8
<b>Quote number</b>	: SY/794/13		

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

This Quality Control Report contains the following information:

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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

### Signatories

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

#### Signatories

Celine Conceicao  
Edwandy Fadjar

#### Position

Senior Spectroscopist  
Organic Coordinator

#### Accreditation Category

Sydney Inorganics  
Sydney 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.

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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA055: Moisture Content (QC Lot: 3167935)</b>									
ES1324838-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	20.7	21.4	3.0	0% - 20%
ES1324840-009	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	15.8	16.7	5.6	0% - 50%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3166764)</b>									
ES1324807-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	32	31	4.6	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	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	9	9	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	46	42	9.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	52	84	47.6	0% - 50%
ES1324882-005	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	10	13.8	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	12	10	9.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	7	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	19	31	45.9	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3166765)</b>									
ES1324807-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1324882-005	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167025)</b>									
ES1324724-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		ES1324834-004	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5
EP075(SIM): 2-Chlorophenol	95-57-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			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 (%)		
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167025) - continued</b>											
ES1324834-004	Anonymous	EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit		
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167871)</b>											
ES1324840-007	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit		
				EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		ES1324841-006	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Chlorophenol	95-57-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 3- & 4-Methylphenol	1319-77-3			1	mg/kg	<1	<1	0.0	No Limit		
				EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167025)</b>											
ES1324724-001	Anonymous	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		



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167025) - continued</b>									
ES1324724-001	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1324834-004	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167871)</b>									
ES1324840-007	Anonymous	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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167871) - continued</b>									
ES1324840-007	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1324841-006	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3165739)</b>									
ES1324834-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1324834-008	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3167024)</b>									
ES1324724-001	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
ES1324834-004	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	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 (%)
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3167024) - continued</b>									
ES1324834-004	Anonymous	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
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3167870)</b>									
ES1324840-007	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
ES1324841-006	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3165739)</b>									
ES1324834-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1324834-008	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3167024)</b>									
ES1324724-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1324834-004	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3167870)</b>									
ES1324840-007	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1324841-006	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3165739)</b>									
ES1324834-001	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
ES1324834-008	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
		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						
	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		

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 Work Order : ES1324839  
 Client : ENVIRO RESOURCES MANAGEMENT  
 Project : PROJECT SYMPHONY



Sub-Matrix: **SOIL**

*Laboratory Duplicate (DUP) Report*

<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD (%)</i>	<i>Recovery Limits (%)</i>
<b>EP080: BTEXN (QC Lot: 3165739) - continued</b>									
ES1324834-008	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3166764)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	120	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	111	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	114	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	103	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	112	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	119	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	120	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3166765)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	87.2	66	112	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167025)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	88.9	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	80.6	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	81.6	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	106	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	83.1	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	83.0	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	72.9	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	85.5	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	84.4	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	70.3	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	71.4	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	22.9	3.9	57	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167871)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	77.7	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	89.0	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	92.5	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	94.4	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	80.2	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	81.0	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	78.1	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	87.3	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	80.9	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	110	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	98.6	68.9	112	





Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167871) - continued</b>									
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	20.0	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167025)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	80.8	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	86.5	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	85.2	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	82.6	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	109	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	110	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	99.3	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	82.9	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	84.6	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	90.2	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	96.1	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	102	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	81.6	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	77.2	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	81.5	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	81.9	72.4	114	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167871)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	93.4	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	88.2	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	95.0	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	94.6	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	96.3	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	95.2	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	95.6	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	98.0	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	84.5	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	96.6	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	82.2	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	91.9	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	94.1	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	85.2	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	84.0	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	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3165739)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	119	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167024)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167024) - continued</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	99.9	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	95.7	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	91.6	64	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167870)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	94.2	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	92.5	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	90.1	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3165739)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	119	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167024)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	95.4	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	94.4	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	96.5	63	131	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167870)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	96.7	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	91.0	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	75.1	63	131	
<b>EP080: BTEXN (QCLot: 3165739)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	114	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	114	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	110	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	109	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	110	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	102	62	138	

### 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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report				
				Spike Concentration	Spike Recovery(%)		Recovery Limits (%)	
					MS	Low	High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3166764)</b>								
ES1324807-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	95.8	70	130	
		EG005T: Cadmium	7440-43-9	50 mg/kg	109	70	130	



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3166764) - continued</b>							
ES1324807-001	Anonymous	EG005T: Chromium	7440-47-3	50 mg/kg	123	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	100	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	104	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	106	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	106	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3166765)</b>							
ES1324807-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	106	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167025)</b>							
ES1324724-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	76.7	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	79.8	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	77.6	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	78.6	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	47.8	20	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167871)</b>							
ES1324840-007	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	77.7	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.9	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	77.0	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	75.4	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	45.3	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167025)</b>							
ES1324724-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	80.4	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	84.3	70	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167871)</b>							
ES1324840-007	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	93.1	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.7	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3165739)</b>							
ES1324834-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	112	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167024)</b>							
ES1324724-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	79.3	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	77.5	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	63.7	52	132
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167870)</b>							
ES1324840-007	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	82.6	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	93.0	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	84.4	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3165739)</b>							



Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3165739) - continued</b>								
ES1324834-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	110	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167024)</b>								
ES1324724-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	99.1	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	69.3	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	52.5	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167870)</b>								
ES1324840-007	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	110	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	89.7	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	68.5	52	132	
<b>EP080: BTEXN (QCLot: 3165739)</b>								
ES1324834-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	101	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	103	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	98.7	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	96.5	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	99.0	70	130	
EP080: Naphthalene	91-20-3	2.5 mg/kg	88.1	70	130			

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report							
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3165739)</b>											
ES1324834-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	112	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3165739)</b>											
ES1324834-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	110	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3165739)</b>											
ES1324834-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	101	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	103	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	98.7	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	96.5	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	99.0	----	70	130	----	----	
EP080: Naphthalene	91-20-3	2.5 mg/kg	88.1	----	70	130	----	----			



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG005T: Total Metals by ICP-AES (QCLot: 3166764)</b>										
ES1324807-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	95.8	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	109	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	123	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	100	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	104	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	106	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	106	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3166765)</b>										
ES1324807-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	106	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167024)</b>										
ES1324724-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	79.3	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	77.5	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	63.7	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167024)</b>										
ES1324724-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	99.1	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	69.3	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	52.5	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167025)</b>										
ES1324724-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	76.7	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	79.8	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	77.6	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	78.6	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	47.8	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167025)</b>										
ES1324724-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	80.4	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	84.3	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167870)</b>										
ES1324840-007	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	82.6	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	93.0	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	84.4	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167870)</b>										
ES1324840-007	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	110	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	89.7	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	68.5	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167871)</b>										
ES1324840-007	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	77.7	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.9	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	77.0	----	60	130	----	----



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167871) - continued</b>										
ES1324840-007	Anonymous	EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	75.4	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	45.3	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167871)</b>										
ES1324840-007	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	93.1	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.7	----	70	130	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1324839</b>	Page	: 1 of 6
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 15-NOV-2013
C-O-C number	: ----	Issue Date	: 22-NOV-2013
Sampler	: AM	No. of samples received	: 10
Order number	: 0224193	No. of samples analysed	: 8
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA055: Moisture Content</b>							
Soil Glass Jar - Unpreserved (EA055-103) BG_MW07_1.6, BK_SB05_2.0, BKSB07_2.9 BK_SB03_1.6, BK_SB06_0.6	14-NOV-2013	----	----	----	20-NOV-2013	28-NOV-2013	✓
<b>EG005T: Total Metals by ICP-AES</b>							
Soil Glass Jar - Unpreserved (EG005T) BG_MW07_1.6, BK_SB05_2.0, BKSB07_2.9 BK_SB03_1.6, BK_SB06_0.6	14-NOV-2013	19-NOV-2013	13-MAY-2014	✓	20-NOV-2013	13-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
Soil Glass Jar - Unpreserved (EG035T) BG_MW07_1.6, BK_SB05_2.0, BKSB07_2.9 BK_SB03_1.6, BK_SB06_0.6	14-NOV-2013	19-NOV-2013	12-DEC-2013	✓	20-NOV-2013	12-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Soil Glass Jar - Unpreserved (EP071) BG_MW07_1.6, BK_SB05_2.0, BKSB07_2.9 BK_SB03_1.6, BK_SB06_0.6	14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
Soil Glass Jar - Unpreserved (EP075(SIM)) BG_MW07_1.6, BK_SB05_2.0, BKSB07_2.9 BK_SB03_1.6, BK_SB06_0.6	14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP075(SIM)) BG_MW07_1.6, BK_SB05_2.0, BKSB07_2.9 BK_SB03_1.6, BK_SB06_0.6	14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓





Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP BLANK 5	08-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓	
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPK 2, TSC 2	11-NOV-2013	19-NOV-2013	25-NOV-2013	✓	21-NOV-2013	25-NOV-2013	✓	
<b>Soil Glass Jar - Unpreserved (EP080)</b> BG_MW07_1.6, BK_SB05_2.0, BKSB07_2.9	BK_SB03_1.6, BK_SB06_0.6,	14-NOV-2013	19-NOV-2013	28-NOV-2013	✓	21-NOV-2013	28-NOV-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP BLANK 5	08-NOV-2013	19-NOV-2013	22-NOV-2013	✓	21-NOV-2013	22-NOV-2013	✓	
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPK 2, TSC 2	11-NOV-2013	19-NOV-2013	25-NOV-2013	✓	21-NOV-2013	25-NOV-2013	✓	
<b>Soil Glass Jar - Unpreserved (EP080)</b> BG_MW07_1.6, BK_SB05_2.0, BKSB07_2.9	BK_SB03_1.6, BK_SB06_0.6,	14-NOV-2013	19-NOV-2013	28-NOV-2013	✓	21-NOV-2013	28-NOV-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Moisture Content	EA055-103	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	4	38	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	4	39	10.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
PAH/Phenols (SIM)	EP075(SIM)	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) 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 (2013) 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 (2013) 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 (2013) 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 <sub>2</sub> SO <sub>4</sub> 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.



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## 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.
-



**CHAIN OF CUSTODY**  
ALS Laboratory  
Please tick ->

LABELLING 21 Brunel Road, Rosedale SA 5125  
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DICKSON STONE 48 Chelmsford Drive, Chelmsford QLD 4060  
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CHACKAY 75 Blenheim Road, Mackay QLD 4740  
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LIMOLONGONG 60 Iremay Street, Wollongong NSW 2500  
Ph: 02 4222 3178 E: wollongong@als.com.au

CLIENT: **ERM** TURNAROUND REQUIREMENTS:  Standard (ATV Last due date)  Non Standard (urgent, VAT (Last due date))

OFFICE: **Sydney** (Standard VAT may be longer for some tests e.g. Ultra Trace Chemicals)  Standard (ATV Last due date)  Non Standard (urgent, VAT (Last due date))

PROJECT: **Public Symphony** ALS QUOTE NO.: **SY19/413**

ORDER NUMBER: **622493** CONTRACT PH: **CAISWATER@LIDDELL**

PROJECT MANAGER: **JOSEPH FERREIRA** CONTACT PH: **0416 082 758**

SAMPLER: **STEPHEN MULLIGAN** SAMPLER MOBILE: **0416 082 758** RELINQUISHED BY: **Stephen Mulligan**

COC emailed to ALS?  YES  NO EDD FORMAT (for default): **John.Cuning@erm.com** DATE/TIME: **13/11/13**

Email Reports to (will default to PH if no other addresses are listed): **John.Cuning@erm.com** DATE/TIME: **13/11/13**

Email Invoice to (will default to PH if no other addresses are listed): **John.Cuning@erm.com** DATE/TIME: **13/11/13**

COMMENT/SPECIAL HANDLING/STORAGE OR DISPOSAL: **Asbestos e D1.**

ALS USE	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	TOTAL CONTAINERS	ANALYSIS REQUIRED (including SUITES (Ns, Suite Codes must be listed to attract suite price) where Metals are required, specify Total (unfiltered) bottles required) or Disposed (field filtered bottle required)											Additional Information						
						S-1 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	S-24 TRH (C6-C40)/BTEXN, PAH, Phenols	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (ED007)	PFOS/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)		Contaminants on likely contaminant levels, all other samples requiring specific analysis etc.					
	1 BH-SB01-0.2	13/11/13	SOIL	1 Jar, 1 Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	2 BH-SB02-0.5	13/11/13	S	" "	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	3 D01-13113-SM	13/11/13	S	" "	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	4 BH-MW07-0.2	13/11/13	S	1 Jar, 1 Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	5 BH-MW07-0.5	13/11/13	S	1 Jar	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		HOLD
	6 RV-SB08-0.1	12/11/13	S	1 Jar, 1 Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	7 BA-MW08-0.5	13/11/13	S	1 Jar, 1 Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	8 BA-MW13-0.2	13/11/13	S	1 Jar, 1 Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	9 Trip Spike	11/11/12	S	1 Jar	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		TRH C6-C9, BTEX
	10 Trip Blank	8/11/13	S	1 Jar	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		TRH C6-C9, BTEX

Environmental Division  
Sydney  
Work Order  
**ES1325015**



Telephone : + 61 -2-8784 8555

1/3



# CHAIN OF CUSTODY

ALS Laboratory  
Please tick

CADENACE 21, Bulimba Road, Brisbane, QLD 4109  
Ph: 07 5539 0090 E: [brisbane@als.com.au](mailto:brisbane@als.com.au)  
BENTLEY 32, Edgars Street, Gold Coast, QLD 4205  
Ph: 07 5539 0090 E: [goldcoast@als.com.au](mailto:goldcoast@als.com.au)  
LISVALE 11, Lisvale Road, Adelaide, SA 5015  
Ph: 07 5539 0090 E: [adelaide@als.com.au](mailto:adelaide@als.com.au)

MANLY 72, Manly Road, Manly, QLD 4170  
Ph: 07 4946 0177 E: [manly@als.com.au](mailto:manly@als.com.au)  
DUNDIGALL 23, Weald Road, Sturtville, VIC 3171  
Ph: 03 9594 5800 E: [sturtville@als.com.au](mailto:sturtville@als.com.au)  
MELBOURNE 55, Spring Road, Mordialoop, WA 6150  
Ph: 08 9525 6231 E: [mordialoop@als.com.au](mailto:mordialoop@als.com.au)

JERRICOVILLE 5, Pease Gum Road, Warrackbeee, NSW 2701  
Ph: 02 4651 5155 E: [warrackbeee@als.com.au](mailto:warrackbeee@als.com.au)  
JUNGA 413, Dunlop Street, North Haven, NSW 2311  
Ph: 02 4422 2900 E: [northhaven@als.com.au](mailto:northhaven@als.com.au)  
JERRIH 10, West Way, Manjimup, WA 6090  
Ph: 08 0205 5155 E: [manjimup@als.com.au](mailto:manjimup@als.com.au)

DSTOUREY 277, 289 Woodcock Road, Springfield, NSW 2151  
Ph: 02 9378 4925 E: [springfield@als.com.au](mailto:springfield@als.com.au)  
LUTHERSVILLE 14, 145 Olympic Court, Bulimba, QLD 4160  
Ph: 07 4203 0895 E: [bulimba@als.com.au](mailto:bulimba@als.com.au)  
LAWSON 99, Kennedy Street, Wollongong, NSW 2500  
Ph: 02 4225 5125 E: [wollongong@als.com.au](mailto:wollongong@als.com.au)

CLIENT: **ERM** TURNAROUND REQUIREMENTS:  Standard 'TAT' (List due date);  Non Standard or urgent 'TAT' (List due date);  Urgent Trace Organisms

OFFICE: **Sydney** (Standard 'TAT' may be longer for some tests e.g. Ultra Trace Organisms)

PROJECT: Project Symphonic **ALS QUOTE NO.: SY72413**

ORDER NUMBER: **0724193** CONTACT PH: **BAYSWATER DIBDELL**

PROJECT MANAGER: **J. FERNANDES** SAMPLER MOBILE: **0434181488** REINQUISHED BY: **RECEIVED BY:**

SAMPLER: **A. MORRIS** EDD FORMAT (or default): **Standard** DATE/TIME: **18/11/13 1020**

COC emailed to ALS? (YES/NO) **NO** DATE/TIME: **18/11/13 1700**

Email Reports to (will default to PM if no other addresses are listed): **Stewie** DATE/TIME: **18/11/13 1900**

Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE MATRIX: SOLID (S) WATER (W)	CONTAINER INFORMATION	ANALYSIS REQUIRED (Including SUITES (NS), Suite Codes must be listed to attract suite price). Where Metals are required, specify Total (unfiltered bottles required) or Dissolved (filtered bottles required).										Additional Information						
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	(refer to)	TOTAL CONTAINERS	S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	S-24 TRH(C6-C40)/BTEXN, PAH, Phenols	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (ED007)	PFOS/POFA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)	Comments on likely contaminant levels, dilutions, & samples requiring specific OC analysis etc.	
11	BG-MJ03-2.0	13-11-13	SOIL	1 Jar		1	X	X	X	X								HOLD	
12	BG-MW03-3.9					1	X	X	X	X									HOLD
13	BG-MW04-2.5					1	X	X	X	X									HOLD
14	BG-MW04-3.9					1	X	X	X	X									HOLD
15	BG-MW05-2.0					1	X	X	X	X									HOLD
16	BG-MW05-3.5					1	X	X	X	X									HOLD
17	BG-MW06-3.0					1	X	X	X	X									HOLD
18	BG-MW06-3.9					1	X	X	X	X									HOLD
19	DOI-13113-AM					1	X	X	X	X									
20	ROI-13113-AM				W	125ml WWS, 100ml WWS, 100ml WWS, 30ml WWS	X	X	X	X									

ZINC Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; QIC = Ultra Preserved QIC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Allflight Unpreserved Plastic  
 VIAL Vial Hold Preserved; NB - NOA Vial Medium Sulphide Preserved; VS = VOA Vial Sulphide Preserved; AV = Allflight Unpreserved Vial; GS = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; IS = HCl Preserved Speciation bottle; ST = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass  
 2 - 2ml Acidic Preserved Bottle; C - 200µl Preserved Bottles; BT = Sterile Bottle; ASS = Plastic Bag for Acid Sample Solis; B = Unpreserved Bag

**ALS CHAIN OF CUSTODY**  
 ALS Laboratory  
 please tick ✓

LABORATORY 21 Blinn Road Preston SA 5095  
 Ph: 08 835 9000 E: als@als.com.au  
 LIBRARY 22 Sturt Street Adelaide QLD 4005  
 Ph: 08 835 2222 E: als@als.com.au  
 5/4/05 222 E: als@als.com.au  
 Ph: 07 7471 9999 E: als@als.com.au

THACKRAY 23 Linker Road Archer QLD 4700  
 Ph: 07 4644 0172 E: als@als.com.au  
 DELICOURT 2 Woodward Street Stirling VIC 3111  
 Ph: 03 9492 3333 E: als@als.com.au  
 1/1/05 333 E: als@als.com.au  
 Ph: 02 9252 6725 E: als@als.com.au

UNIVERSITY 3 Pace Court Woodloch NSW 2204  
 Ph: 02 9593 7330 E: als@als.com.au  
 DUNLOP 410 Glen Road North Haven NSW 2311  
 Ph: 02 4972 3300 E: als@als.com.au  
 JEFFERIES 10 Northview Avenue WA 6050  
 Ph: 08 9250 1033 E: als@als.com.au

LEITCH 727-289 Woodcock Road Southfield NSW 2191  
 Ph: 02 9784 0225 E: als@als.com.au  
 LITTONS 11-13 Doral Court Brisbane QLD 4103  
 Ph: 07 4766 6600 E: als@als.com.au  
 LUMLEY 601 Levee Street Rockingham NSW 2285  
 Ph: 02 4233 3123 E: als@als.com.au

CLIENT: **ESM** TURKROUND REQUIREMENTS:  Standard TAT (List due date);  Non Standard or urgent TAT (List due date):

OFFICE: **Sydney** (Standard TAT may be longer for some tests e.g. Ultra Trace Elements)

PROJECT: **Sydney** ALS QUOTE NO.: **SY794/13**

ORDER NUMBER: **224193** CONTACT PH: **0434181948** RELINQUISHED BY: **Johnewing@esm.com** DATE/TIME: **18/12/13 7:00**

PROJECT MANAGER: **S-Ferling** SAMP. MOBILE: **0434181948** RELINQUISHED BY: **Johnewing@esm.com** DATE/TIME: **18/12/13 7:00**

SAMPLER: **A. MORRIS** EDD FORMAT (or default): **DATE/TIME:**

COC emailed to ALS? (YES / NO) **YES**

Email Reports to (will default to PM if no other addresses are listed): **Johnewing@esm.com** DATE/TIME: **18/12/13 7:00**

Email Invoice to (will default to PM if no other addresses are listed): **Johnewing@esm.com** DATE/TIME: **18/12/13 7:00**

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)	CONTAINER INFORMATION	ANALYSIS REQUIRED (Including Suites (NH, Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required))	Additional Information														
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	(refer to)	TOTAL CONTAINERS	S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	S-24 TRH(C6-C40)BTEXN, PAH, Phenols	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (ED007)	PFOS/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)	Comments on likely contaminant levels, dilutions or samples requiring specific OC analysis etc.
	*TD1-13113-AM	13-11-13	soil	1 Class Sar		1	X		X	X								Please forward sample to Envisia

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; CRC = Nitric Preserved CR; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic  
 V = VOA Vol HCl Preserved; VA = VOA Vol Sodium Bisulfate Preserved; VS = VOA Vol Sulfuric Preserved; AV = Airtight Unpreserved Via SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Specimen Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass  
 C = Zipper Available Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; D = Unpreserved Bag

8/3

## Wael Saleh

---

**From:** Wael Saleh  
**Sent:** Monday, 25 November 2013 9:29 AM  
**To:** 'Kate Fox'  
**Cc:** ERM Australia Project Symphony MacGen; Barbara Hanna (Barbara.Hanna@alsglobal.com) (Barbara.Hanna@alsglobal.com)  
**Subject:** RE: Your Reference : PROJECT SYMPHONY. COC/SRN for ALSE Workorder : ES1325015

**Importance:** High

Hi Kate,

I can add Ec no problem but unfortunately with the Cations/Anions, these have already been authorised.

Regards

Wael Saleh  
Creation and Committal Coordinator  
ALS | Environmental Division  
277-289 Woodpark Road  
Smithfield NSW 2164 Australia

How was your customer experience? Please send us your feedback Please see our latest:

EnviroMail 68 - Sampling and Analysis Implications of the new NEPM - July 2013

EnviroMail 69 - Testing Requirements of the new NEPM - July 2013

EnviroMail 70 - Variation of Naphthalene by SVOC and VOC Methods in Water - July 2013

EnviroMail 71 - Cryptosporidium Infectivity - July 2013

Enviromail 72 - Algal Toxins and Quantitative Analysis - August 2013

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-----Original Message-----

From: Kate Fox [mailto:Kate.Fox@erm.com]

Sent: Friday, 22 November 2013 4:55 PM



To: Wael Saleh  
Cc: ERM Australia Project Symphony MacGen  
Subject: RE: Your Reference : PROJECT SYMPHONY. COC/SRN for ALSE Workorder : ES1325015

Hi Wael,

Could the samples in this SRN that have been listed as needing Cation/ Anion analysis, please be analysed for Electrical Conductivity instead.

This is for the following:

- ES1325015-001
- ES1325015-002
- ES1325015-003
- ES1325015-004
- ES1325015-007
- ES1325015-008

We won't be analysing for Cations/Anions anymore on this project, just EC. The field scientists should have started to label the CoCs for EC, but it might take a couple of days before these correctly populated CoCs come through, so I'll keep checking them.

Many thanks,  
Kate

-----Original Message-----

From: [alse.sydney.aus@alsglobal.com](mailto:alse.sydney.aus@alsglobal.com) [mailto:[alse.sydney.aus@alsglobal.com](mailto:alse.sydney.aus@alsglobal.com)]  
Sent: Friday, November 22, 2013 11:03 AM  
To: John Ewing  
Subject: Your Reference : PROJECT SYMPHONY. COC/SRN for ALSE Workorder : ES1325015

This e-mail has been automatically generated.

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**SAMPLE RECEIPT NOTIFICATION (SRN)****Comprehensive Report**

<b>Work Order</b>	: <b>ES1325015</b>		
<b>Client</b>	: <b>ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	: Environmental Division Sydney
<b>Contact</b>	: MR JOE FERRING	<b>Contact</b>	: Barbara Hanna
<b>Address</b>	: GRND FLOOR, 33 SAUNDERS STREET PYRMONT NSW AUSTRALIA 2009	<b>Address</b>	: 277-289 Woodpark Road Smithfield NSW Australia 2164
<b>E-mail</b>	: joseph.ferring@erm.com	<b>E-mail</b>	: Barbara.Hanna@alsglobal.com
<b>Telephone</b>	: +61 02 8584 8888	<b>Telephone</b>	: +61 2 8784 8555
<b>Facsimile</b>	: +61 02 8584 8800	<b>Facsimile</b>	: +61 2 8784 8555
<b>Project</b>	: PROJECT SYMPHONY	<b>Page</b>	: 1 of 4
<b>Order number</b>	: 0224193	<b>Quote number</b>	: ES2013ENVRES0369 (SY/794/13)
<b>C-O-C number</b>	: ----	<b>QC Level</b>	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Site</b>	: BAYSWATER		
<b>Sampler</b>	: STEPHEN MULLIGAN		

**Dates**

<b>Date Samples Received</b>	: 18-NOV-2013	<b>Issue Date</b>	: 25-NOV-2013 08:35
<b>Client Requested Due Date</b>	: 25-NOV-2013	<b>Scheduled Reporting Date</b>	: <b>25-NOV-2013</b>

**Delivery Details**

<b>Mode of Delivery</b>	: Carrier	<b>Temperature</b>	: 4.2°C - Ice present
<b>No. of coolers/boxes</b>	: 1 HARD	<b>No. of samples received</b>	: 21
<b>Security Seal</b>	: Intact.	<b>No. of samples analysed</b>	: 16

**General Comments**

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample T01\_131113\_AM forward to Envirolab**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exist.

### Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL	No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA010 (solids): Electrical Conductivity (1:5)	SOIL - EA200 Asbestos Identification in Soils	SOIL - ED007 CEC / Exchangeable Cations (ED007)	SOIL - EG005T (solids)	Total Metals by ICP-AES	SOIL - EP066 (solids)	Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids)	Volatile Organic Compounds
ES1325015-001	13-NOV-2013 15:00	BH_SB01_0.2			✓	✓	✓	✓						
ES1325015-002	13-NOV-2013 15:00	BH_SB02_0.5			✓	✓	✓	✓						
ES1325015-003	13-NOV-2013 15:00	D01_131113_SM			✓	✓	✓	✓						
ES1325015-004	13-NOV-2013 15:00	BH_MW07_0.2			✓	✓	✓	✓						
ES1325015-005	13-NOV-2013 15:00	BH_MW07_0.5	✓											
ES1325015-006	13-NOV-2013 15:00	BV_SB08_0.1					✓				✓		✓	
ES1325015-007	13-NOV-2013 15:00	BQ_MW08_0.5			✓	✓	✓		✓					
ES1325015-008	13-NOV-2013 15:00	BQ_MW13_0.2			✓	✓	✓		✓					
ES1325015-011	13-NOV-2013 15:00	BG_MW03_2.0									✓		✓	
ES1325015-012	13-NOV-2013 15:00	BG_MW03_3.9	✓											
ES1325015-013	13-NOV-2013 15:00	BG_MW04_2.5									✓		✓	
ES1325015-014	13-NOV-2013 15:00	BG_MW04_3.9	✓											
ES1325015-015	13-NOV-2013 15:00	BG_MW05_2.0	✓											
ES1325015-016	13-NOV-2013 15:00	BG_MW05_3.5									✓		✓	
ES1325015-017	13-NOV-2013 15:00	BG_MW06_3.0									✓		✓	
ES1325015-018	13-NOV-2013 15:00	BG_MW06_3.9	✓											
ES1325015-019	13-NOV-2013 15:00	D01_131113_AM									✓		✓	

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - NT-1S Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S Major Anions (Cl, SO4)	SOIL - S-01 7 Metals (incl. Digestion)	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-18 (NO MOIST)	TRH(C6-C9)/BTEXN with No Moisture	SOIL - S-24 TRH/BTEXN/PAH + Phenols	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1325015-001	13-NOV-2013 15:00	BH_SB01_0.2	✓	✓		✓			✓	
ES1325015-002	13-NOV-2013 15:00	BH_SB02_0.5	✓	✓		✓			✓	
ES1325015-003	13-NOV-2013 15:00	D01_131113_SM	✓	✓		✓			✓	
ES1325015-004	13-NOV-2013 15:00	BH_MW07_0.2	✓	✓		✓			✓	
ES1325015-006	13-NOV-2013 15:00	BV_SB08_0.1								✓
ES1325015-007	13-NOV-2013 15:00	BQ_MW08_0.5	✓	✓	✓			✓		
ES1325015-008	13-NOV-2013 15:00	BQ_MW13_0.2	✓	✓	✓			✓		



Sample ID	Sample Date / Time	Sample Description	SOIL - NT-1S	Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S	Major Anions (Cl, SO4)	SOIL - S-01	7 Metals (incl. Digestion)	SOIL - S-02	8 Metals (incl. Digestion)	SOIL - S-18 (NO MOIST)	TRH/C6-C9/BTEXN with No Moisture	SOIL - S-24	TRH/BTEXN/PAH + Phenols	SOIL - S-27	TRH/BTEXN/PAH/Phenols/8Metals
ES1325015-009	11-NOV-2013 15:00	TRIP SPIKE 1									✓					
ES1325015-010	08-NOV-2013 15:00	TRIP BLANK 8									✓					
ES1325015-011	13-NOV-2013 15:00	BG_MW03_2.0														✓
ES1325015-013	13-NOV-2013 15:00	BG_MW04_2.5														✓
ES1325015-016	13-NOV-2013 15:00	BG_MW05_3.5														✓
ES1325015-017	13-NOV-2013 15:00	BG_MW06_3.0														✓
ES1325015-019	13-NOV-2013 15:00	D01_131113_AM														✓
ES1325015-021	11-NOV-2013 15:00	TSC 1									✓					

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP066-PCB-WA	Polychlorinated Biphenyls (PCB)	WATER - EP074 (water)	Volatile Organic Compounds	WATER - W-27T	TRH/BTEXN/PAH/Phenols/Total 8
ES1325015-020	13-NOV-2013 15:00	R01_131113_AM	✓	✓	✓	✓	✓	✓

### Proactive Holding Time Report

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



## *Requested Deliverables*

### **JOHN EWING**

- *AU Certificate of Analysis - NATA ( COA )	Email	john.ewing@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	john.ewing@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	john.ewing@erm.com
- A4 - AU Tax Invoice ( INV )	Email	john.ewing@erm.com
- Chain of Custody (CoC) ( COC )	Email	john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	john.ewing@erm.com

### **MR JOE FERRING**

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTAB )	Email	joseph.ferring@erm.com

### **THE ACCOUNTS PAYABLE**

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1325015</b>	Page	: 1 of 25
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOE FERRING	Contact	: Barbara Hanna
Address	: GRND FLOOR, 33 SAUNDERS STREET PYRMONT NSW AUSTRALIA 2009	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193	Date Samples Received	: 18-NOV-2013
C-O-C number	: ----	Issue Date	: 29-NOV-2013
Sampler	: STEPHEN MULLIGAN	No. of samples received	: 21
Site	: BAYSWATER	No. of samples analysed	: 16
Quote number	: SY/794/13		

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



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**
- **EP080: The TRIP SPIKE and TRIP SPIKE CONTROL have been analysed for volatile TPH and BTEX only. The TRIP SPIKE and TRIP SPIKE CONTROL were prepared in the lab using reagent grade sand spiked with petrol. The TRIP SPIKE was dispatched from the lab and the TRIP SPIKE CONTROL retained. The spike samples were extracted and analysed concurrently with samples reported in this batch.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

## Signatories

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

Signatories	Position	Accreditation Category
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Peter Rennie	Asbestos Identifier	Newcastle - Asbestos
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB01_0.2	BH_SB02_0.5	D01_131113_SM	BH_MW07_0.2	BV_SB08_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-001	ES1325015-002	ES1325015-003	ES1325015-004	ES1325015-006
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	7.3	7.8	7.8	8.8	----
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	146	179	1170	207	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	17.3	14.0	14.6	13.3	18.2
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	0.1	--	-	-	-	-	----
Asbestos Type	1332-21-4	-	--	----	----	----	----	-
Sample weight (dry)	----	0.01	g	504	250	72.6	512	524
APPROVED IDENTIFIER:	----	-	--	P.RENNIE	P.RENNIE	P.RENNIE	P.RENNIE	P.RENNIE
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	10.3	9.3	10.1	7.7	----
Exchangeable Magnesium	----	0.1	meq/100g	2.5	2.4	2.4	2.5	----
Exchangeable Potassium	----	0.1	meq/100g	0.4	0.2	0.2	0.3	----
Exchangeable Sodium	----	0.1	meq/100g	<0.1	<0.1	<0.1	<0.1	----
Cation Exchange Capacity	----	0.1	meq/100g	13.2	12.0	12.8	10.6	----
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	<0.1	<0.1	----
<b>ED040S : Soluble Sulfate by ICPAES</b>								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	80	190	1720	220	----
<b>ED045G: Chloride Discrete analyser</b>								
Chloride	16887-00-6	10	mg/kg	120	<10	<10	20	----
<b>ED093S: Soluble Major Cations</b>								
Calcium	7440-70-2	10	mg/kg	30	70	650	40	----
Magnesium	7439-95-4	10	mg/kg	20	10	50	20	----
Sodium	7440-23-5	10	mg/kg	10	20	20	70	----
Potassium	7440-09-7	10	mg/kg	120	20	30	40	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	13	14	15	17	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	8	8	9	35
Copper	7440-50-8	5	mg/kg	25	17	17	7	12
Lead	7439-92-1	5	mg/kg	19	17	16	15	12



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB01_0.2	BH_SB02_0.5	D01_131113_SM	BH_MW07_0.2	BV_SB08_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-001	ES1325015-002	ES1325015-003	ES1325015-004	ES1325015-006
<b>EG005T: Total Metals by ICP-AES - Continued</b>								
Nickel	7440-02-0	2	mg/kg	19	19	19	17	10
Zinc	7440-66-6	5	mg/kg	83	66	75	47	44
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	----	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	----	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	----	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	----	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	----	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	----	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	----	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	----	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	----	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	----	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	----	----	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074D: Fumigants</b>								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	----	----	----	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	----	----	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	----	----	----	<5
Chloromethane	74-87-3	5	mg/kg	----	----	----	----	<5
Vinyl chloride	75-01-4	5	mg/kg	----	----	----	----	<5



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				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-001	ES1325015-002	ES1325015-003	ES1325015-004	ES1325015-006
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
Bromomethane	74-83-9	5	mg/kg	----	----	----	----	<5
Chloroethane	75-00-3	5	mg/kg	----	----	----	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	----	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	----	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	----	----	----	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	----	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	----	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	----	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	----	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	----	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	----	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	----	----	----	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	----	----	----	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	----	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	----	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	----	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	----	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	----	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	----	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	----	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	----	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	----	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	----	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	----	----	----	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	----	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	----	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	----	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	----	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	----	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB01_0.2	BH_SB02_0.5	D01_131113_SM	BH_MW07_0.2	BV_SB08_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-001	ES1325015-002	ES1325015-003	ES1325015-004	ES1325015-006
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	----	----	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	----	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	----	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	----	----	----	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB01_0.2	BH_SB02_0.5	D01_131113_SM	BH_MW07_0.2	BV_SB08_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-001	ES1325015-002	ES1325015-003	ES1325015-004	ES1325015-006
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB01_0.2	BH_SB02_0.5	D01_131113_SM	BH_MW07_0.2	BV_SB08_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-001	ES1325015-002	ES1325015-003	ES1325015-004	ES1325015-006
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	----	65.8
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	----	----	87.9
Toluene-D8	2037-26-5	0.1	%	----	----	----	----	101
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	----	----	95.5
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	98.0	92.6	94.1	87.8	81.0
2-Chlorophenol-D4	93951-73-6	0.1	%	97.6	103	104	97.8	95.9
2,4,6-Tribromophenol	118-79-6	0.1	%	91.4	89.9	90.5	83.2	84.1
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	101	105	109	101	99.8
Anthracene-d10	1719-06-8	0.1	%	93.3	94.5	98.4	91.6	90.5
4-Terphenyl-d14	1718-51-0	0.1	%	88.9	91.1	95.2	88.5	87.2
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	95.0	91.4	89.8	91.2	98.8
Toluene-D8	2037-26-5	0.1	%	102	97.1	96.0	96.1	108
4-Bromofluorobenzene	460-00-4	0.1	%	105	99.4	98.0	98.8	98.9



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW08_0.5	BQ_MW13_0.2	TRIP SPIKE 1	TRIP BLANK 8	BG_MW03_2.0
				13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00	08-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-007	ES1325015-008	ES1325015-009	ES1325015-010	ES1325015-011
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	6.8	6.7	----	----	----
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	365	76	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	20.1	22.3	----	----	16.8
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	----	----
Asbestos Type	1332-21-4	-	--	-	-	----	----	----
Sample weight (dry)	----	0.01	g	362	333	----	----	----
APPROVED IDENTIFIER:	----	-	--	P.RENNIE	P.RENNIE	----	----	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	16.9	13.8	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	6.0	4.0	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	0.6	0.6	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	0.6	0.2	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	24.1	18.7	----	----	----
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	----	----	----
<b>ED040S : Soluble Sulfate by ICPAES</b>								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	580	10	----	----	----
<b>ED045G: Chloride Discrete analyser</b>								
Chloride	16887-00-6	10	mg/kg	140	30	----	----	----
<b>ED093S: Soluble Major Cations</b>								
Calcium	7440-70-2	10	mg/kg	90	30	----	----	----
Magnesium	7439-95-4	10	mg/kg	130	40	----	----	----
Sodium	7440-23-5	10	mg/kg	170	20	----	----	----
Potassium	7440-09-7	10	mg/kg	280	140	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Barium	7440-39-3	10	mg/kg	160	200	----	----	----
Beryllium	7440-41-7	1	mg/kg	2	1	----	----	----
Boron	7440-42-8	50	mg/kg	<50	<50	----	----	----
Cobalt	7440-48-4	2	mg/kg	22	9	----	----	----
Manganese	7439-96-5	5	mg/kg	841	235	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW08_0.5	BQ_MW13_0.2	TRIP SPIKE 1	TRIP BLANK 8	BG_MW03_2.0
				13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00	08-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-007	ES1325015-008	ES1325015-009	ES1325015-010	ES1325015-011
<b>EG005T: Total Metals by ICP-AES - Continued</b>								
Selenium	7782-49-2	5	mg/kg	<5	<5	----	----	----
Vanadium	7440-62-2	5	mg/kg	66	55	----	----	----
Thallium	7440-28-0	5	mg/kg	<5	<5	----	----	----
Arsenic	7440-38-2	5	mg/kg	11	9	----	----	14
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	<1
Chromium	7440-47-3	2	mg/kg	20	21	----	----	18
Copper	7440-50-8	5	mg/kg	22	19	----	----	28
Lead	7439-92-1	5	mg/kg	19	14	----	----	19
Nickel	7440-02-0	2	mg/kg	18	16	----	----	9
Zinc	7440-66-6	5	mg/kg	54	61	----	----	49
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	----	----	----	----	0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	----	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	----	----	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	----	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	----	----	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	----	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	----	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	----	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	----	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	----	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	----	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	----	----	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	----	----	----	<0.5





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW08_0.5	BQ_MW13_0.2	TRIP SPIKE 1	TRIP BLANK 8	BG_MW03_2.0
				13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00	08-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-007	ES1325015-008	ES1325015-009	ES1325015-010	ES1325015-011
<b>EP074D: Fumigants - Continued</b>								
1.2-Dichloropropane	78-87-5	0.5	mg/kg	----	----	----	----	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	----	----	----	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	----	----	----	<5
Chloromethane	74-87-3	5	mg/kg	----	----	----	----	<5
Vinyl chloride	75-01-4	5	mg/kg	----	----	----	----	<5
Bromomethane	74-83-9	5	mg/kg	----	----	----	----	<5
Chloroethane	75-00-3	5	mg/kg	----	----	----	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	----	----	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	----	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	----	----	----	----	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	----	----	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	----	----	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	----	----	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	----	----	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	----	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	----	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	----	----	----	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	----	----	----	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	----	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	----	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	----	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	----	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	----	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	----	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	----	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	----	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	----	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	----	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW08_0.5	BQ_MW13_0.2	TRIP SPIKE 1	TRIP BLANK 8	BG_MW03_2.0
				13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00	08-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-007	ES1325015-008	ES1325015-009	ES1325015-010	ES1325015-011
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	----	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	----	----	----	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	----	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	----	----	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	----	----	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	----	----	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	----	----	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	----	----	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	----	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	----	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	----	----	----	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	----	----	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	----	----	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW08_0.5	BQ_MW13_0.2	TRIP SPIKE 1	TRIP BLANK 8	BG_MW03_2.0
				13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00	08-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-007	ES1325015-008	ES1325015-009	ES1325015-010	ES1325015-011
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	----	----	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	----	----	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<b>79</b>	<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
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<b>88</b>	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<b>52</b>	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	<50
<b>EP080: BTEXN</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW08_0.5	BQ_MW13_0.2	TRIP SPIKE 1	TRIP BLANK 8	BG_MW03_2.0
				13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00	08-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-007	ES1325015-008	ES1325015-009	ES1325015-010	ES1325015-011
<b>EP080: BTEXN - Continued</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.7	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	18.8	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	2.1	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	10.1	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	4.1	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	35.8	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	14.2	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	----	62.5
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	----	----	81.8
Toluene-D8	2037-26-5	0.1	%	----	----	----	----	102
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	----	----	98.0
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	94.0	97.3	----	----	92.4
2-Chlorophenol-D4	93951-73-6	0.1	%	99.3	104	----	----	101
2,4,6-Tribromophenol	118-79-6	0.1	%	91.4	97.1	----	----	92.9
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	105	106	----	----	104
Anthracene-d10	1719-06-8	0.1	%	96.5	96.2	----	----	95.7
4-Terphenyl-d14	1718-51-0	0.1	%	92.3	90.9	----	----	91.0
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	93.7	93.8	91.9	93.8	91.2
Toluene-D8	2037-26-5	0.1	%	99.3	99.0	93.9	96.2	109
4-Bromofluorobenzene	460-00-4	0.1	%	103	100	97.5	101	101



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_2.5	BG_MW05_3.5	BG_MW06_3.0	D01_131113_AM	TSC 1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-013	ES1325015-016	ES1325015-017	ES1325015-019	ES1325015-021
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	18.3	17.0	18.8	19.3	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	27	127	<5	16	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	28	29	14	26	----
Copper	7440-50-8	5	mg/kg	30	37	12	33	----
Lead	7439-92-1	5	mg/kg	29	37	9	23	----
Nickel	7440-02-0	2	mg/kg	38	22	3	36	----
Zinc	7440-66-6	5	mg/kg	115	81	15	118	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	<5	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_2.5	BG_MW05_3.5	BG_MW06_3.0	D01_131113_AM	TSC 1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-013	ES1325015-016	ES1325015-017	ES1325015-019	ES1325015-021
<b>EP074D: Fumigants - Continued</b>								
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	<5	----
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	<5	----
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	<5	----
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	<5	----
Chloroethane	75-00-3	5	mg/kg	<5	<5	<5	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_2.5	BG_MW05_3.5	BG_MW06_3.0	D01_131113_AM	TSC 1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-013	ES1325015-016	ES1325015-017	ES1325015-019	ES1325015-021
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_2.5	BG_MW05_3.5	BG_MW06_3.0	D01_131113_AM	TSC 1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-013	ES1325015-016	ES1325015-017	ES1325015-019	ES1325015-021
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	<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	----
Chrysene	218-01-9	0.5	mg/kg	<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	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<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	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<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	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<b>107</b>
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<b>121</b>
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<b>80</b>
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	----
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<b>1.0</b>





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BG_MW04_2.5	BG_MW05_3.5	BG_MW06_3.0	D01_131113_AM	TSC 1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325015-013	ES1325015-016	ES1325015-017	ES1325015-019	ES1325015-021
<b>EP080: BTEXN - Continued</b>								
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	20.6
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	2.7
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	11.8
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	5.0
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	41.1
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	16.8
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	64.0	62.9	64.5	64.8	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	90.1	78.8	85.4	91.7	----
Toluene-D8	2037-26-5	0.1	%	107	91.7	99.4	103	----
4-Bromofluorobenzene	460-00-4	0.1	%	100	89.8	95.6	93.9	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	92.4	89.6	92.6	88.9	----
2-Chlorophenol-D4	93951-73-6	0.1	%	102	101	104	98.3	----
2,4,6-Tribromophenol	118-79-6	0.1	%	89.5	82.3	83.8	84.5	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	105	103	105	102	----
Anthracene-d10	1719-06-8	0.1	%	97.3	93.9	96.2	92.6	----
4-Terphenyl-d14	1718-51-0	0.1	%	93.2	89.9	92.7	88.9	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	102	89.6	95.7	104	99.0
Toluene-D8	2037-26-5	0.1	%	115	98.5	107	110	103
4-Bromofluorobenzene	460-00-4	0.1	%	106	97.3	96.5	101	98.4



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_131113\_AM

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Client sampling date / time

13-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325015-020	---	---	---	---
<b>EG020T: Total Metals by ICP-MS</b>								
Arsenic	7440-38-2	0.001	mg/L	<0.001	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	---	---	---	---
Chromium	7440-47-3	0.001	mg/L	<0.001	---	---	---	---
Copper	7440-50-8	0.001	mg/L	<0.001	---	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	---	---	---	---
Zinc	7440-66-6	0.005	mg/L	<0.005	---	---	---	---
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	---	---	---	---
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	---	1	µg/L	<1	---	---	---	---
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	5	µg/L	<5	---	---	---	---
Isopropylbenzene	98-82-8	5	µg/L	<5	---	---	---	---
n-Propylbenzene	103-65-1	5	µg/L	<5	---	---	---	---
1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	---	---	---	---
sec-Butylbenzene	135-98-8	5	µg/L	<5	---	---	---	---
1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	---	---	---	---
tert-Butylbenzene	98-06-6	5	µg/L	<5	---	---	---	---
p-Isopropyltoluene	99-87-6	5	µg/L	<5	---	---	---	---
n-Butylbenzene	104-51-8	5	µg/L	<5	---	---	---	---
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	50	µg/L	<50	---	---	---	---
2-Butanone (MEK)	78-93-3	50	µg/L	<50	---	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	---	---	---	---
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	---	---	---	---
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	5	µg/L	<5	---	---	---	---
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	5	µg/L	<5	---	---	---	---
1,2-Dichloropropane	78-87-5	5	µg/L	<5	---	---	---	---
cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	---	---	---	---
trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_131113\_AM

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Client sampling date / time

13-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325015-020	---	---	---	---
<b>EP074D: Fumigants - Continued</b>								
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	---	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	---	---	---	---
Chloromethane	74-87-3	50	µg/L	<50	---	---	---	---
Vinyl chloride	75-01-4	50	µg/L	<50	---	---	---	---
Bromomethane	74-83-9	50	µg/L	<50	---	---	---	---
Chloroethane	75-00-3	50	µg/L	<50	---	---	---	---
Trichlorofluoromethane	75-69-4	50	µg/L	<50	---	---	---	---
1.1-Dichloroethene	75-35-4	5	µg/L	<5	---	---	---	---
Iodomethane	74-88-4	5	µg/L	<5	---	---	---	---
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	---	---	---	---
1.1-Dichloroethane	75-34-3	5	µg/L	<5	---	---	---	---
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	---	---	---	---
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	---	---	---	---
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	---	---	---	---
Carbon Tetrachloride	56-23-5	5	µg/L	<5	---	---	---	---
1.2-Dichloroethane	107-06-2	5	µg/L	<5	---	---	---	---
Trichloroethene	79-01-6	5	µg/L	<5	---	---	---	---
Dibromomethane	74-95-3	5	µg/L	<5	---	---	---	---
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	---	---	---	---
1.3-Dichloropropane	142-28-9	5	µg/L	<5	---	---	---	---
Tetrachloroethene	127-18-4	5	µg/L	<5	---	---	---	---
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	---	---	---	---
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	---	---	---	---
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	---	---	---	---
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	---	---	---	---
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	---	---	---	---
Pentachloroethane	76-01-7	5	µg/L	<5	---	---	---	---
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	---	---	---	---
Hexachlorobutadiene	87-68-3	5	µg/L	<5	---	---	---	---
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	5	µg/L	<5	---	---	---	---
Bromobenzene	108-86-1	5	µg/L	<5	---	---	---	---
2-Chlorotoluene	95-49-8	5	µg/L	<5	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_131113\_AM

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Client sampling date / time

13-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325015-020	---	---	---	---
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
4-Chlorotoluene	106-43-4	5	µg/L	<5	---	---	---	---
1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	---	---	---	---
1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	---	---	---	---
1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	---	---	---	---
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	5	µg/L	<5	---	---	---	---
Bromodichloromethane	75-27-4	5	µg/L	<5	---	---	---	---
Dibromochloromethane	124-48-1	5	µg/L	<5	---	---	---	---
Bromoform	75-25-2	5	µg/L	<5	---	---	---	---
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	7	µg/L	<7	---	---	---	---
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	1.0	µg/L	<1.0	---	---	---	---
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	---	---	---	---
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	---	---	---	---
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	---	---	---	---
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	---	---	---	---
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	---	---	---	---
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	---	---	---	---
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	---	---	---	---
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	---	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_131113\_AM

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Client sampling date / time

13-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325015-020	---	---	---	---
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### EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued

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	---	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	---	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	---	---	---	---

### EP080/071: Total Petroleum Hydrocarbons

C6 - C9 Fraction	----	20	µg/L	<20	---	---	---	---
C10 - C14 Fraction	----	50	µg/L	<50	---	---	---	---
C15 - C28 Fraction	----	100	µg/L	<100	---	---	---	---
C29 - C36 Fraction	----	50	µg/L	<50	---	---	---	---
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	---	---	---	---

### EP080/071: Total Recoverable Hydrocarbons - NEPM 2013

C6 - C10 Fraction	C6_C10	20	µg/L	<20	---	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	---	---	---	---
>C10 - C16 Fraction	>C10_C16	100	µg/L	<100	---	---	---	---
>C16 - C34 Fraction	----	100	µg/L	<100	---	---	---	---
>C34 - C40 Fraction	----	100	µg/L	<100	---	---	---	---
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	---	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	---	---	---	---

### EP080: BTEXN

Benzene	71-43-2	1	µg/L	<1	---	---	---	---
Toluene	108-88-3	2	µg/L	<2	---	---	---	---
Ethylbenzene	100-41-4	2	µg/L	<2	---	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	---	---	---	---
ortho-Xylene	95-47-6	2	µg/L	<2	---	---	---	---



## Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Client sample ID

**R01\_131113\_AM**

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Client sampling date / time

13-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325015-020	----	----	----	----
<b>EP080: BTEXN - Continued</b>								
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	61.1	----	----	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	114	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	120	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	110	----	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	22.8	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	45.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	59.1	----	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	56.7	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	58.2	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	51.1	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	117	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	114	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	110	----	----	----	----

## Analytical Results

### Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BV_SB08_0.1 - 13-NOV-2013 15:00	Grey-brown clay soil with some vegetation
EA200: Description	BQ_MW08_0.5 - 13-NOV-2013 15:00	Brown clay soil with some vegetation
EA200: Description	BQ_MW13_0.2 - 13-NOV-2013 15:00	Brown clay soil with some vegetation
EA200: Description	BH_SB01_0.2 - 13-NOV-2013 15:00	Orange-brown clay soil
EA200: Description	BH_SB02_0.5 - 13-NOV-2013 15:00	Orange-brown clay soil
EA200: Description	D01_131113_SM - 13-NOV-2013 15:00	Brown clay soil
EA200: Description	BH_MW07_0.2 - 13-NOV-2013 15:00	Brown clay soil



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	28.5	129
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	78.3	133.2
Toluene-D8	2037-26-5	79.1	128.9
4-Bromofluorobenzene	460-00-4	80.8	123.7
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10.0	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27.4	113
4-Terphenyl-d14	1718-51-0	32	112
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

## QUALITY CONTROL REPORT

Work Order	: <b>ES1325015</b>	Page	: 1 of 28
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOE FERRING	Contact	: Barbara Hanna
Address	: GRND FLOOR, 33 SAUNDERS STREET PYRMONT NSW AUSTRALIA 2009	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 18-NOV-2013
C-O-C number	: ----	Issue Date	: 29-NOV-2013
Sampler	: STEPHEN MULLIGAN	No. of samples received	: 21
Order number	: 0224193	No. of samples analysed	: 16
Quote number	: SY/794/13		

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





## 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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Peter Rennie	Asbestos Identifier	Newcastle - Asbestos
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3168154)</b>									
ES1324349-046	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.7	6.7	0.0	0% - 20%
ES1325015-008	BQ_MW13_0.2	EA002: pH Value	----	0.1	pH Unit	6.7	6.7	0.0	0% - 20%
<b>EA010: Conductivity (QC Lot: 3175820)</b>									
ES1325015-008	BQ_MW13_0.2	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	76	86	12.3	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3168510)</b>									
ES1325015-001	BH_SB01_0.2	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	17.3	16.2	6.7	0% - 50%
ES1325015-019	D01_131113_AM	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	19.3	21.1	9.1	0% - 20%
<b>ED007: Exchangeable Cations (QC Lot: 3173305)</b>									
ES1324837-002	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.0	14.2	1.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	6.9	7.0	1.7	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.6	0.7	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	21.8	22.2	1.8	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1325017-001	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.2	14.5	2.3	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.6	7.6	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.7	0.7	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.4	0.4	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	23.0	23.2	1.2	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>ED007: Exchangeable Cations (QC Lot: 3178295)</b>									
ES1325015-007	BQ_MW08_0.5	ED007: Exchangeable Calcium	----	0.1	meq/100g	16.9	17.1	1.3	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	6.0	6.0	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.6	0.6	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.6	0.6	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	24.1	24.4	1.0	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>ED040S: Soluble Major Anions (QC Lot: 3168155)</b>									
ES1324911-012	Anonymous	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	40	50	0.0	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 3168161)</b>									
ES1324911-009	Anonymous	ED045G: Chloride	16887-00-6	10	mg/kg	160	130	17.7	0% - 50%
ES1325015-008	BQ_MW13_0.2	ED045G: Chloride	16887-00-6	10	mg/kg	30	40	0.0	No Limit
<b>ED093S: Soluble Major Cations (QC Lot: 3168163)</b>									
ES1325015-008	BQ_MW13_0.2	ED093S: Calcium	7440-70-2	10	mg/kg	30	40	0.0	No Limit
		ED093S: Magnesium	7439-95-4	10	mg/kg	40	60	24.4	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 (%)
<b>ED093S: Soluble Major Cations (QC Lot: 3168163) - continued</b>									
ES1325015-008	BQ_MW13_0.2	ED093S: Sodium	7440-23-5	10	mg/kg	20	20	0.0	No Limit
		ED093S: Potassium	7440-09-7	10	mg/kg	140	170	22.2	0% - 50%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3168398)</b>									
ES1325015-001	BH_SB01_0.2	EG005T: Beryllium	7440-41-7	1	mg/kg	1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	150	130	17.5	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	16	16	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	10	7	32.6	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	19	19	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	13	9	33.9	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	25	20	22.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	16	16.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	147	123	18.1	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	37	34	6.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	83	62	29.7	0% - 50%
ES1325015-017	BG_MW06_3.0	EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
		EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	40	20	89.6	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	18	24.2	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	4	43.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	9	59.9	No Limit
EG005T: Copper	7440-50-8	5	mg/kg	12	14	17.3	No Limit		
EG005T: Lead	7439-92-1	5	mg/kg	9	8	12.6	No Limit		
EG005T: Manganese	7439-96-5	5	mg/kg	6	8	30.8	No Limit		
EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit		
EG005T: Vanadium	7440-62-2	5	mg/kg	22	32	36.8	No Limit		
EG005T: Zinc	7440-66-6	5	mg/kg	15	19	22.7	No Limit		
EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit		
EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3168399)</b>									
ES1325015-001	BH_SB01_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325015-017	BG_MW06_3.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3168220)</b>									
ES1324860-020	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	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 (%)		
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3168220) - continued</b>											
ES1324860-028	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit		
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3166955)</b>											
ES1325015-006	BV_SB08_0.1	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1325018-011	Anonymous	EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1325015-006	BV_SB08_0.1	EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074B: Oxygenated Compounds (QC Lot: 3166955)									
		ES1325015-006	BV_SB08_0.1	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)		78-93-3	5	mg/kg	<5	<5	0.0	No Limit	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5		mg/kg	<5	<5	0.0	No Limit			
EP074: 2-Hexanone (MBK)	591-78-6	5		mg/kg	<5	<5	0.0	No Limit			
ES1325018-011	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074C: Sulfonated Compounds (QC Lot: 3166955)</b>											
ES1325015-006	BV_SB08_0.1	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1325018-011	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074D: Fumigants (QC Lot: 3166955)</b>											
ES1325015-006	BV_SB08_0.1	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1325018-011	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dichloropropane	78-87-5	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 (%)
<b>EP074D: Fumigants (QC Lot: 3166955) - continued</b>									
ES1325018-011	Anonymous	EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166955)</b>									
ES1325015-006	BV_SB08_0.1	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
ES1325018-011	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166955) - continued</b>									
ES1325018-011	Anonymous	EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3166955)</b>									
ES1325015-006	BV_SB08_0.1	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		ES1325018-011	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5
EP074: Bromobenzene	108-86-1			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 2-Chlorotoluene	95-49-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 4-Chlorotoluene	106-43-4			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 1,3-Dichlorobenzene	541-73-1			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 1,4-Dichlorobenzene	106-46-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 1,2-Dichlorobenzene	95-50-1			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 1,2,4-Trichlorobenzene	120-82-1			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 1,2,3-Trichlorobenzene	87-61-6			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3166955)</b>									



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 (%)		
<b>EP074G: Trihalomethanes (QC Lot: 3166955) - continued</b>											
ES1325015-006	BV_SB08_0.1	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1325018-011	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074H: Naphthalene (QC Lot: 3166955)</b>											
ES1325015-006	BV_SB08_0.1	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit		
ES1325018-011	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167020)</b>											
ES1325015-001	BH_SB01_0.2	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit		
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
		ES1325015-017	BG_MW06_3.0	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2,4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2,4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2,6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 3- & 4-Methylphenol	1319-77-3			1	mg/kg	<1	<1	0.0	No Limit		
EP075(SIM): Pentachlorophenol	87-86-5			2	mg/kg	<2	<2	0.0	No Limit		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167020)</b>											
ES1325015-001	BH_SB01_0.2			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		



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167020) - continued</b>									
ES1325015-001	BH_SB01_0.2	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325015-017	BG_MW06_3.0	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		
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3166954)</b>									
ES1325015-006	BV_SB08_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325018-011	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3167019)</b>									
ES1325015-001	BH_SB01_0.2	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	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 (%)	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3167019) - continued</b>										
ES1325015-001	BH_SB01_0.2	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	
ES1325015-017	BG_MW06_3.0	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	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166954)</b>										
ES1325015-006	BV_SB08_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1325018-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3167019)</b>										
ES1325015-001	BH_SB01_0.2	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
ES1325015-017	BG_MW06_3.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3166954)</b>										
ES1325015-006	BV_SB08_0.1	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	
ES1325018-011	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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		
	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit		
<b>Sub-Matrix: WATER</b>										
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 (%)	
<b>EG020T: Total Metals by ICP-MS (QC Lot: 3167670)</b>										
ES1324726-024	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	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 (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 3167670) - continued</b>									
ES1325020-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0004	0.0004	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.016	0.019	18.1	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.829	0.980	16.6	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.018	0.017	0.0	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.014	0.016	13.0	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	1.18	1.36	14.0	0% - 20%
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3167776)</b>									
ES1325015-020	R01_131113_AM	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3168849)</b>									
ES1324952-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES1325037-014	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3168849)</b>									
ES1324952-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES1325037-014	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3168849)</b>									
ES1324952-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES1325037-014	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<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 (%)		
<b>EP074D: Fumigants (QC Lot: 3168849)</b>											
ES1324952-001	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit		
ES1325037-014	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3168849)</b>											
ES1324952-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit		
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit		
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	260	280	6.3	No Limit		
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	28700	24600	15.7	0% - 20%		
		ES1325037-014	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3168849) - continued</b>									
ES1325037-014	Anonymous	EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit		
EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3168849)</b>									
ES1324952-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES1325037-014	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<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 (%)	
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3168849) - continued</b>										
ES1325037-014	Anonymous	EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit	
<b>EP074G: Trihalomethanes (QC Lot: 3168849)</b>										
ES1324952-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	20	21	7.4	No Limit	
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit	
ES1325037-014	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit	
<b>EP074H: Naphthalene (QC Lot: 3168849)</b>										
ES1324952-001	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit	
ES1325037-014	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3168850)</b>										
ES1324952-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<100	<100	0.0	No Limit	
ES1325037-014	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3168850)</b>										
ES1324952-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<100	<100	0.0	No Limit	
ES1325037-014	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3168850)</b>										
ES1324952-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<5	<5	0.0	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<5	<5	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<5	<5	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<5	<5	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<5	<5	0.0	No Limit	
ES1325037-014	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA010: Conductivity (QCLot: 3175820)</b>									
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	100	70	130	
<b>ED007: Exchangeable Cations (QCLot: 3173305)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>ED007: Exchangeable Cations (QCLot: 3178295)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>ED040S: Soluble Major Anions (QCLot: 3168155)</b>									
ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	<10	150 mg/kg	95.4	84	112	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3168161)</b>									
ED045G: Chloride	16887-00-6	10	mg/kg	<10	5000 mg/kg	95.0	79	125	
<b>ED093S: Soluble Major Cations (QCLot: 3168163)</b>									
ED093S: Calcium	7440-70-2	10	mg/kg	<10	50 mg/kg	101	85	113	
ED093S: Magnesium	7439-95-4	10	mg/kg	<10	50 mg/kg	97.2	86	116	
ED093S: Sodium	7440-23-5	10	mg/kg	<10	50 mg/kg	99.4	80	112	
ED093S: Potassium	7440-09-7	10	mg/kg	<10	50 mg/kg	100	88	114	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	112	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	109	83	129	
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	115	88	130	
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	100	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	121	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	106	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	110	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	104	81	123	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398) - continued</b>									
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	113	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	123	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	113	84	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	96.3	75	131	
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	116	95	129	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133	
EG005T: Thallium	7440-28-0	5	mg/kg	<5	5.96 mg/kg	101	70	130	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168399)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	97.9	66	112	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3168220)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	101	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3166955)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	97.2	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	117	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	116	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	117	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	121	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	114	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	116	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	124	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	125	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3166955)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	101	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	79.2	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	87.9	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	92.5	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3166955)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	118	54	126	
<b>EP074D: Fumigants (QCLot: 3166955)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	106	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	97.2	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	88.1	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	85.7	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	97.0	66	126	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 316955)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	59.2	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	87.9	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	90.0	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	105	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	121	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	118	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	120	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	112	43	129	
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	99.8	62	130	
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	104	66	132	
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	98.7	66	132	
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	104	62	126	
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	102	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	103	59	125	
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	95.7	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	107	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	91.9	65	127	
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	103	70	130	
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	96.1	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	108	67	143	
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	98.5	62	122	
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	89.7	54	128	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	96.3	55	129	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	95.3	56	132	
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	82.0	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	96.3	19.8	134	
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	99.8	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	# 137	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 316955)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	111	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	105	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	113	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	118	62	130	





Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166955) - continued</b>									
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	113	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	116	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	109	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	116	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	108	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3166955)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	97.2	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	93.6	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	104	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	106	60	126	
<b>EP074H: Naphthalene (QCLot: 3166955)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	98.4	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167020)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	96.0	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	97.5	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	100	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	108	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	74.7	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	101	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	87.2	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	92.7	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	88.1	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	76.9	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	82.0	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	9.4	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167020)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	104	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	112	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	109	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	108	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	108	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	110	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	102	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	108	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	96.7	70	118	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167020) - continued</b>									
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	103	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	90.0	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	92.1	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	86.0	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166954)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	101	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167019)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	114	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	117	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	106	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166954)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	102	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167019)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	121	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	110	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	103	63	131	
<b>EP080: BTEXN (QCLot: 3166954)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	92.0	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	99.5	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	101	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	102	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	99.8	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	88.7	62	138	

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 3167670)</b>									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	84.7	79	121	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	87.9	82	114	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	92.0	83	115	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	88.2	83	117	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.1	85	115	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.8	83	117	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	85.1	76	118	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3167776)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3167776) - continued</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	101	77	115	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169067)</b>									
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	76.3	61.6	107	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3168849)</b>									
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	105	74	118	
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	103	75	121	
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	102	67	123	
EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	102	70	122	
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	102	69	123	
EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	100	71	121	
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	103	70	122	
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	102	67	123	
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	101	62	126	
<b>EP074B: Oxygenated Compounds (QCLot: 3168849)</b>									
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	96.4	61.4	134	
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	95.8	73.6	130	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	98.0	61	139	
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	99.9	65	137	
<b>EP074C: Sulfonated Compounds (QCLot: 3168849)</b>									
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	106	72.8	127	
<b>EP074D: Fumigants (QCLot: 3168849)</b>									
EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	87.5	61	119	
EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	96.5	76	120	
EP074: cis-1,3-Dichloropropylene	10061-01-5	10	µg/L	<10	10 µg/L	103	62	120	
EP074: trans-1,3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	95.3	61	119	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	96.2	69	117	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3168849)</b>									
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	62.4	60.6	138	
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	79.1	67.4	130	
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	77.0	69.4	129	
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	85.1	56	140	
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	94.4	63	135	
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	90.5	65	131	
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	97.3	69	123	
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	91.1	70.2	128	
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	97.4	71	119	
EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	102	75	119	
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	100	77	117	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3168849) - continued</b>									
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	84.3	61	119	
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	97.8	73	119	
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	100	63	121	
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	93.2	78	122	
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	98.4	74	120	
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	98.0	74	118	
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	99.1	75	123	
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	98.0	79	121	
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	99.0	72	124	
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	88.2	66	114	
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	84.0	60	120	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	103	70.6	128	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	96.1	70	124	
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	99.4	74	128	
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	100	71.8	126	
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	97.2	66.4	136	
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	99.4	58	132	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3168849)</b>									
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	99.6	80	118	
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	100	76	116	
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	103	71	121	
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	102	71	121	
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	99.1	74	120	
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	101	72	120	
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	101	77	117	
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	100	60	126	
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	100	67	125	
<b>EP074G: Trihalomethanes (QCLot: 3168849)</b>									
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	98.7	76	118	
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	104	64	118	
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	102	65	115	
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	103	73.5	126	
<b>EP074H: Naphthalene (QCLot: 3168849)</b>									
EP074: Naphthalene	91-20-3	7	µg/L	<7	10 µg/L	95.8	61	125	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3169069)</b>									
EP075(SIM): Phenol	108-95-2	0.2	µg/L	----	5 µg/L	33.4	24.5	61.9	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L	----	5 µg/L	74.3	63.8	110	
		1	µg/L	<1.0	----	----	----	----	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Recovery Limits (%)	
					Concentration	LCS	Low	High
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3169069) - continued</b>								
EP075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L	----	5 µg/L	70.5	55.9	112
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	µg/L	----	10 µg/L	62.8	42.5	114
		2	µg/L	<2.0	----	----	----	----
EP075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L	----	5 µg/L	79.4	62.7	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.2	µg/L	----	5 µg/L	70.2	59.9	112
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.2	µg/L	----	5 µg/L	69.4	59.3	122
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.2	µg/L	----	5 µg/L	74.0	64.3	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L	----	5 µg/L	72.2	63	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.2	µg/L	----	5 µg/L	63.1	58.7	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.2	µg/L	----	5 µg/L	81.4	50	108
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L	----	10 µg/L	56.2	8.7	95
		2	µg/L	<2.0	----	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3169069)</b>								
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	5 µg/L	72.3	58.6	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	5 µg/L	73.7	63.6	114
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	5 µg/L	74.7	62.2	113
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	5 µg/L	75.6	63.9	115
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	5 µg/L	93.6	62.6	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	5 µg/L	95.2	64.3	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	5 µg/L	93.5	63.6	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	5 µg/L	92.8	63.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	5 µg/L	74.0	64.1	117
		1	µg/L	<1.0	----	----	----	----



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB)	Laboratory Control Spike (LCS) Report				
				Report	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
				Result		LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3169069) - continued</b>									
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	5 µg/L	83.2	62.5	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	5 µg/L	73.2	61.7	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	5 µg/L	91.4	61.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	5 µg/L	77.0	63.3	117	
		0.5	µg/L	<0.5	----	----	----	----	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	5 µg/L	69.1	59.9	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	----	5 µg/L	67.2	61.2	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	5 µg/L	67.4	59.1	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	1	µg/L	<1.0	----	----	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3168850)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	90.3	75	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3169068)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	94.4	59	129	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	101	71	131	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	91.8	62	120	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3168850)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	92.0	75	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3169068)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	97.0	58.9	131	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	97.1	73.9	138	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
		50	µg/L	----	1500 µg/L	98.8	67	127	
<b>EP080: BTEXN (QCLot: 3168850)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	97.8	70	124	
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	100	65	129	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	99.8	70	120	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	100	69	121	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	103	72	122	
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	98.7	70	124	



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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)	
					Low	High	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3168161)</b>							
ES1324911-009	Anonymous	ED045G: Chloride	16887-00-6	12500 mg/kg	100	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398)</b>							
ES1325015-001	BH_SB01_0.2	EG005T: Arsenic	7440-38-2	50 mg/kg	96.3	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	104	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	97.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	107	70	130
EG005T: Zinc	7440-66-6	125 mg/kg	87.8	70	130		
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168399)</b>							
ES1325015-001	BH_SB01_0.2	EG035T: Mercury	7439-97-6	5 mg/kg	109	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3168220)</b>							
ES1324860-020	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166955)</b>							
ES1325015-006	BV_SB08_0.1	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	117	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.5	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166955)</b>							
ES1325015-006	BV_SB08_0.1	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	98.0	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167020)</b>							
ES1325015-001	BH_SB01_0.2	EP075(SIM): Phenol	108-95-2	10 mg/kg	96.9	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.8	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	73.2	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	87.4	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	37.7	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167020)</b>							
ES1325015-001	BH_SB01_0.2	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	103	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	106	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166954)</b>							
ES1325015-006	BV_SB08_0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.2	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167019)</b>							
ES1325015-001	BH_SB01_0.2	EP071: C10 - C14 Fraction	----	640 mg/kg	84.9	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	85.3	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	70.4	52	132



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166954)</b>								
ES1325015-006	BV_SB08_0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	97.8	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167019)</b>								
ES1325015-001	BH_SB01_0.2	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	109	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.4	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	57.8	52	132	
<b>EP080: BTEXN (QCLot: 3166954)</b>								
ES1325015-006	BV_SB08_0.1	EP080: Benzene	71-43-2	2.5 mg/kg	84.7	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	93.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	96.1	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	94.5	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.3	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	82.8	70	130		

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 3167670)</b>							
ES1324729-019	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	113	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	118	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	115	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	110	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	117	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	108	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3167776)</b>							
ES1325020-001	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	75.6	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3168849)</b>							
ES1324952-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	125 µg/L	106	70	130
		EP074: Trichloroethene	79-01-6	125 µg/L	113	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3168849)</b>							
ES1324952-001	Anonymous	EP074: Chlorobenzene	108-90-7	125 µg/L	120	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3168850)</b>							
ES1324952-001	Anonymous	EP080: C6 - C9 Fraction	----	1625 µg/L	127	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3168850)</b>							
ES1324952-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	1875 µg/L	126	70	130
<b>EP080: BTEXN (QCLot: 3168850)</b>							





Sub-Matrix: **WATER**

				Matrix Spike (MS) Report				
				Spike	Spike Recovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP080: BTEXN (QCLot: 3168850) - continued</b>								
ES1324952-001	Anonymous	EP080: Benzene	71-43-2	125 µg/L	115	70	130	
		EP080: Toluene	108-88-3	125 µg/L	117	70	130	
		EP080: Ethylbenzene	100-41-4	125 µg/L	120	70	130	
		EP080: meta- & para-Xylene	108-38-3	125 µg/L	120	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	125 µg/L	122	70	130	
	EP080: Naphthalene	91-20-3	125 µg/L	112	70	130		

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166954)</b>											
ES1325015-006	BV_SB08_0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.2	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166954)</b>											
ES1325015-006	BV_SB08_0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	97.8	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3166954)</b>											
ES1325015-006	BV_SB08_0.1	EP080: Benzene	71-43-2	2.5 mg/kg	84.7	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	93.9	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	96.1	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	94.5	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.3	----	70	130	----	----	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	82.8	----	70	130	----	----		
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166955)</b>											
ES1325015-006	BV_SB08_0.1	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	117	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.5	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166955)</b>											
ES1325015-006	BV_SB08_0.1	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	98.0	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167019)</b>											
ES1325015-001	BH_SB01_0.2	EP071: C10 - C14 Fraction	----	640 mg/kg	84.9	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	85.3	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	70.4	----	52	132	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167019)</b>											
ES1325015-001	BH_SB01_0.2	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	109	----	73	137	----	----	



Sub-Matrix: SOIL					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167019) - continued</b>											
ES1325015-001	BH_SB01_0.2	EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.4	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	57.8	----	52	132	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167020)</b>											
ES1325015-001	BH_SB01_0.2	EP075(SIM): Phenol	108-95-2	10 mg/kg	96.9	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.8	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	73.2	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	87.4	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	37.7	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167020)</b>											
ES1325015-001	BH_SB01_0.2	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	103	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	106	----	70	130	----	----	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3168161)</b>											
ES1324911-009	Anonymous	ED045G: Chloride	16887-00-6	12500 mg/kg	100	----	70	130	----	----	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3168220)</b>											
ES1324860-020	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	----	70	130	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398)</b>											
ES1325015-001	BH_SB01_0.2	EG005T: Arsenic	7440-38-2	50 mg/kg	96.3	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	104	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	104	----	70	130	----	----	
		EG005T: Lead	7439-92-1	125 mg/kg	97.8	----	70	130	----	----	
		EG005T: Nickel	7440-02-0	50 mg/kg	104	----	70	130	----	----	
		EG005T: Selenium	7782-49-2	50 mg/kg	107	----	70	130	----	----	
		EG005T: Zinc	7440-66-6	125 mg/kg	87.8	----	70	130	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168399)</b>											
ES1325015-001	BH_SB01_0.2	EG035T: Mercury	7439-97-6	5 mg/kg	109	----	70	130	----	----	

Sub-Matrix: WATER					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
<b>EG020T: Total Metals by ICP-MS (QCLot: 3167670)</b>											
ES1324729-019	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	113	----	70	130	----	----	
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	----	70	130	----	----	
		EG020A-T: Chromium	7440-47-3	1 mg/L	118	----	70	130	----	----	
		EG020A-T: Copper	7440-50-8	1 mg/L	115	----	70	130	----	----	
		EG020A-T: Lead	7439-92-1	1 mg/L	110	----	70	130	----	----	
		EG020A-T: Nickel	7440-02-0	1 mg/L	117	----	70	130	----	----	
		EG020A-T: Zinc	7440-66-6	1 mg/L	108	----	70	130	----	----	

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 Project : PROJECT SYMPHONY



Sub-Matrix: **WATER**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
					MS	MSD	Low	High	Value	Control Limit	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3167776)</b>											
ES1325020-001	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	75.6	----	70	130	----	----	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3168849)</b>											
ES1324952-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	125 µg/L	106	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	125 µg/L	113	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3168849)</b>											
ES1324952-001	Anonymous	EP074: Chlorobenzene	108-90-7	125 µg/L	120	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3168850)</b>											
ES1324952-001	Anonymous	EP080: C6 - C9 Fraction	----	1625 µg/L	127	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3168850)</b>											
ES1324952-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	1875 µg/L	126	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3168850)</b>											
ES1324952-001	Anonymous	EP080: Benzene	71-43-2	125 µg/L	115	----	70	130	----	----	
		EP080: Toluene	108-88-3	125 µg/L	117	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	125 µg/L	120	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	125 µg/L	120	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	125 µg/L	122	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	125 µg/L	112	----	70	130	----	----	

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325015</b>	Page	: 1 of 14
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOE FERRING	Contact	: Barbara Hanna
Address	: GRND FLOOR, 33 SAUNDERS STREET PYRMONT NSW AUSTRALIA 2009	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 18-NOV-2013
C-O-C number	: ----	Issue Date	: 29-NOV-2013
Sampler	: STEPHEN MULLIGAN	No. of samples received	: 21
Order number	: 0224193	No. of samples analysed	: 16
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA002 : pH (Soils)</b>								
<b>Soil Glass Jar - Unpreserved (EA002)</b> BH_SB01_0.2, D01_131113_SM, BQ_MW08_0.5,	BH_SB02_0.5, BH_MW07_0.2, BQ_MW13_0.2	13-NOV-2013	20-NOV-2013	20-NOV-2013	✔	20-NOV-2013	20-NOV-2013	✔
<b>EA010: Conductivity</b>								
<b>Soil Glass Jar - Unpreserved (EA010)</b> BH_SB01_0.2, D01_131113_SM, BQ_MW08_0.5,	BH_SB02_0.5, BH_MW07_0.2, BQ_MW13_0.2	13-NOV-2013	25-NOV-2013	20-NOV-2013	✖	25-NOV-2013	23-DEC-2013	✔
<b>EA055: Moisture Content</b>								
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BH_SB01_0.2, D01_131113_SM, BV_SB08_0.1, BQ_MW13_0.2, BG_MW04_2.5, BG_MW06_3.0,	BH_SB02_0.5, BH_MW07_0.2, BQ_MW08_0.5, BQ_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	----	----	----	20-NOV-2013	27-NOV-2013	✔
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
<b>Snap Lock Bag (EA200)</b> BH_SB01_0.2, D01_131113_SM, BV_SB08_0.1, BQ_MW13_0.2	BH_SB02_0.5, BH_MW07_0.2, BQ_MW08_0.5,	13-NOV-2013	---	12-MAY-2014	----	26-NOV-2013	25-MAY-2014	✔
<b>ED007: Exchangeable Cations</b>								
<b>Soil Glass Jar - Unpreserved (ED007)</b> BH_SB01_0.2, D01_131113_SM,	BH_SB02_0.5, BH_MW07_0.2	13-NOV-2013	25-NOV-2013	11-DEC-2013	✔	25-NOV-2013	11-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (ED007)</b> BQ_MW08_0.5,	BQ_MW13_0.2	13-NOV-2013	26-NOV-2013	11-DEC-2013	✔	28-NOV-2013	11-DEC-2013	✔



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED040S : Soluble Sulfate by ICPAES</b>								
<b>Soil Glass Jar - Unpreserved (ED040S)</b> BH_SB01_0.2, D01_131113_SM, BQ_MW08_0.5, BH_SB02_0.5, BH_MW07_0.2, BQ_MW13_0.2	13-NOV-2013	20-NOV-2013	11-DEC-2013	✓	20-NOV-2013	18-DEC-2013	✓	
<b>ED045G: Chloride Discrete analyser</b>								
<b>Soil Glass Jar - Unpreserved (ED045G)</b> BH_SB01_0.2, D01_131113_SM, BQ_MW08_0.5, BH_SB02_0.5, BH_MW07_0.2, BQ_MW13_0.2	13-NOV-2013	20-NOV-2013	11-DEC-2013	✓	20-NOV-2013	18-DEC-2013	✓	
<b>ED093S: Soluble Major Cations</b>								
<b>Soil Glass Jar - Unpreserved (ED093S)</b> BH_SB01_0.2, D01_131113_SM, BQ_MW08_0.5, BH_SB02_0.5, BH_MW07_0.2, BQ_MW13_0.2	13-NOV-2013	20-NOV-2013	12-MAY-2014	✓	20-NOV-2013	12-MAY-2014	✓	
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BH_SB01_0.2, D01_131113_SM, BV_SB08_0.1, BQ_MW13_0.2, BG_MW04_2.5, BG_MW06_3.0, BH_SB02_0.5, BH_MW07_0.2, BQ_MW08_0.5, BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	12-MAY-2014	✓	21-NOV-2013	12-MAY-2014	✓	
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BH_SB01_0.2, D01_131113_SM, BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0, BH_SB02_0.5, BH_MW07_0.2, BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	11-DEC-2013	✓	22-NOV-2013	11-DEC-2013	✓	
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
<b>Soil Glass Jar - Unpreserved (EP066)</b> BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0, BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	30-DEC-2013	✓	



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>Soil Glass Jar - Unpreserved (EP071)</b>								
BH_SB01_0.2, D01_131113_SM, BV_SB08_0.1, BQ_MW13_0.2, BG_MW04_2.5, BG_MW06_3.0,	BH_SB02_0.5, BH_MW07_0.2, BQ_MW08_0.5, BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>EP074D: Fumigants</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0,	BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	20-NOV-2013	20-NOV-2013	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0,	BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	20-NOV-2013	20-NOV-2013	✓
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0,	BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	20-NOV-2013	20-NOV-2013	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0,	BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	20-NOV-2013	20-NOV-2013	✓
<b>EP074H: Naphthalene</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0,	BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	20-NOV-2013	20-NOV-2013	✓
<b>EP074B: Oxygenated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b>								
BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0,	BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	20-NOV-2013	20-NOV-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074C: Sulfonated Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0, BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	20-NOV-2013	20-NOV-2013	✓
<b>EP074G: Trihalomethanes</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB08_0.1, BG_MW04_2.5, BG_MW06_3.0, BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	20-NOV-2013	20-NOV-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BH_SB01_0.2, D01_131113_SM, BV_SB08_0.1, BQ_MW13_0.2, BG_MW04_2.5, BG_MW06_3.0, BH_SB02_0.5, BH_MW07_0.2, BQ_MW08_0.5, BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BH_SB01_0.2, D01_131113_SM, BV_SB08_0.1, BQ_MW13_0.2, BG_MW04_2.5, BG_MW06_3.0, BH_SB02_0.5, BH_MW07_0.2, BQ_MW08_0.5, BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>EP080: BTEXN</b>							
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP BLANK 8	08-NOV-2013	20-NOV-2013	22-NOV-2013	✓	20-NOV-2013	22-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPIKE 1, TSC 1	11-NOV-2013	20-NOV-2013	25-NOV-2013	✓	20-NOV-2013	25-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BH_SB01_0.2, D01_131113_SM, BV_SB08_0.1, BQ_MW13_0.2, BG_MW04_2.5, BG_MW06_3.0, BH_SB02_0.5, BH_MW07_0.2, BQ_MW08_0.5, BG_MW03_2.0, BG_MW05_3.5, D01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓





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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP BLANK 8	08-NOV-2013	20-NOV-2013	22-NOV-2013	✓	20-NOV-2013	22-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPIKE 1, TSC 1	11-NOV-2013	20-NOV-2013	25-NOV-2013	✓	20-NOV-2013	25-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BH_SB01_0.2, BH_SB02_0.5, D01_131113_SM, BH_MW07_0.2, BV_SB08_0.1, BQ_MW08_0.5, BQ_MW13_0.2, BG_MW03_2.0, BG_MW04_2.5, BG_MW05_3.5, BG_MW06_3.0, D01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG020T: Total Metals by ICP-MS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> R01_131113_AM	13-NOV-2013	20-NOV-2013	12-MAY-2014	✓	20-NOV-2013	12-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> R01_131113_AM	13-NOV-2013	----	----	----	20-NOV-2013	11-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
<b>Amber Glass Bottle - Unpreserved (EP066)</b> R01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
<b>Amber Glass Bottle - Unpreserved (EP071)</b> R01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓
<b>EP074D: Fumigants</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074)</b> R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074)</b> R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓
<b>EP074F: Halogenated Aromatic Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074)</b> R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074)</b> R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓
<b>EP074H: Naphthalene</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074)</b> R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓



Matrix: **WATER**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074B: Oxygenated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓
<b>EP074C: Sulfonated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓
<b>EP074G: Trihalomethanes</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_131113_AM	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓
<b>EP080: BTEXN</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R01_131113_AM	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	20-NOV-2013	27-NOV-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Cations - soluble by ICP-AES	ED093S	1	9	11.1	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	13	15.4	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (1:5)	EA010	1	6	16.7	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	3	26	11.5	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	13	7.7	10.0	✖	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	17	11.8	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	18	11.1	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	11	18.2	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Cations - soluble by ICP-AES	ED093S	1	9	11.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	13	15.4	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (1:5)	EA010	1	6	16.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	2	26	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	18	5.6	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Cations - soluble by ICP-AES	ED093S	1	9	11.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (1:5)	EA010	1	6	16.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	2	26	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	18	5.6	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Method Blanks (MB) - Continued</b>							
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Chloride Soluble By Discrete Analyser	ED045G	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Total Mercury by FIMS	EG035T	1	10	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Total Mercury by FIMS	EG035T	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<i>Analytical Methods</i>							
<b>Matrix Spikes (MS) - Continued</b>							
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Electrical Conductivity (1:5)	EA010	SOIL	(APHA 21st ed., 2510) Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 104)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
Major Anions - Soluble	ED040S	SOIL	In-house. Soluble Anions are determined off a 1:5 soil / water extract by ICPAES.
Chloride Soluble By Discrete Analyser	ED045G	SOIL	APHA 21st edition 4500-Cl- E. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm. Analysis is performed on a 1:5 soil / water leachate.
Cations - soluble by ICP-AES	ED093S	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 (ICPAES) Water extracts of the soil are analyzed for major cations by ICPAES. 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 (2013) Schedule B(3)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) Schedule B(3) (Method 504)
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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)



Analytical Methods	Method	Matrix	Method Descriptions
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 (2013) 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 (2013) Schedule B(3) (Method 501)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Polychlorinated Biphenyls (PCB)	EP066	WATER	USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Volatile Organic Compounds	EP074	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	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 (2013) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) Schedule B(3) (Method 202)



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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 <sub>2</sub> SO <sub>4</sub> 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 <sub>2</sub> SO <sub>4</sub> 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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3) (Appdx. 2)
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 100 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 (2013) 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: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP074E: Halogenated Aliphatic Compounds	3779313-011	----	Hexachlorobutadiene	87-68-3	137 %	48-136%	Recovery greater than upper 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

- For all regular sample matrices, no surrogate recovery outliers occur.

### Outliers : Analysis Holding Time Compliance

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

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA010: Conductivity</b>							
<b>Soil Glass Jar - Unpreserved</b>							
BH_SB01_0.2, D01_131113_SM, BQ_MW08_0.5,	BH_SB02_0.5, BH_MW07_0.2, BQ_MW13_0.2	25-NOV-2013	20-NOV-2013	5	----	----	----

### Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
Major Anions - Soluble	1	13	7.7	10.0	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

FRM



**CHAIN OF CUSTODY**  
ALS Laboratory  
please tick →

**CLIENT:** MACGEN  
**OFFICE:** SYDNEY  
**PROJECT:** Project Synonymy  
**ORDER NUMBER:** 10000000000000000000  
**PROJECT MANAGER:** JOE FERRACANE  
**SAMPLER:** HC  
**COC emailed to ALS? (YES / NO):** NO  
Email Reports to (will default to PM if no other addresses are listed):  
**COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:** Ashes (over)

**TURNAROUND REQUIREMENTS:** Standard TAT (Tat due date):  
ALS QUOTE NO.: SY79413  
Site: BAYSWATER LIBELL  
Contact PM: 8584 8888  
SAMPLER MOBILE: 0408907057  
EDD FORMAT (for default):  
Relinquished by: WNW  
DATE/TIME: 14/11/13  
Relinquished by: EN  
DATE/TIME: 8/11/13 1700  
Received by: ENR  
DATE/TIME: 19/11/13 1900

**ANALYSIS REQUIRED INCLUDING BUT NOT LIMITED TO:**  
S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)  
17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)  
S-24 TRH(C6-C40)BTEXN, PAH, Phenols  
VOC Target Scan  
PCB  
pH (1:5)  
Exchangeable cations (ED007)  
PFOS/PFOA  
Asbestos (absence/presence)  
Particle Sizing to 75µm (Sieve)  
Organic Matter plus Total Organic Carbon (EP004)

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	TOTAL CONTAINERS	ANALYSIS REQUIRED INCLUDING BUT NOT LIMITED TO:	Additional Information
1	BL-SB02-0.1	13-11-13 AM	SOIL	JAR + BAC	2	X	HOLD
2	BL-SB02-0.5			JAR	1	X	HOLD
3	BL-SB02-1.0			JAR	1	X	HOLD
4	BL-SB02-1.5			JAR	1	X	HOLD
5	BL-SB03-0.1			JAR + BAC	2	X	HOLD
6	BL-SB03-0.5			JAR	1	X	HOLD
7	BL-NW07-0.1			JAR + BAC	2	X	HOLD
8	BL-NW11-0.1			JAR + BAC	2	X	HOLD
9	BL-NW11-0.5			JAR	1	X	HOLD
10	BL-NW11-1.0			JAR	1	X	HOLD
11	BL-NW11-1.7			JAR	1	X	HOLD
12	DB-131113-HC			JAR	1	X	HOLD
TOTAL:							

Water Container Codes: P = Unreserved Plastic; N = Nitric Preservative Plastic; CHC = Chlorine Hydrochloric Preservative; S = Sodium Hydroxide Preservative; SH = Amber Glass Unreserved; AP = VOA Vial HD; P Reserved; VA = VOA Vial Sodium Bisulfate Preservative; VS = VOA Vial Sulfuric Preservative; AV = Air/Vol Unreserved Vial; SG = Sulfuric Preserved Amber Glass; 1 = HD Preserved Plastic; HS = HD Preserved Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASB = Plastic Bag for Acid Substrate Solids; B = Unreserved Bag

Environmental Division  
Sydney  
Work Order  
**ES1325016**

Preserved Glass:

Relinquished By / Date: **ENR**  
Lab / Analysis: **Ashes by - kept GEN**  
Organised By / Date: **09/07/09**



Telephone : +61-2-8784 8555

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

<b>Work Order</b>	<b>: ES1325016</b>		
<b>Client</b>	<b>: ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	<b>: Environmental Division Sydney</b>
<b>Contact Address</b>	<b>: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</b>	<b>Contact Address</b>	<b>: Barbara Hanna 277-289 Woodpark Road Smithfield NSW Australia 2164</b>
<b>E-mail</b>	<b>: joseph.ferring@erm.com</b>	<b>E-mail</b>	<b>: Barbara.Hanna@alsglobal.com</b>
<b>Telephone</b>	<b>: +61 02 8584 8888</b>	<b>Telephone</b>	<b>: +61 2 8784 8555</b>
<b>Facsimile</b>	<b>: +61 02 8584 8800</b>	<b>Facsimile</b>	<b>: +61 2 8784 8555</b>
<b>Project</b>	<b>: PROJECT SYMPHONY</b>	<b>Page</b>	<b>: 1 of 2</b>
<b>Order number</b>	<b>: ----</b>	<b>Quote number</b>	<b>: ES2013ENVRES0369 (SY/794/13)</b>
<b>C-O-C number</b>	<b>: ----</b>	<b>QC Level</b>	<b>: NEPM 2013 Schedule B(3) and ALS QCS3 requirement</b>
<b>Site</b>	<b>: BAYSWATER</b>		
<b>Sampler</b>	<b>: H.C</b>		

#### Dates

Date Samples Received	: 18-NOV-2013	Issue Date	: 19-NOV-2013 16:53
Client Requested Due Date	: 25-NOV-2013	Scheduled Reporting Date	: <b>25-NOV-2013</b>

#### Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.6 - Ice present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 12
Security Seal	: Intact.	No. of samples analysed	: 7

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA200 Asbestos Identification in Soils	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-27 TRH/BTEX/NP/PAH/Phenols/8Metals
ES1325016-001	13-NOV-2013 15:00	BV_SB02_0.1		✓			
ES1325016-002	13-NOV-2013 15:00	BV_SB02_0.5			✓	✓	✓
ES1325016-003	13-NOV-2013 15:00	BV_SB02_1.0	✓				
ES1325016-004	13-NOV-2013 15:00	BV_SB02_1.5	✓				
ES1325016-005	13-NOV-2013 15:00	BV_SB03_0.1		✓	✓	✓	✓
ES1325016-006	13-NOV-2013 15:00	BV_SB03_0.5	✓				
ES1325016-007	13-NOV-2013 15:00	BV_MW07_0.1		✓	✓	✓	✓
ES1325016-008	13-NOV-2013 15:00	BV_MW11_0.1		✓	✓	✓	✓
ES1325016-009	13-NOV-2013 15:00	BV_MW11_0.5	✓				
ES1325016-010	13-NOV-2013 15:00	BV_MW11_1.0	✓				
ES1325016-011	13-NOV-2013 15:00	BV_MW11_1.7					✓
ES1325016-012	13-NOV-2013 15:00	S01_131113_HC			✓	✓	✓

## Proactive Holding Time Report

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

## Requested Deliverables

### MR JOSEPH FERRING

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTab )	Email	joseph.ferring@erm.com

### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

<b>Work Order</b> : <b>ES1325016</b> <b>Client</b> : <b>ENVIRO RESOURCES MANAGEMENT</b> <b>Contact</b> : MR JOSEPH FERRING <b>Address</b> : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007  <b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800 <b>Project</b> : PROJECT SYMPHONY <b>Order number</b> : ---- <b>C-O-C number</b> : ---- <b>Sampler</b> : H.C <b>Site</b> : BAYSWATER  <b>Quote number</b> : SY/794/13	<b>Page</b> : 1 of 14  <b>Laboratory</b> : Environmental Division Sydney <b>Contact</b> : Barbara Hanna <b>Address</b> : 277-289 Woodpark Road Smithfield NSW Australia 2164  <b>E-mail</b> : Barbara.Hanna@alsglobal.com <b>Telephone</b> : +61 2 8784 8555 <b>Facsimile</b> : +61 2 8784 8555 <b>QC Level</b> : NEPM 2013 Schedule B(3) and ALS QCS3 requirement  <b>Date Samples Received</b> : 18-NOV-2013 <b>Issue Date</b> : 26-NOV-2013  <b>No. of samples received</b> : 12 <b>No. of samples analysed</b> : 7
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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

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	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Peter Rennie	Asbestos Identifier	Newcastle - Asbestos



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_0.1	BV_SB02_0.5	BV_SB03_0.1	BV_MW07_0.1	BV_MW11_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325016-001	ES1325016-002	ES1325016-005	ES1325016-007	ES1325016-008
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	----	16.8	19.4	21.8	23.8
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	No	No
Asbestos Type	1332-21-4	-	--	-	----	-	-	-
Sample weight (dry)	----	0.01	g	388	----	226	393	341
APPROVED IDENTIFIER:	----	-	--	P.RENNIE	----	P.RENNIE	P.RENNIE	P.RENNIE
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	----	10	15	11	8
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	19	33	18	20
Copper	7440-50-8	5	mg/kg	----	20	21	21	27
Lead	7439-92-1	5	mg/kg	----	18	22	16	11
Nickel	7440-02-0	2	mg/kg	----	10	28	20	19
Zinc	7440-66-6	5	mg/kg	----	40	87	60	56
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	----	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	<5	<5	<5	<5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_0.1	BV_SB02_0.5	BV_SB03_0.1	BV_MW07_0.1	BV_MW11_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325016-001	ES1325016-002	ES1325016-005	ES1325016-007	ES1325016-008
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	----	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	----	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg	----	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	----	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	----	<5	<5	<5	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_0.1	BV_SB02_0.5	BV_SB03_0.1	BV_MW07_0.1	BV_MW11_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325016-001	ES1325016-002	ES1325016-005	ES1325016-007	ES1325016-008
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	<5	<5	<5	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	----	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_0.1	BV_SB02_0.5	BV_SB03_0.1	BV_MW07_0.1	BV_MW11_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325016-001	ES1325016-002	ES1325016-005	ES1325016-007	ES1325016-008
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	<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
Chrysene	218-01-9	0.5	mg/kg	----	<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
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<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
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<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
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	----	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	----	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	----	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	----	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	----	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	----	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	----	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	<50	<50	<50	<50



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB02_0.1	BV_SB02_0.5	BV_SB03_0.1	BV_MW07_0.1	BV_MW11_0.1
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325016-001	ES1325016-002	ES1325016-005	ES1325016-007	ES1325016-008
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued</b>								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	----	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	----	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	62.4	63.7	62.8	64.1
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	110	98.7	114	109
Toluene-D8	2037-26-5	0.1	%	----	96.7	85.9	106	104
4-Bromofluorobenzene	460-00-4	0.1	%	----	97.0	89.6	101	97.6
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	----	112	105	101	116
2-Chlorophenol-D4	93951-73-6	0.1	%	----	112	115	112	104
2,4,6-Tribromophenol	118-79-6	0.1	%	----	84.1	83.7	100	77.1
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	----	87.0	93.0	109	90.9
Anthracene-d10	1719-06-8	0.1	%	----	91.2	89.4	88.7	84.5
4-Terphenyl-d14	1718-51-0	0.1	%	----	97.3	105	98.3	94.8
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	113	102	117	112
Toluene-D8	2037-26-5	0.1	%	----	91.6	81.4	100	98.3
4-Bromofluorobenzene	460-00-4	0.1	%	----	95.1	89.4	99.2	97.8



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_MW11_1.7	S01_131113_HC	---	---	---
				13-NOV-2013 15:00	13-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325016-011	ES1325016-012	---	---	---
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	---	1.0	%	19.4	22.3	---	---	---
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	5	9	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	<1	---	---	---
Chromium	7440-47-3	2	mg/kg	16	20	---	---	---
Copper	7440-50-8	5	mg/kg	13	24	---	---	---
Lead	7439-92-1	5	mg/kg	6	10	---	---	---
Nickel	7440-02-0	2	mg/kg	22	18	---	---	---
Zinc	7440-66-6	5	mg/kg	44	50	---	---	---
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	---	---	---
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	---	0.1	mg/kg	---	<0.1	---	---	---
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	---	<0.5	---	---	---
Isopropylbenzene	98-82-8	0.5	mg/kg	---	<0.5	---	---	---
n-Propylbenzene	103-65-1	0.5	mg/kg	---	<0.5	---	---	---
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	---	<0.5	---	---	---
sec-Butylbenzene	135-98-8	0.5	mg/kg	---	<0.5	---	---	---
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	---	<0.5	---	---	---
tert-Butylbenzene	98-06-6	0.5	mg/kg	---	<0.5	---	---	---
p-Isopropyltoluene	99-87-6	0.5	mg/kg	---	<0.5	---	---	---
n-Butylbenzene	104-51-8	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	---	<5	---	---	---
2-Butanone (MEK)	78-93-3	5	mg/kg	---	<5	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	---	<5	---	---	---
2-Hexanone (MBK)	591-78-6	5	mg/kg	---	<5	---	---	---
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	---	<0.5	---	---	---
1,2-Dichloropropane	78-87-5	0.5	mg/kg	---	<0.5	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_MW11_1.7	S01_131113_HC	---	---	---
				13-NOV-2013 15:00	13-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325016-011	ES1325016-012	---	---	---
<b>EP074D: Fumigants - Continued</b>								
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	---	<0.5	---	---	---
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	---	<0.5	---	---	---
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	---	<5	---	---	---
Chloromethane	74-87-3	5	mg/kg	---	<5	---	---	---
Vinyl chloride	75-01-4	5	mg/kg	---	<5	---	---	---
Bromomethane	74-83-9	5	mg/kg	---	<5	---	---	---
Chloroethane	75-00-3	5	mg/kg	---	<5	---	---	---
Trichlorofluoromethane	75-69-4	5	mg/kg	---	<5	---	---	---
1.1-Dichloroethene	75-35-4	0.5	mg/kg	---	<0.5	---	---	---
Iodomethane	74-88-4	0.5	mg/kg	---	<0.5	---	---	---
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	---	<0.5	---	---	---
1.1-Dichloroethane	75-34-3	0.5	mg/kg	---	<0.5	---	---	---
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	---	<0.5	---	---	---
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	---	<0.5	---	---	---
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	---	<0.5	---	---	---
Carbon Tetrachloride	56-23-5	0.5	mg/kg	---	<0.5	---	---	---
1.2-Dichloroethane	107-06-2	0.5	mg/kg	---	<0.5	---	---	---
Trichloroethene	79-01-6	0.5	mg/kg	---	<0.5	---	---	---
Dibromomethane	74-95-3	0.5	mg/kg	---	<0.5	---	---	---
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	---	<0.5	---	---	---
1.3-Dichloropropane	142-28-9	0.5	mg/kg	---	<0.5	---	---	---
Tetrachloroethene	127-18-4	0.5	mg/kg	---	<0.5	---	---	---
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	---	<0.5	---	---	---
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	---	<0.5	---	---	---
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	---	<0.5	---	---	---
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	---	<0.5	---	---	---
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	---	<0.5	---	---	---
Pentachloroethane	76-01-7	0.5	mg/kg	---	<0.5	---	---	---
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	---	<0.5	---	---	---
Hexachlorobutadiene	87-68-3	0.5	mg/kg	---	<0.5	---	---	---
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	---	<0.5	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_MW11_1.7	S01_131113_HC	---	---	---
				13-NOV-2013 15:00	13-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325016-011	ES1325016-012	---	---	---
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
Bromobenzene	108-86-1	0.5	mg/kg	----	<0.5	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	<0.5	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	<0.5	----	----	----
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	<0.5	----	----	----
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	<0.5	----	----	----
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	<0.5	----	----	----
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	<0.5	----	----	----
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	<0.5	----	----	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	<0.5	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	----	<0.5	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	----	<0.5	----	----	----
Bromoform	75-25-2	0.5	mg/kg	----	<0.5	----	----	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	<5	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_MW11_1.7	S01_131113_HC	---	---	---
				13-NOV-2013 15:00	13-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325016-011	ES1325016-012	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	---	---	---
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	---	---	---
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	---	---	---
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	---	---	---
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	---	---	---
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	---	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	---	---	---
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	---	---	---
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	---	---	---
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	---	---	---
C10 - C14 Fraction	----	50	mg/kg	<50	<50	---	---	---
C15 - C28 Fraction	----	100	mg/kg	<100	<100	---	---	---
C29 - C36 Fraction	----	100	mg/kg	<100	<100	---	---	---
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	---	---	---
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	---	---	---
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	---	---	---
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	---	---	---
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	---	---	---
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	---	---	---
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_MW11_1.7	S01_131113_HC	----	----	----
				13-NOV-2013 15:00	13-NOV-2013 15:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1325016-011	ES1325016-012	----	----	----
<b>EP080: BTEXN - Continued</b>								
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	----	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	61.2	----	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	114	----	----	----
Toluene-D8	2037-26-5	0.1	%	----	103	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	98.3	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	84.7	108	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	84.3	105	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	79.8	67.3	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	89.1	84.3	----	----	----
Anthracene-d10	1719-06-8	0.1	%	87.6	79.1	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	93.4	77.1	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	112	117	----	----	----
Toluene-D8	2037-26-5	0.1	%	93.8	97.3	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	94.6	97.4	----	----	----





## Analytical Results

### Descriptive Results

Sub-Matrix: **SOIL**

<i>Method: Compound</i>	<i>Client sample ID - Client sampling date / time</i>	<i>Analytical Results</i>
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BV_SB02_0.1 - 13-NOV-2013 15:00	Brown clay soil with some vegetation and small coal pieces
EA200: Description	BV_SB03_0.1 - 13-NOV-2013 15:00	Orange-brown clay soil with some vegetation
EA200: Description	BV_MW07_0.1 - 13-NOV-2013 15:00	Orange-brown clay soil with some vegetation
EA200: Description	BV_MW11_0.1 - 13-NOV-2013 15:00	Brown clay soil with small white rocks



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: ES1325016</b>	Page	: 1 of 16
<b>Client</b>	<b>: ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	: Environmental Division Sydney
<b>Contact</b>	: MR JOSEPH FERRING	<b>Contact</b>	: Barbara Hanna
<b>Address</b>	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Address</b>	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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<b>Telephone</b>	: +61 02 8584 8888	<b>Telephone</b>	: +61 2 8784 8555
<b>Facsimile</b>	: +61 02 8584 8800	<b>Facsimile</b>	: +61 2 8784 8555
<b>Project</b>	: PROJECT SYMPHONY	<b>QC Level</b>	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Site</b>	: BAYSWATER	<b>Date Samples Received</b>	: 18-NOV-2013
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 26-NOV-2013
<b>Sampler</b>	: H.C	<b>No. of samples received</b>	: 12
<b>Order number</b>	: ----	<b>No. of samples analysed</b>	: 7
<b>Quote number</b>	: SY/794/13		

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

This Quality Control Report contains the following information:

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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Peter Rennie	Asbestos Identifier	Newcastle - Asbestos



### **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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA055: Moisture Content (QC Lot: 3167939)</b>									
ES1325016-007	BV_MW07_0.1	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	21.8	22.3	2.4	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3168398)</b>									
ES1325015-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	16	16	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	19	19	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	13	9	33.9	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	25	20	22.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	16	16.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	83	62	29.7	0% - 50%
ES1325015-017	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	18	24.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	4	43.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	9	59.9	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	14	17.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	8	12.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	15	19	22.7	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3168399)</b>									
ES1325015-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325015-017	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3169636)</b>									
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325002-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3166953)</b>									
ES1324716-001	Anonymous	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325013-002	Anonymous	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	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 (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3166953) - continued</b>									
ES1325013-002	Anonymous	EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3166953)</b>									
ES1324716-001	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
ES1325013-002	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3166953)</b>									
ES1324716-001	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325013-002	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3166953)</b>									
ES1324716-001	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325013-002	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166953)</b>									
ES1324716-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166953) - continued</b>									
ES1324716-001	Anonymous	EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
ES1325013-002	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP074: Dichlorodifluoromethane	75-71-8	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166953) - continued</b>									
ES1325013-002	Anonymous	EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3166953)</b>									
ES1324716-001	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325013-002	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3166953)</b>									
ES1324716-001	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325013-002	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3166953)</b>									
ES1324716-001	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
ES1325013-002	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167006)</b>									
ES1324716-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167006) - continued</b>									
ES1324716-001	Anonymous	EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES1325013-004	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167006)</b>							
ES1324716-001	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167006) - continued</b>									
ES1324716-001	Anonymous	EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325013-004	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3166952)</b>									
ES1324716-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325013-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3167005)</b>									
ES1324716-001	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
ES1325013-004	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166952)</b>									
ES1324716-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1325013-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3167005)</b>									
ES1324716-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1325013-004	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	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 (%)
<b>EP080: BTEXN (QC Lot: 3166952)</b>									
ES1324716-001	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	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1325013-002	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
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	112	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	100	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	121	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	110	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	104	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	113	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168399)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	97.9	66	112	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	84.8	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3166953)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	96.2	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	95.4	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	92.6	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	91.5	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	93.7	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	91.8	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	91.9	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	93.2	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	95.9	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3166953)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	103	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	104	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	104	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	110	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3166953)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	106	54	126	
<b>EP074D: Fumigants (QCLot: 3166953)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	84.3	55	133	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074D: Fumigants (QCLot: 3166953) - continued</b>									
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	97.0	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	94.3	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	96.0	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	96.2	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166953)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	85.7	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	89.7	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	104	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	91.9	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	97.3	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	101	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	99.9	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	94.0	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	98.6	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	96.8	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	97.7	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	84.1	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	95.6	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	101	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	101	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	100	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	101	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	104	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	101	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	97.9	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	92.0	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	85.1	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	110	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	103	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	110	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	98.4	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	101	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	95.5	48	136	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166953)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	99.6	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	94.8	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	95.4	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	94.8	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	97.4	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	96.0	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	97.1	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	94.4	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	100	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3166953)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	99.3	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	107	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	107	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	108	60	126	
<b>EP074H: Naphthalene (QCLot: 3166953)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	94.8	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167006)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	101	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	85.6	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	104	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	104	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	80.1	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	85.8	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	82.7	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	88.0	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	# 76.3	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	74.5	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	73.8	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	30.7	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167006)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	82.1	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	97.7	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	97.1	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	103	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	101	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	101	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	106	79	123	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	High
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167006) - continued</b>									
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	97.1	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	95.6	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	102	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	94.8	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	97.5	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	91.2	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	94.2	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	92.9	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	94.7	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166952)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	105	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167005)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	102	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	102	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	87.4	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166952)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	104	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167005)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	103	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	96.4	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	73.0	63	131	
<b>EP080: BTEXN (QCLot: 3166952)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	102	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	103	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	102	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	102	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	106	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.2	62	138	

**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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report		
				Spike Concentration	SpikeRecovery(%)	
					MS	Low



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398)</b>							
ES1325015-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	96.3	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	104	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	97.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	87.8	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168399)</b>							
ES1325015-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	109	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>							
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	81.6	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166953)</b>							
ES1324716-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	94.0	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	89.0	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166953)</b>							
ES1324716-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	91.6	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167006)</b>							
ES1324716-001	Anonymous	EP075(SIM): Phenol	108-95-2	20 mg/kg	115	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	20 mg/kg	98.1	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	20 mg/kg	73.0	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 mg/kg	95.2	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	20 mg/kg	73.5	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167006)</b>							
ES1324716-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	20 mg/kg	89.3	70	130
		EP075(SIM): Pyrene	129-00-0	20 mg/kg	88.0	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166952)</b>							
ES1324716-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	97.2	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167005)</b>							
ES1324716-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	108	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	110	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	106	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166952)</b>							
ES1324716-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	94.5	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167005)</b>							
ES1324716-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	127	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	105	53	131





Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167005) - continued</b>								
ES1324716-001	Anonymous	EP071: >C34 - C40 Fraction	----	2400 mg/kg	82.9	52	132	
<b>EP080: BTEXN (QCLot: 3166952)</b>								
ES1324716-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.7	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	86.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	88.1	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	90.0	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	90.4	70	130	
	EP080: Naphthalene	91-20-3		2.5 mg/kg	78.8	70	130	

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166952)</b>											
ES1324716-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	97.2	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166952)</b>											
ES1324716-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	94.5	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3166952)</b>											
ES1324716-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.7	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	86.9	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	88.1	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	90.0	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	90.4	----	70	130	----	----	
	EP080: Naphthalene	91-20-3		2.5 mg/kg	78.8	----	70	130	----	----	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166953)</b>											
ES1324716-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	94.0	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	89.0	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166953)</b>											
ES1324716-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	91.6	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167005)</b>											
ES1324716-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	108	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	110	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	106	----	52	132	----	----	



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167005)</b>										
ES1324716-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	127	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	105	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	82.9	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167006)</b>										
ES1324716-001	Anonymous	EP075(SIM): Phenol	108-95-2	20 mg/kg	115	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	20 mg/kg	98.1	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	20 mg/kg	73.0	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 mg/kg	95.2	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	20 mg/kg	73.5	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167006)</b>										
ES1324716-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	20 mg/kg	89.3	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	20 mg/kg	88.0	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398)</b>										
ES1325015-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	96.3	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	104	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	104	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	97.8	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	104	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	87.8	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168399)</b>										
ES1325015-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	109	----	70	130	----	----
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>										
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	81.6	----	70	130	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325016</b>	Page	: 1 of 9
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 18-NOV-2013
C-O-C number	: ----	Issue Date	: 26-NOV-2013
Sampler	: H.C	No. of samples received	: 12
Order number	: ----	No. of samples analysed	: 7
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA055: Moisture Content</b>							
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BV_SB02_0.5, BV_MW07_0.1, BV_MW11_1.7, BV_SB03_0.1, BV_MW11_0.1, S01_131113_HC	13-NOV-2013	----	----	----	20-NOV-2013	27-NOV-2013	✓
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>							
<b>Snap Lock Bag (EA200)</b> BV_SB02_0.1, BV_MW07_0.1, BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	---	12-MAY-2014	----	26-NOV-2013	25-MAY-2014	✓
<b>EG005T: Total Metals by ICP-AES</b>							
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BV_SB02_0.5, BV_MW07_0.1, BV_MW11_1.7, BV_SB03_0.1, BV_MW11_0.1, S01_131113_HC	13-NOV-2013	20-NOV-2013	12-MAY-2014	✓	21-NOV-2013	12-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BV_SB02_0.5, BV_MW07_0.1, BV_MW11_1.7, BV_SB03_0.1, BV_MW11_0.1, S01_131113_HC	13-NOV-2013	20-NOV-2013	11-DEC-2013	✓	22-NOV-2013	11-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
<b>Soil Glass Jar - Unpreserved (EP066)</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	21-NOV-2013	27-NOV-2013	✓	22-NOV-2013	31-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
<b>Soil Glass Jar - Unpreserved (EP071)</b> BV_SB02_0.5, BV_MW07_0.1, BV_MW11_1.7, BV_SB03_0.1, BV_MW11_0.1, S01_131113_HC	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	30-DEC-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074D: Fumigants</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	20-NOV-2013	*
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	20-NOV-2013	*
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	20-NOV-2013	*
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	20-NOV-2013	*
<b>EP074H: Naphthalene</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	20-NOV-2013	*
<b>EP074B: Oxygenated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	20-NOV-2013	*
<b>EP074C: Sulfonated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	20-NOV-2013	*
<b>EP074G: Trihalomethanes</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	21-NOV-2013	20-NOV-2013	*



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP075(SIM)A: Phenolic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BV_SB02_0.5, BV_MW07_0.1, BV_MW11_1.7, BV_SB03_0.1, BV_MW11_0.1, S01_131113_HC	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	30-DEC-2013	✓	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BV_SB02_0.5, BV_MW07_0.1, BV_MW11_1.7, BV_SB03_0.1, BV_MW11_0.1, S01_131113_HC	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	30-DEC-2013	✓	
<b>EP080: BTEXN</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BV_SB02_0.5, BV_MW07_0.1, BV_MW11_1.7, BV_SB03_0.1, BV_MW11_0.1, S01_131113_HC	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	27-NOV-2013	✓	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BV_SB02_0.5, BV_MW07_0.1, BV_MW11_1.7, BV_SB03_0.1, BV_MW11_0.1, S01_131113_HC	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	27-NOV-2013	✓	



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Moisture Content	EA055-103	1	10	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	11	18.2	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) Schedule B(3) (Method 504)
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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) 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 (2013) 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 A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na <sub>2</sub> SO <sub>4</sub> 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.



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Work Order : ES1325016  
Client : ENVIRO RESOURCES MANAGEMENT  
Project : PROJECT SYMPHONY



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na <sub>2</sub> SO <sub>4</sub> 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
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP075(SIM)A: Phenolic Compounds	3779351-007	----	<b>4-Chloro-3-methylphenol</b>	59-50-7	76.3 %	76.4-114%	<b>Recovery less than lower control limit</b>

- 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

- For all regular sample matrices, no surrogate recovery outliers occur.

### Outliers : Analysis Holding Time Compliance

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

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved</b>							
BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1,	----	----	----	21-NOV-2013	20-NOV-2013	<b>1</b>
<b>EP074B: Oxygenated Compounds</b>							
<b>Soil Glass Jar - Unpreserved</b>							
BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1,	----	----	----	21-NOV-2013	20-NOV-2013	<b>1</b>
<b>EP074C: Sulfonated Compounds</b>							
<b>Soil Glass Jar - Unpreserved</b>							
BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC	BV_SB03_0.1, BV_MW11_0.1,	----	----	----	21-NOV-2013	20-NOV-2013	<b>1</b>
<b>EP074D: Fumigants</b>							



Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074D: Fumigants - Analysis Holding Time Compliance</b>						
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC BV_SB03_0.1, BV_MW11_0.1,	----	----	----	21-NOV-2013	20-NOV-2013	1
<b>EP074E: Halogenated Aliphatic Compounds</b>						
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC BV_SB03_0.1, BV_MW11_0.1,	----	----	----	21-NOV-2013	20-NOV-2013	1
<b>EP074F: Halogenated Aromatic Compounds</b>						
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC BV_SB03_0.1, BV_MW11_0.1,	----	----	----	21-NOV-2013	20-NOV-2013	1
<b>EP074G: Trihalomethanes</b>						
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC BV_SB03_0.1, BV_MW11_0.1,	----	----	----	21-NOV-2013	20-NOV-2013	1
<b>EP074H: Naphthalene</b>						
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_0.5, BV_MW07_0.1, S01_131113_HC BV_SB03_0.1, BV_MW11_0.1,	----	----	----	21-NOV-2013	20-NOV-2013	1

### Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.

**ALS Environmental**

**CHAIN OF CUSTODY**  
ALS Laboratory  
please tick →

DADELAIDE 21 Burn Road, Norwalk SA 5095  
Ph: 08 8359 0800 E: adelaide@als.com.au

DEBISBANE 32 Strand Street, Silverdale QLD 4063  
Ph: 07 3240 7222 E: samples.south@als.com.au

DUNEDIN ONE 48 Callernish Drive, Cannon QLD 4890  
Ph: 07 241 3900 E: goldstone@als.com.au

CLIENT: **ERAM**

OFFICE: **SYDNEY**

PROJECT: **Project Symphony**

ORDER NUMBER:

PROJECT MANAGER: **Steve Pezzini**

SAMPLER: **HC**

COC emailed to ALS? (YES / NO)

Email Reports to (will default to PM if no other addresses are listed):

Small Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:  
 Standard TAT (last due date)  
 Non Standard or Urgent TAT (last due date):

DADELAIDE 21 Burn Road, Norwalk SA 5095  
Ph: 08 8359 0800 E: adelaide@als.com.au

DEBISBANE 32 Strand Street, Silverdale QLD 4063  
Ph: 07 3240 7222 E: samples.south@als.com.au

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Ph: 07 3240 7222 E: samples.south@als.com.au

DUNEDIN ONE 48 Callernish Drive, Cannon QLD 4890  
Ph: 07 241 3900 E: goldstone@als.com.au

CONTACT PH: **85848288**

SAMPLER MOBILE: **0408207057**

EDD FORMAT (or default):

REINQUISHED BY: **PM** DATE/TIME: **14/11/13**

RECEIVED BY: **W** DATE/TIME: **16/1/13 10:20**

REINQUISHED BY: **W** DATE/TIME: **16/1/13 7:00**

RECEIVED BY: **W** DATE/TIME: **18/1/13 19:00**

Asbestos **ERN**

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	TOTAL CONTAINERS (refer to)	ANALYSIS REQUIRED INCLUDING SUITES (VMS, Suite Codes must be listed to attract suite price) (Where Metals are required, specify total (unfiltered bottle required) or Dissolved (filtered bottle required))											Additional Information
						S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	S-24 TRH (C6-C40)/BTEXN, PAH, Phenols	VOC Target Scan	PCB	pH (1-5)	Exchangeable cations (ED007)	PFOS/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)	
1	BA_MW09_0.05	13/1/13	*	JAR + BQA	2	X	X	X	X	X	X	X	X	X	X	X	HOLD
2	BA_MW09_0.15			JAR	1												HOLD
3	BA_MW09_1.0			JAR	1												HOLD
4	BA_MW09_0.05			JAR + BQA	2	X	X	X	X	X	X	X	X	X	X	X	HOLD
5	BA_MW10_0.05			JAR	1	X											HOLD
6	BA_MW10_1.0			JAR	1												HOLD
7	BA_MW10_1.5			JAR	1												HOLD
8	BA_MW11_0.1			JAR + BQA	2	X	X	X	X	X	X	X	X	X	X	X	HOLD
9	BA_MW11_0.5			JAR	1												HOLD
10	BA_MW11_1.0			JAR	1												HOLD
11	BA_MW11_1.5			JAR	1												HOLD
TOTAL																	

Environmental Division  
Sydney  
Work Order  
**ES1325017**



Telephone : + 61-2-8784 8555

Lab / Analysis: **Asbestos kept at**  
Organised By / Date: **Newcastle**  
Reinquished By / Date: **Sample 1045**

Water Contaminant Codes: P = Unpreserved Plastic; N = Nitrite Preserved Plastic; ORG = Nitrite Preserved Organic; SH = Sulfide Hydrolyzed Preserved; S = Sulfide Preserved  
V = VOA Volatil Preserved; VA = VOA Volatil Sodium Disulfide Preserved; VS = VOA Volatil Sulfide Preserved; AV = Air Tight Unpreserved Volatile; SA = Sulfide Preserved Amine  
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Surveys; SSS = Unpreserved BSA

Preserved Plastic  
Silica; Sp = Sulfide Preserved Plastic; F = Formaldehyde Preserved Glass

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

<b>Work Order</b>	<b>: ES1325017</b>		
<b>Client</b>	<b>: ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	<b>: Environmental Division Sydney</b>
<b>Contact Address</b>	<b>: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</b>	<b>Contact Address</b>	<b>: Barbara Hanna 277-289 Woodpark Road Smithfield NSW Australia 2164</b>
<b>E-mail</b>	<b>: joseph.ferring@erm.com</b>	<b>E-mail</b>	<b>: Barbara.Hanna@alsglobal.com</b>
<b>Telephone</b>	<b>: +61 02 8584 8888</b>	<b>Telephone</b>	<b>: +61 2 8784 8555</b>
<b>Facsimile</b>	<b>: +61 02 8584 8800</b>	<b>Facsimile</b>	<b>: +61 2 8784 8555</b>
<b>Project</b>	<b>: PROJECT SYMPHONY</b>	<b>Page</b>	<b>: 1 of 3</b>
<b>Order number</b>	<b>: ----</b>	<b>Quote number</b>	<b>: ES2013ENVRES0369 (SY/794/13)</b>
<b>C-O-C number</b>	<b>: ----</b>	<b>QC Level</b>	<b>: NEPM 2013 Schedule B(3) and ALS QCS3 requirement</b>
<b>Site</b>	<b>: ----</b>		
<b>Sampler</b>	<b>: H.C</b>		

#### Dates

Date Samples Received	: 18-NOV-2013	Issue Date	: 19-NOV-2013 16:49
Client Requested Due Date	: 25-NOV-2013	Scheduled Reporting Date	: <b>25-NOV-2013</b>

#### Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.6°C - Ice present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 11
Security Seal	: Intact.	No. of samples analysed	: 4

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL	No analysis requested	SOIL - EA002	pH (1:5)	SOIL - EA200	Asbestos Identification in Soils	SOIL - ED007 Def	CEC / Exchangeable Cations (ED007)	SOIL - EG005T (solids)	Total Metals by ICP-AES	SOIL - NT-1S	Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S	Major Anions (Cl, SO4)	SOIL - S-01	7 Metals (incl. Digestion)
ES1325017-001	13-NOV-2013 15:00	BQ_MW09_0.05		✓														
ES1325017-002	13-NOV-2013 15:00	BQ_MW09_0.5	✓															
ES1325017-003	13-NOV-2013 15:00	BQ_MW09_1.0	✓															
ES1325017-004	13-NOV-2013 15:00	BQ_MW10_0.05					✓											
ES1325017-005	13-NOV-2013 15:00	BQ_MW10_0.5		✓				✓		✓		✓		✓		✓		✓
ES1325017-006	13-NOV-2013 15:00	BQ_MW10_1.0	✓															
ES1325017-007	13-NOV-2013 15:00	BQ_MW10_1.5	✓															
ES1325017-008	13-NOV-2013 15:00	BQ_MW11_0.1		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ES1325017-009	13-NOV-2013 15:00	BQ_MW11_0.5	✓															
ES1325017-010	13-NOV-2013 15:00	BQ_MW11_1.0	✓															
ES1325017-011	13-NOV-2013 15:00	BQ_MW11_1.5	✓															

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-24
ES1325017-008	13-NOV-2013 15:00	BQ_MW11_0.1	✓

## Proactive Holding Time Report

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



---

### *Requested Deliverables*

**MR JOSEPH FERRING**

- |  |       |                        |
|--|-------|------------------------|
| - *AU Certificate of Analysis - NATA ( COA )                     | Email | joseph.ferring@erm.com |
| - *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )    | Email | joseph.ferring@erm.com |
| - *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )            | Email | joseph.ferring@erm.com |
| - A4 - AU Sample Receipt Notification - Environmental HT ( SRN ) | Email | joseph.ferring@erm.com |
| - Chain of Custody (CoC) ( COC )                                 | Email | joseph.ferring@erm.com |
| - EDI Format - ENMRG ( ENMRG )                                   | Email | joseph.ferring@erm.com |
| - EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )                     | Email | joseph.ferring@erm.com |
| - EDI Format - ESDAT ( ESDAT )                                   | Email | joseph.ferring@erm.com |
| - EDI Format - XTab ( XTAB )                                     | Email | joseph.ferring@erm.com |

**THE ACCOUNTS PAYABLE**

- |                               |       |                     |
|-------------------------------|-------|---------------------|
| - A4 - AU Tax Invoice ( INV ) | Email | au.accounts@erm.com |
|-------------------------------|-------|---------------------|
-

## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1325017</b>	Page	: 1 of 7
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----		
C-O-C number	: ----	Date Samples Received	: 18-NOV-2013
Sampler	: H.C	Issue Date	: 26-NOV-2013
Site	: ----		
Quote number	: SY/794/13	No. of samples received	: 11
		No. of samples analysed	: 4

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





## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

## Signatories

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

Signatories	Position	Accreditation Category
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Peter Rennie	Asbestos Identifier	Newcastle - Asbestos
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW09_0.05	BQ_MW10_0.05	BQ_MW10_0.5	BQ_MW11_0.1	----
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1325017-001	ES1325017-004	ES1325017-005	ES1325017-008	----
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	6.4	----	6.9	6.4	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	21.5	----	21.6	23.8	----
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	No	----
Asbestos Type	1332-21-4	-	--	-	-	----	-	----
Sample weight (dry)	----	0.01	g	365	446	----	261	----
APPROVED IDENTIFIER:	----	-	--	P.RENNIE	P.RENNIE	----	P.RENNIE	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	14.2	----	12.8	6.0	----
Exchangeable Magnesium	----	0.1	meq/100g	7.6	----	5.0	5.7	----
Exchangeable Potassium	----	0.1	meq/100g	0.7	----	0.2	0.7	----
Exchangeable Sodium	----	0.1	meq/100g	0.4	----	0.6	0.2	----
Cation Exchange Capacity	----	0.1	meq/100g	23.0	----	18.7	12.6	----
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	<0.1	<0.1	----
<b>ED040S : Soluble Sulfate by ICPAES</b>								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	30	----	3470	40	----
<b>ED045G: Chloride Discrete analyser</b>								
Chloride	16887-00-6	10	mg/kg	100	----	160	190	----
<b>ED093S: Soluble Major Cations</b>								
Calcium	7440-70-2	10	mg/kg	40	----	500	60	----
Magnesium	7439-95-4	10	mg/kg	80	----	180	200	----
Sodium	7440-23-5	10	mg/kg	50	----	930	40	----
Potassium	7440-09-7	10	mg/kg	180	----	20	420	----
<b>EG005T: Total Metals by ICP-AES</b>								
Barium	7440-39-3	10	mg/kg	200	----	110	60	----
Beryllium	7440-41-7	1	mg/kg	<1	----	<1	<1	----
Boron	7440-42-8	50	mg/kg	<50	----	<50	<50	----
Cobalt	7440-48-4	2	mg/kg	10	----	12	12	----
Manganese	7439-96-5	5	mg/kg	482	----	239	685	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	<2	----
Selenium	7782-49-2	5	mg/kg	<5	----	<5	<5	----
Vanadium	7440-62-2	5	mg/kg	45	----	48	65	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BQ_MW09_0.05	BQ_MW10_0.05	BQ_MW10_0.5	BQ_MW11_0.1	----
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1325017-001	ES1325017-004	ES1325017-005	ES1325017-008	----
<b>EG005T: Total Metals by ICP-AES - Continued</b>								
Thallium	7440-28-0	5	mg/kg	<5	----	<5	<5	----
Arsenic	7440-38-2	5	mg/kg	<5	----	11	10	----
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	----
Chromium	7440-47-3	2	mg/kg	12	----	20	14	----
Copper	7440-50-8	5	mg/kg	26	----	22	13	----
Lead	7439-92-1	5	mg/kg	17	----	18	19	----
Nickel	7440-02-0	2	mg/kg	9	----	20	8	----
Zinc	7440-66-6	5	mg/kg	38	----	66	34	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	----	----	----	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg	----	----	----	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg	----	----	----	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	----	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg	----	----	----	<0.5	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	----	----	----	<0.5	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	----	----	----	<0.5	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	----	----	----	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	----	----	----	<0.5	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	----	----	----	<0.5	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	----	----	----	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg	----	----	----	<2	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW09_0.05	BQ_MW10_0.05	BQ_MW10_0.5	BQ_MW11_0.1	----
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1325017-001	ES1325017-004	ES1325017-005	ES1325017-008	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	1.2	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	----	----	----	<10	----
C10 - C14 Fraction	----	50	mg/kg	----	----	----	<50	----
C15 - C28 Fraction	----	100	mg/kg	----	----	----	<100	----
C29 - C36 Fraction	----	100	mg/kg	----	----	----	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	<50	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	----	<10	----
>C10 - C16 Fraction	>C10_C16	50	mg/kg	----	----	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	----	<50	----
<b>EP080: BTEXN</b>								
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	----
^ Sum of BTEX	----	0.2	mg/kg	----	----	----	<0.2	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	----	----	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg	----	----	----	<1	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BQ_MW09_0.05	BQ_MW10_0.05	BQ_MW10_0.5	BQ_MW11_0.1	----
				13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	13-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1325017-001	ES1325017-004	ES1325017-005	ES1325017-008	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	----	----	----	98.5	----
2-Chlorophenol-D4	93951-73-6	0.1	%	----	----	----	106	----
2,4,6-Tribromophenol	118-79-6	0.1	%	----	----	----	82.9	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	----	----	----	93.0	----
Anthracene-d10	1719-06-8	0.1	%	----	----	----	86.5	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	----	----	93.6	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	----	116	----
Toluene-D8	2037-26-5	0.1	%	----	----	----	96.2	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	----	96.8	----

## Analytical Results

### Descriptive Results

Sub-Matrix: SOIL

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BQ_MW09_0.05 - 13-NOV-2013 15:00	Brown soil with some vegetation
EA200: Description	BQ_MW10_0.05 - 13-NOV-2013 15:00	Brown soil with some vegetation
EA200: Description	BQ_MW11_0.1 - 13-NOV-2013 15:00	Brown soil with some vegetation



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1.2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

## QUALITY CONTROL REPORT

Work Order	: <b>ES1325017</b>	Page	: 1 of 12
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 18-NOV-2013
C-O-C number	: ----	Issue Date	: 26-NOV-2013
Sampler	: H.C	No. of samples received	: 11
Order number	: ----	No. of samples analysed	: 4
Quote number	: SY/794/13		

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



## General Comments

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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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Peter Rennie	Asbestos Identifier	Newcastle - Asbestos
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics





## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3168154)</b>									
ES1324349-046	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.7	6.7	0.0	0% - 20%
ES1325015-008	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.7	6.7	0.0	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3167939)</b>									
ES1325016-007	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	21.8	22.3	2.4	0% - 20%
<b>ED007: Exchangeable Cations (QC Lot: 3173305)</b>									
ES1324837-002	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.0	14.2	1.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	6.9	7.0	1.7	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.6	0.7	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	21.8	22.2	1.8	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1325017-001	BQ_MW09_0.05	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.2	14.5	2.3	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.6	7.6	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.7	0.7	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.4	0.4	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	23.0	23.2	1.2	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>ED040S: Soluble Major Anions (QC Lot: 3168155)</b>									
ES1324911-012	Anonymous	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	40	50	0.0	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 3168161)</b>									
ES1324911-009	Anonymous	ED045G: Chloride	16887-00-6	10	mg/kg	160	130	17.7	0% - 50%
ES1325015-008	Anonymous	ED045G: Chloride	16887-00-6	10	mg/kg	30	40	0.0	No Limit
<b>ED093S: Soluble Major Cations (QC Lot: 3168163)</b>									
ES1325015-008	Anonymous	ED093S: Calcium	7440-70-2	10	mg/kg	30	40	0.0	No Limit
		ED093S: Magnesium	7439-95-4	10	mg/kg	40	60	24.4	No Limit
		ED093S: Sodium	7440-23-5	10	mg/kg	20	20	0.0	No Limit
		ED093S: Potassium	7440-09-7	10	mg/kg	140	170	22.2	0% - 50%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3168872)</b>									
ES1325037-001	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	30	40	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	4	4	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	3	4	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	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 (%)		
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3168872) - continued</b>											
ES1325037-001	Anonymous	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	6	6	0.0	No Limit		
		EG005T: Manganese	7439-96-5	5	mg/kg	386	439	12.9	0% - 20%		
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Vanadium	7440-62-2	5	mg/kg	23	26	11.2	No Limit		
		EG005T: Zinc	7440-66-6	5	mg/kg	32	36	12.2	No Limit		
		EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
ES1325037-008	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit		
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit		
		EG005T: Barium	7440-39-3	10	mg/kg	<10	<10	0.0	No Limit		
		EG005T: Chromium	7440-47-3	2	mg/kg	4	4	0.0	No Limit		
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.0	No Limit		
		EG005T: Molybdenum	7439-98-7	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	<5	<5	0.0	No Limit		
		EG005T: Manganese	7439-96-5	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Vanadium	7440-62-2	5	mg/kg	8	8	0.0	No Limit		
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit		
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
		<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167006)</b>									
ES1324716-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit		
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
		ES1325013-004	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): 2-Chlorophenol	95-57-8	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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167006) - continued</b>									
ES1325013-004	Anonymous	EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167006)</b>									
ES1324716-001	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1325013-004	Anonymous	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		



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 (%)	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167006) - continued</b>										
ES1325013-004	Anonymous	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	
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3166952)</b>										
ES1324716-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
ES1325013-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3167005)</b>										
ES1324716-001	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	
ES1325013-004	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	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166952)</b>										
ES1324716-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1325013-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3167005)</b>										
ES1324716-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
ES1325013-004	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3166952)</b>										
ES1324716-001	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	
ES1325013-002	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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	

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 Work Order : ES1325017  
 Client : ENVIRO RESOURCES MANAGEMENT  
 Project : PROJECT SYMPHONY



Sub-Matrix: <b>SOIL</b>				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080: BTEXN (QC Lot: 3166952) - continued</b>									
ES1325013-002	Anonymous	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
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>ED007: Exchangeable Cations (QCLot: 3173305)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>ED040S: Soluble Major Anions (QCLot: 3168155)</b>									
ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	<10	150 mg/kg	95.4	84	112	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3168161)</b>									
ED045G: Chloride	16887-00-6	10	mg/kg	<10	5000 mg/kg	95.0	79	125	
<b>ED093S: Soluble Major Cations (QCLot: 3168163)</b>									
ED093S: Calcium	7440-70-2	10	mg/kg	<10	50 mg/kg	101	85	113	
ED093S: Magnesium	7439-95-4	10	mg/kg	<10	50 mg/kg	97.2	86	116	
ED093S: Sodium	7440-23-5	10	mg/kg	<10	50 mg/kg	99.4	80	112	
ED093S: Potassium	7440-09-7	10	mg/kg	<10	50 mg/kg	100	88	114	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168872)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	102	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	103	83	129	
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	109	88	130	
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	96.7	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	110	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	103	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	107	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	100	81	123	
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	110	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	117	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	108	84	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	126	75	131	
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	108	95	129	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	99.7	81	133	
EG005T: Thallium	7440-28-0	5	mg/kg	<5	5.96 mg/kg	99.1	70	130	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167006)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	101	74	116	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167006) - continued</b>									
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	85.6	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	104	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	104	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	80.1	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	85.8	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	82.7	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	88.0	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	# 76.3	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	74.5	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	73.8	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	30.7	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167006)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	82.1	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	97.7	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	97.1	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	103	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	101	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	101	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	106	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	97.1	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	95.6	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	102	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	94.8	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	97.5	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	91.2	76	122	
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	94.2	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	92.9	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	94.7	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166952)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	105	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167005)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	102	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	102	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	87.4	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166952)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	104	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167005)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	103	70	130	



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167005) - continued</b>								
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	96.4	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
		50	mg/kg	----	150 mg/kg	73.0	63	131
<b>EP080: BTEXN (QCLot: 3166952)</b>								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	102	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	103	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	102	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	102	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	106	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.2	62	138

### 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				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) Low High	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3168161)</b>							
ES1324911-009	Anonymous	ED045G: Chloride	16887-00-6	12500 mg/kg	100	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168872)</b>							
ES1325037-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	103	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.8	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	100	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	106	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	98.3	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	98.9	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	104	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	97.8	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167006)</b>							
ES1324716-001	Anonymous	EP075(SIM): Phenol	108-95-2	20 mg/kg	115	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	20 mg/kg	98.1	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	20 mg/kg	73.0	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 mg/kg	95.2	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	20 mg/kg	73.5	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167006)</b>							
ES1324716-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	20 mg/kg	89.3	70	130





Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report				
				Spike	Spike Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167006) - continued</b>								
ES1324716-001	Anonymous	EP075(SIM): Pyrene	129-00-0	20 mg/kg	88.0	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166952)</b>								
ES1324716-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	97.2	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167005)</b>								
ES1324716-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	108	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	110	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	106	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166952)</b>								
ES1324716-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	94.5	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167005)</b>								
ES1324716-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	127	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	105	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	82.9	52	132	
<b>EP080: BTEXN (QCLot: 3166952)</b>								
ES1324716-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.7	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	86.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	88.1	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	90.0	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	90.4	70	130	
	91-20-3	2.5 mg/kg	78.8	70	130			

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166952)</b>										
ES1324716-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	97.2	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166952)</b>										
ES1324716-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	94.5	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3166952)</b>										
ES1324716-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.7	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	86.9	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	88.1	----	70	130	----	----



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP080: BTEXN (QCLot: 3166952) - continued</b>										
ES1324716-001	Anonymous	EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	90.0	----	70	130	----	----
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	90.4	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	78.8	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167005)</b>										
ES1324716-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	108	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	110	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	106	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167005)</b>										
ES1324716-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	127	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	105	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	82.9	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167006)</b>										
ES1324716-001	Anonymous	EP075(SIM): Phenol	108-95-2	20 mg/kg	115	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	20 mg/kg	98.1	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	20 mg/kg	73.0	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 mg/kg	95.2	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	20 mg/kg	73.5	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167006)</b>										
ES1324716-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	20 mg/kg	89.3	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	20 mg/kg	88.0	----	70	130	----	----
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3168161)</b>										
ES1324911-009	Anonymous	ED045G: Chloride	16887-00-6	12500 mg/kg	100	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168872)</b>										
ES1325037-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	103	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.8	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	100	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	106	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	98.3	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	98.9	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	104	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	97.8	----	70	130	----	----



## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325017</b>	Page	: 1 of 7
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 18-NOV-2013
C-O-C number	: ----	Issue Date	: 26-NOV-2013
Sampler	: H.C	No. of samples received	: 11
Order number	: ----	No. of samples analysed	: 4
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA002 : pH (Soils)</b>								
<b>Soil Glass Jar - Unpreserved (EA002)</b> BQ_MW09_0.05, BQ_MW11_0.1	BQ_MW10_0.5,	13-NOV-2013	20-NOV-2013	20-NOV-2013	✓	20-NOV-2013	20-NOV-2013	✓
<b>EA055: Moisture Content</b>								
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BQ_MW09_0.05, BQ_MW11_0.1	BQ_MW10_0.5,	13-NOV-2013	----	----	----	20-NOV-2013	27-NOV-2013	✓
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
<b>Snap Lock Bag (EA200)</b> BQ_MW09_0.05, BQ_MW11_0.1	BQ_MW10_0.05,	13-NOV-2013	---	12-MAY-2014	----	26-NOV-2013	25-MAY-2014	✓
<b>ED007: Exchangeable Cations</b>								
<b>Soil Glass Jar - Unpreserved (ED007)</b> BQ_MW09_0.05, BQ_MW11_0.1	BQ_MW10_0.5,	13-NOV-2013	25-NOV-2013	11-DEC-2013	✓	25-NOV-2013	11-DEC-2013	✓
<b>ED040S : Soluble Sulfate by ICPAES</b>								
<b>Soil Glass Jar - Unpreserved (ED040S)</b> BQ_MW09_0.05, BQ_MW11_0.1	BQ_MW10_0.5,	13-NOV-2013	20-NOV-2013	11-DEC-2013	✓	20-NOV-2013	18-DEC-2013	✓
<b>ED045G: Chloride Discrete analyser</b>								
<b>Soil Glass Jar - Unpreserved (ED045G)</b> BQ_MW09_0.05, BQ_MW11_0.1	BQ_MW10_0.5,	13-NOV-2013	20-NOV-2013	11-DEC-2013	✓	20-NOV-2013	18-DEC-2013	✓
<b>ED093S: Soluble Major Cations</b>								
<b>Soil Glass Jar - Unpreserved (ED093S)</b> BQ_MW09_0.05, BQ_MW11_0.1	BQ_MW10_0.5,	13-NOV-2013	20-NOV-2013	12-MAY-2014	✓	20-NOV-2013	12-MAY-2014	✓
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BQ_MW09_0.05, BQ_MW11_0.1	BQ_MW10_0.5,	13-NOV-2013	20-NOV-2013	12-MAY-2014	✓	21-NOV-2013	12-MAY-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP071) BQ_MW11_0.1	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	30-DEC-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
Soil Glass Jar - Unpreserved (EP075(SIM)) BQ_MW11_0.1	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	30-DEC-2013	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP075(SIM)) BQ_MW11_0.1	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	30-DEC-2013	✓
<b>EP080: BTEXN</b>							
Soil Glass Jar - Unpreserved (EP080) BQ_MW11_0.1	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	27-NOV-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP080) BQ_MW11_0.1	13-NOV-2013	20-NOV-2013	27-NOV-2013	✓	21-NOV-2013	27-NOV-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Cations - soluble by ICP-AES	ED093S	1	9	11.1	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	13	15.4	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	13	7.7	10.0	✖	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	1	10	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	19	10.5	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	17	11.8	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	14	14.3	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	19	10.5	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Cations - soluble by ICP-AES	ED093S	1	9	11.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	13	15.4	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Cations - soluble by ICP-AES	ED093S	1	9	11.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Chloride Soluble By Discrete Analyser	ED045G	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
Major Anions - Soluble	ED040S	SOIL	In-house. Soluble Anions are determined off a 1:5 soil / water extract by ICPAES.
Chloride Soluble By Discrete Analyser	ED045G	SOIL	APHA 21st edition 4500-Cl- E. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm. Analysis is performed on a 1:5 soil / water leachate.
Cations - soluble by ICP-AES	ED093S	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 (ICPAES) Water extracts of the soil are analyzed for major cations by ICPAES. 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 (2013) Schedule B(3)
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 (2013) 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 (2013) 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 (2013) 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 (2013) Schedule B(3) (Method 501)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH4Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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.

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Work Order : ES1325017  
Client : ENVIRO RESOURCES MANAGEMENT  
Project : PROJECT SYMPHONY



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na <sub>2</sub> SO <sub>4</sub> 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
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP075(SIM)A: Phenolic Compounds	3779351-007	----	<b>4-Chloro-3-methylphenol</b>	59-50-7	76.3 %	76.4-114%	<b>Recovery less than lower control limit</b>

- 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

- 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.

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
Major Anions - Soluble	1	13	7.7	10.0	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



CHAIN OF CUSTODY

ALS Laboratory

ALS Laboratory, 1000 ...

ALS Laboratory, 1000 ...

TURNAROUND REQUIREMENTS:

FOR LABORATORY USE ONLY (Circle)

OFFICE: PROJECT: Project Symphony

ORDER NUMBER: PROJECT MANAGER: Joseph Farning

SAMPLER: Tom CaHooge CONTACT PH: SAMPLER MOBILE: EDD FORMAT (or default):

COC (mailed to ALS? YES / NO) Email Reports to (will default to PM if no other addresses are listed): John.ewing@ecm.com

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

Table with columns: LAB ID, SAMPLE ID, DATE / TIME, MATRIX, CONTAINER INFORMATION, ANALYSIS REQUIRED, etc.

ASBESTOS + PSD WASTEWATER

Environmental Division Sydney Work Order ES1325018 Telephone: +61-2-8784 8555

Forward to Enviro Lab

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

<b>Work Order</b>	: <b>ES1325018</b>		
<b>Client</b>	: <b>ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	: Environmental Division Sydney
<b>Contact</b>	: JOHN EWING	<b>Contact</b>	: Barbara Hanna
<b>Address</b>	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Address</b>	: 277-289 Woodpark Road Smithfield NSW Australia 2164
<b>E-mail</b>	: john.ewing@erm.com	<b>E-mail</b>	: Barbara.Hanna@alsglobal.com
<b>Telephone</b>	: +61 02 8584 8888	<b>Telephone</b>	: +61 2 8784 8555
<b>Facsimile</b>	: +61 02 8584 8800	<b>Facsimile</b>	: +61 2 8784 8555
<b>Project</b>	: PROJECT SYMPHONY	<b>Page</b>	: 1 of 3
<b>Order number</b>	: ----		
<b>C-O-C number</b>	: ----	<b>Quote number</b>	: ES2013ENVRES0369 (SY/794/13)
<b>Site</b>	: BAYSWATER		
<b>Sampler</b>	: T.C	<b>QC Level</b>	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement

#### Dates

Date Samples Received	: 18-NOV-2013	Issue Date	: 19-NOV-2013 17:12
Client Requested Due Date	: 25-NOV-2013	Scheduled Reporting Date	: <b>25-NOV-2013</b>

#### Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.6°C - Ice present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 12
Security Seal	: Intact.	No. of samples analysed	: 12

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos and PSD analysis will be conducted by ALS Newcastle.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample T01\_141113\_TC send to Envirolab as per COC**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

### Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - EA150* Particle Size Analysis by Sieving (Default sieves from SOIL - EA200 Asbestos Identification in Soils	SOIL - ED007 Def CEC / Exchangeable Cations (ED007) -Default	SOIL - EP004 (Carbon) Total Organic Carbon (Calc.)	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231 Perfluorooctyl Acids and Sulfonates by LC/MS/MS
ES1325018-001	14-NOV-2013 15:00	BQ_MW12_0.2	✓	✓	✓	✓		✓	
ES1325018-002	14-NOV-2013 15:00	BQ_MW07_0.2	✓		✓	✓			
ES1325018-003	14-NOV-2013 15:00	BQ_MW06_0.2	✓		✓	✓		✓	
ES1325018-004	14-NOV-2013 15:00	BQ_MW05_0.2	✓		✓	✓			
ES1325018-005	14-NOV-2013 15:00	BQ_MW04_0.2	✓		✓	✓		✓	
ES1325018-006	14-NOV-2013 15:00	BQ_MW03_0.2	✓		✓	✓			
ES1325018-007	14-NOV-2013 15:00	BQ_MW02_0.2	✓		✓	✓			
ES1325018-008	14-NOV-2013 15:00	BX_MW03_0.2			✓		✓	✓	✓
ES1325018-009	14-NOV-2013 15:00	BY_MW20_0.2			✓				
ES1325018-010	14-NOV-2013 15:00	BY_MW21_0.2			✓				
ES1325018-011	14-NOV-2013 15:00	BQ_MW14_0.2	✓			✓		✓	
ES1325018-012	14-NOV-2013 15:00	D01_141113_TC	✓			✓			

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-24 TRH/BTEX/PAH + Phenols	SOIL - S-27 TRH/BTEX/PAH/Phenols/6Metals
ES1325018-001	14-NOV-2013 15:00	BQ_MW12_0.2			✓
ES1325018-002	14-NOV-2013 15:00	BQ_MW07_0.2			✓
ES1325018-003	14-NOV-2013 15:00	BQ_MW06_0.2			✓
ES1325018-004	14-NOV-2013 15:00	BQ_MW05_0.2	✓	✓	
ES1325018-005	14-NOV-2013 15:00	BQ_MW04_0.2			✓
ES1325018-006	14-NOV-2013 15:00	BQ_MW03_0.2	✓	✓	
ES1325018-007	14-NOV-2013 15:00	BQ_MW02_0.2	✓	✓	
ES1325018-008	14-NOV-2013 15:00	BX_MW03_0.2			✓
ES1325018-009	14-NOV-2013 15:00	BY_MW20_0.2	✓	✓	
ES1325018-010	14-NOV-2013 15:00	BY_MW21_0.2	✓	✓	
ES1325018-011	14-NOV-2013 15:00	BQ_MW14_0.2			✓
ES1325018-012	14-NOV-2013 15:00	D01_141113_TC	✓	✓	



## Proactive Holding Time Report

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

### Requested Deliverables

#### JOHN EWING

- *AU Certificate of Analysis - NATA ( COA )	Email	john.ewing@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	john.ewing@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	john.ewing@erm.com
- Attachment - Report ( SUBCO )	Email	john.ewing@erm.com
- Chain of Custody (CoC) ( COC )	Email	john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	john.ewing@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	john.ewing@erm.com
- EDI Format - XTab ( XTAB )	Email	john.ewing@erm.com

#### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1325018</b>	Page	: 1 of 21
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: JOHN EWING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: john.ewing@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 18-NOV-2013
C-O-C number	: ----	Issue Date	: 29-NOV-2013
Sampler	: T.C	No. of samples received	: 12
Site	: BAYSWATER	No. of samples analysed	: 12
Quote number	: SY/794/13		

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



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**
- **EP231: PFOA & PFOS results are reported as an aggregate of linear and branched isomers.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

### Signatories

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

Signatories	Position	Accreditation Category
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW12_0.2	BQ_MW07_0.2	BQ_MW06_0.2	BQ_MW05_0.2	BQ_MW04_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-001	ES1325018-002	ES1325018-003	ES1325018-004	ES1325018-005
<b>EA150: Particle Sizing</b>								
+75µm	----	1	%	30	----	----	----	----
+150µm	----	1	%	13	----	----	----	----
+300µm	----	1	%	5	----	----	----	----
+425µm	----	1	%	4	----	----	----	----
+600µm	----	1	%	3	----	----	----	----
+1180µm	----	1	%	3	----	----	----	----
+2.36mm	----	1	%	2	----	----	----	----
+4.75mm	----	1	%	1	----	----	----	----
+9.5mm	----	1	%	<1	----	----	----	----
+19.0mm	----	1	%	<1	----	----	----	----
+37.5mm	----	1	%	<1	----	----	----	----
+75.0mm	----	1	%	<1	----	----	----	----
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	6.4	6.3	6.2	5.6	5.6
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	23.7	25.1	35.7	28.0	25.0
<b>EA150: Soil Classification based on Particle Size</b>								
Fines (<75 µm)	----	1	%	70	----	----	----	----
Sand (>75 µm)	----	1	%	28	----	----	----	----
Gravel (>2mm)	----	1	%	2	----	----	----	----
Cobbles (>6cm)	----	1	%	<1	----	----	----	----
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	572	583	446	466	400
APPROVED IDENTIFIER:	----	-	--	C.OWLER	C.OWLER	C.OWLER	C.OWLER	C.OWLER
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	7.1	10.2	7.5	14.8	12.8
Exchangeable Magnesium	----	0.1	meq/100g	4.1	6.9	5.2	3.1	4.9
Exchangeable Potassium	----	0.1	meq/100g	1.3	1.3	0.8	1.4	1.5
Exchangeable Sodium	----	0.1	meq/100g	<0.1	0.2	0.2	0.1	0.2
Cation Exchange Capacity	----	0.1	meq/100g	12.6	18.7	13.7	19.5	19.4
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	<0.1	<0.1	<0.1





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW12_0.2	BQ_MW07_0.2	BQ_MW06_0.2	BQ_MW05_0.2	BQ_MW04_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-001	ES1325018-002	ES1325018-003	ES1325018-004	ES1325018-005
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	7	24	14	20	11
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	15	18	13	15	13
Copper	7440-50-8	5	mg/kg	15	30	21	33	32
Lead	7439-92-1	5	mg/kg	12	20	18	20	21
Nickel	7440-02-0	2	mg/kg	10	22	12	19	12
Zinc	7440-66-6	5	mg/kg	50	76	63	55	62
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP004: Organic Matter</b>								
Organic Matter	----	0.5	%	2.5	----	----	----	----
Total Organic Carbon	----	0.5	%	1.4	----	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	<5	----	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW12_0.2	BQ_MW07_0.2	BQ_MW06_0.2	BQ_MW05_0.2	BQ_MW04_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-001	ES1325018-002	ES1325018-003	ES1325018-004	ES1325018-005
<b>EP074D: Fumigants - Continued</b>								
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	<5	----	<5
Chloromethane	74-87-3	5	mg/kg	<5	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg	<5	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg	<5	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	<5	----	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW12_0.2	BQ_MW07_0.2	BQ_MW06_0.2	BQ_MW05_0.2	BQ_MW04_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-001	ES1325018-002	ES1325018-003	ES1325018-004	ES1325018-005
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	----	<5	----	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW12_0.2	BQ_MW07_0.2	BQ_MW06_0.2	BQ_MW05_0.2	BQ_MW04_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-001	ES1325018-002	ES1325018-003	ES1325018-004	ES1325018-005
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW12_0.2	BQ_MW07_0.2	BQ_MW06_0.2	BQ_MW05_0.2	BQ_MW04_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-001	ES1325018-002	ES1325018-003	ES1325018-004	ES1325018-005
<b>EP080: BTEXN - Continued</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	87.4	----	90.4	----	91.8
Toluene-D8	2037-26-5	0.1	%	102	----	100	----	101
4-Bromofluorobenzene	460-00-4	0.1	%	93.4	----	92.2	----	93.7
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	76.8	75.5	93.5	93.3	93.8
2-Chlorophenol-D4	93951-73-6	0.1	%	92.9	76.5	98.2	98.4	100
2,4,6-Tribromophenol	118-79-6	0.1	%	81.1	71.3	85.5	88.1	91.0
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	97.1	85.5	100	100	101
Anthracene-d10	1719-06-8	0.1	%	87.8	80.1	91.5	90.5	90.9
4-Terphenyl-d14	1718-51-0	0.1	%	84.9	76.7	88.1	87.2	87.4
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	98.6	97.2	102	97.0	104
Toluene-D8	2037-26-5	0.1	%	110	101	108	95.2	109
4-Bromofluorobenzene	460-00-4	0.1	%	101	101	97.7	93.7	98.8



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW03_0.2	BQ_MW02_0.2	BX_MW03_0.2	BY_MW20_0.2	BY_MW21_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-006	ES1325018-007	ES1325018-008	ES1325018-009	ES1325018-010
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	5.8	5.5	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	25.4	22.8	34.0	31.8	25.8
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	560	449	490	555	635
APPROVED IDENTIFIER:	----	-	--	C.OWLER	C.OWLER	C.OWLER	C.OWLER	C.OWLER
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	10.9	4.4	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	9.6	1.6	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	0.8	0.5	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	1.4	<0.1	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	22.6	6.5	----	----	----
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	14	7	12	18	19
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	19	11	16	33	33
Copper	7440-50-8	5	mg/kg	26	8	19	17	21
Lead	7439-92-1	5	mg/kg	21	12	16	22	25
Nickel	7440-02-0	2	mg/kg	20	7	20	21	22
Zinc	7440-66-6	5	mg/kg	51	34	136	52	63
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	----	<0.5	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	<0.5	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	<0.5	----	----
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	<0.5	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	<0.5	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW03_0.2	BQ_MW02_0.2	BX_MW03_0.2	BY_MW20_0.2	BY_MW21_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-006	ES1325018-007	ES1325018-008	ES1325018-009	ES1325018-010
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>								
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	<0.5	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	<0.5	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	<0.5	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	<0.5	----	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	<5	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	<5	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	<5	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	<5	----	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	<0.5	----	----
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	----	<0.5	----	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	----	----	<0.5	----	----
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	----	<0.5	----	----
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	----	<0.5	----	----
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	----	<0.5	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	----	<5	----	----
Chloromethane	74-87-3	5	mg/kg	----	----	<5	----	----
Vinyl chloride	75-01-4	5	mg/kg	----	----	<5	----	----
Bromomethane	74-83-9	5	mg/kg	----	----	<5	----	----
Chloroethane	75-00-3	5	mg/kg	----	----	<5	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	<5	----	----
1,1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	<0.5	----	----
Iodomethane	74-88-4	0.5	mg/kg	----	----	<0.5	----	----
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	<0.5	----	----
1,1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	<0.5	----	----
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	<0.5	----	----
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	<0.5	----	----
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	<0.5	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	<0.5	----	----
1,2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	<0.5	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW03_0.2	BQ_MW02_0.2	BX_MW03_0.2	BY_MW20_0.2	BY_MW21_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-006	ES1325018-007	ES1325018-008	ES1325018-009	ES1325018-010
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
Trichloroethene	79-01-6	0.5	mg/kg	----	----	<0.5	----	----
Dibromomethane	74-95-3	0.5	mg/kg	----	----	<0.5	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	<0.5	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	<0.5	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	<0.5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	<0.5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	<0.5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	<0.5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	<0.5	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	<0.5	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	<0.5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	<0.5	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	<0.5	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	<0.5	----	----
Bromobenzene	108-86-1	0.5	mg/kg	----	----	<0.5	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	<0.5	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	<0.5	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	<0.5	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	<0.5	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	<0.5	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	<0.5	----	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	<0.5	----	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	----	<0.5	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	<0.5	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	<0.5	----	----
Bromoform	75-25-2	0.5	mg/kg	----	----	<0.5	----	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	----	<5	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW03_0.2	BQ_MW02_0.2	BX_MW03_0.2	BY_MW20_0.2	BY_MW21_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-006	ES1325018-007	ES1325018-008	ES1325018-009	ES1325018-010
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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 (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW03_0.2	BQ_MW02_0.2	BX_MW03_0.2	BY_MW20_0.2	BY_MW21_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-006	ES1325018-007	ES1325018-008	ES1325018-009	ES1325018-010
<b>EP080/071: Total Petroleum Hydrocarbons - Continued</b>								
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	----	----	<b>0.0041</b>	----	----
PFOA	335-67-1	0.0005	mg/kg	----	----	<0.0005	----	----
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	----	----	<0.005	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	<b>60.0</b>	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	<b>87.8</b>	----	----
Toluene-D8	2037-26-5	0.1	%	----	----	<b>96.3</b>	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	<b>95.5</b>	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW03_0.2	BQ_MW02_0.2	BX_MW03_0.2	BY_MW20_0.2	BY_MW21_0.2
				14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00	14-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325018-006	ES1325018-007	ES1325018-008	ES1325018-009	ES1325018-010
<b>EP075(SIM)S: Phenolic Compound Surrogates - Continued</b>								
Phenol-d6	13127-88-3	0.1	%	91.1	97.0	91.5	75.7	76.9
2-Chlorophenol-D4	93951-73-6	0.1	%	99.8	99.7	96.2	99.2	99.2
2,4,6-Tribromophenol	118-79-6	0.1	%	87.6	89.6	88.7	82.2	81.0
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	102	101	100	92.8	99.6
Anthracene-d10	1719-06-8	0.1	%	92.2	91.5	91.4	80.9	80.9
4-Terphenyl-d14	1718-51-0	0.1	%	89.0	88.2	87.5	80.3	80.7
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	97.4	92.8	98.6	96.0	96.9
Toluene-D8	2037-26-5	0.1	%	93.4	91.2	104	89.0	98.2
4-Bromofluorobenzene	460-00-4	0.1	%	96.0	93.0	99.6	92.6	99.4



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BQ_MW14_0.2	D01_141113_TC	---	---	---
				14-NOV-2013 15:00	14-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325018-011	ES1325018-012	---	---	---
<b>EA002 : pH (Soils)</b>								
pH Value	---	0.1	pH Unit	5.7	5.9	---	---	---
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	---	1.0	%	19.9	23.0	---	---	---
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	---	0.1	meq/100g	7.5	9.1	---	---	---
Exchangeable Magnesium	---	0.1	meq/100g	3.6	6.2	---	---	---
Exchangeable Potassium	---	0.1	meq/100g	0.2	0.9	---	---	---
Exchangeable Sodium	---	0.1	meq/100g	0.2	0.2	---	---	---
Cation Exchange Capacity	---	0.1	meq/100g	11.6	16.3	---	---	---
Exchangeable Aluminium	---	0.1	meq/100g	<0.1	<0.1	---	---	---
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	5	13	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	<1	---	---	---
Chromium	7440-47-3	2	mg/kg	17	13	---	---	---
Copper	7440-50-8	5	mg/kg	14	21	---	---	---
Lead	7439-92-1	5	mg/kg	10	17	---	---	---
Nickel	7440-02-0	2	mg/kg	15	13	---	---	---
Zinc	7440-66-6	5	mg/kg	47	64	---	---	---
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	---	---	---
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	---	---	---	---
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	---	---	---	---
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	---	---	---	---
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	---	---	---	---
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	---	---	---	---
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	---	---	---	---
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	---	---	---	---
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	---	---	---	---
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	---	---	---	---
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	---	---	---	---
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	---	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BQ_MW14_0.2	D01_141113_TC	---	---	---
				14-NOV-2013 15:00	14-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325018-011	ES1325018-012	---	---	---
<b>EP074B: Oxygenated Compounds - Continued</b>								
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	---	---	---	---
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	---	---	---	---
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	---	---	---	---
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	---	---	---	---
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	---	---	---	---
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	---	---	---	---
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	---	---	---	---
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	---	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	---	---	---	---
Chloromethane	74-87-3	5	mg/kg	<5	---	---	---	---
Vinyl chloride	75-01-4	5	mg/kg	<5	---	---	---	---
Bromomethane	74-83-9	5	mg/kg	<5	---	---	---	---
Chloroethane	75-00-3	5	mg/kg	<5	---	---	---	---
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	---	---	---	---
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	---	---	---	---
Iodomethane	74-88-4	0.5	mg/kg	<0.5	---	---	---	---
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	---	---	---	---
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	---	---	---	---
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	---	---	---	---
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	---	---	---	---
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	---	---	---	---
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	---	---	---	---
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	---	---	---	---
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	---	---	---	---
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	---	---	---	---
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	---	---	---	---
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	---	---	---	---
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	---	---	---	---
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	---	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BQ_MW14_0.2	D01_141113_TC	---	---	---
				14-NOV-2013 15:00	14-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325018-011	ES1325018-012	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	---	---	---	---
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	---	---	---	---
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	---	---	---	---
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	---	---	---	---
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	---	---	---	---
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	---	---	---	---
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	---	---	---	---
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	---	---	---	---
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	---	---	---	---
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	---	---	---	---
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	---	---	---	---
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	---	---	---	---
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	---	---	---	---
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	---	---	---	---
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	---	---	---	---
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	---	---	---	---
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	---	---	---	---
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	---	---	---	---
Bromoform	75-25-2	0.5	mg/kg	<0.5	---	---	---	---
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	---	---	---	---
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	---	---	---
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	---	---	---
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	---	---	---
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	---	---	---
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	---	---	---
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	---	---	---
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	---	---	---
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	---	---	---
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BQ_MW14_0.2	D01_141113_TC	---	---	---
				14-NOV-2013 15:00	14-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325018-011	ES1325018-012	---	---	---
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	---	---	---
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	---	---	---
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	---	---	---
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	---	---	---
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	---	---	---
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	---	---	---
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	---	---	---
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	---	---	---
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	---	---	---
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	---	---	---
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	---	---	---
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	---	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	---	---	---
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	---	---	---
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	---	---	---
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	---	---	---
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	---	---	---
C10 - C14 Fraction	----	50	mg/kg	<50	<50	---	---	---
C15 - C28 Fraction	----	100	mg/kg	<100	<100	---	---	---
C29 - C36 Fraction	----	100	mg/kg	<100	<100	---	---	---
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	---	---	---
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	---	---	---



**Analytical Results**

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BQ_MW14_0.2	D01_141113_TC	---	---	---
Client sampling date / time				14-NOV-2013 15:00	14-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325018-011	ES1325018-012	---	---	---

**EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued**

>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	---	---	---
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	---	---	---
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	---	---	---
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	---	---	---

**EP080: BTEXN**

Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	---	---	---
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	---	---	---
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	---	---	---
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	---	---	---
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	---	---	---
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	---	---	---
Naphthalene	91-20-3	1	mg/kg	<1	<1	---	---	---

**EP074S: VOC Surrogates**

1,2-Dichloroethane-D4	17060-07-0	0.1	%	85.1	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	92.5	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	88.8	----	----	----	----

**EP075(SIM)S: Phenolic Compound Surrogates**

Phenol-d6	13127-88-3	0.1	%	75.6	74.4	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	98.5	104	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	79.3	83.7	----	----	----

**EP075(SIM)T: PAH Surrogates**

2-Fluorobiphenyl	321-60-8	0.1	%	114	103	----	----	----
Anthracene-d10	1719-06-8	0.1	%	78.3	82.1	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	78.0	82.4	----	----	----

**EP080S: TPH(V)/BTEX Surrogates**

1,2-Dichloroethane-D4	17060-07-0	0.1	%	96.0	94.4	----	----	----
Toluene-D8	2037-26-5	0.1	%	99.4	90.7	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	91.1	88.3	----	----	----





## Analytical Results

### Descriptive Results

Sub-Matrix: **SOIL**

<i>Method: Compound</i>	<i>Client sample ID - Client sampling date / time</i>	<i>Analytical Results</i>
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BQ_MW12_0.2 - 14-NOV-2013 15:00	Mid red-brown clay soil with some vegetation
EA200: Description	BQ_MW07_0.2 - 14-NOV-2013 15:00	Mid brown clay soil with some small red rocks plus some vegetation
EA200: Description	BQ_MW06_0.2 - 14-NOV-2013 15:00	Mid brown clay soil with some small red rocks plus some vegetation
EA200: Description	BQ_MW05_0.2 - 14-NOV-2013 15:00	Mid brown clay soil with some small red rocks plus some vegetation
EA200: Description	BQ_MW04_0.2 - 14-NOV-2013 15:00	Mid brown clay soil with some vegetation
EA200: Description	BQ_MW03_0.2 - 14-NOV-2013 15:00	Mid brown clay soil with some red rocks and brick debris plus some vegetation
EA200: Description	BQ_MW02_0.2 - 14-NOV-2013 15:00	Mid brown clay soil with some vegetation
EA200: Description	BX_MW03_0.2 - 14-NOV-2013 15:00	Mid brown clay soil with some vegetation
EA200: Description	BY_MW20_0.2 - 14-NOV-2013 15:00	Mid brown clay soil with some vegetation
EA200: Description	BY_MW21_0.2 - 14-NOV-2013 15:00	Mid brown clay soil with some vegetation



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

# Certificate of Analysis

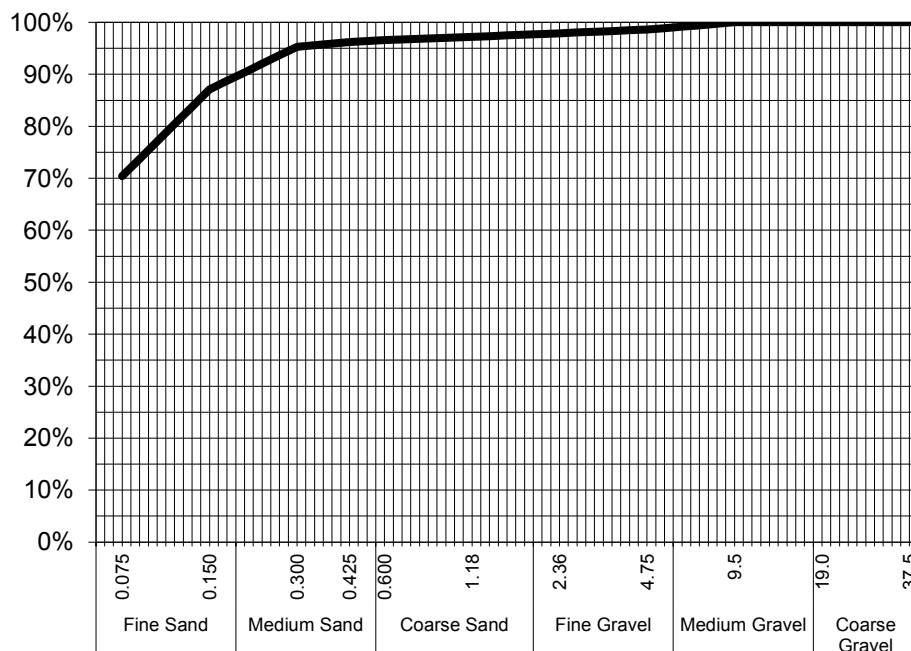
ALS Laboratory Group Pty Ltd  
5 Rosegum Road  
Warabrook, NSW 2304  
pH 02 4968 9433  
fax 02 4968 0349  
samples.newcastle@alsenviro.com

**ALS Environmental**  
**Newcastle, NSW**



**CLIENT:** John Ewing **DATE REPORTED:** 29-Nov-2013  
**COMPANY:** Enviro Resources Management **DATE RECEIVED:** 18-Nov-2013  
**ADDRESS:** Ground Floor **REPORT NO:** ES1325018-001 / PSD  
33 Saunders Street, Pyrmont  
NSW 2009  
**PROJECT:** Project Symphony **SAMPLE ID:** BQ\_MW12\_0.2

## Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	99%
2.36	98%
1.18	97%
0.600	97%
0.425	96%
0.300	95%
0.150	87%
0.075	70%

Samples analysed as received.

## Sample Comments:

**Analysed:** 28-Nov-13

**Loss on Pretreatment:** NA

**Limit of Reporting:** 1%

**Sample Description:** Fines and sand

**Test Method:** AS1289.3.6.1

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**Hamish Murray**  
Laboratory Supervisor, Newcastle  
*Authorised Signatory*

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: ES1325018</b>	Page	: 1 of 25
<b>Client</b>	<b>: ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
<b>Contact</b>	<b>: JOHN EWING</b>	Contact	: Barbara Hanna
<b>Address</b>	<b>: GROUND FLOOR</b> 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
<b>E-mail</b>	<b>: john.ewing@erm.com</b>	E-mail	: Barbara.Hanna@alsglobal.com
<b>Telephone</b>	<b>: +61 02 8584 8888</b>	Telephone	: +61 2 8784 8555
<b>Facsimile</b>	<b>: +61 02 8584 8800</b>	Facsimile	: +61 2 8784 8555
<b>Project</b>	<b>: PROJECT SYMPHONY</b>	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Site</b>	<b>: BAYSWATER</b>	Date Samples Received	: 18-NOV-2013
<b>C-O-C number</b>	<b>: ----</b>	Issue Date	: 29-NOV-2013
<b>Sampler</b>	<b>: T.C</b>	No. of samples received	: 12
<b>Order number</b>	<b>: ----</b>	No. of samples analysed	: 12
<b>Quote number</b>	<b>: SY/794/13</b>		

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



## 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



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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>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Raymond Commodor	Instrument Chemist	Sydney Inorganics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



### 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

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3168503)</b>									
EB1328193-059	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.7	7.5	2.8	0% - 20%
EB1328193-069	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.4	5.4	0.0	0% - 20%
<b>EA002 : pH (Soils) (QC Lot: 3168507)</b>									
ES1325018-007	BQ_MW02_0.2	EA002: pH Value	----	0.1	pH Unit	5.5	5.5	0.0	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3168510)</b>									
ES1325015-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	17.3	16.2	6.7	0% - 50%
ES1325015-019	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	19.3	21.1	9.1	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3168511)</b>									
ES1325018-009	BY_MW20_0.2	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	31.8	36.3	13.2	0% - 20%
ES1325019-009	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	21.8	20.2	7.7	0% - 20%
<b>ED007: Exchangeable Cations (QC Lot: 3173305)</b>									
ES1324837-002	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.0	14.2	1.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	6.9	7.0	1.7	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.6	0.7	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	21.8	22.2	1.8	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1325017-001	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.2	14.5	2.3	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.6	7.6	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.7	0.7	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.4	0.4	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	23.0	23.2	1.2	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>ED007: Exchangeable Cations (QC Lot: 3173307)</b>									
ES1325018-012	D01_141113_TC	ED007: Exchangeable Calcium	----	0.1	meq/100g	9.1	9.0	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	6.2	6.2	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.9	0.9	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	16.3	16.3	0.0	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3168398)</b>									
ES1325015-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	16	16	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	19	19	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	13	9	33.9	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3168398) - continued</b>									
ES1325015-001	Anonymous	EG005T: Copper	7440-50-8	5	mg/kg	25	20	22.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	16	16.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	83	62	29.7	0% - 50%
ES1325015-017	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	18	24.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	4	43.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	9	59.9	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	14	17.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	8	12.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	15	19	22.7	No Limit
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3168400)</b>									
ES1325018-003	BQ_MW06_0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	13	13	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	12	14	15.5	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	14	16	13.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	21	23	8.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	18	18	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	63	66	5.6	0% - 50%
ES1325019-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	14	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	17	19	11.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	18	20	12.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	15	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	66	66	0.0	0% - 50%
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3168399)</b>									
ES1325015-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325015-017	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3168401)</b>									
ES1325018-003	BQ_MW06_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325019-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP004: Organic Matter (QC Lot: 3171699)</b>									
ES1325018-001	BQ_MW12_0.2	EP004: Organic Matter	----	0.5	%	2.5	2.3	7.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	1.4	1.4	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3169636)</b>									
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325002-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3166955)</b>									
ES1325015-006	Anonymous	EP074: Styrene	100-42-5	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 (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3166955) - continued</b>									
ES1325015-006	Anonymous	EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325018-011	BQ_MW14_0.2	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074B: Oxygenated Compounds (QC Lot: 3166955)</b>									
ES1325015-006	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
ES1325018-011	BQ_MW14_0.2	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3166955)</b>									
ES1325015-006	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325018-011	BQ_MW14_0.2	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3166955)</b>									
ES1325015-006	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325018-011	BQ_MW14_0.2	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166955)</b>									
ES1325015-006	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
ES1325018-011	BQ_MW14_0.2	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3166955) - continued</b>									
ES1325018-011	BQ_MW14_0.2	EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3166955)</b>									
ES1325015-006	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325018-011	BQ_MW14_0.2	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074G: Trihalomethanes (QC Lot: 3166955)</b>									
ES1325015-006	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	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 (%)
<b>EP074G: Trihalomethanes (QC Lot: 3166955) - continued</b>									
ES1325018-011	BQ_MW14_0.2	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3166955)</b>									
ES1325015-006	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
ES1325018-011	BQ_MW14_0.2	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167020)</b>									
ES1325015-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES1325015-017	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167871)</b>									
ES1324840-007	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3167871) - continued</b>									
ES1324840-007	Anonymous	EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES1324841-006	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167020)</b>							
ES1325015-001	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325015-017	Anonymous	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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167020) - continued</b>									
ES1325015-017	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167871)</b>									
ES1324840-007	Anonymous	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		
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1324841-006	Anonymous	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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3167871) - continued</b>									
ES1324841-006	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3166954)</b>									
ES1325015-006	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325018-011	BQ_MW14_0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3166958)</b>									
ES1325018-002	BQ_MW07_0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325019-004	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3167019)</b>									
ES1325015-001	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
ES1325015-017	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
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3167870)</b>									
ES1324840-007	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
ES1324841-006	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166954)</b>									
ES1325015-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1325018-011	BQ_MW14_0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166958)</b>									



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 (%)	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3166958) - continued</b>										
ES1325018-002	BQ_MW07_0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1325019-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3167019)</b>										
ES1325015-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
ES1325015-017	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3167870)</b>										
ES1324840-007	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
ES1324841-006	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3166954)</b>										
ES1325015-006	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	
ES1325018-011	BQ_MW14_0.2	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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							
ES1325018-011	BQ_MW14_0.2	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3166958)</b>										
ES1325018-002	BQ_MW07_0.2	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	
ES1325018-002	BQ_MW07_0.2	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit	
ES1325019-004	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	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 (%)	
<b>EP080: BTEXN (QC Lot: 3166958) - continued</b>										
ES1325019-004	Anonymous	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	
	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit		
<b>EP231: Perfluorinated Compounds (QC Lot: 3167772)</b>										
EB1328186-009	Anonymous	EP231: PFOS	1763-23-1	0.0005	mg/kg	0.0065	0.0074	13.0	0% - 50%	
		EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	<0.005	0.0	No Limit	
EB1328186-011	Anonymous	EP231: PFOS	1763-23-1	0.0005	mg/kg	4.79	4.30	10.7	0% - 20%	
		EP231: PFOA	335-67-1	0.0005	mg/kg	0.0084	0.0083	0.0	0% - 50%	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	0.102	0.084	18.9	0% - 20%	





### 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

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>ED007: Exchangeable Cations (QCLot: 3173305)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>ED007: Exchangeable Cations (QCLot: 3173307)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	112	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	100	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	121	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	110	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	104	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	113	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168400)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	117	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	125	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	108	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	104	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	114	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	110	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168399)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	97.9	66	112	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168401)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	96.1	66	112	
<b>EP004: Organic Matter (QCLot: 3171699)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP004: Organic Matter (QCLot: 3171699) - continued</b>									
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	95.7	85	105	
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	95.5	84	106	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	84.8	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3166955)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	97.2	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	117	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	116	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	117	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	121	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	114	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	116	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	124	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	125	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3166955)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	101	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	79.2	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	87.9	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	92.5	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3166955)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	118	54	126	
<b>EP074D: Fumigants (QCLot: 3166955)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	106	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	97.2	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	88.1	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	85.7	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	97.0	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166955)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	59.2	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	87.9	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	90.0	43	147	
		5	mg/kg	<5	----	----	----	----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166955) - continued</b>									
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	105	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	121	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	118	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	120	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	112	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	99.8	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	104	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	98.7	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	104	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	102	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	103	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	95.7	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	107	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	91.9	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	103	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	96.1	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	108	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	98.5	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	89.7	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	96.3	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	95.3	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	82.0	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	96.3	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	99.8	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	# 137	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166955)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	111	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	105	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	113	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	118	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	113	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	116	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	109	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	116	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	108	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3166955)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074G: Trihalomethanes (QCLot: 3166955) - continued</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	97.2	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	93.6	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	104	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	106	60	126	
<b>EP074H: Naphthalene (QCLot: 3166955)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	98.4	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167020)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	96.0	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	97.5	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	100	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	108	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	74.7	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	101	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	87.2	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	92.7	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	88.1	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	76.9	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	82.0	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	9.4	3.9	57	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167871)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	77.7	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	89.0	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	92.5	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	94.4	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	80.2	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	81.0	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	78.1	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	87.3	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	80.9	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	110	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	98.6	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	20.0	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167020)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	104	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	112	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167020) - continued</b>									
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	109	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	108	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	108	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	110	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	102	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	108	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	96.7	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	103	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	90.0	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	92.1	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	86.0	72.4	114	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167871)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	93.4	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	88.2	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	95.0	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	94.6	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	96.3	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	95.2	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	95.6	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	98.0	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	84.5	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	96.6	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	82.2	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	91.9	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	94.1	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	85.2	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	84.0	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	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166954)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	101	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166958)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	91.4	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167019)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	114	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	117	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	106	64	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167870)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167870) - continued</b>								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	94.2	71	131
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	92.5	74	138
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	90.1	64	128
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166954)</b>								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	102	68.4	128
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166958)</b>								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	89.6	68.4	128
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167019)</b>								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	121	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	110	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
		50	mg/kg	----	150 mg/kg	103	63	131
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167870)</b>								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	96.7	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	91.0	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
		50	mg/kg	----	150 mg/kg	75.1	63	131
<b>EP080: BTEXN (QCLot: 3166954)</b>								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	92.0	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	99.5	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	101	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	102	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	99.8	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	88.7	62	138
<b>EP080: BTEXN (QCLot: 3166958)</b>								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	84.8	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	83.9	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	84.7	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	85.9	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	89.0	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	83.3	62	138
<b>EP231: Perfluorinated Compounds (QCLot: 3167772)</b>								
EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	95.3	54	146
EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	91.1	54	134
EP231: 6:2 Fluorotelomer Sulfonate (6:2 Fts)	27619-97-2	0.005	mg/kg	<0.005	0.0125 mg/kg	102	56	138



## 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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)	
						Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398)</b>							
ES1325015-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	96.3	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	104	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	97.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	87.8	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168400)</b>							
ES1325018-003	BQ_MW06_0.2	EG005T: Arsenic	7440-38-2	50 mg/kg	105	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	106	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	100	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	99.2	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168399)</b>							
ES1325015-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	109	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168401)</b>							
ES1325018-003	BQ_MW06_0.2	EG035T: Mercury	7439-97-6	5 mg/kg	111	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>							
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	81.6	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166955)</b>							
ES1325015-006	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	117	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.5	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166955)</b>							
ES1325015-006	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	98.0	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167020)</b>							
ES1325015-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	96.9	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.8	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	73.2	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	87.4	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	37.7	20	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167871)</b>							
ES1324840-007	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	77.7	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.9	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	77.0	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	75.4	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	45.3	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167020)</b>							
ES1325015-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	103	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	106	70	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167871)</b>							
ES1324840-007	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	93.1	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.7	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166954)</b>							
ES1325015-006	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.2	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166958)</b>							
ES1325018-002	BQ_MW07_0.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	112	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167019)</b>							
ES1325015-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	84.9	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	85.3	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	70.4	52	132
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167870)</b>							
ES1324840-007	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	82.6	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	93.0	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	84.4	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166954)</b>							
ES1325015-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	97.8	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166958)</b>							
ES1325018-002	BQ_MW07_0.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	107	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167019)</b>							
ES1325015-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	109	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.4	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	57.8	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167870)</b>							
ES1324840-007	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	110	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	89.7	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	68.5	52	132





Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Recovery Limits (%)		
				Concentration	MS	Low	High	
<b>EP080: BTEXN (QCLot: 3166954)</b>								
ES1325015-006	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	84.7	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	93.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	96.1	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	94.5	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.3	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	82.8	70	130		
<b>EP080: BTEXN (QCLot: 3166958)</b>								
ES1325018-002	BQ_MW07_0.2	EP080: Benzene	71-43-2	2.5 mg/kg	82.7	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	82.8	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	88.6	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.8	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.7	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	89.5	70	130		
<b>EP231: Perfluorinated Compounds (QCLot: 3167772)</b>								
EB1328186-009	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	73.3	54	146	
		EP231: PFOA	335-67-1	0.0025 mg/kg	76.5	54	134	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FTS)	27619-97-2	0.0125 mg/kg	88.4	56	138	

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166954)</b>										
ES1325015-006	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.2	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166954)</b>										
ES1325015-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	97.8	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3166954)</b>										
ES1325015-006	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	84.7	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	93.9	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	96.1	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	94.5	----	70	130	----	----
			106-42-3							
	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.3	----	70	130	----	----	



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP080: BTEXN (QCLot: 3166954) - continued</b>										
ES1325015-006	Anonymous	EP080: Naphthalene	91-20-3	2.5 mg/kg	82.8	----	70	130	----	----
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3166955)</b>										
ES1325015-006	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	117	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.5	----	70	130	----	----
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3166955)</b>										
ES1325015-006	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	98.0	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3166958)</b>										
ES1325018-002	BQ_MW07_0.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	112	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3166958)</b>										
ES1325018-002	BQ_MW07_0.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	107	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3166958)</b>										
ES1325018-002	BQ_MW07_0.2	EP080: Benzene	71-43-2	2.5 mg/kg	82.7	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	82.8	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	88.6	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.8	----	70	130	----	----
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.7	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	89.5	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167019)</b>										
ES1325015-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	84.9	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	85.3	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	70.4	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167019)</b>										
ES1325015-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	109	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.4	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	57.8	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167020)</b>										
ES1325015-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	96.9	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.8	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	73.2	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	87.4	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	37.7	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167020)</b>										
ES1325015-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	103	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	106	----	70	130	----	----
<b>EP231: Perfluorinated Compounds (QCLot: 3167772)</b>										
EB1328186-009	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	73.3	----	54	146	----	----



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP231: Perfluorinated Compounds (QCLot: 3167772) - continued</b>										
EB1328186-009	Anonymous	EP231: PFOA	335-67-1	0.0025 mg/kg	76.5	----	54	134	----	----
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	88.4	----	56	138	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3167870)</b>										
ES1324840-007	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	82.6	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	93.0	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	84.4	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3167870)</b>										
ES1324840-007	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	110	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	89.7	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	68.5	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3167871)</b>										
ES1324840-007	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	77.7	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.9	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	77.0	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	75.4	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	45.3	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3167871)</b>										
ES1324840-007	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	93.1	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.7	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168398)</b>										
ES1325015-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	96.3	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	104	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	104	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	97.8	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	104	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	87.8	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168399)</b>										
ES1325015-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	109	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3168400)</b>										
ES1325018-003	BQ_MW06_0.2	EG005T: Arsenic	7440-38-2	50 mg/kg	105	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	103	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	106	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	100	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	104	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	99.2	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168401)</b>										

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 Work Order : ES1325018  
 Client : ENVIRO RESOURCES MANAGEMENT  
 Project : PROJECT SYMPHONY



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3168401) - continued</b>										
ES1325018-003	BQ_MW06_0.2	EG035T: Mercury	7439-97-6	5 mg/kg	111	----	70	130	----	----
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3169636)</b>										
ES1325240-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	81.6	----	70	130	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325018</b>	Page	: 1 of 10
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: JOHN EWING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: john.ewing@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 18-NOV-2013
C-O-C number	: ----	Issue Date	: 29-NOV-2013
Sampler	: T.C	No. of samples received	: 12
Order number	: ----	No. of samples analysed	: 12
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA002 : pH (Soils)</b>								
<b>Soil Glass Jar - Unpreserved (EA002)</b>								
BQ_MW12_0.2, BQ_MW06_0.2, BQ_MW04_0.2, BQ_MW02_0.2, D01_141113_TC	BQ_MW07_0.2, BQ_MW05_0.2, BQ_MW03_0.2, BQ_MW14_0.2,	14-NOV-2013	21-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EA055: Moisture Content</b>								
<b>Soil Glass Jar - Unpreserved (EA055-103)</b>								
BQ_MW12_0.2, BQ_MW06_0.2, BQ_MW04_0.2, BQ_MW02_0.2, BY_MW20_0.2, BQ_MW14_0.2,	BQ_MW07_0.2, BQ_MW05_0.2, BQ_MW03_0.2, BX_MW03_0.2, BY_MW21_0.2, D01_141113_TC	14-NOV-2013	----	----	----	20-NOV-2013	28-NOV-2013	✓
<b>EA150: Particle Sizing</b>								
<b>Snap Lock Bag (EA150)</b>								
BQ_MW12_0.2		14-NOV-2013	---	13-MAY-2014	----	29-NOV-2013	28-MAY-2014	✓
<b>EA150: Soil Classification based on Particle Size</b>								
<b>Snap Lock Bag (EA150)</b>								
BQ_MW12_0.2		14-NOV-2013	---	13-MAY-2014	----	29-NOV-2013	28-MAY-2014	✓
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
<b>Snap Lock Bag (EA200)</b>								
BQ_MW12_0.2, BQ_MW06_0.2, BQ_MW04_0.2, BQ_MW02_0.2, BY_MW20_0.2,	BQ_MW07_0.2, BQ_MW05_0.2, BQ_MW03_0.2, BX_MW03_0.2, BY_MW21_0.2	14-NOV-2013	---	13-MAY-2014	----	29-NOV-2013	28-MAY-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED007: Exchangeable Cations</b>								
<b>Soil Glass Jar - Unpreserved (ED007)</b> BQ_MW12_0.2, BQ_MW06_0.2, BQ_MW04_0.2, BQ_MW02_0.2, D01_141113_TC	BQ_MW07_0.2, BQ_MW05_0.2, BQ_MW03_0.2, BQ_MW14_0.2	14-NOV-2013	25-NOV-2013	12-DEC-2013	✓	25-NOV-2013	12-DEC-2013	✓
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BQ_MW12_0.2, BQ_MW06_0.2, BQ_MW04_0.2, BQ_MW02_0.2, BY_MW20_0.2, BQ_MW14_0.2	BQ_MW07_0.2, BQ_MW05_0.2, BQ_MW03_0.2, BX_MW03_0.2, BY_MW21_0.2, D01_141113_TC	14-NOV-2013	20-NOV-2013	13-MAY-2014	✓	21-NOV-2013	13-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BQ_MW12_0.2, BQ_MW06_0.2, BQ_MW04_0.2, BQ_MW02_0.2, BY_MW20_0.2, BQ_MW14_0.2	BQ_MW07_0.2, BQ_MW05_0.2, BQ_MW03_0.2, BX_MW03_0.2, BY_MW21_0.2, D01_141113_TC	14-NOV-2013	20-NOV-2013	12-DEC-2013	✓	22-NOV-2013	12-DEC-2013	✓
<b>EP004: Organic Matter</b>								
<b>Soil Glass Jar - Unpreserved (EP004)</b> BQ_MW12_0.2		14-NOV-2013	25-NOV-2013	12-DEC-2013	✓	25-NOV-2013	12-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
<b>Soil Glass Jar - Unpreserved (EP066)</b> BX_MW03_0.2		14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	22-NOV-2013	31-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>Soil Glass Jar - Unpreserved (EP071)</b> BQ_MW12_0.2, BQ_MW06_0.2, BQ_MW04_0.2, BQ_MW02_0.2	BQ_MW07_0.2, BQ_MW05_0.2, BQ_MW03_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	28-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP071)</b> BY_MW20_0.2, BQ_MW14_0.2	BY_MW21_0.2, D01_141113_TC	14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓



Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074D: Fumigants</b>								
Soil Glass Jar - Unpreserved (EP074) BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074F: Halogenated Aromatic Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Soil Glass Jar - Unpreserved (EP074) BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074H: Naphthalene</b>								
Soil Glass Jar - Unpreserved (EP074) BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074B: Oxygenated Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074C: Sulfonated Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓
<b>EP074G: Trihalomethanes</b>								
Soil Glass Jar - Unpreserved (EP074) BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	21-NOV-2013	✓	21-NOV-2013	21-NOV-2013	✓





Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP075(SIM)A: Phenolic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BQ_MW12_0.2, BQ_MW06_0.2, BQ_MW04_0.2, BQ_MW02_0.2, BX_MW03_0.2	BQ_MW07_0.2, BQ_MW05_0.2, BQ_MW03_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	28-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BY_MW20_0.2, BQ_MW14_0.2	BY_MW21_0.2, D01_141113_TC	14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BQ_MW12_0.2, BQ_MW06_0.2, BQ_MW04_0.2, BQ_MW02_0.2, BX_MW03_0.2	BQ_MW07_0.2, BQ_MW05_0.2, BQ_MW03_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	28-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BY_MW20_0.2, BQ_MW14_0.2	BY_MW21_0.2, D01_141113_TC	14-NOV-2013	21-NOV-2013	28-NOV-2013	✓	21-NOV-2013	31-DEC-2013	✓
<b>EP080: BTEXN</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	28-NOV-2013	✓	21-NOV-2013	28-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BQ_MW07_0.2, BQ_MW03_0.2, BY_MW20_0.2, D01_141113_TC	BQ_MW05_0.2, BQ_MW02_0.2, BY_MW21_0.2	14-NOV-2013	20-NOV-2013	28-NOV-2013	✓	22-NOV-2013	28-NOV-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BQ_MW12_0.2, BQ_MW04_0.2, BQ_MW14_0.2	BQ_MW06_0.2, BX_MW03_0.2	14-NOV-2013	20-NOV-2013	28-NOV-2013	✓	21-NOV-2013	28-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BQ_MW07_0.2, BQ_MW03_0.2, BY_MW20_0.2, D01_141113_TC	BQ_MW05_0.2, BQ_MW02_0.2, BY_MW21_0.2	14-NOV-2013	20-NOV-2013	28-NOV-2013	✓	22-NOV-2013	28-NOV-2013	✓
<b>EP231: Perfluorinated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP231)</b> BX_MW03_0.2		14-NOV-2013	21-NOV-2013	13-MAY-2014	✓	21-NOV-2013	31-DEC-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Exchangeable Cations	ED007	3	23	13.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	4	25.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	4	38	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	2	15	13.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	3	25	12.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	38	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	4	39	10.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	11	18.2	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Exchangeable Cations	ED007	2	23	8.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Exchangeable Cations	ED007	2	23	8.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Organic Matter	EP004	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
PAH/Phenols (SIM)	EP075(SIM)	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	39	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Particle Size Analysis (Sieving)	EA150	SOIL	Particle Size Analysis by Sieving according to AS1289.3.6.1 - 2009
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Organic Matter	EP004	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
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 (2013) Schedule B(3) (Method 504)
TPH - Semivolatle 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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) Schedule B(3) (Method 501)
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	SOIL	In-House. A portion of soil is soaked in sodium hydroxide followed by extraction with methanol. The extract is neutralised with HCl and an aliquot taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI Negative Mode using MRM.



Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) Schedule B(3) (Method 202)
Organic Matter	EP004-PR	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
Sample Extraction for Perfluoroalkyl Compounds	EP231-PR	SOIL	In-House
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 <sub>2</sub> SO <sub>4</sub> 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 <sub>2</sub> SO <sub>4</sub> 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
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP074E: Halogenated Aliphatic Compounds	3779313-011	----	Hexachlorobutadiene	87-68-3	137 %	48-136%	Recovery greater than upper 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

- 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.



**CHAIN OF CUSTODY**

ALS Laboratory  
please tick →

**DADELADE 21**, Burns Road, Pocolo, NSW 2206  
Ph: 08 8559 0990 E: adelaide@alsglobal.com

**BRISBANE 32**, Sheild Street, Stafford QLD 4053  
Ph: 07 3243 7222 E: brisbane@alsglobal.com

**GLADSTONE 44**, Callendaron Drive, Clinton QLD 4680  
Ph: 07 7471 5800 E: gladstone@alsglobal.com

**DMACKAY 78**, Harbour Road, Mackay QLD 4740  
Ph: 07 4944 0177 E: dmackay@alsglobal.com

**DELBOURNE 24**, Watral Road, Springside VIC 3171  
Ph: 03 8549 0603 E: delborne@alsglobal.com

**GLADSTONE 44**, Callendaron Drive, Clinton QLD 4680  
Ph: 07 7471 5800 E: gladstone@alsglobal.com

**CINERVA 175**, Ross Gully Road, Warrook NSW 2304  
Ph: 02 4981 6433 E: cinerwa\_newcastle@alsglobal.com

**CINOWRA 413**, Ghery Place, North Nowra NSW 2541  
Ph: 02 42423 2063 E: cinowra@alsglobal.com

**OPERTH 10**, Had Way, Malaga WA 6090  
Ph: 08 9209 7655 E: samples\_perth@alsglobal.com

**DESYNEY 277**, 209 Woodpark Road, Smithfield NSW 2164  
Ph: 02 9764 8555 E: samples\_sydney@alsglobal.com

**LITOWNSVILLE 14-15**, Desma Court, Bohle QLD 4818  
Ph: 07 4788 0600 E: litownsville\_environmentals@alsglobal.com

**DWOLLOONSUNG 60**, Kenny Street, Wollongong NSW 2500  
Ph: 02 4225 9125 E: portlenona@alsglobal.com

**FOR LABORATORY USE ONLY (GIGS)**

Customer Ref: *52*

Project: *Project Symphony*

Random Sample Temperature on Receipt: *18.50*

Other Remarks: *52*

**TURNAROUND REQUIREMENTS:**

Standard TAT (List due date):  Non Standard or urgent TAT (List due date):

(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

ALS QUOTE NO.: SY794/13

SITE: *BAYSWATER/HEBBERT RIVERSIDE*

**RECEIVED BY:** *SM*

**DATE/TIME:** *25/11/13 18:50*

**RELINQUISHED BY:** *SM*

**DATE/TIME:** *25/11/13 19:00*

**CLIENT:** *ERM*

**OFFICE:** *Sydney*

**PROJECT:** *Project Symphony*

**ORDER NUMBER:** *0224193*

**CONTACT PH:**

**PROJECT MANAGER:** *Joe Ferrand*

**SAMPLER:** *Winward Gorms*

**SAMPLER MOBILE:** *0401 565 598*

**EDD FORMAT (for default):**

**RELINQUISHED BY:** *Winward Gorms*

**DATE/TIME:** *21/11/2013 = 7:00PM*

**COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:**

*COC emailed to ALS? (YES/NO)*

*Email Reports to (will default to PM if no other addresses are listed): Symphony.Nagoran@erm.com*

*Email Invoice to (will default to PM if no other addresses are listed): Send to PM*

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below	TOTAL CONTAINERS (refer to)	ANALYSIS REQUIRED INCLUDING SUITES (NB. Suite Codes must be ticked to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).										Additional Information					
						W-2 Metals (As, Ba, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Tl)	Selenium (ORC)	Freshwater (ORC)	VOC Target Scan	PCB	PROS/FOA	W-24 TRHCs-C40/BTEX/PAH	Phenols	Comments on likely contaminant levels, dilutions, or samples requiring specific OC analysis etc.						
1	BR_MWDS - 14 m.bgs	20/11/13 9AM	Soil	AG	1	X			X												
2	BR_MWDS - 31 m.bgs	21/11/13 10:00AM	Soil	AG	1	X			X												
3	RSD1 20113_w/g	11 14:00	H <sub>2</sub> O	AG, VOA, RP	3	X			X												
4	Trip Blank - w/g (10)	15/11/13	Soil		1	X			X												
5	Trip Spike - w/g (2)	15/11/13	Soil		1	X			X												
6	TRSK					X			X												
<b>TOTAL</b>																					

Environmental Division  
Sydney  
Work Order  
**ES1325572**



Telephone : + 61-2-8784 8555

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

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

<b>Work Order</b>	: <b>ES1325572</b>		
<b>Client</b>	: <b>ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	: Environmental Division Sydney
<b>Contact Address</b>	: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Contact Address</b>	: Barbara Hanna 277-289 Woodpark Road Smithfield NSW Australia 2164
<b>E-mail</b>	: joseph.ferring@erm.com	<b>E-mail</b>	: Barbara.Hanna@alsglobal.com
<b>Telephone</b>	: +61 02 8584 8888	<b>Telephone</b>	: +61 2 8784 8555
<b>Facsimile</b>	: +61 02 8584 8800	<b>Facsimile</b>	: +61 2 8784 8555
<b>Project</b>	: PROJECT SYMPHONY	<b>Page</b>	: 1 of 3
<b>Order number</b>	: 0224193	<b>Quote number</b>	: ES2013ENVRES0369 (SY/794/13)
<b>C-O-C number</b>	: ----	<b>QC Level</b>	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Site</b>	: RAVENSWORTH		
<b>Sampler</b>	: WG		

#### Dates

Date Samples Received	: 25-NOV-2013	Issue Date	: 26-NOV-2013 18:18
Client Requested Due Date	: 03-DEC-2013	Scheduled Reporting Date	: <b>03-DEC-2013</b>

#### Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.8°C - Ice present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 6
Security Seal	: Intact.	No. of samples analysed	: 6

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample RS01 not received Green unpreserved bottle , therefore PH, EC analysis could not be conducted,**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.





## Sample Container(s)/Preservation Non-Compliances

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

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

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - EA010 (solids): Electrical Conductivity (1:5)	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl.)	SOIL - S-18 (NO MOIST)	TRH(C6-C9)/BTEXN with No Moisture	SOIL - S-24 TRH/BTEXN/PAH + Phenols
ES1325572-001	20-NOV-2013 09:00	BR_MW05_14 mbgs	✓	✓	✓	✓	✓			✓
ES1325572-002	20-NOV-2013 10:10	BR_MW05_31 mbgs	✓	✓	✓	✓	✓			✓
ES1325572-004	15-NOV-2013 15:00	TRIP BLANK_(10)							✓	
ES1325572-005	15-NOV-2013 15:00	TRIP SPIKE_WG(2)							✓	
ES1325572-006	15-NOV-2013 15:00	TSC							✓	

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EG020T Total Recoverable Metals by ICPMS	WATER - EP074 (water) Volatile Organic Compounds	WATER - W-24 TRH/BTEXN/PAH/Phenols
ES1325572-003	20-NOV-2013 14:00	RS01_201113_WG	✓	✓	✓

## Proactive Holding Time Report

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



## *Requested Deliverables*

### **MR JOSEPH FERRING**

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- A4 - AU Tax Invoice ( INV )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTAB )	Email	joseph.ferring@erm.com

### **SYMPHONY MACGEN**

- *AU Certificate of Analysis - NATA ( COA )	Email	symphony.macgen@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	symphony.macgen@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	symphony.macgen@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	symphony.macgen@erm.com
- Chain of Custody (CoC) ( COC )	Email	symphony.macgen@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	symphony.macgen@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	symphony.macgen@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	symphony.macgen@erm.com
- EDI Format - XTab ( XTAB )	Email	symphony.macgen@erm.com

### **THE ACCOUNTS PAYABLE**

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

<b>Work Order</b> : <b>ES1325572</b> <b>Client</b> : <b>ENVIRO RESOURCES MANAGEMENT</b> <b>Contact</b> : MR JOSEPH FERRING <b>Address</b> : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007  <b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800 <b>Project</b> : PROJECT SYMPHONY <b>Order number</b> : 0224193 <b>C-O-C number</b> : ---- <b>Sampler</b> : WG <b>Site</b> : RAVENSWORTH  <b>Quote number</b> : SY/794/13	<b>Page</b> : 1 of 14  <b>Laboratory</b> : Environmental Division Sydney <b>Contact</b> : Barbara Hanna <b>Address</b> : 277-289 Woodpark Road Smithfield NSW Australia 2164  <b>E-mail</b> : Barbara.Hanna@alsglobal.com <b>Telephone</b> : +61 2 8784 8555 <b>Facsimile</b> : +61 2 8784 8555 <b>QC Level</b> : NEPM 2013 Schedule B(3) and ALS QCS3 requirement  <b>Date Samples Received</b> : 25-NOV-2013 <b>Issue Date</b> : 03-DEC-2013  <b>No. of samples received</b> : 6 <b>No. of samples analysed</b> : 6
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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

### Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney 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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BR_MW05_14.0	BR_MW05_31.0	TB10_151113	TS2_151113	TSC_151113
				20-NOV-2013 09:00	20-NOV-2013 10:10	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325572-001	ES1325572-002	ES1325572-004	ES1325572-005	ES1325572-006
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	8.2	9.5	----	----	----
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	164	170	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	10.1	11.9	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	34	<5	----	----	----
Barium	7440-39-3	10	mg/kg	50	40	----	----	----
Beryllium	7440-41-7	1	mg/kg	1	<1	----	----	----
Boron	7440-42-8	50	mg/kg	<50	<50	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	<2	2	----	----	----
Cobalt	7440-48-4	2	mg/kg	3	<2	----	----	----
Copper	7440-50-8	5	mg/kg	14	11	----	----	----
Lead	7439-92-1	5	mg/kg	22	5	----	----	----
Manganese	7439-96-5	5	mg/kg	58	305	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	----	----	----
Nickel	7440-02-0	2	mg/kg	5	2	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	<5	----	----	----
Vanadium	7440-62-2	5	mg/kg	12	8	----	----	----
Zinc	7440-66-6	5	mg/kg	29	16	----	----	----
Thallium	7440-28-0	5	mg/kg	<5	<5	----	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	0.2	<0.1	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BR_MW05_14.0	BR_MW05_31.0	TB10_151113	TS2_151113	TSC_151113
				20-NOV-2013 09:00	20-NOV-2013 10:10	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325572-001	ES1325572-002	ES1325572-004	ES1325572-005	ES1325572-006
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>								
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	----	----	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	----	----	----
Chloromethane	74-87-3	5	mg/kg	<5	<5	----	----	----
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	----	----	----
Bromomethane	74-83-9	5	mg/kg	<5	<5	----	----	----
Chloroethane	75-00-3	5	mg/kg	<5	<5	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	----	----	----
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BR_MW05_14.0	BR_MW05_31.0	TB10_151113	TS2_151113	TSC_151113
				20-NOV-2013 09:00	20-NOV-2013 10:10	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325572-001	ES1325572-002	ES1325572-004	ES1325572-005	ES1325572-006
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	----	----	----
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	----	----	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BR_MW05_14.0	BR_MW05_31.0	TB10_151113	TS2_151113	TSC_151113
				20-NOV-2013 09:00	20-NOV-2013 10:10	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325572-001	ES1325572-002	ES1325572-004	ES1325572-005	ES1325572-006
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	1.2	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	1.0	0.7	----	----	----
Pyrene	129-00-0	0.5	mg/kg	1.0	0.6	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	0.6	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	0.5	<0.5	----	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	4.3	1.3	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	94
C10 - C14 Fraction	----	50	mg/kg	60	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	720	210	----	----	----
C29 - C36 Fraction	----	100	mg/kg	250	100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	1030	310	----	----	----





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BR_MW05_14.0	BR_MW05_31.0	TB10_151113	TS2_151113	TSC_151113
				20-NOV-2013 09:00	20-NOV-2013 10:10	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325572-001	ES1325572-002	ES1325572-004	ES1325572-005	ES1325572-006
<b>EP080/071: Total Petroleum Hydrocarbons - Continued</b>								
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	107
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	65
>C10 - C16 Fraction	>C10_C16	50	mg/kg	130	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	840	280	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	120	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	1090	280	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	130	<50	----	----	----
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	0.8
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	1.1	20.9
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	2.8
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	0.6	12.7
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	5.1
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	1.7	42.3
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	0.6	17.8
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	97.6	102	----	----	----
Toluene-D8	2037-26-5	0.1	%	110	112	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	96.8	83.5	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	100	97.6	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	109	106	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	85.4	76.3	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	114	113	----	----	----
Anthracene-d10	1719-06-8	0.1	%	97.6	96.8	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	115	125	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	93.4	97.1	100	94.1	96.9
Toluene-D8	2037-26-5	0.1	%	113	114	86.9	82.4	86.6



### Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BR_MW05_14.0	BR_MW05_31.0	TB10_151113	TS2_151113	TSC_151113
				20-NOV-2013 09:00	20-NOV-2013 10:10	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325572-001	ES1325572-002	ES1325572-004	ES1325572-005	ES1325572-006
<b>EP080S: TPH(V)/BTEX Surrogates - Continued</b>								
4-Bromofluorobenzene	460-00-4	0.1	%	115	102	78.0	75.8	83.0

Client sampling date / time



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

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Client sampling date / time

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Compound	CAS Number	LOR	Unit	ES1325572-003	---	---	---	---
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### EG020T: Total Metals by ICP-MS

Arsenic	7440-38-2	0.001	mg/L	<0.001	---	---	---	---
Beryllium	7440-41-7	0.001	mg/L	<0.001	---	---	---	---
Barium	7440-39-3	0.001	mg/L	0.001	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	---	---	---	---
Chromium	7440-47-3	0.001	mg/L	<0.001	---	---	---	---
Cobalt	7440-48-4	0.001	mg/L	<0.001	---	---	---	---
Copper	7440-50-8	0.001	mg/L	0.004	---	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	---	---	---	---
Manganese	7439-96-5	0.001	mg/L	0.002	---	---	---	---
Molybdenum	7439-98-7	0.001	mg/L	<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	---	---	---	---
Thallium	7440-28-0	0.001	mg/L	<0.001	---	---	---	---
Vanadium	7440-62-2	0.01	mg/L	<0.01	---	---	---	---
Zinc	7440-66-6	0.005	mg/L	<0.005	---	---	---	---
Boron	7440-42-8	0.05	mg/L	<0.05	---	---	---	---

### EP074A: Monocyclic Aromatic Hydrocarbons

Styrene	100-42-5	5	µg/L	<5	---	---	---	---
Isopropylbenzene	98-82-8	5	µg/L	<5	---	---	---	---
n-Propylbenzene	103-65-1	5	µg/L	<5	---	---	---	---
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	---	---	---	---
sec-Butylbenzene	135-98-8	5	µg/L	<5	---	---	---	---
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	---	---	---	---
tert-Butylbenzene	98-06-6	5	µg/L	<5	---	---	---	---
p-Isopropyltoluene	99-87-6	5	µg/L	<5	---	---	---	---
n-Butylbenzene	104-51-8	5	µg/L	<5	---	---	---	---

### EP074B: Oxygenated Compounds

Vinyl Acetate	108-05-4	50	µg/L	<50	---	---	---	---
2-Butanone (MEK)	78-93-3	50	µg/L	<50	---	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	---	---	---	---
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	---	---	---	---

### EP074C: Sulfonated Compounds

Carbon disulfide	75-15-0	5	µg/L	<5	---	---	---	---
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### EP074D: Fumigants



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

RS01\_201113\_WG

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Client sampling date / time

20-NOV-2013 14:00

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Compound	CAS Number	LOR	Unit	ES1325572-003	---	---	---	---
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### EP074D: Fumigants - Continued

2,2-Dichloropropane	594-20-7	5	µg/L	<5	---	---	---	---
1,2-Dichloropropane	78-87-5	5	µg/L	<5	---	---	---	---
cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	---	---	---	---
trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	---	---	---	---
1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	---	---	---	---

### EP074E: Halogenated Aliphatic Compounds

Dichlorodifluoromethane	75-71-8	50	µg/L	<50	---	---	---	---
Chloromethane	74-87-3	50	µg/L	<50	---	---	---	---
Vinyl chloride	75-01-4	50	µg/L	<50	---	---	---	---
Bromomethane	74-83-9	50	µg/L	<50	---	---	---	---
Chloroethane	75-00-3	50	µg/L	<50	---	---	---	---
Trichlorofluoromethane	75-69-4	50	µg/L	<50	---	---	---	---
1,1-Dichloroethene	75-35-4	5	µg/L	<5	---	---	---	---
Iodomethane	74-88-4	5	µg/L	<5	---	---	---	---
trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	---	---	---	---
1,1-Dichloroethane	75-34-3	5	µg/L	<5	---	---	---	---
cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	---	---	---	---
1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	---	---	---	---
1,1-Dichloropropylene	563-58-6	5	µg/L	<5	---	---	---	---
Carbon Tetrachloride	56-23-5	5	µg/L	<5	---	---	---	---
1,2-Dichloroethane	107-06-2	5	µg/L	<5	---	---	---	---
Trichloroethene	79-01-6	5	µg/L	<5	---	---	---	---
Dibromomethane	74-95-3	5	µg/L	<5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	---	---	---	---
1,3-Dichloropropane	142-28-9	5	µg/L	<5	---	---	---	---
Tetrachloroethene	127-18-4	5	µg/L	<5	---	---	---	---
1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	---	---	---	---
trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	---	---	---	---
cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	---	---	---	---
1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	---	---	---	---
Pentachloroethane	76-01-7	5	µg/L	<5	---	---	---	---
1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	---	---	---	---
Hexachlorobutadiene	87-68-3	5	µg/L	<5	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

RS01\_201113\_WG

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Client sampling date / time

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Compound	CAS Number	LOR	Unit	ES1325572-003	---	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	5	µg/L	<5	---	---	---	---
Bromobenzene	108-86-1	5	µg/L	<5	---	---	---	---
2-Chlorotoluene	95-49-8	5	µg/L	<5	---	---	---	---
4-Chlorotoluene	106-43-4	5	µg/L	<5	---	---	---	---
1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	---	---	---	---
1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	---	---	---	---
1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	---	---	---	---
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	5	µg/L	<5	---	---	---	---
Bromodichloromethane	75-27-4	5	µg/L	<5	---	---	---	---
Dibromochloromethane	124-48-1	5	µg/L	<5	---	---	---	---
Bromoform	75-25-2	5	µg/L	<5	---	---	---	---
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	7	µg/L	<7	---	---	---	---
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	1.0	µg/L	<1.0	---	---	---	---
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	---	---	---	---
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	---	---	---	---
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	---	---	---	---
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	---	---	---	---
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	---	---	---	---
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	---	---	---	---
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	---	---	---	---
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	---	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	1.0	µg/L	<1.0	---	---	---	---
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

RS01\_201113\_WG

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Client sampling date / time

20-NOV-2013 14:00

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ES1325572-003

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Compound	CAS Number	LOR	Unit	ES1325572-003	---	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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	---	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	---	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	---	---	---	---
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	20	µg/L	<20	---	---	---	---
C10 - C14 Fraction	----	50	µg/L	<50	---	---	---	---
C15 - C28 Fraction	----	100	µg/L	<100	---	---	---	---
C29 - C36 Fraction	----	50	µg/L	<50	---	---	---	---
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	---	---	---	---
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	---	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	---	---	---	---
>C10 - C16 Fraction	>C10_C16	100	µg/L	<100	---	---	---	---
>C16 - C34 Fraction	----	100	µg/L	<100	---	---	---	---
>C34 - C40 Fraction	----	100	µg/L	<100	---	---	---	---
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	---	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	---	---	---	---
<b>EP080: BTEXN</b>								
Benzene	71-43-2	1	µg/L	<1	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

RS01\_201113\_WG

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Client sampling date / time

20-NOV-2013 14:00

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Compound	CAS Number	LOR	Unit	ES1325572-003	----	----	----	----
<b>EP080: BTEXN - Continued</b>								
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	113	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	108	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	105	----	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	42.2	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	65.6	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	26.8	----	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	84.1	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	78.4	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	76.5	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	115	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	120	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	117	----	----	----	----



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	78.3	133.2
Toluene-D8	2037-26-5	79.1	128.9
4-Bromofluorobenzene	460-00-4	80.8	123.7
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10.0	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27.4	113
4-Terphenyl-d14	1718-51-0	32	112
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128



## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>ES1325572</b>	Page	: 1 of 31
<b>Client</b>	: <b>ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	: Environmental Division Sydney
<b>Contact</b>	: MR JOSEPH FERRING	<b>Contact</b>	: Barbara Hanna
<b>Address</b>	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Address</b>	: 277-289 Woodpark Road Smithfield NSW Australia 2164
<b>E-mail</b>	: joseph.ferring@erm.com	<b>E-mail</b>	: Barbara.Hanna@alsglobal.com
<b>Telephone</b>	: +61 02 8584 8888	<b>Telephone</b>	: +61 2 8784 8555
<b>Facsimile</b>	: +61 02 8584 8800	<b>Facsimile</b>	: +61 2 8784 8555
<b>Project</b>	: PROJECT SYMPHONY	<b>QC Level</b>	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Site</b>	: RAVENSWORTH	<b>Date Samples Received</b>	: 25-NOV-2013
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 03-DEC-2013
<b>Sampler</b>	: WG	<b>No. of samples received</b>	: 6
<b>Order number</b>	: 0224193	<b>No. of samples analysed</b>	: 6
<b>Quote number</b>	: SY/794/13		

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

This Quality Control Report contains the following information:

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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

### *Signatories*

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney 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.

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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3183264)</b>									
ES1325553-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.9	6.8	0.0	0% - 20%
ES1325686-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	4.7	4.8	0.0	0% - 20%
<b>EA010: Conductivity (QC Lot: 3183265)</b>									
ES1325572-001	BR_MW05_14.0	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	164	146	11.5	0% - 20%
ES1325686-002	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	183	199	8.7	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3186651)</b>									
EB1328691-009	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	38.7	37.0	4.7	0% - 20%
ES1325572-001	BR_MW05_14.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	10.1	10.0	1.2	0% - 50%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3183315)</b>									
ES1325303-001	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	10	10	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	6	9	45.2	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	2	5	89.1	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	9	65.7	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	10	30.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	24	43.2	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	225	236	4.5	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	10	14	27.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	34	35	4.1	No Limit
EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit		
EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
ES1325523-001	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	20	30	57.4	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	4	5	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	2	5	84.7	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	4	17	132	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	17	31	57.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	113	92	19.8	0% - 20%



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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3183315) - continued</b>									
ES1325523-001	Anonymous	EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	18	29	46.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	16	29.0	No Limit
		EG005T: Thallium	7440-28-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3183316)</b>									
ES1325303-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325523-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3181475)</b>									
ES1325472-004	Anonymous	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325613-011	Anonymous	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3181475)</b>									
ES1325472-004	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
ES1325613-011	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3181475)</b>									
ES1325472-004	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325613-011	Anonymous	EP074: Carbon disulfide	75-15-0	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 (%)		
<b>EP074D: Fumigants (QC Lot: 3181475)</b>											
ES1325472-004	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1325613-011	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3181475)</b>											
ES1325472-004	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
		ES1325613-011	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3181475) - continued</b>									
ES1325613-011	Anonymous	EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3181475)</b>									
ES1325472-004	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325613-011	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	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 (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3181475) - continued</b>									
ES1325613-011	Anonymous	EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3181475)</b>									
ES1325472-004	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325613-011	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3181475)</b>									
ES1325472-004	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
ES1325613-011	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3183181)</b>									
ES1325472-002	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		ES1325579-003	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5
EP075(SIM): 2-Chlorophenol	95-57-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2			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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3183181) - continued</b>									
ES1325579-003	Anonymous	EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3183181)</b>									
ES1325472-002	Anonymous	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	2.0	2.3	11.9	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	1.6	1.8	13.1	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	1.4	1.6	12.6	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.8	1.0	16.4	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.1	1.2	14.2	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	0.7	0.7	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	0.6	0.6	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	8.2	9.2	11.5	0% - 50%
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	0.8	0.8	0.0	No Limit		
ES1325579-003	Anonymous	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





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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3183181) - continued</b>									
ES1325579-003	Anonymous	EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3181474)</b>									
ES1325472-004	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325613-011	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3181481)</b>									
EB1328769-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325576-003	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3183180)</b>									
ES1325472-002	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	320	350	9.4	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	100	120	16.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES1325579-003	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3181474)</b>									
ES1325472-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1325613-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3181481)</b>									
EB1328769-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1325576-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183180)</b>									
ES1325472-002	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	360	420	13.1	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	70	60	0.0	No Limit
ES1325579-003	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3181474)</b>									
ES1325472-004	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
ES1325613-011	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
		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



Sub-Matrix: <b>SOIL</b>				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080: BTEXN (QC Lot: 3181474) - continued</b>									
ES1325613-011	Anonymous	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
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3181481)</b>									
EB1328769-001	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	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1325576-003	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
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
<b>Sub-Matrix: <b>WATER</b></b>									
Sub-Matrix: <b>WATER</b>				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 3183488)</b>									
ES1325639-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.007	18.4	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.323	0.327	1.4	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.004	0.005	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.008	0.009	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.020	0.021	6.6	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.163	0.174	6.5	0% - 20%
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	0.005	0.004	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.008	0.009	11.9	No Limit
		EG020A-T: Thallium	7440-28-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	1.88	1.87	0.9	0% - 20%
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG020A-T: Boron	7440-42-8	0.05	mg/L	0.09	0.09	0.0	No Limit		
ES1325742-005	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0005	0.0006	16.8	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	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 (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 3183488) - continued</b>									
ES1325742-005	Anonymous	EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.040	0.040	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.005	0.004	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.142	0.141	1.0	0% - 20%
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.023	0.025	8.4	0% - 20%
		EG020A-T: Thallium	7440-28-0	0.001	mg/L	0.001	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	17.8	17.4	2.0	0% - 20%
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit		
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES1325689-005	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	900	860	4.4	0% - 50%
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	90	90	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES1325689-005	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	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 (%)
<b>EP074B: Oxygenated Compounds (QC Lot: 3184134) - continued</b>									
ES1325689-005	Anonymous	EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES1325689-005	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES1325689-005	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3184134) - continued</b>									
ES1325525-001	Anonymous	EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES1325689-005	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit		
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit		
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit		
EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit		
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit		
EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit		
EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<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 (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3184134) - continued</b>									
ES1325525-001	Anonymous	EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES1325689-005	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES1325689-005	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit
ES1325689-005	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3181850)</b>									
ES1325573-003	Anonymous	EP075(SIM): Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	0.0	No Limit
		ES1325573-009	Anonymous	EP075(SIM): Phenol	108-95-2	1.0	µg/L	<1.0	<1.0
EP075(SIM): 2-Chlorophenol	95-57-8			1.0	µg/L	<1.0	<1.0	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			1.0	µg/L	<1.0	<1.0	0.0	No Limit
EP075(SIM): 2-Nitrophenol	88-75-5			1.0	µg/L	<1.0	<1.0	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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3181850) - continued</b>									
ES1325573-009	Anonymous	EP075(SIM): 2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3181850)</b>									
ES1325573-003	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): 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
		ES1325573-009	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5
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): Dibenz(a,h)anthracene	53-70-3			1.0	µg/L	<1.0	<1.0	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 (%)	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3181850) - continued</b>										
ES1325573-009	Anonymous	EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	0.0	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3181849)</b>										
ES1325573-003	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.0	No Limit	
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.0	No Limit	
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	60	0.0	No Limit	
ES1325573-009	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.0	No Limit	
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.0	No Limit	
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.0	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	110	120	9.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3181849)</b>										
ES1325573-003	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	<100	0.0	No Limit	
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.0	No Limit	
ES1325573-009	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	<100	0.0	No Limit	
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	120	140	18.8	No Limit	
<b>EP080: BTEXN (QC Lot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	1	1	0.0	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	3	3	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	4	3	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	3	2	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA010: Conductivity (QCLot: 3183265)</b>									
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	101	70	130	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3183315)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	112	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	109	83	129	
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	111	88	130	
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	101	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	108	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	101	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	107	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	99.6	81	123	
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	110	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	109	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	112	84	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	104	75	131	
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	112	95	129	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	106	81	133	
EG005T: Thallium	7440-28-0	5	mg/kg	<5	----	----	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3183316)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	88.4	66	112	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3181475)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	104	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	110	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	110	63	129	
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	106	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	111	64	130	
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	108	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	109	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	109	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	106	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3181475)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	91.2	29.6	156	
		5	mg/kg	<5	----	----	----	----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074B: Oxygenated Compounds (QCLot: 3181475) - continued</b>									
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	102	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	97.1	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	99.2	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3181475)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	103	54	126	
<b>EP074D: Fumigants (QCLot: 3181475)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	104	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	112	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	90.3	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	87.6	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	102	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3181475)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	102	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	109	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	93.6	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	107	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	122	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	116	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	118	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	90.6	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	103	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	106	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	100	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	102	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	106	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	94.2	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	103	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	106	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	95.1	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	106	70	130	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3181475) - continued</b>									
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	99.8	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	106	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	87.3	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	106	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	95.6	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	99.4	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	105	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	80.6	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	81.9	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	118	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3181475)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	114	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	106	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	110	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	108	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	111	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	109	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	107	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	108	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	111	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3181475)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	107	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	92.0	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	85.3	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	93.4	60	126	
<b>EP074H: Naphthalene (QCLot: 3181475)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	85.6	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183181)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	98.3	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	98.2	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	104	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	105	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	89.4	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	99.3	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	100	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	106	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	101	76.4	114	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183181) - continued</b>									
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	100	57	111	
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	95.9	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	33.7	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183181)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	106	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	111	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	111	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	113	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	111	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	112	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	112	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	113	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	111	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	107	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	100	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	110	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	104	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	108	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	105	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181474)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	106	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181481)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	96.2	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183180)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	92.7	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	101	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	93.5	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181474)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	108	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181481)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	96.4	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183180)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	93.8	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	101	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	85.8	63	131	
<b>EP080: BTEXN (QCLot: 3181474)</b>									



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080: BTEXN (QCLot: 3181474) - continued</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	96.7	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	103	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	106	58	118	
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	108	60	120	
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	112	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	99.0	62	138	
<b>EP080: BTEXN (QCLot: 3181481)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	93.5	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	94.6	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	89.6	58	118	
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	92.8	60	120	
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	92.5	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	96.2	62	138	

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 3183488)</b>									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.7	79	121	
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	104	76	120	
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	98.3	84	116	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.4	82	114	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.5	83	115	
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	93.1	84	116	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.3	83	117	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	85	115	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.5	83	115	
EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	101	81	125	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.2	83	117	
EG020A-T: Thallium	7440-28-0	0.001	mg/L	<0.001	0.1 mg/L	104	86	116	
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	92.5	84	114	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.8	76	118	
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	96.5	73	127	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3184134)</b>									
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	110	74	118	
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	109	75	121	
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	109	67	123	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3184134) - continued</b>									
EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	109	70	122	
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	109	69	123	
EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	108	71	121	
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	108	70	122	
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	108	67	123	
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	106	62	126	
<b>EP074B: Oxygenated Compounds (QCLot: 3184134)</b>									
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	108	61.4	134	
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	113	73.6	130	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	114	61	139	
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	118	65	137	
<b>EP074C: Sulfonated Compounds (QCLot: 3184134)</b>									
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	80.5	72.8	127	
<b>EP074D: Fumigants (QCLot: 3184134)</b>									
EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	84.8	61	119	
EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	105	76	120	
EP074: cis-1,3-Dichloropropylene	10061-01-5	10	µg/L	<10	10 µg/L	99.8	62	120	
EP074: trans-1,3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	97.2	61	119	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	101	69	117	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3184134)</b>									
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	100	60.6	138	
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	108	67.4	130	
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	96.7	69.4	129	
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	88.0	56	140	
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	107	63	135	
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	97.1	65	131	
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	100	69	123	
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	105	70.2	128	
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	103	71	119	
EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	102	75	119	
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	104	77	117	
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	82.2	61	119	
EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	104	73	119	
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	83.6	63	121	
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	98.6	78	122	
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	103	74	120	
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	95.6	74	118	
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	113	75	123	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Recovery Limits (%)	
					Concentration	LCS	Low	High
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3184134) - continued</b>								
EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	108	79	121
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	105	72	124
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	83.0	66	114
EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	111	60	120
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	103	70.6	128
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	104	70	124
EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	111	74	128
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	94.7	71.8	126
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	79.0	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	86.9	58	132
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3184134)</b>								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	104	80	118
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	107	76	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	107	71	121
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	108	71	121
EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	105	74	120
EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	103	72	120
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	104	77	117
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	96.5	60	126
EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	94.7	67	125
<b>EP074G: Trihalomethanes (QCLot: 3184134)</b>								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	92.8	76	118
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	86.3	64	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	87.8	65	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	86.9	73.5	126
<b>EP074H: Naphthalene (QCLot: 3184134)</b>								
EP074: Naphthalene	91-20-3	7	µg/L	<7	10 µg/L	98.2	61	125
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3181850)</b>								
EP075(SIM): Phenol	108-95-2	0.2	µg/L	----	5 µg/L	# 64.4	24.5	61.9
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L	----	5 µg/L	83.9	63.8	110
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L	----	5 µg/L	81.4	55.9	112
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	µg/L	----	10 µg/L	76.6	42.5	114
		2	µg/L	<2.0	----	----	----	----
EP075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L	----	5 µg/L	76.4	62.7	117
		1	µg/L	<1.0	----	----	----	----



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3181850) - continued</b>									
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.2	µg/L	----	5 µg/L	80.8	59.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.2	µg/L	----	5 µg/L	78.7	59.3	122	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.2	µg/L	----	5 µg/L	77.4	64.3	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L	----	5 µg/L	77.2	63	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.2	µg/L	----	5 µg/L	75.6	58.7	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.2	µg/L	----	5 µg/L	67.1	50	108	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L	----	10 µg/L	34.2	8.7	95	
		2	µg/L	<2.0	----	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3181850)</b>									
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	5 µg/L	77.5	58.6	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	5 µg/L	83.5	63.6	114	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	5 µg/L	78.7	62.2	113	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	5 µg/L	82.7	63.9	115	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	5 µg/L	80.3	62.6	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	5 µg/L	80.8	64.3	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	5 µg/L	85.8	63.6	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	5 µg/L	84.3	63.1	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	5 µg/L	84.2	64.1	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	5 µg/L	79.9	62.5	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	5 µg/L	83.0	61.7	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	5 µg/L	83.0	61.7	117	
		1	µg/L	<1.0	----	----	----	----	





Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP075(SIM): Polynuclear Aromatic Hydrocarbons (QCLot: 3181850) - continued</b>								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	5 µg/L	82.9	63.3	117
		0.5	µg/L	<0.5	----	----	----	----
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	5 µg/L	79.0	59.9	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	----	5 µg/L	81.8	61.2	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	5 µg/L	86.4	59.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	1	µg/L	<1.0	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181849)</b>								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	92.2	59	129
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	97.4	71	131
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	95.9	62	120
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3184135)</b>								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	94.2	75	127
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181849)</b>								
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	101	58.9	131
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	93.1	73.9	138
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
		50	µg/L	----	1500 µg/L	104	67	127
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3184135)</b>								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	98.1	75	127
<b>EP080: BTEXN (QCLot: 3184135)</b>								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.9	70	124
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	92.7	65	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	95.6	70	120
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	94.5	69	121
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.4	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	92.4	70	124

### 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**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report		
				Spike	SpikeRecovery(%)	Recovery Limits (%)
				Concentration	MS	Low High



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3183315)</b>							
ES1325303-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	100	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.2	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	100	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	96.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	103	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	106	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	92.0	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3183316)</b>							
ES1325303-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	93.9	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3181475)</b>							
ES1325472-004	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	86.3	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	96.9	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3181475)</b>							
ES1325472-004	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	112	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183181)</b>							
ES1325472-002	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	92.1	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	94.4	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	85.9	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	95.2	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	38.1	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183181)</b>							
ES1325472-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	102	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.0	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181474)</b>							
ES1325472-004	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	78.5	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181481)</b>							
EB1328769-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	117	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183180)</b>							
ES1325472-002	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	99.3	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	105	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	92.9	52	132
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181474)</b>							
ES1325472-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	81.2	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181481)</b>							
EB1328769-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	119	70	130



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183180)</b>								
ES1325472-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	128	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	97.4	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	73.8	52	132	
<b>EP080: BTEXN (QCLot: 3181474)</b>								
ES1325472-004	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	70.8	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	78.3	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	82.2	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	81.4	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.3	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	90.8	70	130		
<b>EP080: BTEXN (QCLot: 3181481)</b>								
EB1328769-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	100	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	107	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	109	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	102	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	106	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	90.4	70	130		

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 3183488)</b>							
ES1325607-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	70	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	109	70	130
		EG020A-T: Barium	7440-39-3	1 mg/L	111	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	106	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	109	70	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	108	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	112	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	105	70	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	99.4	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	107	70	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	108	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	112	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3184134)</b>							
ES1325525-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	127	70	130
		EP074: Trichloroethene	79-01-6	25 µg/L	124	70	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3184134)</b>								
ES1325525-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	123	70	130	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3181850)</b>								
ES1325573-005	Anonymous	EP075(SIM): Phenol	108-95-2	20 µg/L	44.9	20	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	79.3	60	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	102	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 µg/L	83.9	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	85.9	20	130	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3181850)</b>								
ES1325573-005	Anonymous	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	84.3	70	130	
		EP075(SIM): Pyrene	129-00-0	20 µg/L	95.8	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181849)</b>								
ES1325573-005	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	106	74	150	
		EP071: C15 - C28 Fraction	----	300 µg/L	94.7	77	153	
		EP071: C29 - C36 Fraction	----	200 µg/L	98.4	67	153	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3184135)</b>								
ES1325525-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	121	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181849)</b>								
ES1325573-005	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	250 µg/L	75.2	74	150	
		EP071: >C16 - C34 Fraction	----	350 µg/L	93.9	77	153	
		EP071: >C34 - C40 Fraction	----	150 µg/L	94.8	67	153	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3184135)</b>								
ES1325525-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	70	130	
<b>EP080: BTEXN (QCLot: 3184135)</b>								
ES1325525-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	108	70	130	
		EP080: Toluene	108-88-3	25 µg/L	103	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	108	70	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	105	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	107	70	130	
EP080: Naphthalene	91-20-3	25 µg/L	96.2	70	130			

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Spike	Spike Recovery (%)	Recovery Limits (%)	RPDs (%)



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
					MS	MSD	Low	High	Value	Control Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181474)</b>											
ES1325472-004	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	78.5	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181474)</b>											
ES1325472-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	81.2	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3181474)</b>											
ES1325472-004	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	70.8	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	78.3	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	82.2	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	81.4	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.3	----	70	130	----	----	
	EP080: Naphthalene	91-20-3		2.5 mg/kg	90.8	----	70	130	----	----	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3181475)</b>											
ES1325472-004	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	86.3	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	96.9	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3181475)</b>											
ES1325472-004	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	112	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181481)</b>											
EB1328769-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	117	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181481)</b>											
EB1328769-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	119	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3181481)</b>											
EB1328769-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	100	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	107	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	109	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	102	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	106	----	70	130	----	----	
	EP080: Naphthalene	91-20-3		2.5 mg/kg	90.4	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183180)</b>											
ES1325472-002	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	99.3	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	105	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	92.9	----	52	132	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183180)</b>											
ES1325472-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	128	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	97.4	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	73.8	----	52	132	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183181)</b>											



Sub-Matrix: SOIL					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183181) - continued</b>											
ES1325472-002	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	92.1	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	94.4	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	85.9	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	95.2	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	38.1	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183181)</b>											
ES1325472-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	102	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.0	----	70	130	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3183315)</b>											
ES1325303-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	100	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.2	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	100	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	107	----	70	130	----	----	
		EG005T: Lead	7439-92-1	125 mg/kg	96.4	----	70	130	----	----	
		EG005T: Nickel	7440-02-0	50 mg/kg	103	----	70	130	----	----	
		EG005T: Selenium	7782-49-2	50 mg/kg	106	----	70	130	----	----	
		EG005T: Zinc	7440-66-6	125 mg/kg	92.0	----	70	130	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3183316)</b>											
ES1325303-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	93.9	----	70	130	----	----	

Sub-Matrix: WATER					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181849)</b>											
ES1325573-005	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	106	----	74	150	----	----	
		EP071: C15 - C28 Fraction	----	300 µg/L	94.7	----	77	153	----	----	
		EP071: C29 - C36 Fraction	----	200 µg/L	98.4	----	67	153	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181849)</b>											
ES1325573-005	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	250 µg/L	75.2	----	74	150	----	----	
		EP071: >C16 - C34 Fraction	----	350 µg/L	93.9	----	77	153	----	----	
		EP071: >C34 - C40 Fraction	----	150 µg/L	94.8	----	67	153	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3181850)</b>											
ES1325573-005	Anonymous	EP075(SIM): Phenol	108-95-2	20 µg/L	44.9	----	20	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	20 µg/L	79.3	----	60	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	20 µg/L	102	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	20 µg/L	83.9	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	20 µg/L	85.9	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3181850)</b>											



Sub-Matrix: WATER

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3181850) - continued</b>										
ES1325573-005	Anonymous	EP075(SIM): Acenaphthene	83-32-9	20 µg/L	84.3	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	20 µg/L	95.8	----	70	130	----	----
<b>EG020T: Total Metals by ICP-MS (QCLot: 3183488)</b>										
ES1325607-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	----	70	130	----	----
		EG020A-T: Beryllium	7440-41-7	1 mg/L	109	----	70	130	----	----
		EG020A-T: Barium	7440-39-3	1 mg/L	111	----	70	130	----	----
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	106	----	70	130	----	----
		EG020A-T: Chromium	7440-47-3	1 mg/L	109	----	70	130	----	----
		EG020A-T: Cobalt	7440-48-4	1 mg/L	108	----	70	130	----	----
		EG020A-T: Copper	7440-50-8	1 mg/L	112	----	70	130	----	----
		EG020A-T: Lead	7439-92-1	1 mg/L	105	----	70	130	----	----
		EG020A-T: Manganese	7439-96-5	1 mg/L	99.4	----	70	130	----	----
		EG020A-T: Nickel	7440-02-0	1 mg/L	107	----	70	130	----	----
		EG020A-T: Vanadium	7440-62-2	1 mg/L	108	----	70	130	----	----
		EG020A-T: Zinc	7440-66-6	1 mg/L	112	----	70	130	----	----
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3184134)</b>										
ES1325525-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	127	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	25 µg/L	124	----	70	130	----	----
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3184134)</b>										
ES1325525-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	123	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	121	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	108	----	70	130	----	----
		EP080: Toluene	108-88-3	25 µg/L	103	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	25 µg/L	108	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	105	----	70	130	----	----
			106-42-3							
		EP080: ortho-Xylene	95-47-6	25 µg/L	107	----	70	130	----	----
		EP080: Naphthalene	91-20-3	25 µg/L	96.2	----	70	130	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325572</b>	Page	: 1 of 10
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: RAVENSWORTH	Date Samples Received	: 25-NOV-2013
C-O-C number	: ----	Issue Date	: 03-DEC-2013
Sampler	: WG	No. of samples received	: 6
Order number	: 0224193	No. of samples analysed	: 6
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers





## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA002 : pH (Soils)</b>							
Soil Glass Jar - Unpreserved (EA002) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	28-NOV-2013	27-NOV-2013	*	28-NOV-2013	28-NOV-2013	✓
<b>EA010: Conductivity</b>							
Soil Glass Jar - Unpreserved (EA010) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	28-NOV-2013	27-NOV-2013	*	28-NOV-2013	26-DEC-2013	✓
<b>EA055: Moisture Content</b>							
Soil Glass Jar - Unpreserved (EA055-103) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	----	----	----	29-NOV-2013	04-DEC-2013	✓
<b>EG005T: Total Metals by ICP-AES</b>							
Soil Glass Jar - Unpreserved (EG005T) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	28-NOV-2013	19-MAY-2014	✓	28-NOV-2013	19-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
Soil Glass Jar - Unpreserved (EG035T) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	28-NOV-2013	18-DEC-2013	✓	29-NOV-2013	18-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Soil Glass Jar - Unpreserved (EP071) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	29-NOV-2013	04-DEC-2013	✓	30-NOV-2013	08-JAN-2014	✓
<b>EP074D: Fumigants</b>							
Soil Glass Jar - Unpreserved (EP074) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	27-NOV-2013	27-NOV-2013	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	27-NOV-2013	27-NOV-2013	✓
<b>EP074F: Halogenated Aromatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	27-NOV-2013	27-NOV-2013	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP074) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	27-NOV-2013	27-NOV-2013	✓
<b>EP074H: Naphthalene</b>							
Soil Glass Jar - Unpreserved (EP074) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	27-NOV-2013	27-NOV-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074B: Oxygenated Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	27-NOV-2013	27-NOV-2013	✓	
<b>EP074C: Sulfonated Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	27-NOV-2013	27-NOV-2013	✓	
<b>EP074G: Trihalomethanes</b>								
Soil Glass Jar - Unpreserved (EP074) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	27-NOV-2013	27-NOV-2013	✓	
<b>EP075(SIM)A: Phenolic Compounds</b>								
Soil Glass Jar - Unpreserved (EP075(SIM)) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	29-NOV-2013	04-DEC-2013	✓	30-NOV-2013	08-JAN-2014	✓	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Soil Glass Jar - Unpreserved (EP075(SIM)) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	29-NOV-2013	04-DEC-2013	✓	30-NOV-2013	08-JAN-2014	✓	
<b>EP080: BTEXN</b>								
Soil Glass Jar - Unpreserved (EP080) TB10_151113, TSC_151113	15-NOV-2013	29-NOV-2013	29-NOV-2013	✓	30-NOV-2013	29-NOV-2013	*	
Soil Glass Jar - Unpreserved (EP080) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	04-DEC-2013	✓	27-NOV-2013	04-DEC-2013	✓	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
Soil Glass Jar - Unpreserved (EP080) TB10_151113, TSC_151113	15-NOV-2013	29-NOV-2013	29-NOV-2013	✓	30-NOV-2013	29-NOV-2013	*	
Soil Glass Jar - Unpreserved (EP080) BR_MW05_14.0, BR_MW05_31.0	20-NOV-2013	27-NOV-2013	04-DEC-2013	✓	27-NOV-2013	04-DEC-2013	✓	

Matrix: **WATER**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG020T: Total Metals by ICP-MS</b>								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) RS01_201113_WG	20-NOV-2013	28-NOV-2013	19-MAY-2014	✓	28-NOV-2013	19-MAY-2014	✓	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
Amber Glass Bottle - Unpreserved (EP071) RS01_201113_WG	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	30-NOV-2013	08-JAN-2014	✓	
<b>EP074D: Fumigants</b>								
Amber VOC Vial - Sulfuric Acid (EP074) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓	
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Amber VOC Vial - Sulfuric Acid (EP074) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓	



Matrix: **WATER**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074F: Halogenated Aromatic Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Amber VOC Vial - Sulfuric Acid (EP074) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓
<b>EP074H: Naphthalene</b>							
Amber VOC Vial - Sulfuric Acid (EP074) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓
<b>EP074B: Oxygenated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓
<b>EP074C: Sulfonated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓
<b>EP074G: Trihalomethanes</b>							
Amber VOC Vial - Sulfuric Acid (EP074) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) RS01_201113_WG	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	30-NOV-2013	08-JAN-2014	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) RS01_201113_WG	20-NOV-2013	27-NOV-2013	27-NOV-2013	✓	30-NOV-2013	08-JAN-2014	✓
<b>EP080: BTEXN</b>							
Amber VOC Vial - Sulfuric Acid (EP080) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
Amber VOC Vial - Sulfuric Acid (EP080) RS01_201113_WG	20-NOV-2013	28-NOV-2013	04-DEC-2013	✓	28-NOV-2013	04-DEC-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Electrical Conductivity (1:5)	EA010	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	12	16.7	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Electrical Conductivity (1:5)	EA010	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	12	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Electrical Conductivity (1:5)	EA010	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	12	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	12	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	16	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	2	15	13.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	18	11.1	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	6	16.7	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	6	16.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	6	16.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	6	16.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Electrical Conductivity (1:5)	EA010	SOIL	(APHA 21st ed., 2510) Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 104)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) Schedule B(3) (Method 501)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Volatile Organic Compounds	EP074	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	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 (2013) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 <sub>2</sub> SO <sub>4</sub> 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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3) (Appdx. 2)
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 100 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 (2013) 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
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP075(SIM)A: Phenolic Compounds	3796977-007	----	Phenol	108-95-2	64.4 %	24.5-61.9%	Recovery greater than upper 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

- For all regular sample matrices, no surrogate recovery outliers occur.

### Outliers : Analysis Holding Time Compliance

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

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA002 : pH (Soils)</b>							
<b>Soil Glass Jar - Unpreserved</b> BR_MW05_14.0,	BR_MW05_31.0	28-NOV-2013	27-NOV-2013	1	----	----	----
<b>EA010: Conductivity</b>							
<b>Soil Glass Jar - Unpreserved</b> BR_MW05_14.0,	BR_MW05_31.0	28-NOV-2013	27-NOV-2013	1	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved</b> TB10_151113, TSC_151113	TS2_151113,	----	----	----	30-NOV-2013	29-NOV-2013	1
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
<b>Soil Glass Jar - Unpreserved</b> TB10_151113, TSC_151113	TS2_151113,	----	----	----	30-NOV-2013	29-NOV-2013	1
<b>EP080: BTEXN</b>							
<b>Soil Glass Jar - Unpreserved</b> TB10_151113, TSC_151113	TS2_151113,	----	----	----	30-NOV-2013	29-NOV-2013	1

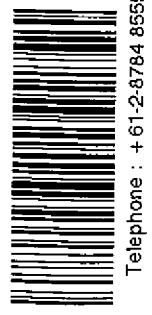




### ***Outliers : Frequency of Quality Control Samples***

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**
-



**FOR LABORATORY USE ONLY (Circle)**  
Custody Seal intact  
Free Ice / frozen ice blocks present upon receipt?   
Random Sample Temperature on Receipt: \_\_\_\_\_  
Other comment: \_\_\_\_\_

**TURNAROUND REQUIREMENTS:**  
 Standard TAT (List due date)  
 Non-Standard or urgent TAT (List due date)  
ALS QUOTE NO.: SY770413  
SITE: BAYSWATER HERBERT

**CHAIN OF CUSTODY**  
ALS Laboratory  
Please tick →  
CLIENT: **ERM**  
OFFICE: **Sydney**  
PROJECT: **Project Symphony**  
ORDER NUMBER: **0224193**  
PROJECT MANAGER: **Joseph Farnoy**  
SAMPLER: **Tom Cathrope / Stephen Mulligan**  
CONTACT PR: \_\_\_\_\_  
SAMPLER MOBILE: \_\_\_\_\_  
EDD FORMAT (or email): \_\_\_\_\_  
COC emailed to ALS? (YES / NO): \_\_\_\_\_  
Email Reports to (will default to PM if no other addresses are listed): **Symphony.mulligan@erm.com**  
Email Invoice to (will default to PM if no other addresses are listed): **stephen.mulligan@erm.com**

RECEIVED BY: **SPG**  
DATE/TIME: **25/11/13 11:00**  
RELINQUISHED BY: **Tom Cathrope**  
DATE/TIME: **21/11/13**

RECEIVED BY: **GAZ**  
DATE/TIME: **26/11/13 19:00**

**COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:**

ALS USE	LAB ID	SAMPLE ID	MATRIX	DATE / TIME	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	ANALYSIS REQUIRED (including BUTES (N3). Suite Codes must be listed to extract suite code). Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).	Additional Information
		<b>BP-MW02-6-0</b>	<b>soil</b>	<b>21/11/13</b>	<b>1 Jar</b>	<b>1</b>	7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	<b>Hexavalent Chromium Electrical Conductivity</b>
		<b>BL-SB04-2-9</b>	<b>soil</b>				7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	<b>Forward EnviroLab</b>
		<b>DO2-21113-TC</b>	<b>soil</b>				7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	
		<b>BL-MW05-3-4</b>					7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	
		<b>BH-MW01-4-5</b>					7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	
		<b>BH-MW02-3-7</b>					7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	
		<b>BH-MW02-5-7</b>					7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	
		<b>BL-MW10-4-9</b>					7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	
		<b>BL-MW01-3-0</b>					7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	
		<b>BL-SB03-2-0</b>					7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	
		<b>BL-SB03-3-0</b>					7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	
		<b>RO1-21113-TC</b>					7 Metals (As, Ba, Be, Cd, Cr, Cu, Pb, Zn, Hg) X 9-24 TRHCs (C40) (BTEX, PAH, Phenols) X VOC Target Scan X PCB X pH (1:5) X Exchangeable Cations (ED07) X PFOS/PFOA X Asbestos (absent/present) X Particle Size to 75µm (slieve) X Organic Matter Plus Total Organic Carbon (EPO4) X	

**Water Container Codes:** P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SN = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AQ = Amber Glass Unpreserved Plastic; AV = Amalgam Unpreserved Plastic; F = Ferrous Preserved Plastic; V = VOA Vol HCl Preserved; VB = VOA Vol Sulfuric Preserved; AV = Aqueous Unpreserved Vial; SC = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Special bottle; SP = Sulfuric Preserved Bottle; E = Unpreserved Bag; Z = Zinc Acetate Preserved Bottle; ST = Sulfuric Bottle; ASE = Plastic Bag for Acid Sulfate Soils; U = Unpreserved Bag.

**1083**



# CHAIN OF CUSTODY

ALS Laboratory  
Please tick →

3001 Lepp Lane, Unit 10, Richmond BC V6X 2A7  
Tel: 604-273-8381  
JANUARY 2007 Edition  
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CLIENT: **ERM**  
OFFICE: **Sydney**  
PROJECT: **Project Sydney**  
ORDER NUMBER: **0224193**  
PROJECT MANAGER: **JA Morris**  
SAMPLER: **(RM) Joe Fering**  
COC emailed to ALS? (YES/NO)

TURNAROUND REQUIREMENTS:  Standard TAT (List due date):  
 Non Standard or urgent TAT (List due date):  
Standard TAT may no longer for some tests only.  
Ultra Trace Quantities

ALS QUOTE NO.: **SY79413**  
SITES: **KAYSWATER, RIDDELL**  
CONTACT PR: **0434 81914**  
SAMPLER MOBILE: **John, existing**  
EDD FORMAT (or default): **Sydney magland erms.com**

RECEIVED BY: **PC** DATE/TIME: **25-11-13 1700**  
RECEIVED BY: **KAR** DATE/TIME: **26/11/13 1900**

FOR LABORATORY USE ONLY (Circle)  
Custody Seal Intact? Yes No N/A  
Free Ice / frozen ice bricks present upon receipt? Yes No N/A  
Random Sample Temperature on Receipt: °C  
Other comment:

COE SEQUENCE NUMBER (Circle)  
COC: 1 2 3 4 5 6 7  
OF: 1 2 3 4 5 6 7

ANALYSIS REQUIRED INCLUDING SUITES (NB, Suite Codes must be listed to attract suite price)  
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

ALS USE	LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below	CONTAINER INFORMATION (refer to TOTAL CONTAINERS)	ANALYSIS REQUIRED INCLUDING SUITES (NB, Suite Codes must be listed to attract suite price)													Additional Information		
							S-2 Metals (As, Ba, Pb, Zn, Hg)	S-2 Metals (As, Ba, Cr, Cu, Ni, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	S-24 TR (Ch, Cd, BTEXN, PAH, Phenols)	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (ED07)	PFOS/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EPC04)	Comments on likely contamination, dilutions, or samples not analysed. DC - analysis etc.				
	13	BI-MW02-3.0	21/11/13	soil	1 Glass Jar	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Electrical Conductivity
	14	BT-MW3-2.0				1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	HOLD
		BT-MW3-3.8				1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	HOLD
		BV-MW08-2.0				1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		BV-MW08-5.0				1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		BV-MW09-2.0				1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
		Top spike																				
		Top blank																				

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORG = Nitric Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial; SG = Sulfuric Preserved Amber Casket; H = HCl Preserved Plastic; HB = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Tin.

AM

TA



**CHAIN OF CUSTODY**  
ALS Laboratory  
Phone 616-479-7800

**CLIENT:** *EAM*  
**OFFICE:** *Sydney*

**PROJECT:** *Projects/Sydney*  
**ORDER NUMBER:** *0224193*

**PROJECT MANAGER:** *John Fenwick*  
**SAMPLER:** *A. Morris*

**CONTACT PH:** *0239-181417*  
**SAMPLER MOBILE:** *John Fenwick 0239-181417*  
**EDD FORMAT (for default):** *John.fenwick@erm.com*  
*Sydney@moergen.com*

**COC emailed to ALS? (YES / NO)**  
**Email Reports to (will default to PM if no other addresses are listed):**  
**Email Invoice to (will default to PM, if no other addresses are listed):**

**TURNAROUND REQUIREMENTS:**  
 Standard TAT (List due date)  
 Non Standard or urgent TAT (List due date)

**ALS QUOTE NO.:** SY779413  
**SITE:** *BAYSWATER / LIDDELL*

**FOR LABORATORY USE ONLY (Circle)**  
Custody Seal intact?  Yes  No  N/A  
Free Ice / Icepacks packs present upon receipt?  Yes  No  N/A  
Random Sample Temperature on Receipt: \_\_\_\_\_ °C  
Other comment: \_\_\_\_\_

**RECEIVED BY:** *AM*  
**DATE/TIME:** *25-11-13 (100)*

**RECEIVED BY:** *EM*  
**DATE/TIME:** *24/11/13 19:00*

**ANALYSIS REQUIRED including SUITES (N/A, Suita Codes must be listed to attract suite price)**  
When Results are required, specify Total (undiluted bottle required) or Dissolved (field filtered bottle required).

Analysis	Required
17 Metals (As, Ba, Be, Cd, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	<input checked="" type="checkbox"/>
8-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	<input checked="" type="checkbox"/>
3-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	<input checked="" type="checkbox"/>
S-2 TRHCM, PAH, Phthalates	<input checked="" type="checkbox"/>
VOC Target Scan	<input checked="" type="checkbox"/>
PCB	<input checked="" type="checkbox"/>
pH (1:5)	
Exchangable cations (ED07)	
PFOs/PFA	
Asbestos (absence/presence)	
Particle Sizing to 75µm (Stieve)	
Organic Matter plus Carbon (EPO4)	

**Comments on likely contaminant levels, dilutions, or samples requiring specific GC analysis etc.**  
*Please forward to EnviroLab*

ALS USE	LAB ID	MATRIX: SOLID (S) WATER (W)	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (code: below)	TOTAL CONTAINERS (refer to)	ANALYSIS REQUIRED including SUITES (N/A, Suita Codes must be listed to attract suite price)	Additional Information
	<i>T01-20113-AM</i>		<i>20/11/13</i>	<i>SOIL</i>	<i>1 Glass Jar</i>	<i>1</i>		

**Water Container Codes:** P = Unpreserved Plastic; N = Nitric Preserved Plastic; BNC = Nitric Preserved ChOC; SH = Sodium Hydroxide/ChOC Preserved; S = Sodium Hydroxide Preserved Plastic; SG = Amber Glass Unpreserved Plastic; AG = Amalgam Unpreserved Plastic; V = VOA Vol HCl Preserved; VB = VOA Vol Sodium Borohydride Preserved; VS = VOA Vol Sulfuric Preserved; AV = Amalgam Unpreserved Vial; SD = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HG = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Strontium Bottle; JSS = Plastic Bin for Acid Sulphate Soils; B = Unpreserved Bin.

20f3

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

**Work Order : ES1325580**

<p><b>Client : ENVIRO RESOURCES MANAGEMENT</b></p> <p><b>Contact : MR JOSEPH FERRING</b></p> <p><b>Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</b></p>	<p><b>Laboratory : Environmental Division Sydney</b></p> <p><b>Contact : Barbara Hanna</b></p> <p><b>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</b></p>
---	--

<p><b>E-mail : joseph.ferring@erm.com</b></p> <p><b>Telephone : +61 02 8584 8888</b></p> <p><b>Facsimile : +61 02 8584 8800</b></p>	<p><b>E-mail : Barbara.Hanna@alsglobal.com</b></p> <p><b>Telephone : +61 2 8784 8555</b></p> <p><b>Facsimile : +61 2 8784 8555</b></p>
---	--

<p><b>Project : PROJECT SYMPHONY</b></p> <p><b>Order number : 0224193</b></p> <p><b>C-O-C number : ----</b></p> <p><b>Site : ----</b></p> <p><b>Sampler : tc/sm</b></p>	<p><b>Page : 1 of 3</b></p> <p><b>Quote number : ES2013ENVRES0369 (SY/794/13)</b></p> <p><b>QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement</b></p>
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#### Dates

<p><b>Date Samples Received : 25-NOV-2013</b></p> <p><b>Client Requested Due Date : 02-DEC-2013</b></p>	<p><b>Issue Date : 26-NOV-2013 16:21</b></p> <p><b>Scheduled Reporting Date : <b>02-DEC-2013</b></b></p>
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#### Delivery Details

<p><b>Mode of Delivery : Carrier</b></p> <p><b>No. of coolers/boxes : 1 HARD</b></p> <p><b>Security Seal : Intact.</b></p>	<p><b>Temperature : 4.5°C - Ice present</b></p> <p><b>No. of samples received : 21</b></p> <p><b>No. of samples analysed : 17</b></p>
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#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample TRIP BLANK has not been received.**
- **Sample D02 and TO1 send to Envirolab**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exist.

### Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL	No analysis requested	SOIL - EA002	pH (1:5)	SOIL - EA010 (solids): Electrical Conductivity (1:5)	SOIL - ED007 Def	CEC / Exchangeable Cations (ED007)	SOIL - EG048G	Total Hexavalent Chromium (Alkaline)	SOIL - EP066 (solids)	Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids)	Volatile Organic Compounds	SOIL - EP231	Perfluorooctyl Acids and Sulfonates
ES1325580-001	21-NOV-2013 15:00	BP_MW02_6.0															
ES1325580-002	21-NOV-2013 15:00	BL_SB04_2.9										✓					✓
ES1325580-003	21-NOV-2013 15:00	BL_MW05_3.4										✓		✓			✓
ES1325580-004	21-NOV-2013 15:00	BH_MW01_4.5		✓		✓		✓									
ES1325580-005	21-NOV-2013 15:00	BH_MW02_3.7					✓					✓		✓			
ES1325580-006	21-NOV-2013 15:00	BV_MW10_4.9										✓		✓			
ES1325580-007	21-NOV-2013 15:00	BL_MW01_3.0								✓		✓		✓			✓
ES1325580-008	21-NOV-2013 15:00	BL_SB03_3.0										✓		✓			✓
ES1325580-010	21-NOV-2013 15:00	BI_MW02_3.0			✓		✓		✓								
ES1325580-011	21-NOV-2013 15:00	BI_MW3_3.8			✓		✓		✓								
ES1325580-012	21-NOV-2013 15:00	BV_MW08_5.0										✓		✓			
ES1325580-013	21-NOV-2013 15:00	BV_MW09_2.0										✓		✓			
ES1325580-017	21-NOV-2013 15:00	BH_MW02_5.7	✓														
ES1325580-018	21-NOV-2013 15:00	BL_SB03_2.0	✓														
ES1325580-019	21-NOV-2013 15:00	BI_MW03_2.0	✓														
ES1325580-020	21-NOV-2013 15:00	BV_MW08_2.0	✓														

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-18 (NO MOIST)	TRH(C6-C9)/BTEXN with No Moisture	SOIL - S-27	TRH/BTEXN/PAH/Phenols&Metals
ES1325580-001	21-NOV-2013 15:00	BP_MW02_6.0			✓	
ES1325580-002	21-NOV-2013 15:00	BL_SB04_2.9			✓	
ES1325580-003	21-NOV-2013 15:00	BL_MW05_3.4			✓	
ES1325580-004	21-NOV-2013 15:00	BH_MW01_4.5			✓	
ES1325580-005	21-NOV-2013 15:00	BH_MW02_3.7			✓	
ES1325580-006	21-NOV-2013 15:00	BV_MW10_4.9			✓	
ES1325580-007	21-NOV-2013 15:00	BL_MW01_3.0			✓	
ES1325580-008	21-NOV-2013 15:00	BL_SB03_3.0			✓	



			SOIL - S-18 (NO MOIST) TRH/(C6-C9)/BTEXN with No. Moisture	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1325580-010	21-NOV-2013 15:00	BI_MW02_3.0		✓
ES1325580-011	21-NOV-2013 15:00	BI_MW3_3.8		✓
ES1325580-012	21-NOV-2013 15:00	BV_MW08_5.0		✓
ES1325580-013	21-NOV-2013 15:00	BV_MW09_2.0		✓
ES1325580-014	15-NOV-2013 15:00	TRIP SPIKE	✓	
ES1325580-016	15-NOV-2013 15:00	TSC	✓	
ES1325580-021	15-NOV-2013 15:00	TS 6	✓	
ES1325580-022	15-NOV-2013 15:00	TSC 6	✓	

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP066-PCB-WA Polychlorinated Biphenyls (PCB)	WATER - EP074 (water) Volatile Organic Compounds	WATER - W-27 TRH/BTEXN/PAH/Phenols/8 Metals
ES1325580-009	21-NOV-2013 15:00	R01_211113_TC	✓	✓	✓

## Proactive Holding Time Report

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

## Requested Deliverables

### MR STEPHEN MULLIGAN

- A4 - AU Tax Invoice ( INV )

Email stephen.mulligan@erm.com

### SYMPHONY ERARING

- \*AU Certificate of Analysis - NATA ( COA )
- \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )
- \*AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )
- Chain of Custody (CoC) ( COC )
- EDI Format - ENMRG ( ENMRG )
- EDI Format - EQUIS V5 ERM ( EQUIS\_V5\_ERM )
- EDI Format - ESDAT ( ESDAT )
- EDI Format - XTab ( XTab )

Email Symphony.Eraring@erm.com  
Email Symphony.Eraring@erm.com  
Email Symphony.Eraring@erm.com  
Email Symphony.Eraring@erm.com  
Email Symphony.Eraring@erm.com  
Email Symphony.Eraring@erm.com  
Email Symphony.Eraring@erm.com  
Email Symphony.Eraring@erm.com  
Email Symphony.Eraring@erm.com

### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )

Email au.accounts@erm.com

## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1325580</b>	Page	: 1 of 26
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193		
C-O-C number	: ----	Date Samples Received	: 25-NOV-2013
Sampler	: tc/sm	Issue Date	: 03-DEC-2013
Site	: ----		
Quote number	: SY/794/13	No. of samples received	: 21
		No. of samples analysed	: 17

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





## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EG048: LOR raised for Hexavalent Chromium (Alkaline Digest) analysis on sample ID(BL\_MW01\_3.0) due to sample matrix.**
- **EP080: The TRIP SPIKE and TRIP SPIKE CONTROL have been analysed for volatile TPH and BTEX only. The TRIP SPIKE and TRIP SPIKE CONTROL were prepared in the lab using reagent grade sand spiked with petrol. The TRIP SPIKE was dispatched from the lab and the TRIP SPIKE CONTROL retained. The spike samples were extracted and analysed concurrently with samples reported in this batch.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

### Signatories

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

Signatories	Position	Accreditation Category
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
		Sydney Organics
Phalak Inthaksone	Laboratory Manager - Organics	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BP_MW02_6.0	BL_SB04_2.9	BL_MW05_3.4	BH_MW01_4.5	BH_MW02_3.7
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-001	ES1325580-002	ES1325580-003	ES1325580-004	ES1325580-005
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	----	----	----	7.4	----
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	----	338	574
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	15.1	19.2	13.6	22.4	20.2
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	----	----	----	24.0	----
Exchangeable Magnesium	----	0.1	meq/100g	----	----	----	12.2	----
Exchangeable Potassium	----	0.1	meq/100g	----	----	----	0.5	----
Exchangeable Sodium	----	0.1	meq/100g	----	----	----	1.5	----
Cation Exchange Capacity	----	0.1	meq/100g	----	----	----	38.2	----
Exchangeable Aluminium	----	0.1	meq/100g	----	----	----	<0.1	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	6	6	19	14	20
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	30	10	8	27	24
Copper	7440-50-8	5	mg/kg	19	11	27	16	23
Lead	7439-92-1	5	mg/kg	43	17	17	24	21
Nickel	7440-02-0	2	mg/kg	13	11	30	12	16
Zinc	7440-66-6	5	mg/kg	53	46	92	44	44
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	<0.1	----	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BP_MW02_6.0	BL_SB04_2.9	BL_MW05_3.4	BH_MW01_4.5	BH_MW02_3.7
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-001	ES1325580-002	ES1325580-003	ES1325580-004	ES1325580-005
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>								
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	<5	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	<5	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	<5	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	<5	----	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	<5	----	<5
Chloromethane	74-87-3	5	mg/kg	<5	----	<5	----	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	----	<5	----	<5
Bromomethane	74-83-9	5	mg/kg	<5	----	<5	----	<5
Chloroethane	75-00-3	5	mg/kg	<5	----	<5	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	<5	----	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BP_MW02_6.0	BL_SB04_2.9	BL_MW05_3.4	BH_MW01_4.5	BH_MW02_3.7
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-001	ES1325580-002	ES1325580-003	ES1325580-004	ES1325580-005
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	----	<5	----	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BP_MW02_6.0	BL_SB04_2.9	BL_MW05_3.4	BH_MW01_4.5	BH_MW02_3.7
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-001	ES1325580-002	ES1325580-003	ES1325580-004	ES1325580-005
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BP_MW02_6.0	BL_SB04_2.9	BL_MW05_3.4	BH_MW01_4.5	BH_MW02_3.7
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-001	ES1325580-002	ES1325580-003	ES1325580-004	ES1325580-005
<b>EP080/071: Total Petroleum Hydrocarbons - Continued</b>								
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	----	0.0006	0.0006	----	----
PFOA	335-67-1	0.0005	mg/kg	----	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	----	<0.005	<0.005	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	125	120	----	128
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	85.7	----	96.4	----	88.5
Toluene-D8	2037-26-5	0.1	%	99.2	----	114	----	108
4-Bromofluorobenzene	460-00-4	0.1	%	94.0	----	110	----	101
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	101	94.8	98.9	91.7	104
2-Chlorophenol-D4	93951-73-6	0.1	%	108	99.8	113	97.0	98.1
2,4,6-Tribromophenol	118-79-6	0.1	%	97.0	82.7	91.1	94.9	96.2



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sample ID	BP_MW02_6.0	BL_SB04_2.9	BL_MW05_3.4	BH_MW01_4.5	BH_MW02_3.7
Client sampling date / time	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00

Compound	CAS Number	LOR	Unit	ES1325580-001	ES1325580-002	ES1325580-003	ES1325580-004	ES1325580-005
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	96.8	93.1	94.4	92.4	92.5
Anthracene-d10	1719-06-8	0.1	%	87.6	85.6	86.0	82.8	86.7
4-Terphenyl-d14	1718-51-0	0.1	%	79.4	78.8	77.6	77.5	80.5
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	89.7	95.1	101	92.1	91.9
Toluene-D8	2037-26-5	0.1	%	93.0	98.8	106	94.5	101
4-Bromofluorobenzene	460-00-4	0.1	%	94.9	102	110	99.0	100



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW10_4.9	BL_MW01_3.0	BL_SB03_3.0	BI_MW02_3.0	BI_MW3_3.8
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-006	ES1325580-007	ES1325580-008	ES1325580-010	ES1325580-011
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	----	----	----	7.1	7.4
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	----	2120	2110
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	14.7	15.8	17.4	20.5	15.6
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	----	----	----	86.4	10.7
Exchangeable Magnesium	----	0.1	meq/100g	----	----	----	2.5	5.1
Exchangeable Potassium	----	0.1	meq/100g	----	----	----	0.2	0.2
Exchangeable Sodium	----	0.1	meq/100g	----	----	----	0.1	0.3
Cation Exchange Capacity	----	0.1	meq/100g	----	----	----	89.2	16.4
Exchangeable Aluminium	----	0.1	meq/100g	----	----	----	<0.1	<0.1
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	<5	42	<5	8	9
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	19	13	13	16	16
Copper	7440-50-8	5	mg/kg	20	28	24	24	14
Lead	7439-92-1	5	mg/kg	10	64	37	14	14
Nickel	7440-02-0	2	mg/kg	15	10	3	20	14
Zinc	7440-66-6	5	mg/kg	52	65	31	70	52
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EG048: Hexavalent Chromium (Alkaline Digest)</b>								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<1.0	----	----	----
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW10_4.9	BL_MW01_3.0	BL_SB03_3.0	BI_MW02_3.0	BI_MW3_3.8
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-006	ES1325580-007	ES1325580-008	ES1325580-010	ES1325580-011
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>								
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	----	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	----	----
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	----	----
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	----	----
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	----	----
Chloroethane	75-00-3	5	mg/kg	<5	<5	<5	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	----	----
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW10_4.9	BL_MW01_3.0	BL_SB03_3.0	BI_MW02_3.0	BI_MW3_3.8
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-006	ES1325580-007	ES1325580-008	ES1325580-010	ES1325580-011
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW10_4.9	BL_MW01_3.0	BL_SB03_3.0	BI_MW02_3.0	BI_MW3_3.8
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-006	ES1325580-007	ES1325580-008	ES1325580-010	ES1325580-011
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW10_4.9	BL_MW01_3.0	BL_SB03_3.0	BI_MW02_3.0	BI_MW3_3.8
				21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-006	ES1325580-007	ES1325580-008	ES1325580-010	ES1325580-011
<b>EP080/071: Total Petroleum Hydrocarbons - Continued</b>								
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	----	<0.0005	<0.0005	----	----
PFOA	335-67-1	0.0005	mg/kg	----	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	----	<0.005	<0.005	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	114	113	100	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	91.4	91.6	89.1	----	----
Toluene-D8	2037-26-5	0.1	%	112	112	104	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	105	104	100	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	91.7	103	94.6	95.1	94.7



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sample ID	BV_MW10_4.9	BL_MW01_3.0	BL_SB03_3.0	BI_MW02_3.0	BI_MW3_3.8
Client sampling date / time	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00	21-NOV-2013 15:00
	ES1325580-006	ES1325580-007	ES1325580-008	ES1325580-010	ES1325580-011

Compound	CAS Number	LOR	Unit	ES1325580-006	ES1325580-007	ES1325580-008	ES1325580-010	ES1325580-011
<b>EP075(SIM)S: Phenolic Compound Surrogates - Continued</b>								
2-Chlorophenol-D4	93951-73-6	0.1	%	99.4	100	95.3	102	99.6
2,4,6-Tribromophenol	118-79-6	0.1	%	86.8	86.8	84.7	84.9	83.4
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	88.4	94.1	95.0	94.7	95.2
Anthracene-d10	1719-06-8	0.1	%	87.0	86.4	86.8	86.4	85.7
4-Terphenyl-d14	1718-51-0	0.1	%	79.5	79.9	80.1	80.2	80.4
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	95.8	95.9	93.2	93.2	90.4
Toluene-D8	2037-26-5	0.1	%	105	106	97.7	97.0	90.1
4-Bromofluorobenzene	460-00-4	0.1	%	106	106	103	101	94.1



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW08_5.0	BV_MW09_2.0	TRIP SPIKE	TSC	TS 6
				21-NOV-2013 15:00	21-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-012	ES1325580-013	ES1325580-014	ES1325580-016	ES1325580-021
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	17.1	15.1	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	10	18	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	23	18	----	----	----
Copper	7440-50-8	5	mg/kg	19	21	----	----	----
Lead	7439-92-1	5	mg/kg	17	23	----	----	----
Nickel	7440-02-0	2	mg/kg	16	14	----	----	----
Zinc	7440-66-6	5	mg/kg	56	75	----	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	----	----	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW08_5.0	BV_MW09_2.0	TRIP SPIKE	TSC	TS 6
				21-NOV-2013 15:00	21-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-012	ES1325580-013	ES1325580-014	ES1325580-016	ES1325580-021
<b>EP074D: Fumigants - Continued</b>								
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	----	----	----
Chloromethane	74-87-3	5	mg/kg	<5	<5	----	----	----
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	----	----	----
Bromomethane	74-83-9	5	mg/kg	<5	<5	----	----	----
Chloroethane	75-00-3	5	mg/kg	<5	<5	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	----	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW08_5.0	BV_MW09_2.0	TRIP SPIKE	TSC	TS 6
				21-NOV-2013 15:00	21-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-012	ES1325580-013	ES1325580-014	ES1325580-016	ES1325580-021
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	----	----	----
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	----	----	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW08_5.0	BV_MW09_2.0	TRIP SPIKE	TSC	TS 6
				21-NOV-2013 15:00	21-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-012	ES1325580-013	ES1325580-014	ES1325580-016	ES1325580-021
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<b>51</b>	<b>70</b>	<b>59</b>
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<b>56</b>	<b>78</b>	<b>66</b>
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<b>32</b>	<b>43</b>	<b>36</b>
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<b>0.4</b>	<b>0.6</b>	<b>0.5</b>



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW08_5.0	BV_MW09_2.0	TRIP SPIKE	TSC	TS 6
				21-NOV-2013 15:00	21-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325580-012	ES1325580-013	ES1325580-014	ES1325580-016	ES1325580-021
<b>EP080: BTEXN - Continued</b>								
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	12.8	18.3	15.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	1.5	2.1	1.8
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	7.0	9.9	8.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	2.8	4.1	3.6
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	24.5	35.0	29.9
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	9.8	14.0	12.1
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	118	129	----	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	90.8	97.8	----	----	----
Toluene-D8	2037-26-5	0.1	%	108	114	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	103	108	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	93.8	104	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	94.6	98.5	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	85.2	87.3	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	86.8	94.0	----	----	----
Anthracene-d10	1719-06-8	0.1	%	84.8	88.2	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	80.1	82.4	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	95.1	103	92.0	89.2	87.2
Toluene-D8	2037-26-5	0.1	%	101	107	97.1	88.5	91.9
4-Bromofluorobenzene	460-00-4	0.1	%	104	110	97.2	89.6	90.3



## Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)

Client sample ID

**TSC 6**

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Client sampling date / time

15-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325580-022	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>C6 - C9 Fraction</b>	----	10	mg/kg	<b>84</b>	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>C6 - C10 Fraction</b>	C6_C10	10	mg/kg	<b>94</b>	----	----	----	----
<b>C6 - C10 Fraction minus BTEX (F1)</b>	C6_C10-BTEX	10	mg/kg	<b>54</b>	----	----	----	----
<b>EP080: BTEXN</b>								
<b>Benzene</b>	71-43-2	0.2	mg/kg	<b>0.7</b>	----	----	----	----
<b>Toluene</b>	108-88-3	0.5	mg/kg	<b>21.0</b>	----	----	----	----
<b>Ethylbenzene</b>	100-41-4	0.5	mg/kg	<b>2.4</b>	----	----	----	----
<b>meta- &amp; para-Xylene</b>	108-38-3 106-42-3	0.5	mg/kg	<b>11.4</b>	----	----	----	----
<b>ortho-Xylene</b>	95-47-6	0.5	mg/kg	<b>4.7</b>	----	----	----	----
<b>Sum of BTEX</b>	----	0.2	mg/kg	<b>40.2</b>	----	----	----	----
<b>Total Xylenes</b>	1330-20-7	0.5	mg/kg	<b>16.1</b>	----	----	----	----
<b>Naphthalene</b>	91-20-3	1	mg/kg	<b>&lt;1</b>	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
<b>1,2-Dichloroethane-D4</b>	17060-07-0	0.1	%	<b>96.0</b>	----	----	----	----
<b>Toluene-D8</b>	2037-26-5	0.1	%	<b>99.7</b>	----	----	----	----
<b>4-Bromofluorobenzene</b>	460-00-4	0.1	%	<b>97.7</b>	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_211113\_TC

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Client sampling date / time

21-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325580-009	---	---	---	---
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### EG020F: Dissolved Metals by ICP-MS

Arsenic	7440-38-2	0.001	mg/L	<0.001	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	---	---	---	---
Chromium	7440-47-3	0.001	mg/L	<0.001	---	---	---	---
Copper	7440-50-8	0.001	mg/L	<0.001	---	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	---	---	---	---
Zinc	7440-66-6	0.005	mg/L	<0.005	---	---	---	---

### EG035F: Dissolved Mercury by FIMS

Mercury	7439-97-6	0.0001	mg/L	<0.0001	---	---	---	---
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### EP066: Polychlorinated Biphenyls (PCB)

Total Polychlorinated biphenyls	---	1	µg/L	<1	---	---	---	---
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### EP074A: Monocyclic Aromatic Hydrocarbons

Styrene	100-42-5	5	µg/L	<5	---	---	---	---
Isopropylbenzene	98-82-8	5	µg/L	<5	---	---	---	---
n-Propylbenzene	103-65-1	5	µg/L	<5	---	---	---	---
1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	---	---	---	---
sec-Butylbenzene	135-98-8	5	µg/L	<5	---	---	---	---
1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	---	---	---	---
tert-Butylbenzene	98-06-6	5	µg/L	<5	---	---	---	---
p-Isopropyltoluene	99-87-6	5	µg/L	<5	---	---	---	---
n-Butylbenzene	104-51-8	5	µg/L	<5	---	---	---	---

### EP074B: Oxygenated Compounds

Vinyl Acetate	108-05-4	50	µg/L	<50	---	---	---	---
2-Butanone (MEK)	78-93-3	50	µg/L	<50	---	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	---	---	---	---
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	---	---	---	---

### EP074C: Sulfonated Compounds

Carbon disulfide	75-15-0	5	µg/L	<5	---	---	---	---
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### EP074D: Fumigants

2,2-Dichloropropane	594-20-7	5	µg/L	<5	---	---	---	---
1,2-Dichloropropane	78-87-5	5	µg/L	<5	---	---	---	---
cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	---	---	---	---
trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_211113\_TC

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Client sampling date / time

21-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325580-009	---	---	---	---
<b>EP074D: Fumigants - Continued</b>								
1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	---	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	---	---	---	---
Chloromethane	74-87-3	50	µg/L	<50	---	---	---	---
Vinyl chloride	75-01-4	50	µg/L	<50	---	---	---	---
Bromomethane	74-83-9	50	µg/L	<50	---	---	---	---
Chloroethane	75-00-3	50	µg/L	<50	---	---	---	---
Trichlorofluoromethane	75-69-4	50	µg/L	<50	---	---	---	---
1,1-Dichloroethene	75-35-4	5	µg/L	<5	---	---	---	---
Iodomethane	74-88-4	5	µg/L	<5	---	---	---	---
trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	---	---	---	---
1,1-Dichloroethane	75-34-3	5	µg/L	<5	---	---	---	---
cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	---	---	---	---
1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	---	---	---	---
1,1-Dichloropropylene	563-58-6	5	µg/L	<5	---	---	---	---
Carbon Tetrachloride	56-23-5	5	µg/L	<5	---	---	---	---
1,2-Dichloroethane	107-06-2	5	µg/L	<5	---	---	---	---
Trichloroethene	79-01-6	5	µg/L	<5	---	---	---	---
Dibromomethane	74-95-3	5	µg/L	<5	---	---	---	---
1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	---	---	---	---
1,3-Dichloropropane	142-28-9	5	µg/L	<5	---	---	---	---
Tetrachloroethene	127-18-4	5	µg/L	<5	---	---	---	---
1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	---	---	---	---
trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	---	---	---	---
cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	---	---	---	---
1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	---	---	---	---
Pentachloroethane	76-01-7	5	µg/L	<5	---	---	---	---
1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	---	---	---	---
Hexachlorobutadiene	87-68-3	5	µg/L	<5	---	---	---	---
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	5	µg/L	<5	---	---	---	---
Bromobenzene	108-86-1	5	µg/L	<5	---	---	---	---
2-Chlorotoluene	95-49-8	5	µg/L	<5	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_211113\_TC

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Client sampling date / time

21-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325580-009	---	---	---	---
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
4-Chlorotoluene	106-43-4	5	µg/L	<5	---	---	---	---
1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	---	---	---	---
1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	---	---	---	---
1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	---	---	---	---
1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	---	---	---	---
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	5	µg/L	<5	---	---	---	---
Bromodichloromethane	75-27-4	5	µg/L	<5	---	---	---	---
Dibromochloromethane	124-48-1	5	µg/L	<5	---	---	---	---
Bromoform	75-25-2	5	µg/L	<5	---	---	---	---
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	7	µg/L	<7	---	---	---	---
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	1.0	µg/L	<1.0	---	---	---	---
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	---	---	---	---
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	---	---	---	---
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	---	---	---	---
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	---	---	---	---
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	---	---	---	---
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	---	---	---	---
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	---	---	---	---
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	---	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01\_211113\_TC

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Client sampling date / time

21-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325580-009	---	---	---	---
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### EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued

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	---	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	---	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	---	---	---	---

### EP080/071: Total Petroleum Hydrocarbons

C6 - C9 Fraction	----	20	µg/L	<20	---	---	---	---
C10 - C14 Fraction	----	50	µg/L	<50	---	---	---	---
C15 - C28 Fraction	----	100	µg/L	<100	---	---	---	---
C29 - C36 Fraction	----	50	µg/L	<50	---	---	---	---
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	---	---	---	---

### EP080/071: Total Recoverable Hydrocarbons - NEPM 2013

C6 - C10 Fraction	C6_C10	20	µg/L	<20	---	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	---	---	---	---
>C10 - C16 Fraction	>C10_C16	100	µg/L	<100	---	---	---	---
>C16 - C34 Fraction	----	100	µg/L	<100	---	---	---	---
>C34 - C40 Fraction	----	100	µg/L	<100	---	---	---	---
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	---	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	---	---	---	---

### EP080: BTEXN

Benzene	71-43-2	1	µg/L	<1	---	---	---	---
Toluene	108-88-3	2	µg/L	<2	---	---	---	---
Ethylbenzene	100-41-4	2	µg/L	<2	---	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	---	---	---	---
ortho-Xylene	95-47-6	2	µg/L	<2	---	---	---	---



## Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Client sample ID

**R01\_211113\_TC**

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Client sampling date / time

21-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325580-009	----	----	----	----
<b>EP080: BTEXN - Continued</b>								
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	73.0	----	----	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	110	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	107	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	102	----	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	35.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	60.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	59.2	----	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	73.1	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	102	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	100	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	112	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	119	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	114	----	----	----	----





## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	28.5	129
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	78.3	133.2
Toluene-D8	2037-26-5	79.1	128.9
4-Bromofluorobenzene	460-00-4	80.8	123.7
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10.0	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27.4	113
4-Terphenyl-d14	1718-51-0	32	112
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

## QUALITY CONTROL REPORT

Work Order	: <b>ES1325580</b>	Page	: 1 of 27
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 25-NOV-2013
C-O-C number	: ----	Issue Date	: 03-DEC-2013
Sampler	: tc/sm	No. of samples received	: 21
Order number	: 0224193	No. of samples analysed	: 17
Quote number	: SY/794/13		

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



## 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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
		Sydney Organics
Phalak Inthaksone	Laboratory Manager - Organics	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3185860)</b>									
ES1325574-011	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.2	6.3	0.0	0% - 20%
ES1325738-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.2	7.2	0.0	0% - 20%
<b>EA010: Conductivity (QC Lot: 3185862)</b>									
ES1325574-011	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	382	371	2.9	0% - 20%
ES1325738-001	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	437	440	0.7	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3186325)</b>									
ES1325575-009	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.6	14.0	16.7	0% - 50%
ES1325579-006	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.8	14.6	6.1	0% - 50%
<b>EA055: Moisture Content (QC Lot: 3186326)</b>									
ES1325580-006	BV_MW10_4.9	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.7	14.4	1.5	0% - 50%
ES1325594-005	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.0	13.0	7.0	0% - 50%
<b>ED007: Exchangeable Cations (QC Lot: 3181813)</b>									
ES1325580-004	BH_MW01_4.5	ED007: Exchangeable Calcium	----	0.1	meq/100g	24.0	21.4	11.2	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	12.2	11.3	7.5	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.5	0.4	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	1.5	1.2	19.4	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	38.2	34.4	10.3	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3185235)</b>									
ES1325574-008	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	11	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	8	7	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	33	33	0.0	No Limit
ES1325579-006	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	9	18.1	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	5	51.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	7	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	11	37.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	21	34	44.3	No Limit		
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3185237)</b>									
ES1325580-007	BL_MW01_3.0	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3185237) - continued</b>									
ES1325580-007	BL_MW01_3.0	EG005T: Chromium	7440-47-3	2	mg/kg	13	14	9.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	11	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	42	46	7.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	26	6.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	64	73	12.2	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	65	70	7.6	0% - 50%
ES1325594-005	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	20	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	28	20	32.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	13	10	28.6	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	37	32	14.7	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	89	59	40.2	0% - 50%
EG005T: Zinc	7440-66-6	5	mg/kg	22200	21800	2.1	0% - 20%		
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3185236)</b>									
ES1325574-008	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325579-006	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3185238)</b>									
ES1325580-007	BL_MW01_3.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325594-005	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 3181210)</b>									
ES1325402-021	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325553-007	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3185535)</b>									
ES1325580-002	BL_SB04_2.9	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325580-007	BL_MW01_3.0	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3181467)</b>									
ES1325580-001	BP_MW02_6.0	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3181467)</b>									
ES1325580-001	BP_MW02_6.0	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	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 (%)
<b>EP074B: Oxygenated Compounds (QC Lot: 3181467) - continued</b>									
ES1325580-001	BP_MW02_6.0	EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3181467)</b>									
ES1325580-001	BP_MW02_6.0	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3181467)</b>									
ES1325580-001	BP_MW02_6.0	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3181467)</b>									
ES1325580-001	BP_MW02_6.0	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3181467)</b>									
ES1325580-001	BP_MW02_6.0	EP074: Chlorobenzene	108-90-7	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 (%)		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3181467) - continued</b>											
ES1325580-001	BP_MW02_6.0	EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074G: Trihalomethanes (QC Lot: 3181467)</b>											
ES1325580-001	BP_MW02_6.0	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074H: Naphthalene (QC Lot: 3181467)</b>											
ES1325580-001	BP_MW02_6.0	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3183179)</b>											
ES1325580-001	BP_MW02_6.0	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit		
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
		ES1325580-012	BV_MW08_5.0	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit				
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	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 (%)
<b>EP075(SIM): Polynuclear Aromatic Hydrocarbons (QC Lot: 3183179)</b>									
ES1325580-001	BP_MW02_6.0	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1325580-012	BV_MW08_5.0	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3181466)</b>									
ES1325580-001	BP_MW02_6.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	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 (%)
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3181466) - continued</b>									
ES1325580-007	BL_MW01_3.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3183178)</b>									
ES1325580-001	BP_MW02_6.0	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
ES1325580-012	BV_MW08_5.0	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3181466)</b>									
ES1325580-001	BP_MW02_6.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1325580-007	BL_MW01_3.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183178)</b>									
ES1325580-001	BP_MW02_6.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1325580-012	BV_MW08_5.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3181466)</b>									
ES1325580-001	BP_MW02_6.0	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
ES1325580-007	BL_MW01_3.0	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
		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						
	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
	91-20-3	1	mg/kg	<1	<1	0.0	No Limit		
<b>EP231: Perfluorinated Compounds (QC Lot: 3180786)</b>									
EB1328769-001	Anonymous	EP231: PFOS	1763-23-1	0.0005	mg/kg	0.0058	0.0052	10.8	0% - 50%
		EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	<0.005	0.0	No Limit
ES1325580-007	BL_MW01_3.0	EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	<0.005	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 (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 3181835)</b>									
ES1325555-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.002	41.7	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.012	0.012	0.0	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.038	0.036	6.0	No Limit
ES1325573-011	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0013	0.0015	15.5	0% - 50%
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.004	0.005	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.042	0.041	0.0	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.024	0.025	0.0	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 3181834)</b>									
ES1325545-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES1325573-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES1325689-005	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	900	860	4.4	0% - 50%
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	90	90	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 (%)
<b>EP074B: Oxygenated Compounds (QC Lot: 3184134) - continued</b>									
ES1325525-001	Anonymous	EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES1325689-005	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES1325689-005	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES1325689-005	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3184134)</b>									
ES1325525-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<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 (%)		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3184134) - continued</b>											
ES1325525-001	Anonymous	EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit		
ES1325689-005	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit		
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit		
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit		
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit		
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit		
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit		
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit		
		<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3184134)</b>									
		ES1325525-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
				EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
				EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<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 (%)	
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3184134) - continued</b>										
ES1325525-001	Anonymous	EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit	
ES1325689-005	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit	
EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit			
<b>EP074G: Trihalomethanes (QC Lot: 3184134)</b>										
ES1325525-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit	
ES1325689-005	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit	
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit	
<b>EP074H: Naphthalene (QC Lot: 3184134)</b>										
ES1325525-001	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit	
ES1325689-005	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	110	120	9.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	120	140	18.8	No Limit	
<b>EP080: BTEXN (QC Lot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	1	1	0.0	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	3	3	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	4	3	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	3	2	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit	
	EP080: Naphthalene	91-20-3	5	µg/L	<5	<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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA010: Conductivity (QCLot: 3185862)</b>									
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	100	70	130	
<b>ED007: Exchangeable Cations (QCLot: 3181813)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3185235)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	105	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	96.9	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	107	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	110	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	100	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	108	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	102	81	133	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3185237)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	110	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	115	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	109	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	102	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	114	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3185236)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	85.4	66	112	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3185238)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	83.5	66	112	
<b>EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 3181210)</b>									
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	87.2	62	122	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3185535)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	# 127	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3181467)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3181467) - continued</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	102	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	108	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	107	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	107	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	109	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	108	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	106	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	108	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	110	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3181467)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	104	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	97.4	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	101	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	106	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3181467)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	80.1	54	126	
<b>EP074D: Fumigants (QCLot: 3181467)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	91.5	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	105	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	97.4	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	93.4	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	95.2	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3181467)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	64.5	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	81.5	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	94.1	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	89.9	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	96.2	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	99.3	49	135	
		5	mg/kg	<5	----	----	----	----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3181467) - continued</b>									
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	97.6	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	87.2	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	102	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	102	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	104	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	89.5	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	108	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	100	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	105	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	102	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	94.0	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	109	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	102	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	107	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	88.9	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	97.8	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	96.6	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	100	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	107	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	102	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	90.4	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	111	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3181467)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	104	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	104	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	106	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	107	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	106	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	105	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	105	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	107	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	110	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3181467)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	97.5	62	120	
EP074: Dibromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	94.4	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	92.9	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	93.5	60	126	
<b>EP074H: Naphthalene (QCLot: 3181467)</b>									





Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074H: Naphthalene (QCLot: 3181467) - continued</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	106	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183179)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	108	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	107	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	95.8	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	102	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	84.8	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	105	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	95.0	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	104	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	90.4	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	83.6	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	84.2	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	43.0	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183179)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	113	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	113	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	112	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	115	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	113	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	114	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	116	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	104	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	111	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	82.9	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	96.0	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	109	76	122	
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	93.8	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	90.4	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	87.7	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181466)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	81.7	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183178)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	89.9	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	99.5	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	91.3	64	128	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181466)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	80.2	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183178)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	94.6	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	97.5	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	73.3	63	131	
<b>EP080: BTEXN (QCLot: 3181466)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	88.5	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	85.0	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	89.9	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	86.2	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	94.9	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	108	62	138	
<b>EP231: Perfluorinated Compounds (QCLot: 3180786)</b>									
EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	106	54	146	
EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	106	54	134	
EP231: 6:2 Fluorotelomer Sulfonate (6:2 FTS)	27619-97-2	0.005	mg/kg	<0.005	0.0125 mg/kg	105	56	138	

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 3181835)</b>									
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.5	80	118	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.0	82	112	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.6	81	111	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.2	80	112	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.8	83	111	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	100	81	113	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.8	80	116	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 3181834)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	104	78	114	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3179781)</b>									
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	79.0	61.6	107	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3184134)</b>									
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	110	74	118	
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	109	75	121	
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	109	67	123	
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	109	70	122	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3184134) - continued</b>									
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	109	69	123	
EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	108	71	121	
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	108	70	122	
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	108	67	123	
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	106	62	126	
<b>EP074B: Oxygenated Compounds (QCLot: 3184134)</b>									
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	108	61.4	134	
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	113	73.6	130	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	114	61	139	
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	118	65	137	
<b>EP074C: Sulfonated Compounds (QCLot: 3184134)</b>									
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	80.5	72.8	127	
<b>EP074D: Fumigants (QCLot: 3184134)</b>									
EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	84.8	61	119	
EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	105	76	120	
EP074: cis-1,3-Dichloropropylene	10061-01-5	10	µg/L	<10	10 µg/L	99.8	62	120	
EP074: trans-1,3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	97.2	61	119	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	101	69	117	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3184134)</b>									
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	100	60.6	138	
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	108	67.4	130	
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	96.7	69.4	129	
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	88.0	56	140	
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	107	63	135	
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	97.1	65	131	
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	100	69	123	
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	105	70.2	128	
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	103	71	119	
EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	102	75	119	
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	104	77	117	
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	82.2	61	119	
EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	104	73	119	
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	83.6	63	121	
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	98.6	78	122	
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	103	74	120	
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	95.6	74	118	
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	113	75	123	
EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	108	79	121	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3184134) - continued</b>									
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	105	72	124	
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	83.0	66	114	
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	111	60	120	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	103	70.6	128	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	104	70	124	
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	111	74	128	
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	94.7	71.8	126	
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	79.0	66.4	136	
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	86.9	58	132	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3184134)</b>									
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	104	80	118	
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	107	76	116	
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	107	71	121	
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	108	71	121	
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	105	74	120	
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	103	72	120	
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	104	77	117	
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	96.5	60	126	
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	94.7	67	125	
<b>EP074G: Trihalomethanes (QCLot: 3184134)</b>									
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	92.8	76	118	
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	86.3	64	118	
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	87.8	65	115	
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	86.9	73.5	126	
<b>EP074H: Naphthalene (QCLot: 3184134)</b>									
EP074: Naphthalene	91-20-3	7	µg/L	<7	10 µg/L	98.2	61	125	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3179780)</b>									
EP075(SIM): Phenol	108-95-2	0.2	µg/L	----	5 µg/L	46.9	24.5	61.9	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L	----	5 µg/L	68.8	63.8	110	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L	----	5 µg/L	66.3	55.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	µg/L	----	10 µg/L	65.6	42.5	114	
		2	µg/L	<2.0	----	----	----	----	
EP075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L	----	5 µg/L	68.7	62.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.2	µg/L	----	5 µg/L	67.2	59.9	112	
		1	µg/L	<1.0	----	----	----	----	



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3179780) - continued</b>									
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.2	µg/L	----	5 µg/L	74.1	59.3	122	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.2	µg/L	----	5 µg/L	85.8	64.3	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L	----	5 µg/L	79.2	63	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.2	µg/L	----	5 µg/L	71.4	58.7	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.2	µg/L	----	5 µg/L	89.1	50	108	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L	----	10 µg/L	23.6	8.7	95	
		2	µg/L	<2.0	----	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3179780)</b>									
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	5 µg/L	68.1	58.6	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	5 µg/L	70.5	63.6	114	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	5 µg/L	70.4	62.2	113	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	5 µg/L	79.7	63.9	115	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	5 µg/L	72.1	62.6	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	5 µg/L	77.2	64.3	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	5 µg/L	70.3	63.6	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	5 µg/L	68.7	63.1	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	5 µg/L	81.6	64.1	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	5 µg/L	97.8	62.5	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	5 µg/L	74.6	61.7	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	5 µg/L	87.0	61.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	5 µg/L	104	63.3	117	
		0.5	µg/L	<0.5	----	----	----	----	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3179780) - continued</b>								
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	5 µg/L	87.9	59.9	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	----	5 µg/L	87.5	61.2	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	5 µg/L	78.1	59.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	1	µg/L	<1.0	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3179779)</b>								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	101	59	129
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	100	71	131
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	104	62	120
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3184135)</b>								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	94.2	75	127
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3179779)</b>								
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	106	58.9	131
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	102	73.9	138
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
		50	µg/L	----	1500 µg/L	97.6	67	127
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3184135)</b>								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	98.1	75	127
<b>EP080: BTEXN (QCLot: 3184135)</b>								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.9	70	124
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	92.7	65	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	95.6	70	120
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	94.5	69	121
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.4	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	92.4	70	124

### 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

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%)	Recovery Limits (%)	
					MS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3185235)</b>							
ES1325574-008	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	105	70	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike	Spike Recovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3185235) - continued</b>							
ES1325574-008	Anonymous	EG005T: Cadmium	7440-43-9	50 mg/kg	96.0	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	104	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	95.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	100	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	96.6	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3185237)</b>							
ES1325580-007	BL_MW01_3.0	EG005T: Arsenic	7440-38-2	50 mg/kg	94.3	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	101	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	105	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	79.3	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	103	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	94.8	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3185236)</b>							
ES1325574-008	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	98.6	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3185238)</b>							
ES1325580-007	BL_MW01_3.0	EG035T: Mercury	7439-97-6	5 mg/kg	94.8	70	130
<b>EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 3181210)</b>							
ES1325402-021	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	79.9	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3185535)</b>							
ES1325580-002	BL_SB04_2.9	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	127	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3181467)</b>							
ES1325580-001	BP_MW02_6.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	75.2	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	78.2	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3181467)</b>							
ES1325580-001	BP_MW02_6.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	90.6	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183179)</b>							
ES1325580-001	BP_MW02_6.0	EP075(SIM): Phenol	108-95-2	10 mg/kg	98.9	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.3	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	79.7	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	89.4	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	50.8	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183179)</b>							
ES1325580-001	BP_MW02_6.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	95.1	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	97.6	70	130



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181466)</b>								
ES1325580-001	BP_MW02_6.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	79.7	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183178)</b>								
ES1325580-001	BP_MW02_6.0	EP071: C10 - C14 Fraction	----	640 mg/kg	74.6	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	85.8	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	78.9	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181466)</b>								
ES1325580-001	BP_MW02_6.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	74.9	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183178)</b>								
ES1325580-001	BP_MW02_6.0	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	100	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	83.3	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	63.4	52	132	
<b>EP080: BTEXN (QCLot: 3181466)</b>								
ES1325580-001	BP_MW02_6.0	EP080: Benzene	71-43-2	2.5 mg/kg	71.0	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	77.3	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	78.4	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	76.1	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.5	70	130	
	91-20-3	EP080: Naphthalene		2.5 mg/kg	94.8	70	130	
<b>EP231: Perfluorinated Compounds (QCLot: 3180786)</b>								
EB1328769-001	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	77.1	54	146	
		EP231: PFOA	335-67-1	0.0025 mg/kg	98.3	54	134	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	121	56	138	

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 3181835)</b>							
ES1325573-003	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	100	70	130
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	93.7	70	130
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	94.7	70	130
		EG020A-F: Copper	7440-50-8	0.2 mg/L	93.3	70	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	87.8	70	130
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	89.1	70	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	93.1	70	130
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 3181834)</b>							
ES1325573-004	Anonymous	EG035F: Mercury	7439-97-6	0.0100 mg/L	73.1	70	130





Sub-Matrix: **WATER**

				Matrix Spike (MS) Report				
				Spike	Spike Recovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3184134)</b>								
ES1325525-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	127	70	130	
		EP074: Trichloroethene	79-01-6	25 µg/L	124	70	130	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3184134)</b>								
ES1325525-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	123	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3184135)</b>								
ES1325525-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	121	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3184135)</b>								
ES1325525-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	70	130	
<b>EP080: BTEXN (QCLot: 3184135)</b>								
ES1325525-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	108	70	130	
		EP080: Toluene	108-88-3	25 µg/L	103	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	108	70	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	105	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	107	70	130	
	EP080: Naphthalene	91-20-3	25 µg/L	96.2	70	130		

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit	
<b>EP231: Perfluorinated Compounds (QCLot: 3180786)</b>											
EB1328769-001	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	77.1	----	54	146	----	----	
		EP231: PFOA	335-67-1	0.0025 mg/kg	98.3	----	54	134	----	----	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	121	----	56	138	----	----	
<b>EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 3181210)</b>											
ES1325402-021	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	79.9	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3181466)</b>											
ES1325580-001	BP_MW02_6.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	79.7	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3181466)</b>											
ES1325580-001	BP_MW02_6.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	74.9	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3181466)</b>											
ES1325580-001	BP_MW02_6.0	EP080: Benzene	71-43-2	2.5 mg/kg	71.0	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	77.3	----	70	130	----	----	



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP080: BTEXN (QCLot: 3181466) - continued</b>										
ES1325580-001	BP_MW02_6.0	EP080: Ethylbenzene	100-41-4	2.5 mg/kg	78.4	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	76.1	----	70	130	----	----
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.5	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	94.8	----	70	130	----	----
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3181467)</b>										
ES1325580-001	BP_MW02_6.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	75.2	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	78.2	----	70	130	----	----
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3181467)</b>										
ES1325580-001	BP_MW02_6.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	90.6	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183178)</b>										
ES1325580-001	BP_MW02_6.0	EP071: C10 - C14 Fraction	----	640 mg/kg	74.6	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	85.8	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	78.9	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183178)</b>										
ES1325580-001	BP_MW02_6.0	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	100	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	83.3	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	63.4	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183179)</b>										
ES1325580-001	BP_MW02_6.0	EP075(SIM): Phenol	108-95-2	10 mg/kg	98.9	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.3	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	79.7	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	89.4	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	50.8	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183179)</b>										
ES1325580-001	BP_MW02_6.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	95.1	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	97.6	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3185235)</b>										
ES1325574-008	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	105	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.0	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	103	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	104	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	95.8	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	100	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	96.6	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3185236)</b>										
ES1325574-008	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	98.6	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3185237)</b>										



Sub-Matrix: **SOIL**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG005T: Total Metals by ICP-AES (QCLot: 3185237) - continued</b>										
ES1325580-007	BL_MW01_3.0	EG005T: Arsenic	7440-38-2	50 mg/kg	94.3	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	101	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	105	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	79.3	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	103	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	94.8	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3185238)</b>										
ES1325580-007	BL_MW01_3.0	EG035T: Mercury	7439-97-6	5 mg/kg	94.8	----	70	130	----	----
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3185535)</b>										
ES1325580-002	BL_SB04_2.9	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	127	----	70	130	----	----

Sub-Matrix: **WATER**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 3181834)</b>										
ES1325573-004	Anonymous	EG035F: Mercury	7439-97-6	0.0100 mg/L	73.1	----	70	130	----	----
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 3181835)</b>										
ES1325573-003	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	100	----	70	130	----	----
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	93.7	----	70	130	----	----
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	94.7	----	70	130	----	----
		EG020A-F: Copper	7440-50-8	0.2 mg/L	93.3	----	70	130	----	----
		EG020A-F: Lead	7439-92-1	0.2 mg/L	87.8	----	70	130	----	----
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	89.1	----	70	130	----	----
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	93.1	----	70	130	----	----
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3184134)</b>										
ES1325525-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	127	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	25 µg/L	124	----	70	130	----	----
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3184134)</b>										
ES1325525-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	123	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	121	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3184135)</b>										
ES1325525-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	108	----	70	130	----	----
		EP080: Toluene	108-88-3	25 µg/L	103	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	25 µg/L	108	----	70	130	----	----

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 Work Order : ES1325580  
 Client : ENVIRO RESOURCES MANAGEMENT  
 Project : PROJECT SYMPHONY



Sub-Matrix: **WATER**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EP080: BTEXN (QCLot: 3184135) - continued</b>										
ES1325525-001	Anonymous	EP080: meta- & para-Xylene	108-38-3	25 µg/L	105	----	70	130	----	----
			106-42-3							
		EP080: ortho-Xylene	95-47-6	25 µg/L	107	----	70	130	----	----
		EP080: Naphthalene	91-20-3	25 µg/L	96.2	----	70	130	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325580</b>	Page	: 1 of 16
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 25-NOV-2013
C-O-C number	: ----	Issue Date	: 03-DEC-2013
Sampler	: tc/sm	No. of samples received	: 21
Order number	: 0224193	No. of samples analysed	: 17
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA002 : pH (Soils)</b>								
<b>Soil Glass Jar - Unpreserved (EA002)</b> BH_MW01_4.5, BI_MW3_3.8	BI_MW02_3.0,	21-NOV-2013	29-NOV-2013	28-NOV-2013	✖	29-NOV-2013	29-NOV-2013	✔
<b>EA010: Conductivity</b>								
<b>Soil Glass Jar - Unpreserved (EA010)</b> BH_MW01_4.5, BI_MW02_3.0,	BH_MW02_3.7, BI_MW3_3.8	21-NOV-2013	29-NOV-2013	28-NOV-2013	✖	29-NOV-2013	27-DEC-2013	✔
<b>EA055: Moisture Content</b>								
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BL_MW01_3.0, BI_MW02_3.0, BV_MW08_5.0,	BL_SB04_2.9, BH_MW01_4.5, BV_MW10_4.9, BL_SB03_3.0, BI_MW3_3.8, BV_MW09_2.0	21-NOV-2013	----	----	----	29-NOV-2013	05-DEC-2013	✔
<b>ED007: Exchangeable Cations</b>								
<b>Soil Glass Jar - Unpreserved (ED007)</b> BH_MW01_4.5, BI_MW3_3.8	BI_MW02_3.0,	21-NOV-2013	28-NOV-2013	19-DEC-2013	✔	28-NOV-2013	19-DEC-2013	✔
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BL_MW01_3.0, BI_MW02_3.0, BV_MW08_5.0,	BL_SB04_2.9, BH_MW01_4.5, BV_MW10_4.9, BL_SB03_3.0, BI_MW3_3.8, BV_MW09_2.0	21-NOV-2013	29-NOV-2013	20-MAY-2014	✔	29-NOV-2013	20-MAY-2014	✔



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BL_MW01_3.0, BI_MW02_3.0, BV_MW08_5.0, BL_SB04_2.9, BH_MW01_4.5, BV_MW10_4.9, BL_SB03_3.0, BI_MW3_3.8, BV_MW09_2.0	21-NOV-2013	29-NOV-2013	19-DEC-2013	✓	29-NOV-2013	19-DEC-2013	✓
<b>EG048: Hexavalent Chromium (Alkaline Digest)</b>							
<b>Soil Glass Jar - Unpreserved (EG048G)</b> BL_MW01_3.0	21-NOV-2013	27-NOV-2013	19-DEC-2013	✓	27-NOV-2013	04-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
<b>Soil Glass Jar - Unpreserved (EP066)</b> BL_SB04_2.9, BH_MW02_3.7, BL_MW01_3.0, BV_MW08_5.0, BL_MW05_3.4, BV_MW10_4.9, BL_SB03_3.0, BV_MW09_2.0	21-NOV-2013	29-NOV-2013	05-DEC-2013	✓	30-NOV-2013	08-JAN-2014	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
<b>Soil Glass Jar - Unpreserved (EP071)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BL_MW01_3.0, BI_MW02_3.0, BV_MW08_5.0, BL_SB04_2.9, BH_MW01_4.5, BV_MW10_4.9, BL_SB03_3.0, BI_MW3_3.8, BV_MW09_2.0	21-NOV-2013	29-NOV-2013	05-DEC-2013	✓	29-NOV-2013	08-JAN-2014	✓
<b>EP074D: Fumigants</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_6.0, BH_MW02_3.7, BL_MW01_3.0, BV_MW08_5.0, BL_MW05_3.4, BV_MW10_4.9, BL_SB03_3.0, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	28-NOV-2013	*
<b>EP074E: Halogenated Aliphatic Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_6.0, BH_MW02_3.7, BL_MW01_3.0, BV_MW08_5.0, BL_MW05_3.4, BV_MW10_4.9, BL_SB03_3.0, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	28-NOV-2013	*



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	28-NOV-2013	*	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	28-NOV-2013	*	
<b>EP074H: Naphthalene</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	28-NOV-2013	*	
<b>EP074B: Oxygenated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	28-NOV-2013	*	
<b>EP074C: Sulfonated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	28-NOV-2013	*	
<b>EP074G: Trihalomethanes</b>								
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	28-NOV-2013	*	





Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP075(SIM)A: Phenolic Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BL_MW01_3.0, BI_MW02_3.0, BV_MW08_5.0, BL_SB04_2.9, BH_MW01_4.5, BV_MW10_4.9, BL_SB03_3.0, BI_MW3_3.8, BV_MW09_2.0	21-NOV-2013	29-NOV-2013	05-DEC-2013	✓	29-NOV-2013	08-JAN-2014	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BL_MW01_3.0, BI_MW02_3.0, BV_MW08_5.0, BL_SB04_2.9, BH_MW01_4.5, BV_MW10_4.9, BL_SB03_3.0, BI_MW3_3.8, BV_MW09_2.0	21-NOV-2013	29-NOV-2013	05-DEC-2013	✓	29-NOV-2013	08-JAN-2014	✓
<b>EP080: BTEXN</b>							
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPIKE, TS 6, TSC, TSC 6	15-NOV-2013	28-NOV-2013	29-NOV-2013	✓	29-NOV-2013	29-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BL_MW01_3.0, BI_MW02_3.0, BV_MW08_5.0, BL_SB04_2.9, BH_MW01_4.5, BV_MW10_4.9, BL_SB03_3.0, BI_MW3_3.8, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	29-NOV-2013	05-DEC-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPIKE, TS 6, TSC, TSC 6	15-NOV-2013	28-NOV-2013	29-NOV-2013	✓	29-NOV-2013	29-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BL_MW01_3.0, BI_MW02_3.0, BV_MW08_5.0, BL_SB04_2.9, BH_MW01_4.5, BV_MW10_4.9, BL_SB03_3.0, BI_MW3_3.8, BV_MW09_2.0	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	29-NOV-2013	05-DEC-2013	✓
<b>EP231: Perfluorinated Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP231)</b> BL_SB04_2.9, BL_MW01_3.0, BL_MW05_3.4, BL_SB03_3.0	21-NOV-2013	28-NOV-2013	20-MAY-2014	✓	28-NOV-2013	07-JAN-2014	✓



Matrix: **WATER**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG020F: Dissolved Metals by ICP-MS</b>							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) R01_211113_TC	21-NOV-2013	---	20-MAY-2014	----	27-NOV-2013	20-MAY-2014	✓
<b>EG035F: Dissolved Mercury by FIMS</b>							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) R01_211113_TC	21-NOV-2013	---	19-DEC-2013	----	28-NOV-2013	19-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
Amber Glass Bottle - Unpreserved (EP066) R01_211113_TC	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	08-JAN-2014	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Amber Glass Bottle - Unpreserved (EP071) R01_211113_TC	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	08-JAN-2014	✓
<b>EP074D: Fumigants</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓
<b>EP074F: Halogenated Aromatic Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓
<b>EP074H: Naphthalene</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓
<b>EP074B: Oxygenated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓
<b>EP074C: Sulfonated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓
<b>EP074G: Trihalomethanes</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_211113_TC	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	08-JAN-2014	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_211113_TC	21-NOV-2013	28-NOV-2013	28-NOV-2013	✓	29-NOV-2013	08-JAN-2014	✓

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 Project : PROJECT SYMPHONY



Matrix: **WATER**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080: BTEXN</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R01_211113_TC	21-NOV-2013	28-NOV-2013	05-DEC-2013	✓	28-NOV-2013	05-DEC-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Electrical Conductivity (1:5)	EA010	2	15	13.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	3	33.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	14	14.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	2	12	16.7	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	38	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	38	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	8	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Electrical Conductivity (1:5)	EA010	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	12	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Electrical Conductivity (1:5)	EA010	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	12	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Method Blanks (MB) - Continued</b>							
Volatile Organic Compounds	EP074	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	12	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	38	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Dissolved Mercury by FIMS	EG035F	2	13	15.4	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	6	16.7	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Dissolved Mercury by FIMS	EG035F	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	6	16.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Dissolved Mercury by FIMS	EG035F	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	6	16.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Dissolved Mercury by FIMS	EG035F	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	6	16.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Page : 10 of 16  
 Work Order : ES1325580  
 Client : ENVIRO RESOURCES MANAGEMENT  
 Project : PROJECT SYMPHONY



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<i>Analytical Methods</i>							
<b>Matrix Spikes (MS) - Continued</b>							
Volatile Organic Compounds	EP074	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Electrical Conductivity (1:5)	EA010	SOIL	(APHA 21st ed., 2510) Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 104)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
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 (2013) Schedule B(3) (Method 504)
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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) Schedule B(3) (Method 501)



Analytical Methods	Method	Matrix	Method Descriptions
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	SOIL	In-House. A portion of soil is soaked in sodium hydroxide followed by extraction with methanol. The extract is neutralised with HCl and an aliquot taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI Negative Mode using MRM.
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): Samples are 0.45 um filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45 um filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Polychlorinated Biphenyls (PCB)	EP066	WATER	USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3) (Appdx. 2)
TPH - Semivolatle Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Volatile Organic Compounds	EP074	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	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 (2013) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	USEPA SW846, Method 3060A.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) Schedule B(3) (Method 202)





<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Sample Extraction for Perfluoroalkyl Compounds	EP231-PR	SOIL	In-House
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 <sub>2</sub> SO <sub>4</sub> 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 <sub>2</sub> SO <sub>4</sub> 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.
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 100 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 (2013) 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: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP066: Polychlorinated Biphenyls (PCB)	3801855-002	----	<b>Total Polychlorinated biphenyls</b>	----	127 %	57.4-117%	<b>Recovery greater than upper control limit</b>

- 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

- For all regular sample matrices, no surrogate recovery outliers occur.

### Outliers : Analysis Holding Time Compliance

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

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA002 : pH (Soils)</b>							
<b>Soil Glass Jar - Unpreserved</b>							
BH_MW01_4.5, BI_MW3_3.8	BI_MW02_3.0,	29-NOV-2013	28-NOV-2013	1	----	----	----
<b>EA010: Conductivity</b>							
<b>Soil Glass Jar - Unpreserved</b>							
BH_MW01_4.5, BI_MW02_3.0,	BH_MW02_3.7, BI_MW3_3.8	29-NOV-2013	28-NOV-2013	1	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved</b>							
BP_MW02_6.0, BH_MW02_3.7, BL_MW01_3.0, BV_MW08_5.0,	BL_MW05_3.4, BV_MW10_4.9, BL_SB03_3.0, BV_MW09_2.0	----	----	----	29-NOV-2013	28-NOV-2013	1
<b>EP074B: Oxygenated Compounds</b>							



Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074B: Oxygenated Compounds - Analysis Holding Time Compliance</b>						
<b>Soil Glass Jar - Unpreserved</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	----	----	----	29-NOV-2013	28-NOV-2013	1
<b>EP074C: Sulfonated Compounds</b>						
<b>Soil Glass Jar - Unpreserved</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	----	----	----	29-NOV-2013	28-NOV-2013	1
<b>EP074D: Fumigants</b>						
<b>Soil Glass Jar - Unpreserved</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	----	----	----	29-NOV-2013	28-NOV-2013	1
<b>EP074E: Halogenated Aliphatic Compounds</b>						
<b>Soil Glass Jar - Unpreserved</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	----	----	----	29-NOV-2013	28-NOV-2013	1
<b>EP074F: Halogenated Aromatic Compounds</b>						
<b>Soil Glass Jar - Unpreserved</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	----	----	----	29-NOV-2013	28-NOV-2013	1
<b>EP074G: Trihalomethanes</b>						
<b>Soil Glass Jar - Unpreserved</b> BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	----	----	----	29-NOV-2013	28-NOV-2013	1
<b>EP074H: Naphthalene</b>						



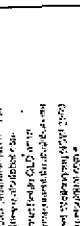
Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074H: Naphthalene - Analysis Holding Time Compliance</b>						
<b>Soil Glass Jar - Unpreserved</b>						
BP_MW02_6.0, BL_MW05_3.4, BH_MW02_3.7, BV_MW10_4.9, BL_MW01_3.0, BL_SB03_3.0, BV_MW08_5.0, BV_MW09_2.0	----	----	----	29-NOV-2013	28-NOV-2013	1

### Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**



### CHAIN OF CUSTODY

ALS Laboratory  
Please fax to:

Client: **ERM**

Office: **Sydney**

Project: **Sydney**

Order Number: **0224193**

Project Manager: **JOSEPH FERRING**

Sampler: **S. MULLIGAN/H. CAMPBELL**

### TURNAROUND REQUIREMENTS:

Standard TAT (List due date):

Standard TAT may be longer for some tests e.g. Ultra Trace Organics

ALS QUOTE NO.: **SVY79443**

Site: **BAYSWATER / LIDDELL**

Contact PH: **STEPHEN MULLIGAN**

Sampler Mobile: **SYMPHONY.MULLIGAN@ERM.COM**

EDD Format (or default): **25/11/13**

COG emailed to ALS? (YES / NO)

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?  Yes  No

From Iso / from Ice packs present upon receipt?  Yes  No

Random Sample Temperature on Receipt: **5.3**

RECEIVED BY: **J. Ferring**

RECEIVED BY: **S.M.C.**

DATE/TIME: **28/11/13 17:00**

DATE/TIME: **28/11/13 10:30**

RECEIVED BY: **Stephen Mulligan**

DATE/TIME: **25/11/13**

### COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

Blanked TAT (List due date):

ALS USE	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below	TOTAL CONTAINERS	ANALYSIS REQUIRED including SUITES (NO. Suite Codes must be listed to affect suite prep)											Additional Information	
						When Matrix also required, specify Total (unfiltered bottle required) or Chelated (filtered matrix bottle required).	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Tl, Se)	5-24 TRH/C6-Phenols	VOC Target Scan	PCB	pH (1:5)	Exchangeable Cations (ED07)	PFO/POA	Asbestos (absence/presence)	Particle Sizing to 75um (Stave)	Organic Matter plus Total Organic Carbon (EPO4)		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	BL-SB01-0.25	25/11/13	SOIL	2x Jar, 1x Bag	3	X	X	X	X	X	X	X	X	X	X	X	X	
2	BL-SB07-0.25	25/11/13		1x Jar, 1x Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	
3	BL-MW04-0.25	25/11/13		2x Jar, 1x Bag	3	X	X	X	X	X	X	X	X	X	X	X	X	
4	BL-SB02-0.5	25/11/13		2x Jar, 1x Bag	3	X	X	X	X	X	X	X	X	X	X	X	X	
5	BL-MW02-0.2	25/11/13		2x Jar, 1x Bag	3	X	X	X	X	X	X	X	X	X	X	X	X	
6	BL-SB06-0.5	25/11/13		2x Jar, 1x Bag	3	X	X	X	X	X	X	X	X	X	X	X	X	
7	BV-MW01-0.1	25/11/13		1x Jar, 1x Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	
8	BV-MW13-0.5	25/11/13		1x Jar, 1x Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	
9	BV-SB07-0.25	25/11/13		1x Jar, 1x Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	
10	BP-MW06-0.2	25/11/13		1x Jar, 1x Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	
11	BE-MW04-2.0	25/11/13		1x JAR	1	X	X	X	X	X	X	X	X	X	X	X	X	
12	BE-MW05-2.0	25/11/13		1x JAR	1	X	X	X	X	X	X	X	X	X	X	X	X	

Environmental Division  
Sydney  
Work Order  
**ES1325842**



Telephone : +61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; DRG = Nitric Preserved Glass; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Air-tight Unpreserved Plastic; V = VOA Vol HCl Preserved; VB = VOA Vol Sodium Bisulfate Preserved; VS = VOA Vol Sulfuric Preserved; AV = Air-tight Unpreserved Vol; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Formalin; Z = Zinc Amalgam Preserved Bottle; E = EDTA Preserved Bottle; ST = Starch Bottle; ABS = Plastic Jar for Acid Sulphate Soils; B = Unpreserved Bot.



### CHAIN OF CUSTODY

ALS Laboratory  
 4000 West 11th Street  
 Suite 100  
 Denver, CO 80202  
 303.425.1234

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ALS Laboratory  
 4000 West 11th Street  
 Suite 100  
 Denver, CO 80202  
 303.425.1234

CLIENT: **ERM**

OFFICE: **Sydney**

PROJECT: **Project Synphony**

ORDER NUMBER: **0224193**

PROJECT MANAGER: **JOSEPH FERRING**

SAMPLER: **STEPHEN MULLIGAN**

CONTACT PH: \_\_\_\_\_

SAMPLER MOBILE: \_\_\_\_\_

EDD FORMAT (or default): \_\_\_\_\_

Site: **8AYS WATER LIDDELL**

ALS QUOTE NO.: **SV73413**

TURNAROUND REQUIREMENTS:  Standard TAT (List due date);  Non Standard or request TAT (List due date): \_\_\_\_\_

COC SEQUENCE NUMBER (Circle): \_\_\_\_\_

Free Ice / Ice on Ice (Initials present upon receipt):  Yes  No

Freeze Sample Temperature on Receipt: \_\_\_\_\_

Other Comment: \_\_\_\_\_

RECEIVED BY: **Stephen Mulligan**

RECEIVED BY: **Ferring**

DATE/TIME: **26/11/13 10:30**

DATE/TIME: **28/11/13 17:00**

DATE/TIME: **28/11/13 19:30**

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

LAB ID	SAMPLE ID	MATRIX	DATE / TIME	TYPE & PRESERVATIVE codes (below)	TOTAL CONTAINERS	ANALYSIS REQUIRED (including SVITES (NLS, Sides Codes must be listed to reflect auto price) Where Mobile (m.u. required), specify Total (unlabeled bottle required) or Diluted (labeled bottle required).															Additional Information		
						92 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Ni, Mn, Ni, Pb, V, Zn, B, Mo, Tl, Se)	S-24 TRH (Cr, Cd, Pb, TKN, PAH, Phenols)	VOC Target Scan	PCB	pH (1-s)	Exchangeable cations (ED07)	PFOS/PFOA	Absence/Presence	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EPO4)	Electrical Conductivity						
13	BH-SB07-0.2	soil	26/11/13	1x Jar, 1x Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
14	BL-MW03-0.25	soil	26/11/13	1x Jar, 1x Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
15	BP-MW01-0.25		26/11/13	1x Jar, 1x Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
16	BP-MW03-0.5		26/11/13		2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
17	BU-MW01-0.5		26/11/13		2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
18	BU-MW02-0.5		26/11/13		2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
19	BU-SB01-0.5		26/11/13		2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
20	BU-SB02-0.25		26/11/13		2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
21	BU-MW03-0.5		26/11/13		2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
22	D01-26/11/13-SM		26/11/13	1x Jar	1																		
23	BX-MW01-0.5		26/11/13	1x Jar, 1x Bag	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
24	BX-MW02-0.5		26/11/13		2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
25	BX-MW04-0.15		26/11/13		2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; DIC = Nitric Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; E = Sodium Hydroxide Preserved Plastic; AG = Ammonia Preserved Plastic; AP = Ammonia Unpreserved Plastic; V = VOA Val HCl Preserved; VO = VOA Val Sodium Bisulfate Preserved; VS = VOA Val Sulfuric Preserved; AV = Air/Soil Unpreserved Val; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Amber Glass; H3 = HCl Preserved Plastic; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Starch Bottle; AS9 = Plastic Bag for Acid Samples; B = Unpreserved Bm

**CHAIN OF CUSTODY**  
ALS Laboratory  
please ask →

Standard TAT (List due date)  
 Non Standard or urgent TAT (List due date):

TURNAROUND REQUIREMENTS:  
 (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

PROJECT: Project Symphony  
 ORDER NUMBER: 0214153  
 PROJECT MANAGER: Joe Carney  
 SAMPLER: Tom Callhage  
 CQC emailed to ALS? (YES / NO)  
 Email Reports to (will default to PM if no other addresses are listed):  
 Email Invoice to (will default to PM if no other addresses are listed):

CONTACT PH: \_\_\_\_\_  
 SAMPLER MOBILE: \_\_\_\_\_  
 EDD FORMAT (or default): \_\_\_\_\_

TURNAROUND REQUIREMENTS:  
 (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

PROJECT: Project Symphony  
 ORDER NUMBER: 0214153  
 PROJECT MANAGER: Joe Carney  
 SAMPLER: Tom Callhage  
 CQC emailed to ALS? (YES / NO)  
 Email Reports to (will default to PM if no other addresses are listed):  
 Email Invoice to (will default to PM if no other addresses are listed):

FOR LABORATORY USE ONLY (Circle)  
 Custody Seal Intact?  No  Yes  
 Free ice / frozen ice labels present upon receipt?  No  Yes  
 Random Sample Temperature on Receipt: \_\_\_\_\_ °C  
 Other comment: \_\_\_\_\_  
 RECEIVED BY: *Tom Callhage*  
 DATE/TIME: *25/11/13*  
 RELINQUISHED BY: *Joe Carney*  
 DATE/TIME: *28/11/13 17:00*  
 RECEIVED BY: *Rannoch*  
 DATE/TIME: *28/11/13 19:00*

ALS USE	SAMPLE DETAILS		CONTAINER INFORMATION		ANALYSIS REQUIRED including SITES (NO. Site Codes must be listed to select suite price) Where Matrix are required, specify Total (undiluted bottle required) or Dissolved (final filtered bottle required).													Additional Information
	MATRIX: SOLID (S) WATER (W)	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes (below)	TOTAL CONTAINERS	S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	S-2 Metals (As, Ba, Mn, Ni, Pb, V, Zn, Bi, Mo, Ti, Se)	S-24 TRHCs-C409/TEKN, PAH	VOC Target Scan	PCB	PH (1:5) / CFC	Skatole (E0607) / Skatole (E0607)	PFO/S/FOA	Asbestos (absence/presence)	Particle Sizing to Tyson (Sieve)	Organic Matter plus Total Organic Carbon (EPO4)		
26	08-MW01-5	22/11	SOIL		1	X	X	X	X	X	X	X	X	X	X			
27	BE-MW07-6.0	↓			1	X	X	X	X	X	X	X	X	X	X			
28	BF-MW06-6.0	↓			1	X	X	X	X	X	X	X	X	X	X			
29	BL-MW06-3.0	25/11			1	X	X	X	X	X	X	X	X	X	X			
30	BL-SB01-2.9				1	X	X	X	X	X	X	X	X	X	X			
31	BV-SB02-2.9				1	X	X	X	X	X	X	X	X	X	X			
32	BV-SB06-2.9				1	X	X	X	X	X	X	X	X	X	X			
33	DOL-25113-TR				1	X	X	X	X	X	X	X	X	X	X			
34	BL-SB07-2.9				1	X	X	X	X	X	X	X	X	X	X			
35	RO1-25113-SM	25/11/13			4	X	X	X	X	X	X	X	X	X	X			
36	RO1-26113-SM	26/11/13			4	X	X	X	X	X	X	X	X	X	X			

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Sulphur Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AP = Amber Glass Unpreserved Plastic; V = VOA Via HCl Preserved; VB = VOA Via Sodium Dichloride Preserved; VS = VOA Via Sulphur Preserved; AV = Aircooled Unpreserved Vial S2 = Sulphur Preserved; Amber Glass: H = HD Preserved Plastic; HS = HC Preserved Plastic; IS = IFC Preserved Plastic; SP = Sulphur Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Shimite Bottle; ASG = Plastic Jar for Acid Sulphate Soils; B = Unpreserved Soil.



# CHAIN OF CUSTODY

ALS Laboratory  
 10000 170th Avenue, Suite 100  
 Denver, CO 80231  
 Phone: 303.440.2600  
 Fax: 303.440.2601  
 Email: info@als.com

ALS Laboratory  
 10000 170th Avenue, Suite 100  
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 Phone: 303.440.2600  
 Fax: 303.440.2601  
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 10000 170th Avenue, Suite 100  
 Denver, CO 80231  
 Phone: 303.440.2600  
 Fax: 303.440.2601  
 Email: info@als.com

ALS Laboratory  
 10000 170th Avenue, Suite 100  
 Denver, CO 80231  
 Phone: 303.440.2600  
 Fax: 303.440.2601  
 Email: info@als.com

**CLIENT:** ERM  
**OFFICE:** SYDNEY  
**PROJECT:** Project Symphony  
**ORDER NUMBER:** 0224193  
**PROJECT MANAGER:** JOSEPH PERRINI  
**SAMPLER:** HC  
**CONTACT PH:**  
**SAMPLER MOBILE:**  
**EDD FORMAT (or default):**  
**COC emailed to ALS? (YES/NO):**  
**Email Reports to (will default to PM if no other addresses are listed):** Symphony.MacKenzie@erm.com  
**Email Invoices to (will default to PM if no other addresses are listed):**

**TURNAROUND REQUIREMENTS:**  Standard TAT (List due date)  
 Non Standard or urgent TAT (List due date):

**ALS QUOTE NO.:** SY79413  
**SITE:** BAYSWATER / LIDDELL  
**FOR LABORATORY USE ONLY (Circle):**  
 Custody Seal (Intact)   
 Free Ice / Frozen Ice Billets present upon receipt   
 Random Sample Temperature on Receipt: 5-3 °C  
 Other comment:

**RECEIVED BY:** JMC  
**DATE/TIME:** 26/11/13 08:30  
**RELINQUISHED BY:** HC  
**DATE/TIME:** 26/11/13 17:00  
**RECEIVED BY:** KENNETH  
**DATE/TIME:** 28/11/13 19:00

ALS USE	SAMPLE DETAILS		CONTAINER INFORMATION		ANALYSIS REQUIRED INCLUDING SUITES (NB. Solo Suites must be listed to allow suite price)														Additional Information
	MATRIX: SOLID (S) WATER (W)	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below	refer to TOTAL CONTAINERS	When Matrixes are required, specify Total (combined bottles retained) or Disolved (liquid filtered bottle retained).													
53	BL-MW02-2.5	26-11	SOIL	JAR, ICE	1	17 Metals (As, Ba, Pb, Zn, Hg)	5-24 TRHCs-COYBTEXN, PAH	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (ED07)	PFOA/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EPO4)	Comments on study contaminant levels, dilutions, or samples requiring specific GC analysis etc.			
47	BL-MW02-4.0	26-11				X	X	X											
48	BL-MW03-2.5	26-11				X	X	X											
49	BL-MW03-4.0	26-11				X	X	X											
44	BE-MW09-0.9	26-11				X	X	X											
50	BL-MW06-4.0	26/11		JAR	1														
51	BL-MW02-3.0	25/11		JAR	1														
52	BL-SB01-2.9	25/11		JAR	1														
55	TSC 5																		
56	TSC 6																		

**COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:**

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; OIG = Nitric Preserved Glass; SH = Selenium Hexafluoride Preserved; B = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic  
 V = VOA Vol HCl Preserved; VO = VOA Vol Sodium Bicarbonate Preserved; VS = VOA Vol Sodium Bicarbonate Preserved; AV = Airtight Unpreserved Vol SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Specimen bottle; SP = Sulfuric Preserved Plastic; F = Formamide Preserved Glass  
 Z = Zinc Methano Preserved Bottle; E = EDTA Preserved Bottle; ST = Sample Bottle; AFS = Plastic for Acid Sample Stain; U = Unpreserved 50ml

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Extra received



**ALS CHAIN OF CUSTODY**

**ALS Laboratory**  
 1000 120th Ave NE, Suite 100  
 Bellevue, WA 98004  
 (206) 462-1500  
 Fax: (206) 462-1501  
 www.alslab.com

**TURNAROUND REQUIREMENTS:**  
 Standard TAT (List due date)  
 Non-Standard or urgent TAT (List due date):

ALS QUOTE NO.: SVT8413

SITE: BAY/WATER

CONTACT PH: \_\_\_\_\_

PROJECT MANAGER: \_\_\_\_\_

SAMPLER: \_\_\_\_\_

COC emailed to ALS? (YES / NO): \_\_\_\_\_

EDD FORMAT (or default): \_\_\_\_\_

Project: Symphony

ORDER NUMBER: \_\_\_\_\_

CLIENT: ERM

OFFICE: Sydney

**FOR LABORATORY USE ONLY (Circle)**

Custom Seal Intact?  No  Yes

Free Ice / Frozen Ice bricks present upon receipt  Yes  No

Random Sample Temperature on Receipt: \_\_\_\_\_

Other comment: \_\_\_\_\_

RECEIVED BY: Steph Mulligan DATE/TIME: 26/11/13

RELINQUISHED BY: SMS DATE/TIME: 28/11/13 17:00

RECEIVED BY: Ramesh DATE/TIME: 28/11/13 19:00

COCK SEQUENCE NUMBER (Circle)

COCK	1	2	3	4	5	6	7
OF	1	2	3	4	5	6	7

**ANALYSIS REQUIRED** (NB. Suite Codes must be listed to extract suite code)  
 Where Metals are required, specify Total (unfiltered) or Dissolved (filtered) (if required)

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes (below)	TOTAL CONTAINERS (of 10)	ANALYSIS REQUIRED
37	BV-MW03-6.0		SOIL		1	17 Metals (As, Ba, Cd, Cr, Cu, Ni, Pb, Zn, Hg), S2 Metals (As, Ba, Cd, Cr, Cu, Ni, Mo, Tl, Se), S-24 TRH(Co, Cd, Pb, V, Zn, B, Ba, Cd, Cr, Cu, Ni, Mn, Tl, Se), Phenols, VOC Target Scan, PCB, pH (1:5), Exchangeable cations (ED07), PFOS/PFOA, Asbestos/presence, Particle Sizing to 75µm (Sieve), Organic Matter plus Total Organic Carbon (EP04)
38	BV-SB07-2.9				1	SAMPLE NOT RECEIVED
39	BL-MW03-3.4				1	
40	BL-SB06-2.9				1	
41	BR-MW01-5.0				1	
42	BR-MW03-3.5				1	
43	BR-MW05-4.0				1	
46	DD2_261113-TC				1	
44	Trip spike 5				2	
45	Trip blank				1	
46	Top spike 6				1	

**COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:**

Forwarded to Enviro Lab

**WATER CONTAINER CODES:**  
 P = Unpreserved Plastic; M = Metals Preserved Plastic; DR = Nitric Preserved Plastic; GRC = Nitric Preserved Glass; S = Sodium Hydroxide Preserved Plastic; AO = Amber Glass Unpreserved Plastic; AV = Amber Glass Unpreserved Plastic; V = VOA Vial; VOA Vial; Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Amber Glass Unpreserved Vial; SC = Sulfuric Preserved; Amber Glass; H = HCl received Plastic; H5 = HCl received Plastic; SP = Sulfuric Preserved Plastic; F = Formic acid Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Strontium Bottle; AS = Plastic Bin for Acid Sulphate Solids; U = Unpreserved Bin.

*[Handwritten notes and signatures at the top of the page]*

not recd

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

**Work Order** : ES1325842

**Amendment** : 1

**Client** : ENVIRO RESOURCES MANAGEMENT  
**Laboratory** : Environmental Division Sydney

**Contact** : MR JOSEPH FERRING  
**Address** : GROUND FLOOR  
 33 SAUNDERS STREET, PYRMONT  
 NSW 2009  
 LOCKED BAG 24  
 BROADWAY NSW, AUSTRALIA 2007

**Contact** : Barbara Hanna  
**Address** : 277-289 Woodpark Road Smithfield  
 NSW Australia 2164

**E-mail** : joseph.ferring@erm.com  
**Telephone** : +61 02 8584 8888  
**Facsimile** : +61 02 8584 8800

**E-mail** : Barbara.Hanna@alsglobal.com  
**Telephone** : +61 2 8784 8555  
**Facsimile** : +61 2 8784 8555

**Project** : PROJECT SYMPHONY  
**Order number** : 0224193  
**C-O-C number** : ----  
**Site** : ----

**Page** : 1 of 5  
**Quote number** : ES2013ENVRES0369 (SY/794/13)

**Sampler** : SM, HC  
**QC Level** : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

#### Dates

**Date Samples Received** : 28-NOV-2013  
**Client Requested Due Date** : 05-DEC-2013  
**Issue Date** : 06-JAN-2014 16:09  
**Scheduled Reporting Date** : **05-DEC-2013**

#### Delivery Details

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

**Temperature** : 5.3°C SYD - Ice present  
**No. of samples received** : 54  
**No. of samples analysed** : 50

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Samples received in appropriately pretreated and preserved containers.
- Sample BP\_MW05\_4.0 was not received.
- Samples BP\_MW06\_4.0 and BL\_MW02\_3.0 were received extra and placed on hold.
- Sample D02\_261113\_TC to be forwarded to Envirolab.
- Sample BV\_SB07\_2.9 was received broken.
- Sample BU\_MW02\_2.5 was received labeled as BU\_MW\_2.3 on the jar, lab will use sample ID on the jar for analyse until further notice.
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Sample(s) damaged during transit. Please contact ALS for further information.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.





			(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA010 (solids): Electrical Conductivity (1:5) Electrical Conductivity (1:5)	SOIL - EA200 Asbestos Identification in Soils	SOIL - ED007 Def CEC / Exchangeable Cations (ED007) -Default	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231 Perfluorooctyl Acids and Sulfonates by LC/MS/MS
ES1325842-042	26-NOV-2013 15:00	BP_MW03_3.5							✓	
ES1325842-047	26-NOV-2013 15:00	BU_MW02_4.0							✓	
ES1325842-048	26-NOV-2013 15:00	BU_MW03_2.5							✓	
ES1325842-050	26-NOV-2013 15:00	BP_MW06_4.0	✓							
ES1325842-051	25-NOV-2013 15:00	BL_MW02_3.0	✓							
ES1325842-053	26-NOV-2013 15:00	BU_MW02_2.3	✓							
ES1325842-057	26-NOV-2013 15:00	BU_MW03_4.0	✓							

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1325842-001	25-NOV-2013 15:00	BL_SB01_0.25		✓
ES1325842-002	25-NOV-2013 15:00	BL_SB07_0.25		✓
ES1325842-003	25-NOV-2013 15:00	BL_MW04_0.25		✓
ES1325842-004	25-NOV-2013 15:00	BL_SB02_0.5		✓
ES1325842-005	25-NOV-2013 15:00	BL_MW02_0.2		✓
ES1325842-006	25-NOV-2013 15:00	BL_SB06_0.5		✓
ES1325842-007	25-NOV-2013 15:00	BV_MW01_0.1		✓
ES1325842-008	25-NOV-2013 15:00	BV_MW13_0.5		✓
ES1325842-009	25-NOV-2013 15:00	BV_SB07_0.25		✓
ES1325842-010	25-NOV-2013 15:00	BP_MW06_0.2		✓
ES1325842-011	25-NOV-2013 15:00	BE_MW04_2.0		✓
ES1325842-012	25-NOV-2013 15:00	BE_MW05_2.0		✓
ES1325842-013	26-NOV-2013 15:00	BH_SB07_0.2		✓
ES1325842-014	26-NOV-2013 15:00	BL_MW03_0.25		✓
ES1325842-015	26-NOV-2013 15:00	BP_MW01_0.25		✓
ES1325842-016	26-NOV-2013 15:00	BP_MW03_0.5		✓
ES1325842-017	26-NOV-2013 15:00	BU_MW01_0.5		✓
ES1325842-018	26-NOV-2013 15:00	BU_MW02_0.5		✓
ES1325842-019	26-NOV-2013 15:00	BU_SB01_0.5		✓
ES1325842-020	26-NOV-2013 15:00	BU_SB02_0.5		✓
ES1325842-021	26-NOV-2013 15:00	BU_MW03_0.5		✓
ES1325842-022	26-NOV-2013 15:00	D01_261113_SM		✓
ES1325842-023	26-NOV-2013 15:00	BX_MW01_0.5		✓



			SOIL - S-18 (NO MOIST) TRH/(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-27 TRH/BTEXN/PAH/Phenols&Metals
ES1325842-024	26-NOV-2013 15:00	BX_MW02_0.5		✓
ES1325842-025	26-NOV-2013 15:00	BX_MW04_0.15		✓
ES1325842-026	22-NOV-2013 15:00	BQ_MW01_1.5		✓
ES1325842-027	22-NOV-2013 15:00	BE_MW07_6.0		✓
ES1325842-028	22-NOV-2013 15:00	BE_MW06_6.0		✓
ES1325842-029	25-NOV-2013 15:00	BL_MW06_3.0		✓
ES1325842-030	25-NOV-2013 15:00	BL_SB01_2.9		✓
ES1325842-031	25-NOV-2013 15:00	BV_SB05_2.9		✓
ES1325842-032	25-NOV-2013 15:00	BV_SB06_2.9		✓
ES1325842-033	25-NOV-2013 15:00	D01_251113_TC		✓
ES1325842-034	25-NOV-2013 15:00	BL_SB07_2.9		✓
ES1325842-037	26-NOV-2013 15:00	BV_MW13_6.0		✓
ES1325842-038	26-NOV-2013 15:00	BL_MW03_3.4		✓
ES1325842-039	26-NOV-2013 15:00	BL_SB06_2.9		✓
ES1325842-040	26-NOV-2013 15:00	BV_MW01_5.0		✓
ES1325842-041	26-NOV-2013 15:00	BP_MW01_3.5		✓
ES1325842-042	26-NOV-2013 15:00	BP_MW03_3.5		✓
ES1325842-044	25-NOV-2013 15:00	TRIP SPIKE 5	✓	
ES1325842-045	25-NOV-2013 15:00	TRIP BLANK	✓	
ES1325842-046	25-NOV-2013 15:00	TRIP SPIKE 6	✓	
ES1325842-047	26-NOV-2013 15:00	BU_MW02_4.0		✓
ES1325842-048	26-NOV-2013 15:00	BU_MW03_2.5		✓
ES1325842-049	26-NOV-2013 15:00	BE_MW09_0.9		✓
ES1325842-055	25-NOV-2013 15:00	TSC 5	✓	
ES1325842-056	25-NOV-2013 15:00	TSC 6	✓	

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP066-PCB-WA Polychlorinated Biphenyls (PCB)	WATER - EP074 (water) Volatile Organic Compounds	WATER - W-27T TRH/BTEXN/PAH/Phenols/Total & Metals
ES1325842-035	25-NOV-2013 15:00	R01_251113_SM	✓	✓	✓
ES1325842-036	26-NOV-2013 15:00	R01_261113_SM	✓	✓	✓



## Proactive Holding Time Report

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

### Requested Deliverables

#### SYMPHONY MACGEN

- *AU Certificate of Analysis - NATA ( COA )	Email	symphony.macgen@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	symphony.macgen@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	symphony.macgen@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN	Email	symphony.macgen@erm.com
- Chain of Custody (CoC) ( COC )	Email	symphony.macgen@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	symphony.macgen@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	symphony.macgen@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	symphony.macgen@erm.com
- EDI Format - XTab ( XTAB )	Email	symphony.macgen@erm.com

#### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1325842</b>	Page	: 1 of 57
Amendment	: <b>1</b>		
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193		
C-O-C number	: ----	Date Samples Received	: 28-NOV-2013
Sampler	: SM, HC	Issue Date	: 06-JAN-2014
Site	: ----		
Quote number	: SY/794/13	No. of samples received	: 54
		No. of samples analysed	: 50

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



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**
- **EG020: Positive result for sample ES1325842-35,36 has been confirmed by reanalysis.**
- **EP080: The TRIP SPIKE and TRIP SPIKE CONTROL have been analysed for volatile TPH and BTEX only. The TRIP SPIKE and TRIP SPIKE CONTROL were prepared in the lab using reagent grade sand spiked with petrol. The TRIP SPIKE was dispatched from the lab and the TRIP SPIKE CONTROL retained. The spike samples were extracted and analysed concurrently with samples reported in this batch.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

### Signatories

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

Signatories	Position	Accreditation Category
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_SB01_0.25	BL_SB07_0.25	BL_MW04_0.25	BL_SB02_0.5	BL_MW02_0.2
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-001	ES1325842-002	ES1325842-003	ES1325842-004	ES1325842-005
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	16.2	17.7	16.4	15.8	16.9
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	482	627	217	281	371
APPROVED IDENTIFIER:	----	-	--	C.OWLER	C.OWLER	C.OWLER	C.OWLER	C.OWLER
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	<5	12	8	7	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	10	8	12	8	13
Copper	7440-50-8	5	mg/kg	14	17	22	16	14
Lead	7439-92-1	5	mg/kg	8	16	15	13	5
Nickel	7440-02-0	2	mg/kg	12	24	22	19	23
Zinc	7440-66-6	5	mg/kg	72	93	76	83	54
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_SB01_0.25	BL_SB07_0.25	BL_MW04_0.25	BL_SB02_0.5	BL_MW02_0.2
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-001	ES1325842-002	ES1325842-003	ES1325842-004	ES1325842-005
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_SB01_0.25	BL_SB07_0.25	BL_MW04_0.25	BL_SB02_0.5	BL_MW02_0.2
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-001	ES1325842-002	ES1325842-003	ES1325842-004	ES1325842-005
<b>EP080: BTEXN - Continued</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
PFOA	335-67-1	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	<0.005	<0.005	<0.005	0.005
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	86.0	96.0	90.0	84.0	97.0
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	96.0	94.9	92.3	89.6	90.4
2-Chlorophenol-D4	93951-73-6	0.1	%	106	106	104	102	96.4
2,4,6-Tribromophenol	118-79-6	0.1	%	86.6	110	110	110	43.9
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	98.7	101	101	98.5	94.6
Anthracene-d10	1719-06-8	0.1	%	95.9	96.3	96.5	94.1	90.7
4-Terphenyl-d14	1718-51-0	0.1	%	95.6	92.4	96.7	93.8	89.1
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	107	93.8	90.6	92.9	90.5
Toluene-D8	2037-26-5	0.1	%	109	96.9	92.3	95.1	90.6
4-Bromofluorobenzene	460-00-4	0.1	%	111	98.0	95.1	96.1	94.1



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_SB06_0.5	BV_MW01_0.1	BV_MW13_0.5	BV_SB07_0.25	BP_MW06_0.2
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-006	ES1325842-007	ES1325842-008	ES1325842-009	ES1325842-010
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	13.2	16.6	16.5	10.2	14.4
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	561	333	297	517	595
APPROVED IDENTIFIER:	----	-	--	C.OWLER	C.OWLER	C.OWLER	C.OWLER	C.OWLER
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	7	10	16	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	22	12	13	13
Copper	7440-50-8	5	mg/kg	23	14	24	10	13
Lead	7439-92-1	5	mg/kg	14	15	22	<5	<5
Nickel	7440-02-0	2	mg/kg	24	14	20	10	22
Zinc	7440-66-6	5	mg/kg	81	58	97	33	61
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	<0.1	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	----	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	----	----	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	----	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	----	----	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	----	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	----	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	----	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	----	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	----	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	----	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	----	----	<5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BL_SB06_0.5	BV_MW01_0.1	BV_MW13_0.5	BV_SB07_0.25	BP_MW06_0.2
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
				ES1325842-006	ES1325842-007	ES1325842-008	ES1325842-009	ES1325842-010
Compound	CAS Number	LOR	Unit					
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	----	----	----	----	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	----	----	----	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	----	----	----	<5
Chloromethane	74-87-3	5	mg/kg	----	----	----	----	<5
Vinyl chloride	75-01-4	5	mg/kg	----	----	----	----	<5
Bromomethane	74-83-9	5	mg/kg	----	----	----	----	<5
Chloroethane	75-00-3	5	mg/kg	----	----	----	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	----	----	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	----	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	----	----	----	----	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	----	----	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	----	----	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	----	----	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	----	----	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	----	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	----	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	----	----	----	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	----	----	----	----	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	----	----	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	----	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	----	----	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	----	----	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	----	----	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	----	----	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	----	----	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	----	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	----	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_SB06_0.5	BV_MW01_0.1	BV_MW13_0.5	BV_SB07_0.25	BP_MW06_0.2
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-006	ES1325842-007	ES1325842-008	ES1325842-009	ES1325842-010
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	----	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	----	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	----	----	----	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	----	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	----	----	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	----	----	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	----	----	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	----	----	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	----	----	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	----	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	----	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	----	----	----	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_SB06_0.5	BV_MW01_0.1	BV_MW13_0.5	BV_SB07_0.25	BP_MW06_0.2
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-006	ES1325842-007	ES1325842-008	ES1325842-009	ES1325842-010
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_SB06_0.5	BV_MW01_0.1	BV_MW13_0.5	BV_SB07_0.25	BP_MW06_0.2
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-006	ES1325842-007	ES1325842-008	ES1325842-009	ES1325842-010
<b>EP080: BTEXN - Continued</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	<0.0005	----	----	----	----
PFOA	335-67-1	0.0005	mg/kg	<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	----	----	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	102	----	94.0	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	----	----	79.3
Toluene-D8	2037-26-5	0.1	%	----	----	----	----	91.6
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	----	----	83.9
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	90.9	92.3	99.0	90.3	91.0
2-Chlorophenol-D4	93951-73-6	0.1	%	102	105	107	99.5	99.2
2,4,6-Tribromophenol	118-79-6	0.1	%	106	115	119	102	104
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	97.4	101	105	93.8	94.4
Anthracene-d10	1719-06-8	0.1	%	92.0	96.6	101	90.0	89.7
4-Terphenyl-d14	1718-51-0	0.1	%	91.6	92.4	101	89.2	89.2
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	93.3	92.4	101	95.9	83.0
Toluene-D8	2037-26-5	0.1	%	97.2	94.3	105	99.5	86.0
4-Bromofluorobenzene	460-00-4	0.1	%	100	93.7	107	99.6	84.8





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BE_MW04_2.0	BE_MW05_2.0	BH_SB07_0.2	BL_MW03_0.25	BP_MW01_0.25
				25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-011	ES1325842-012	ES1325842-013	ES1325842-014	ES1325842-015
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	----	----	7.5	----	----
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	73	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	17.3	22.2	9.1	14.6	8.8
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	No	No	No
Asbestos Type	1332-21-4	-	--	----	----	-	-	-
Sample weight (dry)	----	0.01	g	----	----	239	409	390
APPROVED IDENTIFIER:	----	-	--	----	----	C.OWLER	C.OWLER	C.OWLER
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	----	----	14.1	----	----
Exchangeable Magnesium	----	0.1	meq/100g	----	----	0.4	----	----
Exchangeable Potassium	----	0.1	meq/100g	----	----	0.3	----	----
Exchangeable Sodium	----	0.1	meq/100g	----	----	<0.1	----	----
Cation Exchange Capacity	----	0.1	meq/100g	----	----	14.9	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	8	6	<5	14	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	18	16	11	7	18
Copper	7440-50-8	5	mg/kg	23	15	12	24	7
Lead	7439-92-1	5	mg/kg	14	13	<5	25	<5
Nickel	7440-02-0	2	mg/kg	23	14	10	25	6
Zinc	7440-66-6	5	mg/kg	83	55	34	102	24
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	----	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	----	----	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	----	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BE_MW04_2.0	BE_MW05_2.0	BH_SB07_0.2	BL_MW03_0.25	BP_MW01_0.25
				25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-011	ES1325842-012	ES1325842-013	ES1325842-014	ES1325842-015
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>								
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	----	----	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	----	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	----	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	----	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	----	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	----	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	----	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	----	----	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	----	----	----	----	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	----	----	----	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	----	----	----	<5
Chloromethane	74-87-3	5	mg/kg	----	----	----	----	<5
Vinyl chloride	75-01-4	5	mg/kg	----	----	----	----	<5
Bromomethane	74-83-9	5	mg/kg	----	----	----	----	<5
Chloroethane	75-00-3	5	mg/kg	----	----	----	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	----	----	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	----	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	----	----	----	----	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	----	----	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	----	----	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	----	----	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	----	----	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	----	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	----	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BE_MW04_2.0	BE_MW05_2.0	BH_SB07_0.2	BL_MW03_0.25	BP_MW01_0.25
				25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-011	ES1325842-012	ES1325842-013	ES1325842-014	ES1325842-015
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1.2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	----	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	----	----	----	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	----	----	----	----	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	----	----	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	----	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	----	----	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	----	----	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	----	----	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	----	----	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	----	----	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	----	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	----	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	----	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	----	----	----	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	----	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	----	----	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	----	----	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	----	----	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	----	----	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	----	----	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	----	----	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	----	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	----	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	----	----	----	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BE_MW04_2.0	BE_MW05_2.0	BH_SB07_0.2	BL_MW03_0.25	BP_MW01_0.25
				25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-011	ES1325842-012	ES1325842-013	ES1325842-014	ES1325842-015
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BE_MW04_2.0	BE_MW05_2.0	BH_SB07_0.2	BL_MW03_0.25	BP_MW01_0.25
				25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-011	ES1325842-012	ES1325842-013	ES1325842-014	ES1325842-015
<b>EP080/071: Total Petroleum Hydrocarbons - Continued</b>								
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	----	----	----	<0.0005	----
PFOA	335-67-1	0.0005	mg/kg	----	----	----	<0.0005	----
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	----	----	----	<0.005	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	104	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	----	----	105
Toluene-D8	2037-26-5	0.1	%	----	----	----	----	93.5
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	----	----	87.5
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	92.3	92.8	92.7	92.3	94.6
2-Chlorophenol-D4	93951-73-6	0.1	%	103	103	103	104	105
2,4,6-Tribromophenol	118-79-6	0.1	%	114	110	110	108	116



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sample ID	BE_MW04_2.0	BE_MW05_2.0	BH_SB07_0.2	BL_MW03_0.25	BP_MW01_0.25
Client sampling date / time	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	ES1325842-011	ES1325842-012	ES1325842-013	ES1325842-014	ES1325842-015

Client sampling date / time

Compound	CAS Number	LOR	Unit	ES1325842-011	ES1325842-012	ES1325842-013	ES1325842-014	ES1325842-015
<b>EP075(SIM)S: Phenolic Compound Surrogates - Continued</b>								
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	103	99.7	99.6	99.3	102
Anthracene-d10	1719-06-8	0.1	%	99.9	95.4	95.5	95.4	97.8
4-Terphenyl-d14	1718-51-0	0.1	%	95.5	96.3	96.2	94.2	98.7
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	88.3	98.2	96.5	90.8	110
Toluene-D8	2037-26-5	0.1	%	78.0	91.1	87.2	82.9	87.8
4-Bromofluorobenzene	460-00-4	0.1	%	87.9	97.6	93.5	92.1	88.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BP_MW03_0.5	BU_MW01_0.5	BU_MW02_0.5	BU_SB01_0.5	BU_SB02_0.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-016	ES1325842-017	ES1325842-018	ES1325842-019	ES1325842-020
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	11.8	15.7	12.8	12.4	13.4
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	357	314	388	138	340
APPROVED IDENTIFIER:	----	-	--	C.OWLER	C.OWLER	C.OWLER	C.OWLER	C.OWLER
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	8	9	8	12	13
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	18	12	15	15	15
Copper	7440-50-8	5	mg/kg	19	16	24	19	19
Lead	7439-92-1	5	mg/kg	9	16	14	18	17
Nickel	7440-02-0	2	mg/kg	20	11	24	10	17
Zinc	7440-66-6	5	mg/kg	62	56	74	42	66
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	<5	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	BP_MW03_0.5	BU_MW01_0.5	BU_MW02_0.5	BU_SB01_0.5	BU_SB02_0.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
				ES1325842-016	ES1325842-017	ES1325842-018	ES1325842-019	ES1325842-020
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	<5	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BP_MW03_0.5	BU_MW01_0.5	BU_MW02_0.5	BU_SB01_0.5	BU_SB02_0.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-016	ES1325842-017	ES1325842-018	ES1325842-019	ES1325842-020
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BP_MW03_0.5	BU_MW01_0.5	BU_MW02_0.5	BU_SB01_0.5	BU_SB02_0.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-016	ES1325842-017	ES1325842-018	ES1325842-019	ES1325842-020
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BP_MW03_0.5	BU_MW01_0.5	BU_MW02_0.5	BU_SB01_0.5	BU_SB02_0.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-016	ES1325842-017	ES1325842-018	ES1325842-019	ES1325842-020
<b>EP080: BTEXN - Continued</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	104	102	104	106	107
Toluene-D8	2037-26-5	0.1	%	94.7	90.2	91.4	101	97.6
4-Bromofluorobenzene	460-00-4	0.1	%	89.7	87.4	86.6	94.8	92.7
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	94.8	95.2	93.1	94.7	84.9
2-Chlorophenol-D4	93951-73-6	0.1	%	106	105	104	104	94.4
2,4,6-Tribromophenol	118-79-6	0.1	%	114	119	112	114	99.9
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	102	104	103	101	90.9
Anthracene-d10	1719-06-8	0.1	%	98.0	99.0	95.3	97.1	86.3
4-Terphenyl-d14	1718-51-0	0.1	%	94.1	99.9	98.9	96.8	84.9
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	108	106	109	111	112
Toluene-D8	2037-26-5	0.1	%	88.9	84.7	85.6	94.9	91.7
4-Bromofluorobenzene	460-00-4	0.1	%	91.1	89.6	89.0	97.2	94.0



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BU_MW03_0.5	D01_261113_SM	BX_MW01_0.5	BX_MW02_0.5	BX_MW04_0.15
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-021	ES1325842-022	ES1325842-023	ES1325842-024	ES1325842-025
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	16.3	18.0	16.6	18.0	15.3
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	No	No
Asbestos Type	1332-21-4	-	--	-	----	-	-	-
Sample weight (dry)	----	0.01	g	389	----	125	292	533
APPROVED IDENTIFIER:	----	-	--	C.OWLER	----	C.OWLER	C.OWLER	C.OWLER
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	11	10	10	14	9
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	15	16	15	7
Copper	7440-50-8	5	mg/kg	23	24	20	11	7
Lead	7439-92-1	5	mg/kg	21	17	15	14	7
Nickel	7440-02-0	2	mg/kg	10	21	15	6	8
Zinc	7440-66-6	5	mg/kg	46	100	80	64	45
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	<0.1	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BU_MW03_0.5	D01_261113_SM	BX_MW01_0.5	BX_MW02_0.5	BX_MW04_0.15
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-021	ES1325842-022	ES1325842-023	ES1325842-024	ES1325842-025
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	----	----	----
Chloromethane	74-87-3	5	mg/kg	<5	<5	----	----	----
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	----	----	----
Bromomethane	74-83-9	5	mg/kg	<5	<5	----	----	----
Chloroethane	75-00-3	5	mg/kg	<5	<5	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	----	----	----
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	----	----	----
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	----	----	----
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BU_MW03_0.5	D01_261113_SM	BX_MW01_0.5	BX_MW02_0.5	BX_MW04_0.15
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-021	ES1325842-022	ES1325842-023	ES1325842-024	ES1325842-025
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	----	----	----
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	----	----	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	----	----	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2

### EP075(SIM)B: Polynuclear Aromatic Hydrocarbons



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BU_MW03_0.5	D01_261113_SM	BX_MW01_0.5	BX_MW02_0.5	BX_MW04_0.15
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-021	ES1325842-022	ES1325842-023	ES1325842-024	ES1325842-025
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BU_MW03_0.5	D01_261113_SM	BX_MW01_0.5	BX_MW02_0.5	BX_MW04_0.15
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-021	ES1325842-022	ES1325842-023	ES1325842-024	ES1325842-025
<b>EP080: BTEXN - Continued</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	----	----	<0.0005	<0.0005	<0.0005
PFOA	335-67-1	0.0005	mg/kg	----	----	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	----	----	<0.005	<0.005	<0.005
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	114	106	127
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	106	98.1	----	----	----
Toluene-D8	2037-26-5	0.1	%	107	89.9	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	98.2	90.8	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	90.7	88.7	102	89.8	84.2
2-Chlorophenol-D4	93951-73-6	0.1	%	97.2	94.4	109	96.6	88.9
2,4,6-Tribromophenol	118-79-6	0.1	%	98.8	101	113	103	96.5
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	100	100	111	101	96.0
Anthracene-d10	1719-06-8	0.1	%	88.0	89.8	99.5	90.2	86.8
4-Terphenyl-d14	1718-51-0	0.1	%	83.6	84.4	93.5	85.3	80.5
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	98.1	90.8	98.4	94.6	95.0
Toluene-D8	2037-26-5	0.1	%	99.1	82.8	96.9	96.6	90.5
4-Bromofluorobenzene	460-00-4	0.1	%	92.1	86.2	93.2	92.8	85.6





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BQ_MW01_1.5	BE_MW07_6.0	BE_MW06_6.0	BL_MW06_3.0	BL_SB01_2.9
				22-NOV-2013 15:00	22-NOV-2013 15:00	22-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-026	ES1325842-027	ES1325842-028	ES1325842-029	ES1325842-030
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	4.9	----	----	----	----
<b>EA010: Conductivity</b>								
Electrical Conductivity @ 25°C	----	1	µS/cm	333	----	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	18.7	19.6	17.8	16.2	15.0
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	2.7	----	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	4.6	----	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	0.2	----	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	2.6	----	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	10.0	----	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	8	7	5	7	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	12	16	8	11	16
Copper	7440-50-8	5	mg/kg	12	15	16	26	26
Lead	7439-92-1	5	mg/kg	13	12	10	12	13
Nickel	7440-02-0	2	mg/kg	6	18	13	20	25
Zinc	7440-66-6	5	mg/kg	37	54	87	88	62
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_1.5	BE_MW07_6.0	BE_MW06_6.0	BL_MW06_3.0	BL_SB01_2.9
				22-NOV-2013 15:00	22-NOV-2013 15:00	22-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-026	ES1325842-027	ES1325842-028	ES1325842-029	ES1325842-030
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	----	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	----	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	----	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	----	<5	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	----	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	----	----	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	----	----	<5	<5
Bromomethane	74-83-9	5	mg/kg	<5	----	----	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	----	----	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	----	<5	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_1.5	BE_MW07_6.0	BE_MW06_6.0	BL_MW06_3.0	BL_SB01_2.9
				22-NOV-2013 15:00	22-NOV-2013 15:00	22-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-026	ES1325842-027	ES1325842-028	ES1325842-029	ES1325842-030
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	----	----	<5	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_1.5	BE_MW07_6.0	BE_MW06_6.0	BL_MW06_3.0	BL_SB01_2.9
				22-NOV-2013 15:00	22-NOV-2013 15:00	22-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-026	ES1325842-027	ES1325842-028	ES1325842-029	ES1325842-030
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BQ_MW01_1.5	BE_MW07_6.0	BE_MW06_6.0	BL_MW06_3.0	BL_SB01_2.9
				22-NOV-2013 15:00	22-NOV-2013 15:00	22-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-026	ES1325842-027	ES1325842-028	ES1325842-029	ES1325842-030
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued</b>								
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	----	----	----	<0.0005	<0.0005
PFOA	335-67-1	0.0005	mg/kg	----	----	----	<0.0005	<0.0005
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	----	----	----	<0.005	<0.005
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	120	123
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	106	----	----	103	111
Toluene-D8	2037-26-5	0.1	%	104	----	----	111	116
4-Bromofluorobenzene	460-00-4	0.1	%	97.0	----	----	100	106
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	88.3	87.3	92.6	85.6	89.1
2-Chlorophenol-D4	93951-73-6	0.1	%	91.0	88.8	99.4	93.0	96.3
2,4,6-Tribromophenol	118-79-6	0.1	%	105	104	110	97.9	99.7
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	101	99.3	106	97.8	99.6
Anthracene-d10	1719-06-8	0.1	%	91.7	90.4	96.6	88.4	90.2
4-Terphenyl-d14	1718-51-0	0.1	%	86.4	85.4	91.5	82.8	84.2
<b>EP080S: TPH(V)/BTEX Surrogates</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sample ID	BQ_MW01_1.5	BE_MW07_6.0	BE_MW06_6.0	BL_MW06_3.0	BL_SB01_2.9
Client sampling date / time	22-NOV-2013 15:00	22-NOV-2013 15:00	22-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00
Compound	ES1325842-026	ES1325842-027	ES1325842-028	ES1325842-029	ES1325842-030

Compound	CAS Number	LOR	Unit	ES1325842-026	ES1325842-027	ES1325842-028	ES1325842-029	ES1325842-030
<b>EP080S: TPH(V)/BTEX Surrogates - Continued</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	97.8	101	90.5	94.9	102
Toluene-D8	2037-26-5	0.1	%	95.1	95.7	86.0	103	107
4-Bromofluorobenzene	460-00-4	0.1	%	91.9	94.4	82.6	99.8	102



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB05_2.9	BV_SB06_2.9	D01_251113_TC	BL_SB07_2.9	BV_MW13_6.0
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-031	ES1325842-032	ES1325842-033	ES1325842-034	ES1325842-037
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	23.4	14.9	18.6	14.1	22.5
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	5	21	17	5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	10	20	14	12	7
Copper	7440-50-8	5	mg/kg	14	26	27	29	9
Lead	7439-92-1	5	mg/kg	18	25	40	15	14
Nickel	7440-02-0	2	mg/kg	6	14	6	16	3
Zinc	7440-66-6	5	mg/kg	69	96	36	96	28
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	<5	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB05_2.9	BV_SB06_2.9	D01_251113_TC	BL_SB07_2.9	BV_MW13_6.0
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-031	ES1325842-032	ES1325842-033	ES1325842-034	ES1325842-037
<b>EP074D: Fumigants - Continued</b>								
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB05_2.9	BV_SB06_2.9	D01_251113_TC	BL_SB07_2.9	BV_MW13_6.0
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-031	ES1325842-032	ES1325842-033	ES1325842-034	ES1325842-037
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB05_2.9	BV_SB06_2.9	D01_251113_TC	BL_SB07_2.9	BV_MW13_6.0
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-031	ES1325842-032	ES1325842-033	ES1325842-034	ES1325842-037
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB05_2.9	BV_SB06_2.9	D01_251113_TC	BL_SB07_2.9	BV_MW13_6.0
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-031	ES1325842-032	ES1325842-033	ES1325842-034	ES1325842-037
<b>EP080: BTEXN - Continued</b>								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	----	----	----	<0.0005	----
PFOA	335-67-1	0.0005	mg/kg	----	----	----	<0.0005	----
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	----	----	----	<0.005	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	124	127	128	129	129
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	104	103	107	114	98.9
Toluene-D8	2037-26-5	0.1	%	113	105	108	119	98.1
4-Bromofluorobenzene	460-00-4	0.1	%	104	96.7	102	108	94.9
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	86.8	88.6	93.7	97.9	93.0
2-Chlorophenol-D4	93951-73-6	0.1	%	90.2	92.8	100	100	96.4
2,4,6-Tribromophenol	118-79-6	0.1	%	105	101	110	114	112
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	99.6	101	108	112	108
Anthracene-d10	1719-06-8	0.1	%	89.3	91.4	97.4	100	99.3
4-Terphenyl-d14	1718-51-0	0.1	%	85.4	85.6	91.0	94.8	93.1
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	96.5	95.1	97.5	105	91.4
Toluene-D8	2037-26-5	0.1	%	105	97.4	99.6	110	91.6
4-Bromofluorobenzene	460-00-4	0.1	%	101	95.5	98.5	105	91.1



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_MW03_3.4	BL_SB06_2.9	BV_MW01_5.0	BP_MW01_3.5	BP_MW03_3.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-038	ES1325842-039	ES1325842-040	ES1325842-041	ES1325842-042
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	10.7	15.8	19.4	16.9	20.5
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	10	8	15	5	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	8	14	13	23	22
Copper	7440-50-8	5	mg/kg	16	27	30	26	21
Lead	7439-92-1	5	mg/kg	12	16	21	13	5
Nickel	7440-02-0	2	mg/kg	21	24	18	17	16
Zinc	7440-66-6	5	mg/kg	63	86	96	80	74
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	<5	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_MW03_3.4	BL_SB06_2.9	BV_MW01_5.0	BP_MW01_3.5	BP_MW03_3.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-038	ES1325842-039	ES1325842-040	ES1325842-041	ES1325842-042
<b>EP074D: Fumigants - Continued</b>								
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_MW03_3.4	BL_SB06_2.9	BV_MW01_5.0	BP_MW01_3.5	BP_MW03_3.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-038	ES1325842-039	ES1325842-040	ES1325842-041	ES1325842-042
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BL_MW03_3.4	BL_SB06_2.9	BV_MW01_5.0	BP_MW01_3.5	BP_MW03_3.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-038	ES1325842-039	ES1325842-040	ES1325842-041	ES1325842-042
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BL_MW03_3.4	BL_SB06_2.9	BV_MW01_5.0	BP_MW01_3.5	BP_MW03_3.5
				26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-038	ES1325842-039	ES1325842-040	ES1325842-041	ES1325842-042
<b>EP080: BTEXN - Continued</b>								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP231: Perfluorinated Compounds</b>								
PFOS	1763-23-1	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
PFOA	335-67-1	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	0.007	----	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	102	122	88.9	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	111	104	108	105	122
Toluene-D8	2037-26-5	0.1	%	107	98.4	107	102	119
4-Bromofluorobenzene	460-00-4	0.1	%	100	91.4	94.6	93.3	106
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	94.4	91.6	92.8	89.9	88.8
2-Chlorophenol-D4	93951-73-6	0.1	%	102	97.1	100	95.6	91.4
2,4,6-Tribromophenol	118-79-6	0.1	%	107	102	106	104	102
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	106	102	105	102	99.7
Anthracene-d10	1719-06-8	0.1	%	95.8	91.4	92.1	91.7	90.4
4-Terphenyl-d14	1718-51-0	0.1	%	89.3	86.7	87.8	86.1	84.4
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	103	96.1	99.8	97.4	111
Toluene-D8	2037-26-5	0.1	%	100	90.4	99.4	94.9	111
4-Bromofluorobenzene	460-00-4	0.1	%	98.6	87.9	92.7	91.5	105





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TRIP SPIKE 5	TRIP BLANK	TRIP SPIKE 6	BU_MW02_4.0	BU_MW03_2.5
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-044	ES1325842-045	ES1325842-046	ES1325842-047	ES1325842-048
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	----	----	----	19.9	12.5
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	----	----	----	10	10
Cadmium	7440-43-9	1	mg/kg	----	----	----	<1	<1
Chromium	7440-47-3	2	mg/kg	----	----	----	11	16
Copper	7440-50-8	5	mg/kg	----	----	----	18	28
Lead	7439-92-1	5	mg/kg	----	----	----	14	16
Nickel	7440-02-0	2	mg/kg	----	----	----	14	30
Zinc	7440-66-6	5	mg/kg	----	----	----	48	84
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	----	----	----	<0.1	<0.1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	----	----	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	----	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	----	<0.5	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	----	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	----	<0.5	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	----	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	----	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	----	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	----	<0.5	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	----	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	----	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	----	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	----	<5	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	----	<0.5	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	----	----	<0.5	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	----	----	----	<0.5	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	----	----	<0.5	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	----	----	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TRIP SPIKE 5	TRIP BLANK	TRIP SPIKE 6	BU_MW02_4.0	BU_MW03_2.5
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-044	ES1325842-045	ES1325842-046	ES1325842-047	ES1325842-048
<b>EP074D: Fumigants - Continued</b>								
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	----	----	<0.5	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	----	----	<5	<5
Chloromethane	74-87-3	5	mg/kg	----	----	----	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	----	----	----	<5	<5
Bromomethane	74-83-9	5	mg/kg	----	----	----	<5	<5
Chloroethane	75-00-3	5	mg/kg	----	----	----	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	----	<5	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	----	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	----	----	----	<0.5	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	----	<0.5	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	----	<0.5	<0.5
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	----	<0.5	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	----	<0.5	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	----	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	----	<0.5	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	----	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	----	----	----	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	----	----	----	<0.5	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	----	<0.5	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	----	<0.5	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	----	<0.5	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	----	<0.5	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	----	<0.5	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	----	<0.5	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	----	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	----	<0.5	<0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	----	<0.5	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	----	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	----	----	----	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	----	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TRIP SPIKE 5	TRIP BLANK	TRIP SPIKE 6	BU_MW02_4.0	BU_MW03_2.5
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-044	ES1325842-045	ES1325842-046	ES1325842-047	ES1325842-048
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	----	<0.5	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	----	<0.5	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	----	<0.5	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	----	<0.5	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	----	<0.5	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	----	<0.5	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	----	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	----	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	----	----	----	<0.5	<0.5
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	----	----	<5	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	----	----	----	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	----	----	----	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	----	----	----	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	----	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	----	----	----	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	----	----	----	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	----	----	----	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	----	----	----	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	----	----	----	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	----	----	----	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	----	----	----	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	----	----	----	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	----	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	----	----	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TRIP SPIKE 5	TRIP BLANK	TRIP SPIKE 6	BU_MW02_4.0	BU_MW03_2.5
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-044	ES1325842-045	ES1325842-046	ES1325842-047	ES1325842-048
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	----	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	----	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<b>64</b>	<10	<b>63</b>	<10	<10
C10 - C14 Fraction	----	50	mg/kg	----	----	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg	----	----	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg	----	----	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<b>76</b>	<10	<b>74</b>	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<b>45</b>	<10	<b>45</b>	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	----	----	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	<50	<50
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<b>0.7</b>	<0.2	<b>0.6</b>	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<b>14.8</b>	<0.5	<b>15.5</b>	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<b>2.1</b>	<0.5	<b>1.6</b>	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<b>9.4</b>	<0.5	<b>8.1</b>	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<b>3.8</b>	<0.5	<b>3.2</b>	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<b>30.8</b>	<0.2	<b>29.0</b>	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<b>13.2</b>	<0.5	<b>11.3</b>	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TRIP SPIKE 5	TRIP BLANK	TRIP SPIKE 6	BU_MW02_4.0	BU_MW03_2.5
				25-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325842-044	ES1325842-045	ES1325842-046	ES1325842-047	ES1325842-048
<b>EP080: BTEXN - Continued</b>								
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	----	115	117
Toluene-D8	2037-26-5	0.1	%	----	----	----	87.7	110
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	----	94.7	92.4
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	----	----	----	81.7	91.3
2-Chlorophenol-D4	93951-73-6	0.1	%	----	----	----	89.2	100
2,4,6-Tribromophenol	118-79-6	0.1	%	----	----	----	91.2	102
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	----	----	----	92.4	104
Anthracene-d10	1719-06-8	0.1	%	----	----	----	82.2	92.6
4-Terphenyl-d14	1718-51-0	0.1	%	----	----	----	83.0	92.6
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	94.3	96.1	86.0	104	128
Toluene-D8	2037-26-5	0.1	%	94.0	132	84.4	81.9	101
4-Bromofluorobenzene	460-00-4	0.1	%	88.4	108	86.0	76.5	82.7



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BE_MW09_0.9	TSC 5	TSC 6	---	---
				26-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	---	---
Compound	CAS Number	LOR	Unit	ES1325842-049	ES1325842-055	ES1325842-056	---	---
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	---	1.0	%	14.0	---	---	---	---
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	7	---	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	---	---	---	---
Chromium	7440-47-3	2	mg/kg	10	---	---	---	---
Copper	7440-50-8	5	mg/kg	21	---	---	---	---
Lead	7439-92-1	5	mg/kg	11	---	---	---	---
Nickel	7440-02-0	2	mg/kg	11	---	---	---	---
Zinc	7440-66-6	5	mg/kg	65	---	---	---	---
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	---	---	---	---
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	---	---	---	---
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	---	---	---	---
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	---	---	---	---
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	---	---	---	---
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	---	---	---	---
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	---	---	---	---
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	---	---	---	---
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	---	---	---	---
Pentachlorophenol	87-86-5	2	mg/kg	<2	---	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	---	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BE_MW09_0.9	TSC 5	TSC 6	---	---
				26-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	---	---
Compound	CAS Number	LOR	Unit	ES1325842-049	ES1325842-055	ES1325842-056	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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	---	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	---	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	---	---	---	---
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	67	82	---	---
C10 - C14 Fraction	----	50	mg/kg	<50	---	---	---	---
C15 - C28 Fraction	----	100	mg/kg	<100	---	---	---	---
C29 - C36 Fraction	----	100	mg/kg	<100	---	---	---	---
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	---	---	---	---
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	79	95	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	49	59	---	---
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	---	---	---	---
>C16 - C34 Fraction	----	100	mg/kg	<100	---	---	---	---
>C34 - C40 Fraction	----	100	mg/kg	<100	---	---	---	---
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	---	---	---	---
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	0.8	0.9	---	---
Toluene	108-88-3	0.5	mg/kg	<0.5	14.4	15.6	---	---
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1.8	2.2	---	---
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	8.7	12.1	---	---
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	4.5	5.2	---	---
^ Sum of BTEX	----	0.2	mg/kg	<0.2	30.2	36.0	---	---
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	13.2	17.3	---	---
^ Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BE_MW09_0.9	TSC 5	TSC 6	----	----
				26-NOV-2013 15:00	25-NOV-2013 15:00	25-NOV-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	ES1325842-049	ES1325842-055	ES1325842-056	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	87.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	95.6	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	101	----	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	97.8	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	88.3	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	88.8	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	83.1	80.4	77.1	----	----
Toluene-D8	2037-26-5	0.1	%	114	89.5	88.7	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	117	92.5	93.0	----	----





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_251113_SM	R01_261113_SM	---	---	---
				25-NOV-2013 15:00	26-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325842-035	ES1325842-036	---	---	---
<b>EG020T: Total Metals by ICP-MS</b>								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	---	---	---
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	---	---	---
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	---	---	---
Copper	7440-50-8	0.001	mg/L	0.004	0.001	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	---	---	---
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	---	---	---
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	---	---	---
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	---	1	µg/L	<1	<1	---	---	---
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	5	µg/L	<5	<5	---	---	---
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	---	---	---
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	---	---	---
1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	---	---	---
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	---	---	---
1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	---	---	---
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	---	---	---
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	---	---	---
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	---	---	---
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	---	---	---
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	---	---	---
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	---	---	---
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	---	---	---
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	---	---	---
1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	---	---	---
cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	---	---	---
trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_251113_SM	R01_261113_SM	---	---	---
				25-NOV-2013 15:00	26-NOV-2013 15:00	---	---	---
				ES1325842-035	ES1325842-036	---	---	---
Compound	CAS Number	LOR	Unit					
<b>EP074D: Fumigants - Continued</b>								
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	---	---	---
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	---	---	---
Chloromethane	74-87-3	50	µg/L	<50	<50	---	---	---
Vinyl chloride	75-01-4	50	µg/L	<50	<50	---	---	---
Bromomethane	74-83-9	50	µg/L	<50	<50	---	---	---
Chloroethane	75-00-3	50	µg/L	<50	<50	---	---	---
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	---	---	---
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	---	---	---
Iodomethane	74-88-4	5	µg/L	<5	<5	---	---	---
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	---	---	---
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	---	---	---
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	---	---	---
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	---	---	---
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	---	---	---
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	---	---	---
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	---	---	---
Trichloroethene	79-01-6	5	µg/L	<5	<5	---	---	---
Dibromomethane	74-95-3	5	µg/L	<5	<5	---	---	---
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	---	---	---
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	---	---	---
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	---	---	---
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	---	---	---
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	---	---	---
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	---	---	---
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	---	---	---
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	---	---	---
Pentachloroethane	76-01-7	5	µg/L	<5	<5	---	---	---
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	---	---	---
Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	---	---	---
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	---	---	---
Bromobenzene	108-86-1	5	µg/L	<5	<5	---	---	---
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_251113_SM	R01_261113_SM	---	---	---
				25-NOV-2013 15:00	26-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325842-035	ES1325842-036	---	---	---
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>								
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	---	---	---
1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	---	---	---
1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	---	---	---
1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	---	---	---
1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	---	---	---
1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	---	---	---
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	5	µg/L	<5	<5	---	---	---
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	---	---	---
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	---	---	---
Bromoform	75-25-2	5	µg/L	<5	<5	---	---	---
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	7	µg/L	<7	<7	---	---	---
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	---	---	---
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0	---	---	---
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	---	---	---
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	---	---	---
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	---	---	---
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	---	---	---
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	---	---	---
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	---	---	---
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	---	---	---
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	---	---	---
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	---	---	---
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	---	---	---
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	---	---	---
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	---	---	---
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	---	---	---
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	---	---	---
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

Client sampling date / time

				R01_251113_SM	R01_261113_SM	---	---	---
				25-NOV-2013 15:00	26-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1325842-035	ES1325842-036	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	---	---	---
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	---	---	---
Benz(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	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	---	---	---
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	20	µg/L	<20	<20	---	---	---
C10 - C14 Fraction	----	50	µg/L	<50	<50	---	---	---
C15 - C28 Fraction	----	100	µg/L	<100	<100	---	---	---
C29 - C36 Fraction	----	50	µg/L	<50	<50	---	---	---
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	---	---	---
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	---	---	---
>C10 - C16 Fraction	>C10_C16	100	µg/L	<100	<100	---	---	---
>C16 - C34 Fraction	----	100	µg/L	<100	<100	---	---	---
>C34 - C40 Fraction	----	100	µg/L	<100	<100	---	---	---
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	---	---	---
<b>EP080: BTEXN</b>								
Benzene	71-43-2	1	µg/L	<1	<1	---	---	---
Toluene	108-88-3	2	µg/L	<2	<2	---	---	---
Ethylbenzene	100-41-4	2	µg/L	<2	<2	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	---	---	---
ortho-Xylene	95-47-6	2	µg/L	<2	<2	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_251113_SM	R01_261113_SM	----	----	----
				25-NOV-2013 15:00	26-NOV-2013 15:00	----	----	----
Compound	CAS Number	LOR	Unit	ES1325842-035	ES1325842-036	----	----	----
<b>EP080: BTEXN - Continued</b>								
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	125	86.6	----	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	115	112	----	----	----
Toluene-D8	2037-26-5	0.1	%	103	105	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	96.9	95.6	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	46.0	44.3	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	70.2	70.2	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	90.4	94.4	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	74.8	76.1	----	----	----
Anthracene-d10	1719-06-8	0.1	%	104	99.2	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	101	106	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	120	118	----	----	----
Toluene-D8	2037-26-5	0.1	%	96.8	98.4	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	99.4	96.7	----	----	----



## Analytical Results

### Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BL_SB01_0.25 - 25-NOV-2013 15:00	Pale cream clay soil with some grey and red rocks plus a trace of vegetation
EA200: Description	BL_SB07_0.25 - 25-NOV-2013 15:00	Pale grey-brown clay soil with a trace of vegetation
EA200: Description	BL_MW04_0.25 - 25-NOV-2013 15:00	Pale brown clay soil with a trace of vegetation
EA200: Description	BL_SB02_0.5 - 25-NOV-2013 15:00	Pale brown clay soil with some small brown rocks plus a trace of vegetation
EA200: Description	BL_MW02_0.2 - 25-NOV-2013 15:00	Pale brown clay soil with some small brown rocks plus a trace of vegetation
EA200: Description	BL_SB06_0.5 - 25-NOV-2013 15:00	Pale brown clay soil with some small brown rocks plus a trace of vegetation
EA200: Description	BV_MW01_0.1 - 25-NOV-2013 15:00	Mid brown clay soil with some brown rocks plus a trace of vegetation
EA200: Description	BV_MW13_0.5 - 25-NOV-2013 15:00	Mid grey-brown clay soil with a trace of vegetation
EA200: Description	BV_SB07_0.25 - 25-NOV-2013 15:00	Mid red-brown clay soil with some vegetation
EA200: Description	BP_MW06_0.2 - 25-NOV-2013 15:00	Mid brown clay soil with plenty of small red and grey rocks plus some quartz grains and a trace of vegetation
EA200: Description	BH_SB07_0.2 - 26-NOV-2013 15:00	Mid orange-brown clay soil with some red rocks plus a trace of vegetation
EA200: Description	BL_MW03_0.25 - 26-NOV-2013 15:00	Mid grey clay soil with some vegetation
EA200: Description	BP_MW01_0.25 - 26-NOV-2013 15:00	Mid orange-brown clay soil with a trace of vegetation
EA200: Description	BP_MW03_0.5 - 26-NOV-2013 15:00	Mid brown clay soil with some vegetation
EA200: Description	BU_MW01_0.5 - 26-NOV-2013 15:00	Mid brown clay soil with some vegetation
EA200: Description	BU_MW02_0.5 - 26-NOV-2013 15:00	Pale brown clay soil with a trace of vegetation
EA200: Description	BU_SB01_0.5 - 26-NOV-2013 15:00	Pale brown clay soil with some red rocks plus a trace of vegetation
EA200: Description	BU_SB02_0.5 - 26-NOV-2013 15:00	Mid grey-brown clay soil with some grey and brown rocks plus a trace of vegetation
EA200: Description	BU_MW03_0.5 - 26-NOV-2013 15:00	Mid yellow-brown clay soil with grey and red rocks plus a trace of vegetation
EA200: Description	BX_MW01_0.5 - 26-NOV-2013 15:00	Mid orange-brown clay soil with grey rocks plus a trace of vegetation
EA200: Description	BX_MW02_0.5 - 26-NOV-2013 15:00	Mid orange-brown clay soil with grey and orange rocks plus a trace of vegetation
EA200: Description	BX_MW04_0.15 - 26-NOV-2013 15:00	Pale grey-brown clay soil with grey and orange rocks plus a trace of vegetation



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	28.5	129
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	78.3	133.2
Toluene-D8	2037-26-5	79.1	128.9
4-Bromofluorobenzene	460-00-4	80.8	123.7
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10.0	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27.4	113
4-Terphenyl-d14	1718-51-0	32	112
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

## QUALITY CONTROL REPORT

Work Order	: <b>ES1325842</b>	Page	: 1 of 48
Amendment	: <b>1</b>		
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 28-NOV-2013
Sampler	: SM, HC	Issue Date	: 06-JAN-2014
Order number	: 0224193		
Quote number	: SY/794/13	No. of samples received	: 54
		No. of samples analysed	: 50

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





## 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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3188456)</b>									
ES1325837-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.1	7.0	1.6	0% - 20%
ES1325966-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.4	7.4	0.0	0% - 20%
<b>EA010: Conductivity (QC Lot: 3188457)</b>									
ES1325837-001	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	106	107	0.0	0% - 20%
ES1325966-002	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	3730	3780	1.3	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3189040)</b>									
ES1325783-005	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	27.3	30.6	11.4	0% - 20%
ES1325826-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	18.0	20.8	14.9	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3189041)</b>									
ES1325842-008	BV_MW13_0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.5	16.1	2.1	0% - 50%
ES1325842-019	BU_SB01_0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.4	15.0	18.6	0% - 50%
<b>EA055: Moisture Content (QC Lot: 3189042)</b>									
ES1325842-028	BE_MW06_6.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	17.8	18.3	3.0	0% - 50%
ES1325842-041	BP_MW01_3.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.9	16.5	2.5	0% - 50%
<b>EA055: Moisture Content (QC Lot: 3190920)</b>									
ES1325840-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	24.8	26.3	6.0	0% - 20%
ES1325843-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.6	10.0	14.8	0% - 50%
<b>ED007: Exchangeable Cations (QC Lot: 3190611)</b>									
ES1325842-013	BH_SB07_0.2	ED007: Exchangeable Calcium	----	0.1	meq/100g	14.1	14.1	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	0.4	0.4	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	14.9	14.8	0.0	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3189579)</b>									
ES1325842-001	BL_SB01_0.25	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	12	23.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	12	16	31.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	14	15	12.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	9	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	72	52	31.7	0% - 50%
ES1325842-011	BE_MW04_2.0	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	16	10.6	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	23	18	23.2	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	5	38.2	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3189579) - continued</b>									
ES1325842-011	BE_MW04_2.0	EG005T: Copper	7440-50-8	5	mg/kg	23	19	20.7	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	12	13.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	83	66	23.8	0% - 50%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3189581)</b>									
ES1325842-021	BU_MW03_0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	13	15	15.7	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	13	28.4	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	12	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	23	22	4.7	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	21	22	5.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	46	60	26.9	0% - 50%
ES1325842-031	BV_SB05_2.9	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	10	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	8	29.4	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	5	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	14	14	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	18	12	42.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	69	77	10.2	0% - 50%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3192312)</b>									
ES1325741-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	11	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	4	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	9	8	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	10	11.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	47	44	6.5	No Limit
ES1325840-004	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	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3189580)</b>									
ES1325842-001	BL_SB01_0.25	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325842-011	BE_MW04_2.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3189582)</b>									
ES1325842-021	BU_MW03_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325842-031	BV_SB05_2.9	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	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 (%)
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3192313)</b>									
ES1325741-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325840-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3188237)</b>									
ES1325842-001	BL_SB01_0.25	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325842-025	BX_MW04_0.15	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3190624)</b>									
ES1325880-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325886-004	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3186544)</b>									
ES1325842-010	BP_MW06_0.2	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3187199)</b>									
ES1325842-021	BU_MW03_0.5	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325842-032	BV_SB06_2.9	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3189108)</b>									
ES1325842-047	BU_MW02_4.0	EP074: Styrene	100-42-5	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 (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3189108) - continued</b>									
ES1325842-047	BU_MW02_4.0	EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3186544)</b>									
ES1325842-010	BP_MW06_0.2	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3187199)</b>									
ES1325842-021	BU_MW03_0.5	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
ES1325842-032	BV_SB06_2.9	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3189108)</b>									
ES1325842-047	BU_MW02_4.0	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3186544)</b>									
ES1325842-010	BP_MW06_0.2	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3187199)</b>									
ES1325842-021	BU_MW03_0.5	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325842-032	BV_SB06_2.9	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3189108)</b>									
ES1325842-047	BU_MW02_4.0	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3186544)</b>									
ES1325842-010	BP_MW06_0.2	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	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 (%)
<b>EP074D: Fumigants (QC Lot: 3186544) - continued</b>									
ES1325842-010	BP_MW06_0.2	EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3187199)</b>									
ES1325842-021	BU_MW03_0.5	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325842-032	BV_SB06_2.9	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3189108)</b>									
ES1325842-047	BU_MW02_4.0	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3186544)</b>									
ES1325842-010	BP_MW06_0.2	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3186544) - continued</b>									
ES1325842-010	BP_MW06_0.2	EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3187199)</b>									
ES1325842-021	BU_MW03_0.5	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit
ES1325842-032	BV_SB06_2.9	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3187199) - continued</b>									
ES1325842-032	BV_SB06_2.9	EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3189108)</b>									
ES1325842-047	BU_MW02_4.0	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3189108) - continued</b>									
ES1325842-047	BU_MW02_4.0	EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3186544)</b>									
ES1325842-010	BP_MW06_0.2	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3187199)</b>									
ES1325842-021	BU_MW03_0.5	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325842-032	BV_SB06_2.9	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 1,2-Dichlorobenzene	95-50-1	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 (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3187199) - continued</b>									
ES1325842-032	BV_SB06_2.9	EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3189108)</b>									
ES1325842-047	BU_MW02_4.0	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3186544)</b>									
ES1325842-010	BP_MW06_0.2	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3187199)</b>									
ES1325842-021	BU_MW03_0.5	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325842-032	BV_SB06_2.9	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3189108)</b>									
ES1325842-047	BU_MW02_4.0	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3186544)</b>									
ES1325842-010	BP_MW06_0.2	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3187199)</b>									
ES1325842-021	BU_MW03_0.5	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
ES1325842-032	BV_SB06_2.9	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3189108)</b>									
ES1325842-047	BU_MW02_4.0	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3186561)</b>									



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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3186561) - continued</b>									
ES1325842-001	BL_SB01_0.25	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES1325842-011	BE_MW04_2.0	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3187197)</b>									
ES1325842-021	BU_MW03_0.5	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES1325842-031	BV_SB05_2.9	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	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 (%)		
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3187197) - continued</b>											
ES1325842-031	BV_SB05_2.9	EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit		
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3189101)</b>											
ES1325842-047	BU_MW02_4.0	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit		
				EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		ES1325899-002	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Chlorophenol	95-57-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4			0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP075(SIM): 3- & 4-Methylphenol	1319-77-3			1	mg/kg	<1	<1	0.0	No Limit		
				EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3186561)</b>											
ES1325842-001	BL_SB01_0.25	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		



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3186561) - continued</b>									
ES1325842-001	BL_SB01_0.25	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): Dibenzo(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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325842-011	BE_MW04_2.0	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): Dibenzo(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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3187197)</b>									
ES1325842-021	BU_MW03_0.5	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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3187197) - continued</b>									
ES1325842-021	BU_MW03_0.5	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325842-031	BV_SB05_2.9	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
				EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3189101)</b>									
ES1325842-047	BU_MW02_4.0	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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3189101) - continued</b>									
ES1325842-047	BU_MW02_4.0	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325899-002	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3186543)</b>							
ES1325842-010	BP_MW06_0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325842-015	BP_MW01_0.25	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3186560)</b>									
ES1325842-001	BL_SB01_0.25	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
ES1325842-011	BE_MW04_2.0	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



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 (%)
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3186560) - continued</b>									
ES1325842-011	BE_MW04_2.0	EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3187196)</b>									
ES1325842-021	BU_MW03_0.5	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
ES1325842-031	BV_SB05_2.9	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
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3187198)</b>									
ES1325842-021	BU_MW03_0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325842-032	BV_SB06_2.9	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3189100)</b>									
ES1325842-047	BU_MW02_4.0	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
ES1325899-002	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
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3189107)</b>									
ES1325842-047	BU_MW02_4.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325968-003	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3186543)</b>									
ES1325842-010	BP_MW06_0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1325842-015	BP_MW01_0.25	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3186560)</b>									
ES1325842-001	BL_SB01_0.25	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1325842-011	BE_MW04_2.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3187196)</b>									
ES1325842-021	BU_MW03_0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1325842-031	BV_SB05_2.9	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3187198)</b>									





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 (%)	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3187198) - continued</b>										
ES1325842-021	BU_MW03_0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1325842-032	BV_SB06_2.9	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3189100)</b>										
ES1325842-047	BU_MW02_4.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
ES1325899-002	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3189107)</b>										
ES1325842-047	BU_MW02_4.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1325968-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3186543)</b>										
ES1325842-010	BP_MW06_0.2	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							
			95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
ES1325842-015	BP_MW01_0.25	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							
			95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
	91-20-3	1	mg/kg	<1	<1	0.0	No Limit			
<b>EP080: BTEXN (QC Lot: 3187198)</b>										
ES1325842-021	BU_MW03_0.5	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							
			95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
ES1325842-032	BV_SB06_2.9	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							



Sub-Matrix: <b>SOIL</b>				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080: BTEXN (QC Lot: 3187198) - continued</b>									
ES1325842-032	BV_SB06_2.9	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3189107)</b>									
ES1325842-047	BU_MW02_4.0	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
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1325968-003	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
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
<b>EP231: Perfluorinated Compounds (QC Lot: 3188405)</b>									
ES1325842-001	BL_SB01_0.25	EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	<0.005	0.0	No Limit
ES1325842-029	BL_MW06_3.0	EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	<0.005	0.0	No Limit
<b>Sub-Matrix: <b>WATER</b></b>									
Sub-Matrix: <b>WATER</b>				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3188065)</b>									
ES1325842-035	R01_251113_SM	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES1326013-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3187789)</b>									
ES1325901-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES1325918-003	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<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 (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3187789) - continued</b>									
ES1325918-003	Anonymous	EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3187789)</b>									
ES1325901-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES1325918-003	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3187789)</b>									
ES1325901-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES1325918-003	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3187789)</b>									
ES1325901-001	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES1325918-003	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3187789)</b>									
ES1325901-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3187789) - continued</b>									
ES1325901-001	Anonymous	EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit		
ES1325918-003	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit		
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit		
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3187789) - continued</b>									
ES1325918-003	Anonymous	EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3187789)</b>									
ES1325901-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
ES1325918-003	Anonymous	EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
ES1325918-003	Anonymous	EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
ES1325918-003	Anonymous	EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3187789)</b>									
ES1325901-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES1325918-003	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3187789)</b>									
ES1325901-001	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit
ES1325918-003	Anonymous	EP074: Naphthalene	91-20-3	7	µg/L	<7	<7	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3187790)</b>									
ES1325901-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit

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 Work Order : ES1325842 Amendment 1  
 Client : ENVIRO RESOURCES MANAGEMENT  
 Project : PROJECT SYMPHONY



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 (%)	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3187790) - continued</b>										
ES1325918-003	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3187790)</b>										
ES1325901-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit	
ES1325918-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3187790)</b>										
ES1325901-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit	
ES1325918-003	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA010: Conductivity (QCLot: 3188457)</b>									
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	101	70	130	
<b>ED007: Exchangeable Cations (QCLot: 3190611)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3189579)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	108	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	95.8	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	99.0	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	101	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	98.5	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	102	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	100	81	133	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3189581)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	109	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	106	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	113	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	104	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	110	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3192312)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	105	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	99.6	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	96.2	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	101	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	94.2	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	103	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	94.1	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3189580)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	79.5	66	112	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3189582)</b>									



Sub-Matrix: SOIL

Method: Compound				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)
CAS Number	LOR	Unit	Result	LCS		Low	High	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3189582) - continued</b>								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	69.0	66	112
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3192313)</b>								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	72.9	66	112
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3188237)</b>								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	65.0	57.4	117
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3190624)</b>								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	85.0	57.4	117
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3186544)</b>								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	89.7	64	126
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	93.1	66	128
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	93.1	63	129
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	91.9	63	129
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	94.3	64	130
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	93.1	63	129
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	92.9	63	129
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	94.0	62	130
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	95.4	61	131
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3187199)</b>								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	109	64	126
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	113	66	128
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	116	63	129
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	116	63	129
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	118	64	130
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	117	63	129
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	118	63	129
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	119	62	130
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	118	61	131
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3189108)</b>								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	71.5	64	126
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	86.0	66	128
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	77.0	63	129
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	86.2	63	129
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	82.4	64	130
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	83.5	63	129
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	92.8	63	129
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	79.2	62	130
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	81.9	61	131
<b>EP074B: Oxygenated Compounds (QCLot: 3186544)</b>								





Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074B: Oxygenated Compounds (QCLot: 3186544) - continued</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	71.0	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	103	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	89.2	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	93.8	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074B: Oxygenated Compounds (QCLot: 3187199)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	105	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	103	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	99.2	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	106	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074B: Oxygenated Compounds (QCLot: 3189108)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	32.0	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	106	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	90.8	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	75.2	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3186544)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	62.6	54	126	
<b>EP074C: Sulfonated Compounds (QCLot: 3187199)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	106	54	126	
<b>EP074C: Sulfonated Compounds (QCLot: 3189108)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	75.8	54	126	
<b>EP074D: Fumigants (QCLot: 3186544)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	75.4	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	89.0	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	88.3	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	80.2	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	88.1	66	126	
<b>EP074D: Fumigants (QCLot: 3187199)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074D: Fumigants (QCLot: 3187199) - continued</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	98.4	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	111	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	112	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	106	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	102	66	126	
<b>EP074D: Fumigants (QCLot: 3189108)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	82.2	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	79.1	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	78.3	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	72.1	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	73.8	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3186544)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	51.0	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	67.5	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	77.9	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	64.9	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	76.6	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	77.6	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	74.3	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	72.4	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	79.5	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	84.2	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	86.9	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	73.8	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	88.9	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	82.7	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	92.5	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	89.8	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	87.1	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	94.7	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	87.6	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	91.3	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	80.3	62	122	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3186544) - continued</b>									
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	92.2	54	128	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	97.1	55	129	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	90.5	56	132	
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	94.0	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	89.9	19.8	134	
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	77.1	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	98.4	48	136	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187199)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	116	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	112	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	113	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	108	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	114	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	114	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	107	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	107	43	129	
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	110	62	130	
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	108	66	132	
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	110	66	132	
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	98.8	62	126	
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	112	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	106	59	125	
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	111	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	110	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	99.3	65	127	
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	109	70	130	
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	104	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	109	67	143	
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	98.9	62	122	
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	103	54	128	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	109	55	129	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	104	56	132	
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	111	65	135	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187199) - continued</b>									
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	117	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	103	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	122	48	136	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3189108)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	38.7	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	49.2	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	68.1	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	67.7	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	78.9	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	70.3	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	95.6	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	78.1	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	82.6	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	91.7	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	86.6	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	95.0	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	85.2	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	90.5	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	94.3	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	93.1	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	91.4	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	79.4	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	80.0	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	71.8	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	76.0	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	78.3	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	84.3	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	72.1	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	67.0	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	78.6	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	74.9	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	80.0	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3186544)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3186544) - continued</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	91.5	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	91.3	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	93.2	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	93.5	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	93.6	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	91.8	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	92.6	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	92.9	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	95.9	60	132	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3187199)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	108	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	114	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	117	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	117	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	114	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	114	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	113	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	119	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	121	60	132	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3189108)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	73.4	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	83.5	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	98.3	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	88.1	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	83.3	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	75.3	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	75.0	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	63.6	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	67.5	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3186544)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	84.8	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	83.5	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	83.4	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	90.2	60	126	
<b>EP074G: Trihalomethanes (QCLot: 3187199)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	103	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	104	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	108	63	121	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074G: Trihalomethanes (QCLot: 3187199) - continued</b>									
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	105	60	126	
<b>EP074G: Trihalomethanes (QCLot: 3189108)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	95.2	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	82.7	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	71.7	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	79.7	60	126	
<b>EP074H: Naphthalene (QCLot: 3186544)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	93.8	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP074H: Naphthalene (QCLot: 3187199)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	116	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP074H: Naphthalene (QCLot: 3189108)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	84.4	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3186561)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	98.9	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	99.4	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	98.2	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	104	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	78.9	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	101	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	92.1	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	93.3	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	89.8	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	85.3	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	82.9	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	23.8	3.9	57	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3187197)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	90.4	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	91.3	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	94.7	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	98.0	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	83.3	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	83.8	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	89.2	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	91.9	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	86.3	76.4	114	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3187197) - continued</b>									
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	85.3	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	87.6	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	27.3	3.9	57	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3189101)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	82.4	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	89.9	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	107	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	108	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	88.2	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	88.0	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	94.8	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	98.6	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	92.1	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	93.0	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	93.4	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	25.9	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3186561)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	97.8	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	104	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	104	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	104	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	107	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	109	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	110	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	110	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	95.8	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	106	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	90.0	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	106	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	97.7	76	122	
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	94.5	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	94.4	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	92.5	72.4	114	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3187197)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	87.4	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	100	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	95.4	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	102	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	102	79	123	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3187197) - continued</b>									
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	96.8	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	102	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	103	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	94.4	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	100	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	95.4	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	98.8	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	93.5	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	93.9	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	93.9	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	93.5	72.4	114	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3189101)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	93.5	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	106	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	100	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	108	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	108	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	102	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	107	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	108	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	99.1	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	102	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	96.3	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	107	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	98.4	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	98.3	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	99.5	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	97.1	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3186543)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	97.0	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3186560)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	87.6	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	94.8	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	97.7	64	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187196)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	110	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	111	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	99.3	64	128	





Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187198)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	83.0	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3189100)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	107	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	109	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	95.2	64	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3189107)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	103	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3186543)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	108	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3186560)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	82.4	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	100	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	104	63	131	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187196)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	110	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	107	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	86.8	63	131	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187198)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	83.3	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3189100)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	103	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	107	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	76.7	63	131	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3189107)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	103	68.4	128	
<b>EP080: BTEXN (QCLot: 3186543)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	92.6	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	93.7	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.3	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	91.5	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	101	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	95.1	62	138	
<b>EP080: BTEXN (QCLot: 3187198)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	86.5	62	116	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080: BTEXN (QCLot: 3187198) - continued</b>									
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	83.5	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	81.5	58	118	
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	80.2	60	120	
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	84.6	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.6	62	138	
<b>EP080: BTEXN (QCLot: 3189107)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	110	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	103	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	93.7	58	118	
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.4	60	120	
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	111	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	114	62	138	
<b>EP231: Perfluorinated Compounds (QCLot: 3188405)</b>									
EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	75.2	54	146	
EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	79.2	54	134	
EP231: 6:2 Fluorotelomer Sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	0.0125 mg/kg	115	56	138	

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3188065)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	87.8	77	115	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3186883)</b>									
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	96.7	61.6	107	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3187789)</b>									
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	90.4	74	118	
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	91.4	75	121	
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	88.9	67	123	
EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	91.9	70	122	
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	91.8	69	123	
EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	91.6	71	121	
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	92.7	70	122	
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	88.6	67	123	
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	82.0	62	126	
<b>EP074B: Oxygenated Compounds (QCLot: 3187789)</b>									
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	74.6	61.4	134	
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	102	73.6	130	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074B: Oxygenated Compounds (QCLot: 3187789) - continued</b>									
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	94.9	61	139	
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	99.5	65	137	
<b>EP074C: Sulfonated Compounds (QCLot: 3187789)</b>									
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	86.3	72.8	127	
<b>EP074D: Fumigants (QCLot: 3187789)</b>									
EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	76.7	61	119	
EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	98.4	76	120	
EP074: cis-1,3-Dichloropropylene	10061-01-5	10	µg/L	<10	10 µg/L	89.8	62	120	
EP074: trans-1,3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	85.3	61	119	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	93.1	69	117	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187789)</b>									
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	104	60.6	138	
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	97.5	67.4	130	
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	102	69.4	129	
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	85.5	56	140	
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	99.5	63	135	
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	103	65	131	
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	98.1	69	123	
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	93.0	70.2	128	
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	92.3	71	119	
EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	97.5	75	119	
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	96.0	77	117	
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	84.0	61	119	
EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	94.2	73	119	
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	93.2	63	121	
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	104	78	122	
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	95.1	74	120	
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	94.0	74	118	
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	98.6	75	123	
EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	100	79	121	
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	90.0	72	124	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	91.8	66	114	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	79.6	60	120	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	81.5	70.6	128	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	94.0	70	124	
EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	104	74	128	
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	102	71.8	126	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	87.0	66.4	136	
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	88.5	58	132	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3187789)</b>									
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	96.6	80	118	
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	94.4	76	116	
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	94.2	71	121	
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	90.5	71	121	
EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	91.0	74	120	
EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	89.6	72	120	
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	93.6	77	117	
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	80.1	60	126	
EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	89.8	67	125	
<b>EP074G: Trihalomethanes (QCLot: 3187789)</b>									
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	94.6	76	118	
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	94.5	64	118	
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	94.8	65	115	
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	97.6	73.5	126	
<b>EP074H: Naphthalene (QCLot: 3187789)</b>									
EP074: Naphthalene	91-20-3	7	µg/L	<7	10 µg/L	95.5	61	125	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3186882)</b>									
EP075(SIM): Phenol	108-95-2	0.2	µg/L	----	5 µg/L	51.0	24.5	61.9	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L	----	5 µg/L	98.4	63.8	110	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L	----	5 µg/L	62.2	55.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	µg/L	----	10 µg/L	60.6	42.5	114	
		2	µg/L	<2.0	----	----	----	----	
EP075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L	----	5 µg/L	87.6	62.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.2	µg/L	----	5 µg/L	74.4	59.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.2	µg/L	----	5 µg/L	69.2	59.3	122	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.2	µg/L	----	5 µg/L	83.1	64.3	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L	----	5 µg/L	75.0	63	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.2	µg/L	----	5 µg/L	72.9	58.7	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.2	µg/L	----	5 µg/L	64.2	50	108	
		1	µg/L	<1.0	----	----	----	----	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
					LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3186882) - continued</b>								
EP075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L	----	10 µg/L	56.5	8.7	95
		2	µg/L	<2.0	----	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3186882)</b>								
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	5 µg/L	69.4	58.6	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	5 µg/L	72.4	63.6	114
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	5 µg/L	73.3	62.2	113
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	5 µg/L	69.2	63.9	115
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	5 µg/L	89.3	62.6	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	5 µg/L	91.4	64.3	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	5 µg/L	64.2	63.6	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	5 µg/L	83.6	63.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	5 µg/L	64.4	64.1	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	5 µg/L	89.6	62.5	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	5 µg/L	82.7	61.7	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	5 µg/L	98.6	61.7	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	5 µg/L	85.4	63.3	117
		0.5	µg/L	<0.5	----	----	----	----
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	5 µg/L	87.8	59.9	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	----	5 µg/L	92.7	61.2	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	5 µg/L	85.8	59.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	1	µg/L	<1.0	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3186881)</b>								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	65.7	59	129
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	86.9	71	131
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	83.9	62	120



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187790)</b>								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	81.5	75	127
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3186881)</b>								
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	81.6	58.9	131
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	84.0	73.9	138
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
		50	µg/L	----	1500 µg/L	78.7	67	127
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187790)</b>								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	79.9	75	127
<b>EP080: BTEXN (QCLot: 3187790)</b>								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	92.0	70	124
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	86.1	65	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	81.2	70	120
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	79.7	69	121
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	84.9	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	88.4	70	124

### 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**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%)	
						Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3189579)</b>							
ES1325842-001	BL_SB01_0.25	EG005T: Arsenic	7440-38-2	50 mg/kg	95.5	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	90.8	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	99.0	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	95.5	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	94.0	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.2	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	77.8	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3189581)</b>							
ES1325842-021	BU_MW03_0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	100	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.1	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	102	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	98.7	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	101	70	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG005T: Total Metals by ICP-AES (QCLot: 3189581) - continued</b>							
ES1325842-021	BU_MW03_0.5	EG005T: Nickel	7440-02-0	50 mg/kg	100	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	99.5	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3192312)</b>							
ES1325741-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	96.7	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.5	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	100	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	106	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	98.0	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	98.7	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	92.8	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3189580)</b>							
ES1325842-001	BL_SB01_0.25	EG035T: Mercury	7439-97-6	5 mg/kg	84.7	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3189582)</b>							
ES1325842-021	BU_MW03_0.5	EG035T: Mercury	7439-97-6	5 mg/kg	83.6	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3192313)</b>							
ES1325741-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	81.2	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3188237)</b>							
ES1325842-001	BL_SB01_0.25	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	90.0	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3190624)</b>							
ES1325880-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	82.0	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3186544)</b>							
ES1325842-010	BP_MW06_0.2	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	93.3	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	89.4	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187199)</b>							
ES1325842-021	BU_MW03_0.5	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	96.2	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.8	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3189108)</b>							
ES1325842-047	BU_MW02_4.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	90.0	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	96.3	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3186544)</b>							
ES1325842-010	BP_MW06_0.2	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	94.7	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3187199)</b>							
ES1325842-021	BU_MW03_0.5	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	98.5	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3189108)</b>							
ES1325842-047	BU_MW02_4.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	88.0	70	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3186561)</b>							
ES1325842-001	BL_SB01_0.25	EP075(SIM): Phenol	108-95-2	10 mg/kg	86.6	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	90.1	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	76.0	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	84.3	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	37.2	20	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3187197)</b>							
ES1325842-021	BU_MW03_0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	85.5	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	88.9	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	83.2	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.7	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	73.6	20	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3189101)</b>							
ES1325842-047	BU_MW02_4.0	EP075(SIM): Phenol	108-95-2	10 mg/kg	75.8	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	79.2	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	74.1	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	76.5	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	54.4	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3186561)</b>							
ES1325842-001	BL_SB01_0.25	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	92.1	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.4	70	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3187197)</b>							
ES1325842-021	BU_MW03_0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	87.1	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	95.4	70	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3189101)</b>							
ES1325842-047	BU_MW02_4.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	77.2	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	85.2	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3186543)</b>							
ES1325842-010	BP_MW06_0.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.1	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3186560)</b>							
ES1325842-001	BL_SB01_0.25	EP071: C10 - C14 Fraction	----	640 mg/kg	77.1	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	79.9	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	71.9	52	132
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187196)</b>							
ES1325842-021	BU_MW03_0.5	EP071: C10 - C14 Fraction	----	640 mg/kg	88.6	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	88.2	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	76.9	52	132





Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187198)</b>								
ES1325842-021	BU_MW03_0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.4	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3189100)</b>								
ES1325842-047	BU_MW02_4.0	EP071: C10 - C14 Fraction	----	640 mg/kg	78.4	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.6	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	67.3	52	132	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3189107)</b>								
ES1325842-047	BU_MW02_4.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	109	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3186543)</b>								
ES1325842-010	BP_MW06_0.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	97.7	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3186560)</b>								
ES1325842-001	BL_SB01_0.25	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	99.2	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	74.5	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	57.9	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187196)</b>								
ES1325842-021	BU_MW03_0.5	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	111	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	81.0	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	59.1	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187198)</b>								
ES1325842-021	BU_MW03_0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	85.1	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3189100)</b>								
ES1325842-047	BU_MW02_4.0	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	100	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	72.7	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	55.0	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3189107)</b>								
ES1325842-047	BU_MW02_4.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	111	70	130	
<b>EP080: BTEXN (QCLot: 3186543)</b>								
ES1325842-010	BP_MW06_0.2	EP080: Benzene	71-43-2	2.5 mg/kg	87.5	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	87.9	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.9	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	87.4	70	130	
	91-20-3	EP080: Naphthalene		2.5 mg/kg	81.9	70	130	
<b>EP080: BTEXN (QCLot: 3187198)</b>								
ES1325842-021	BU_MW03_0.5	EP080: Benzene	71-43-2	2.5 mg/kg	88.5	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	84.1	70	130	



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP080: BTEXN (QCLot: 3187198) - continued</b>							
ES1325842-021	BU_MW03_0.5	EP080: Ethylbenzene	100-41-4	2.5 mg/kg	85.7	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	81.3	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	83.8	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	80.2	70	130
<b>EP080: BTEXN (QCLot: 3189107)</b>							
ES1325842-047	BU_MW02_4.0	EP080: Benzene	71-43-2	2.5 mg/kg	94.1	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	103	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	102	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	97.6	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.8	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	104	70	130
<b>EP231: Perfluorinated Compounds (QCLot: 3188405)</b>							
ES1325842-001	BL_SB01_0.25	EP231: PFOS	1763-23-1	0.0025 mg/kg	73.1	54	146
		EP231: PFOA	335-67-1	0.0025 mg/kg	77.3	54	134
		EP231: 6:2 Fluorotelomer sulfonate (6:2 Fts)	27619-97-2	0.0125 mg/kg	90.9	56	138

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3188065)</b>							
ES1325842-036	R01_261113_SM	EG035T: Mercury	7439-97-6	0.010 mg/L	96.7	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187789)</b>							
ES1325901-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	110	70	130
		EP074: Trichloroethene	79-01-6	25 µg/L	107	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3187789)</b>							
ES1325901-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	110	70	130
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187790)</b>							
ES1325901-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	111	70	130
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187790)</b>							
ES1325901-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	106	70	130
<b>EP080: BTEXN (QCLot: 3187790)</b>							
ES1325901-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	99.4	70	130
		EP080: Toluene	108-88-3	25 µg/L	93.7	70	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	95.0	70	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) Low High
<b>EP080: BTEXN (QCLot: 3187790) - continued</b>							
ES1325901-001	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	95.3	70	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	98.5	70	130
		EP080: Naphthalene	91-20-3	25 µg/L	98.2	70	130

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	MSD	Recovery Limits (%) Low High	RPDs (%) Value Control Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3186543)</b>										
ES1325842-010	BP_MW06_0.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.1	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3186543)</b>										
ES1325842-010	BP_MW06_0.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	97.7	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3186543)</b>										
ES1325842-010	BP_MW06_0.2	EP080: Benzene	71-43-2	2.5 mg/kg	87.5	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	87.9	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	86.9	----	70	130	----	----
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	87.4	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	81.9	----	70	130	----	----
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3186544)</b>										
ES1325842-010	BP_MW06_0.2	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	93.3	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	89.4	----	70	130	----	----
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3186544)</b>										
ES1325842-010	BP_MW06_0.2	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	94.7	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3186560)</b>										
ES1325842-001	BL_SB01_0.25	EP071: C10 - C14 Fraction	----	640 mg/kg	77.1	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	79.9	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	71.9	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3186560)</b>										
ES1325842-001	BL_SB01_0.25	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	99.2	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	74.5	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	57.9	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3186561)</b>										



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
					MS	MSD	Low	High	Value	Control Limit	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3186561) - continued</b>											
ES1325842-001	BL_SB01_0.25	EP075(SIM): Phenol	108-95-2	10 mg/kg	86.6	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	90.1	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	76.0	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	84.3	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	37.2	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3186561)</b>											
ES1325842-001	BL_SB01_0.25	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	92.1	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.4	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187196)</b>											
ES1325842-021	BU_MW03_0.5	EP071: C10 - C14 Fraction	----	640 mg/kg	88.6	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	88.2	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	76.9	----	52	132	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187196)</b>											
ES1325842-021	BU_MW03_0.5	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	111	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	81.0	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	59.1	----	52	132	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3187197)</b>											
ES1325842-021	BU_MW03_0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	85.5	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	88.9	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	83.2	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.7	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	73.6	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3187197)</b>											
ES1325842-021	BU_MW03_0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	87.1	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	95.4	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187198)</b>											
ES1325842-021	BU_MW03_0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.4	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187198)</b>											
ES1325842-021	BU_MW03_0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	85.1	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3187198)</b>											
ES1325842-021	BU_MW03_0.5	EP080: Benzene	71-43-2	2.5 mg/kg	88.5	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	84.1	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	85.7	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	81.3	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	83.8	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	80.2	----	70	130	----	----	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187199)</b>											



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187199) - continued</b>										
ES1325842-021	BU_MW03_0.5	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	96.2	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.8	----	70	130	----	----
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3187199)</b>										
ES1325842-021	BU_MW03_0.5	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	98.5	----	70	130	----	----
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3188237)</b>										
ES1325842-001	BL_SB01_0.25	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	90.0	----	70	130	----	----
<b>EP231: Perfluorinated Compounds (QCLot: 3188405)</b>										
ES1325842-001	BL_SB01_0.25	EP231: PFOS	1763-23-1	0.0025 mg/kg	73.1	----	54	146	----	----
		EP231: PFOA	335-67-1	0.0025 mg/kg	77.3	----	54	134	----	----
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	90.9	----	56	138	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3189100)</b>										
ES1325842-047	BU_MW02_4.0	EP071: C10 - C14 Fraction	----	640 mg/kg	78.4	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.6	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	67.3	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3189100)</b>										
ES1325842-047	BU_MW02_4.0	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	100	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	72.7	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	55.0	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3189101)</b>										
ES1325842-047	BU_MW02_4.0	EP075(SIM): Phenol	108-95-2	10 mg/kg	75.8	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	79.2	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	74.1	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	76.5	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	54.4	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3189101)</b>										
ES1325842-047	BU_MW02_4.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	77.2	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	85.2	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3189107)</b>										
ES1325842-047	BU_MW02_4.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	109	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3189107)</b>										
ES1325842-047	BU_MW02_4.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	111	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3189107)</b>										
ES1325842-047	BU_MW02_4.0	EP080: Benzene	71-43-2	2.5 mg/kg	94.1	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	103	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	102	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	97.6	----	70	130	----	----
			106-42-3							



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP080: BTEXN (QCLot: 3189107) - continued</b>										
ES1325842-047	BU_MW02_4.0	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.8	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	104	----	70	130	----	----
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3189108)</b>										
ES1325842-047	BU_MW02_4.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	90.0	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	96.3	----	70	130	----	----
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3189108)</b>										
ES1325842-047	BU_MW02_4.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	88.0	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3189579)</b>										
ES1325842-001	BL_SB01_0.25	EG005T: Arsenic	7440-38-2	50 mg/kg	95.5	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	90.8	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	99.0	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	95.5	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	94.0	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	96.2	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	77.8	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3189580)</b>										
ES1325842-001	BL_SB01_0.25	EG035T: Mercury	7439-97-6	5 mg/kg	84.7	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3189581)</b>										
ES1325842-021	BU_MW03_0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	100	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.1	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	102	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	98.7	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	101	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	100	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	99.5	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3189582)</b>										
ES1325842-021	BU_MW03_0.5	EG035T: Mercury	7439-97-6	5 mg/kg	83.6	----	70	130	----	----
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3190624)</b>										
ES1325880-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	82.0	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3192312)</b>										
ES1325741-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	96.7	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.5	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	100	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	106	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	98.0	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	98.7	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	92.8	----	70	130	----	----



Sub-Matrix: SOIL					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3192313)</b>											
ES1325741-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	81.2	----	70	130	----	----	

Sub-Matrix: WATER					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187789)</b>											
ES1325901-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	110	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	25 µg/L	107	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3187789)</b>											
ES1325901-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	110	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187790)</b>											
ES1325901-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	111	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187790)</b>											
ES1325901-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	106	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3187790)</b>											
ES1325901-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	99.4	----	70	130	----	----	
		EP080: Toluene	108-88-3	25 µg/L	93.7	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	25 µg/L	95.0	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	95.3	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	25 µg/L	98.5	----	70	130	----	----	
	91-20-3	EP080: Naphthalene		25 µg/L	98.2	----	70	130	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3188065)</b>											
ES1325842-036	R01_261113_SM	EG035T: Mercury	7439-97-6	0.010 mg/L	96.7	----	70	130	----	----	

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325842</b>	Page	: 1 of 23
Amendment	: <b>1</b>		
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 28-NOV-2013
Sampler	: SM, HC	Issue Date	: 06-JAN-2014
Order number	: 0224193		
Quote number	: SY/794/13	No. of samples received	: 54
		No. of samples analysed	: 50

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers





## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA002 : pH (Soils)</b>							
Soil Glass Jar - Unpreserved (EA002) BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	02-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) BH_SB07_0.2	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	02-DEC-2013	✔
<b>EA010: Conductivity</b>							
Soil Glass Jar - Unpreserved (EA010) BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	30-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA010) BH_SB07_0.2	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	30-DEC-2013	✔
<b>EA055: Moisture Content</b>							
Soil Glass Jar - Unpreserved (EA055-103) BQ_MW01_1.5, BE_MW06_6.0	BE_MW07_6.0, 22-NOV-2013	----	----	----	02-DEC-2013	06-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA055-103) BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW01_0.1, BV_SB07_0.25, BE_MW04_2.0, BL_MW06_3.0, BV_SB05_2.9, D01_251113_TC, BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BV_MW13_0.5, BP_MW06_0.2, BE_MW05_2.0, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	----	----	----	02-DEC-2013	09-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA055-103)							



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis				
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation		
<b>EA055: Moisture Content - Continued</b>									
BH_SB07_0.2, BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BX_MW01_0.5, BX_MW04_0.15, BL_MW03_3.4, BV_MW01_5.0, BP_MW03_3.5,	BL_MW03_0.25, BP_MW03_0.5, BU_MW02_0.5, BU_SB02_0.5, D01_261113_SM, BX_MW02_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5, BU_MW02_4.0	26-NOV-2013	----	----	----	02-DEC-2013	10-DEC-2013	✓	
<b>Soil Glass Jar - Unpreserved (EA055-103)</b>									
BU_MW03_2.5,	BE_MW09_0.9	26-NOV-2013	----	----	----	03-DEC-2013	10-DEC-2013	✓	
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>									
<b>Snap Lock Bag (EA200)</b>									
BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW01_0.1, BV_SB07_0.25,	BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BV_MW13_0.5, BP_MW06_0.2	25-NOV-2013	---	24-MAY-2014	----	09-DEC-2013	07-JUN-2014	✓	
<b>Snap Lock Bag (EA200)</b>									
BH_SB07_0.2, BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BX_MW02_0.5,	BL_MW03_0.25, BP_MW03_0.5, BU_MW02_0.5, BU_SB02_0.5, BX_MW01_0.5, BX_MW04_0.15	26-NOV-2013	---	25-MAY-2014	----	09-DEC-2013	07-JUN-2014	✓	
<b>ED007: Exchangeable Cations</b>									
<b>Soil Glass Jar - Unpreserved (ED007)</b>									
BQ_MW01_1.5		22-NOV-2013	03-DEC-2013	20-DEC-2013	✓	05-DEC-2013	20-DEC-2013	✓	
<b>Soil Glass Jar - Unpreserved (ED007)</b>									
BH_SB07_0.2		26-NOV-2013	03-DEC-2013	24-DEC-2013	✓	05-DEC-2013	24-DEC-2013	✓	



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BQ_MW01_1.5, BE_MW06_6.0	BE_MW07_6.0,	22-NOV-2013	02-DEC-2013	21-MAY-2014	✓	04-DEC-2013	21-MAY-2014	✓
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW01_0.1, BV_SB07_0.25, BE_MW04_2.0, BL_MW06_3.0, BV_SB05_2.9, D01_251113_TC,	BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BV_MW13_0.5, BP_MW06_0.2, BE_MW05_2.0, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	24-MAY-2014	✓	04-DEC-2013	24-MAY-2014	✓
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BH_SB07_0.2, BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BX_MW01_0.5, BX_MW04_0.15, BL_MW03_3.4, BV_MW01_5.0, BP_MW03_3.5	BL_MW03_0.25, BP_MW03_0.5, BU_MW02_0.5, BU_SB02_0.5, D01_261113_SM, BX_MW02_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5,	26-NOV-2013	02-DEC-2013	25-MAY-2014	✓	04-DEC-2013	25-MAY-2014	✓
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BU_MW02_4.0, BE_MW09_0.9	BU_MW03_2.5,	26-NOV-2013	04-DEC-2013	25-MAY-2014	✓	04-DEC-2013	25-MAY-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BQ_MW01_1.5, BE_MW06_6.0	BE_MW07_6.0,	22-NOV-2013	02-DEC-2013	20-DEC-2013	✓	05-DEC-2013	20-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW01_0.1, BV_SB07_0.25, BE_MW04_2.0, BL_MW06_3.0, BV_SB05_2.9, D01_251113_TC,	BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BV_MW13_0.5, BP_MW06_0.2, BE_MW05_2.0, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	23-DEC-2013	✓	05-DEC-2013	23-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BH_SB07_0.2, BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BX_MW01_0.5, BX_MW04_0.15, BL_MW03_3.4, BV_MW01_5.0, BP_MW03_3.5	BL_MW03_0.25, BP_MW03_0.5, BU_MW02_0.5, BU_SB02_0.5, D01_261113_SM, BX_MW02_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5,	26-NOV-2013	02-DEC-2013	24-DEC-2013	✓	05-DEC-2013	24-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BU_MW02_4.0, BE_MW09_0.9	BU_MW03_2.5,	26-NOV-2013	04-DEC-2013	24-DEC-2013	✓	05-DEC-2013	24-DEC-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
<b>Soil Glass Jar - Unpreserved (EP066)</b> BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW13_0.5, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9 BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BL_MW06_3.0, BV_SB05_2.9, D01_251113_TC,	25-NOV-2013	04-DEC-2013	09-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP066)</b> BV_MW01_5.0	26-NOV-2013	03-DEC-2013	10-DEC-2013	✓	03-DEC-2013	12-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP066)</b> BL_MW03_0.25, BX_MW02_0.5, BV_MW13_6.0, BL_SB06_2.9 BX_MW01_0.5, BX_MW04_0.15, BL_MW03_3.4,	26-NOV-2013	04-DEC-2013	10-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved (EP071)</b> BQ_MW01_1.5, BE_MW06_6.0 BE_MW07_6.0,	22-NOV-2013	04-DEC-2013	06-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP071)</b> BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW01_0.1, BV_SB07_0.25, BE_MW04_2.0, BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BV_MW13_0.5, BP_MW06_0.2, BE_MW05_2.0	25-NOV-2013	03-DEC-2013	09-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP071)</b> BL_MW06_3.0, BV_SB05_2.9, D01_251113_TC, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	04-DEC-2013	09-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP071)</b> BH_SB07_0.2, BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BL_MW03_0.25, BP_MW03_0.5, BU_MW02_0.5, BU_SB02_0.5	26-NOV-2013	03-DEC-2013	10-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP071)</b> BU_MW03_0.5, BX_MW01_0.5, BX_MW04_0.15, BL_MW03_3.4, BV_MW01_5.0, BP_MW03_3.5, BU_MW03_2.5, D01_261113_SM, BX_MW02_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5, BU_MW02_4.0, BE_MW09_0.9	26-NOV-2013	04-DEC-2013	10-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074D: Fumigants</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	29-NOV-2013	✖
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW06_0.2, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	02-DEC-2013	✔	02-DEC-2013	02-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	03-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BU_MW02_4.0,	26-NOV-2013	03-DEC-2013	03-DEC-2013	✔	03-DEC-2013	03-DEC-2013	✔
<b>EP074E: Halogenated Aliphatic Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	29-NOV-2013	✖
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW06_0.2, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	02-DEC-2013	✔	02-DEC-2013	02-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	03-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BU_MW02_4.0,	26-NOV-2013	03-DEC-2013	03-DEC-2013	✔	03-DEC-2013	03-DEC-2013	✔



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074F: Halogenated Aromatic Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	29-NOV-2013	✖
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW06_0.2, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	02-DEC-2013	✔	02-DEC-2013	02-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	03-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BU_MW02_4.0,	26-NOV-2013	03-DEC-2013	03-DEC-2013	✔	03-DEC-2013	03-DEC-2013	✔
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	29-NOV-2013	✖
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW06_0.2, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	02-DEC-2013	✔	02-DEC-2013	02-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	03-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BU_MW02_4.0,	26-NOV-2013	03-DEC-2013	03-DEC-2013	✔	03-DEC-2013	03-DEC-2013	✔



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074H: Naphthalene</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	29-NOV-2013	✖
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW06_0.2, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	02-DEC-2013	✔	02-DEC-2013	02-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	03-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BU_MW02_4.0,	26-NOV-2013	03-DEC-2013	03-DEC-2013	✔	03-DEC-2013	03-DEC-2013	✔
<b>EP074B: Oxygenated Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	29-NOV-2013	✖
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW06_0.2, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	02-DEC-2013	✔	02-DEC-2013	02-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	03-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BU_MW02_4.0,	26-NOV-2013	03-DEC-2013	03-DEC-2013	✔	03-DEC-2013	03-DEC-2013	✔





Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074C: Sulfonated Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	29-NOV-2013	✖
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW06_0.2, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	02-DEC-2013	✔	02-DEC-2013	02-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	03-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BU_MW02_4.0,	26-NOV-2013	03-DEC-2013	03-DEC-2013	✔	03-DEC-2013	03-DEC-2013	✔
<b>EP074G: Trihalomethanes</b>							
<b>Soil Glass Jar - Unpreserved (EP074)</b> BQ_MW01_1.5	22-NOV-2013	02-DEC-2013	29-NOV-2013	✖	02-DEC-2013	29-NOV-2013	✖
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW06_0.2, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	02-DEC-2013	✔	02-DEC-2013	02-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5	26-NOV-2013	02-DEC-2013	03-DEC-2013	✔	02-DEC-2013	03-DEC-2013	✔
<b>Soil Glass Jar - Unpreserved (EP074)</b> BU_MW02_4.0,	26-NOV-2013	03-DEC-2013	03-DEC-2013	✔	03-DEC-2013	03-DEC-2013	✔



Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP075(SIM)A: Phenolic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BQ_MW01_1.5, BE_MW06_6.0	BE_MW07_6.0,	22-NOV-2013	04-DEC-2013	06-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW01_0.1, BV_SB07_0.25, BE_MW04_2.0,	BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BV_MW13_0.5, BP_MW06_0.2, BE_MW05_2.0	25-NOV-2013	03-DEC-2013	09-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BL_MW06_3.0, BV_SB05_2.9, D01_251113_TC,	BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	04-DEC-2013	09-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BH_SB07_0.2, BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5,	BL_MW03_0.25, BP_MW03_0.5, BU_MW02_0.5, BU_SB02_0.5	26-NOV-2013	03-DEC-2013	10-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BU_MW03_0.5, BX_MW01_0.5, BX_MW04_0.15, BL_MW03_3.4, BV_MW01_5.0, BP_MW03_3.5, BU_MW03_2.5,	D01_261113_SM, BX_MW02_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5, BU_MW02_4.0, BE_MW09_0.9	26-NOV-2013	04-DEC-2013	10-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BQ_MW01_1.5, BE_MW06_6.0	BE_MW07_6.0,	22-NOV-2013	04-DEC-2013	06-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW01_0.1, BV_SB07_0.25, BE_MW04_2.0,	BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BV_MW13_0.5, BP_MW06_0.2, BE_MW05_2.0	25-NOV-2013	03-DEC-2013	09-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BL_MW06_3.0, BV_SB05_2.9, D01_251113_TC,	BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	04-DEC-2013	09-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BH_SB07_0.2, BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5,	BL_MW03_0.25, BP_MW03_0.5, BU_MW02_0.5, BU_SB02_0.5	26-NOV-2013	03-DEC-2013	10-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BU_MW03_0.5, BX_MW01_0.5, BX_MW04_0.15, BL_MW03_3.4, BV_MW01_5.0, BP_MW03_3.5, BU_MW03_2.5,	D01_261113_SM, BX_MW02_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5, BU_MW02_4.0, BE_MW09_0.9	26-NOV-2013	04-DEC-2013	10-DEC-2013	✓	04-DEC-2013	13-JAN-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BQ_MW01_1.5, BE_MW06_6.0	BE_MW07_6.0,	22-NOV-2013	02-DEC-2013	06-DEC-2013	✓	02-DEC-2013	06-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW01_0.1, BV_SB07_0.25, BE_MW04_2.0, BL_MW06_3.0, BV_SB05_2.9, D01_251113_TC,	BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BV_MW13_0.5, BP_MW06_0.2, BE_MW05_2.0, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPIKE 5, TRIP SPIKE 6, TSC 6	TRIP BLANK, TSC 5,	25-NOV-2013	03-DEC-2013	09-DEC-2013	✓	03-DEC-2013	09-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BH_SB07_0.2, BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BX_MW01_0.5, BX_MW04_0.15, BL_MW03_3.4, BV_MW01_5.0, BP_MW03_3.5	BL_MW03_0.25, BP_MW03_0.5, BU_MW02_0.5, BU_SB02_0.5, D01_261113_SM, BX_MW02_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5,	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BU_MW02_4.0, BE_MW09_0.9	BU_MW03_2.5,	26-NOV-2013	03-DEC-2013	10-DEC-2013	✓	03-DEC-2013	10-DEC-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BQ_MW01_1.5, BE_MW06_6.0	BE_MW07_6.0,	22-NOV-2013	02-DEC-2013	06-DEC-2013	✓	02-DEC-2013	06-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BV_MW01_0.1, BV_SB07_0.25, BE_MW04_2.0, BL_MW06_3.0, BV_SB05_2.9, D01_251113_TC,	BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BV_MW13_0.5, BP_MW06_0.2, BE_MW05_2.0, BL_SB01_2.9, BV_SB06_2.9, BL_SB07_2.9	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPIKE 5, TRIP SPIKE 6, TSC 6	TRIP BLANK, TSC 5,	25-NOV-2013	03-DEC-2013	09-DEC-2013	✓	03-DEC-2013	09-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BH_SB07_0.2, BP_MW01_0.25, BU_MW01_0.5, BU_SB01_0.5, BU_MW03_0.5, BX_MW01_0.5, BX_MW04_0.15, BL_MW03_3.4, BV_MW01_5.0, BP_MW03_3.5	BL_MW03_0.25, BP_MW03_0.5, BU_MW02_0.5, BU_SB02_0.5, D01_261113_SM, BX_MW02_0.5, BV_MW13_6.0, BL_SB06_2.9, BP_MW01_3.5,	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BU_MW02_4.0, BE_MW09_0.9	BU_MW03_2.5,	26-NOV-2013	03-DEC-2013	10-DEC-2013	✓	03-DEC-2013	10-DEC-2013	✓
<b>EP231: Perfluorinated Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP231)</b> BL_SB01_0.25, BL_MW04_0.25, BL_MW02_0.2, BL_MW06_3.0, BL_SB07_2.9	BL_SB07_0.25, BL_SB02_0.5, BL_SB06_0.5, BL_SB01_2.9,	25-NOV-2013	03-DEC-2013	24-MAY-2014	✓	04-DEC-2013	12-JAN-2014	✓
<b>Soil Glass Jar - Unpreserved (EP231)</b> BL_MW03_0.25, BX_MW02_0.5, BL_MW03_3.4,	BX_MW01_0.5, BX_MW04_0.15, BL_SB06_2.9	26-NOV-2013	03-DEC-2013	25-MAY-2014	✓	04-DEC-2013	12-JAN-2014	✓



Matrix: **WATER**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG020T: Total Metals by ICP-MS</b>							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) R01_251113_SM	25-NOV-2013	02-DEC-2013	24-MAY-2014	✓	02-DEC-2013	24-MAY-2014	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) R01_261113_SM	26-NOV-2013	02-DEC-2013	25-MAY-2014	✓	02-DEC-2013	25-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) R01_251113_SM	25-NOV-2013	----	----	----	02-DEC-2013	23-DEC-2013	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) R01_261113_SM	26-NOV-2013	----	----	----	02-DEC-2013	24-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
Amber Glass Bottle - Unpreserved (EP066) R01_251113_SM	25-NOV-2013	02-DEC-2013	02-DEC-2013	✓	03-DEC-2013	11-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP066) R01_261113_SM	26-NOV-2013	02-DEC-2013	03-DEC-2013	✓	03-DEC-2013	11-JAN-2014	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Amber Glass Bottle - Unpreserved (EP071) R01_251113_SM	25-NOV-2013	02-DEC-2013	02-DEC-2013	✓	02-DEC-2013	11-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP071) R01_261113_SM	26-NOV-2013	02-DEC-2013	03-DEC-2013	✓	02-DEC-2013	11-JAN-2014	✓
<b>EP074D: Fumigants</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>EP074F: Halogenated Aromatic Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓



Matrix: **WATER**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074H: Naphthalene</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>EP074B: Oxygenated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>EP074C: Sulfonated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>EP074G: Trihalomethanes</b>							
Amber VOC Vial - Sulfuric Acid (EP074) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_251113_SM	25-NOV-2013	02-DEC-2013	02-DEC-2013	✓	02-DEC-2013	11-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_261113_SM	26-NOV-2013	02-DEC-2013	03-DEC-2013	✓	02-DEC-2013	11-JAN-2014	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_251113_SM	25-NOV-2013	02-DEC-2013	02-DEC-2013	✓	02-DEC-2013	11-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_261113_SM	26-NOV-2013	02-DEC-2013	03-DEC-2013	✓	02-DEC-2013	11-JAN-2014	✓
<b>EP080: BTEXN</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP080) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R01_251113_SM	25-NOV-2013	02-DEC-2013	09-DEC-2013	✓	02-DEC-2013	09-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP080) R01_261113_SM	26-NOV-2013	02-DEC-2013	10-DEC-2013	✓	02-DEC-2013	10-DEC-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Electrical Conductivity (1:5)	EA010	2	13	15.4	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	2	50.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	8	80	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	6	60	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	2	16	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	4	35	11.4	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	6	60	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	6	59	10.2	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	6	60	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	6	58	10.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	4	27	14.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Electrical Conductivity (1:5)	EA010	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	3	60	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	35	5.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	3	60	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	3	59	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	3	60	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	58	5.2	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	3	27	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Electrical Conductivity (1:5)	EA010	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	3	60	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	35	5.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	3	60	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	3	59	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	3	60	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	58	5.2	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	3	27	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	3	60	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement





Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	35	5.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	3	60	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	3	59	5.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	3	60	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	58	5.2	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	3	27	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	16	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	15	13.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Electrical Conductivity (1:5)	EA010	SOIL	(APHA 21st ed., 2510) Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 104)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) Schedule B(3) (Method 504)
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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) Schedule B(3) (Method 501)
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	SOIL	In-House. A portion of soil is soaked in sodium hydroxide followed by extraction with methanol. The extract is neutralised with HCl and an aliquot taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI Negative Mode using MRM.



Analytical Methods	Method	Matrix	Method Descriptions
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Polychlorinated Biphenyls (PCB)	EP066	WATER	USEPA SW 846 - 8270D Sample 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 (2013) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
Volatile Organic Compounds	EP074	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	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 (2013) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) Schedule B(3) (Method 202)
Sample Extraction for Perfluoroalkyl Compounds	EP231-PR	SOIL	In-House
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 <sub>2</sub> SO <sub>4</sub> 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.

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<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na <sub>2</sub> SO <sub>4</sub> 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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3) (Appdx. 2)
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 100 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 (2013) 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

- 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

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Samples Submitted</b>							
EP080S: TPH(V)/BTEX Surrogates	ES1325842-045	TRIP BLANK	Toluene-D8	2037-26-5	132 %	73.9-132.1 %	Recovery greater than upper data quality objective

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Samples Submitted</b>							
EP075(SIM)S: Phenolic Compound Surrogates	ES1325842-035	R01_251113_SM	Phenol-d6	13127-88-3	46.0 %	10.0-44 %	Recovery greater than upper data quality objective
EP075(SIM)S: Phenolic Compound Surrogates	ES1325842-036	R01_261113_SM	Phenol-d6	13127-88-3	44.3 %	10.0-44 %	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.

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA002 : pH (Soils)</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	----	----	----
<b>EA010: Conductivity</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	02-DEC-2013	29-NOV-2013	3
<b>EP074B: Oxygenated Compounds</b>						



Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074B: Oxygenated Compounds - Analysis Holding Time Compliance</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	02-DEC-2013	29-NOV-2013	3
<b>EP074C: Sulfonated Compounds</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	02-DEC-2013	29-NOV-2013	3
<b>EP074D: Fumigants</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	02-DEC-2013	29-NOV-2013	3
<b>EP074E: Halogenated Aliphatic Compounds</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	02-DEC-2013	29-NOV-2013	3
<b>EP074F: Halogenated Aromatic Compounds</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	02-DEC-2013	29-NOV-2013	3
<b>EP074G: Trihalomethanes</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	02-DEC-2013	29-NOV-2013	3
<b>EP074H: Naphthalene</b>						
Soil Glass Jar - Unpreserved BQ_MW01_1.5	02-DEC-2013	29-NOV-2013	3	02-DEC-2013	29-NOV-2013	3

### 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.

641212



CHAIN OF CUSTODY

LADELAIDE 21 Burma Road...  
CUBRISBANE 32 Strand Street...  
GLADSTONE 46 Callamondah Drive...

DMACKAY 78 Hinchon Road...  
DUNEDIN 21a Westall Road...  
DUNEDIN 27 Sydney Road...

LEWISCASTLE 5 Ross Glen Road...  
LINDVIRA 413 Geary Place...  
MERTON 10 Wood Way...

CLYDEVIEW 377 269 Woodside Road...  
DUNEDIN 151 & 16 Duncraig Court...  
GIBCO LINDSAY 6th Floor...

CLIENT: ERM  
OFFICE: Sydney  
PROJECT: Project Symphony  
ORDER NUMBER: 0224193  
PROJECT MANAGER: S. Ferrin  
SAMPLER: A-MORRIS  
COC emailed to ALS? (YES / NO)  
Email Reports to (will default to PM if no other addresses are listed):  
Email Invoice to (will default to PM if no other addresses are listed):  
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS:  
Standard TAT may be longer for some tests e.g., Ultra Trace Organics.  
ALS QUOTE NO.: SY79413  
SITE: BAYSWATER / HOBELL  
CONTACT PH:  
SAMPLER MOBILE: A-MORRIS  
EDD FORMAT (or default):

FOR LABORATORY USE ONLY (Circle)  
Custody Seal intact? Yes No N/A  
Freeze ice / frozen ice bricks present upon receipt? Yes No N/A  
Random Sample Temperature on Receipt: C  
Other comment:  
RELINQUISHED BY: Frank Als  
DATE/TIME: 26-11-13 1900  
RECEIVED BY:  
DATE/TIME:

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)												Additional Information	
				TYPE & PRESERVATIVE codes below	(refer to TOTAL CONTAINERS)	Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).													
1	BV-SB09-2.0	20-11-13	SOIL			2-Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	X	17-Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Tl, Se)	0-24 TRH (G6, G40)/BTEX, PAH, Phenols	X	VOC Target Scan	PCB	PH (1:5)	Exchangeable cations (ED007)	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP04)	Comments on likely contaminant levels, dilutions, or samples requiring specific OC analysis etc.	
2	BI-MW01-3.0						X		X	X									
3	DOZ-201113-AM						X		X	X									
4	TSpike (TS5)	20-11-13					X		X	X									
5	T-Blank	20-11-13					X		X	X									
6	TSC 5	11-11-13					X		X	X									
				TOTAL															

Prep 11-11-13 Co-C9  
Prep 15-11-13 BTEX only

Environmental Division  
Sydney  
Work Order  
ES1325879  
Barcode  
Telephone: +61-2-8784 8555

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

Handwritten signature

## Jacob Waugh

---

**From:** Barbara Hanna  
**Sent:** Friday, 29 November 2013 3:55 PM  
**To:** Jacob Waugh  
**Subject:** FW: ERM Symphony: labelling and additional analysis  
**Attachments:** image001.jpg

Hi Jacob,

Could you please arrange the following and I will arrange the sample ID changes.

Thanks!!!

Additionally:

ES1325573-011 (T01\_221113\_TH) – please forward to Envirolab for analysis

ES1325883-001 (BI\_MW03\_0.6) – analyse for Electrical Conductivity (paste)

ES1325882-001 (BH\_SB06\_1.6) – analyse for Electrical Conductivity (paste)

ES1325882-002 (BH\_MW04\_3.0) – analyse for Electrical Conductivity (paste)

ES1325882-003 (BH\_SB08\_3.0) – analyse for Electrical Conductivity (paste)

ES1325882-004 (BH\_MW03\_4.5) – analyse for Electrical Conductivity (paste)

ES1325879-002 (BI\_MW01\_3.0) – analyse for Electrical Conductivity (paste)

Kind Regards

## Barbara Hanna

**Client Services Manager**  
**ALS | Environmental Division**

277-289 Woodpark Road  
Smithfield NSW 2164 Australia

*How was your customer experience? [Please send us your feedback](#)*

*Please see our latest [EnviroMail 68 - Sampling and Analysis Implications of the new NEPM - July 2013](#)*

*[EnviroMail 69 - Testing Requirements of the new NEPM - July 2013](#)*

*[EnviroMail 70 - Variation of Naphthalene by SVOC and VOC Methods in Water - July 2013](#)*

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Reduction in Sample Volumes - Improving quality, safety, efficiency and sustainability in environmental practices





Please consider the environment before printing this email.

From: Kate Fox [mailto:Kate.Fox@erm.com]  
Sent: Friday, 29 November 2013 2:27 PM  
To: Barbara Hanna  
Cc: ERM Australia Project Symphony MacGen  
Subject: ERM Symphony: labelling and additional analysis

Hi Barbara,

A few more requests re: Symphony samples please!

Could the following be re-labelled:

<b>Lab Sample ID</b>	<b>Current ID</b>	<b>Correct ID</b>
ES1325579-001	LO_SB06_2.9-3.0	LO_SB06_3.0
ES1325579-002	LO_SB07_2.9-3.0	LO_SB07_3.0
ES1325579-003	LO_SB09_2.9-3.0	LO_SB09_3.0
ES1325579-004	LP_MW01_2.9-3.0	LP_MW01_3.0
ES1325579-005	LP_SB11_1.1-1.2	LP_SB11_1.2
ES1325579-006	LP_SB11_2.9-3.0	LP_SB11_3.0
ES1325579-007	LP_SB12_0.7-0.8	LP_SB12_0.8
ES1325579-008	LP_SB12_2.9-3.0	LP_SB12_3.0
ES1325579-009	LN_MW04_2.9-3.0	LN_MW04_3.0
ES1325572-001	BR_MW05_14 mbgs	BR_MW05_14.0
ES1325572-002	BR_MW05_31 mbgs	BR_MW05_31.0
ES1325572-003	TRIP BLANK_(10)	TB10_151113
ES1325572-004	TRIP SPIKE_WG(2)	TS2_151113
ES1325572-005	TSC	TSC_151113
ES1325880-001	BU_SB02_2.5	BV_SB02_2.5
ES1325880-009	TRIP BLANK 1	TB1_201113
ES1325880-010	TRIP BLANK 7	TB7_201113
ES1325573-001	TRIP BLANK	TB_221113
ES1325573-002	TRIP SPIKE	TS_221113
ES1325573-012	RINSATE_201113_NH	R01_201113_TH
ES1325573-013	RINSATE_211113_TH	R01_211113_TH
ES1325573-014	RINSATE_221113_TH	R01_221113_TH

Additionally:

ES1325573-011 (T01\_221113\_TH) – please forward to Envirolab for analysis

ES1325883-001 (BI\_MW03\_0.6) – analyse for Electrical Conductivity (paste)

ES1325882-001 (BH\_SB06\_1.6) – analyse for Electrical Conductivity (paste)  
ES1325882-002 (BH\_MW04\_3.0) – analyse for Electrical Conductivity (paste)  
ES1325882-003 (BH\_SB08\_3.0) – analyse for Electrical Conductivity (paste)  
ES1325882-004 (BH\_MW03\_4.5) – analyse for Electrical Conductivity (paste)

ES1325879-002 (BI\_MW01\_3.0) – analyse for Electrical Conductivity (paste)

Many thanks,  
Kate



**Kate Fox**  
Environmental Resources Management  
Level 1, 60 Leichhardt Street  
Spring Hill, Brisbane, QLD, 4000

Switch: +61 7 3839 8393 | Direct : +61 7 3007 8439 | [www.erm.com](http://www.erm.com)

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## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

<b>Work Order</b> : <b>ES1325879</b>	
<b>Client</b> : <b>ENVIRO RESOURCES MANAGEMENT</b> <b>Contact</b> : MR JOSEPH FERRING <b>Address</b> : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Laboratory</b> : Environmental Division Sydney  <b>Contact</b> : Barbara Hanna <b>Address</b> : 277-289 Woodpark Road Smithfield NSW Australia 2164  <b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800  <b>Project</b> : Project Symphony <b>Order number</b> : 0224193 <b>C-O-C number</b> : ---- <b>Site</b> : BAYWATER <b>Sampler</b> : A. MORRIS
<b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800  <b>Project</b> : Project Symphony <b>Order number</b> : 0224193 <b>C-O-C number</b> : ---- <b>Site</b> : BAYWATER <b>Sampler</b> : A. MORRIS	<b>E-mail</b> : Barbara.Hanna@alsglobal.com <b>Telephone</b> : +61 2 8784 8555 <b>Facsimile</b> : +61 2 8784 8555  <b>Page</b> : 1 of 3  <b>Quote number</b> : ES2013ENVRES0369 (SY/794/13)  <b>QC Level</b> : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

#### Dates

<b>Date Samples Received</b> : 26-NOV-2013 <b>Client Requested Due Date</b> : 04-DEC-2013	<b>Issue Date</b> : 29-NOV-2013 17:00 <b>Scheduled Reporting Date</b> : <b>04-DEC-2013</b>
--	---

#### Delivery Details

<b>Mode of Delivery</b> : Carrier <b>No. of coolers/boxes</b> : 7 HARD <b>Security Seal</b> : Intact.	<b>Temperature</b> : 4.8°C - Ice present <b>No. of samples received</b> : 6 <b>No. of samples analysed</b> : 6
---	--

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - EA032 Electrical Conductivity (Saturated Paste)	SOIL - ED007 CEC / Exchangeable Cations (ED007) -All	SOIL - EP004 (Carbon) Total Organic Carbon (Calc.)	SOIL - EP066 (solids) Polychlorinated Biphenyls by GC/MS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - NT-1S Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S Major Anions (Cl, SO4)
ES1325879-001	20-NOV-2013 15:00	BV_SB09_2.0					✓	✓		
ES1325879-002	20-NOV-2013 15:00	BI_MW01_3.0	✓	✓	✓	✓			✓	✓

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-18 (NO MOIST) TPH(C6-C9)/BTEX with No Moisture for TBs	SOIL - S-27 TPH/BTEX/NPAH/Phenols/8Metals
ES1325879-001	20-NOV-2013 15:00	BV_SB09_2.0		✓
ES1325879-002	20-NOV-2013 15:00	BI_MW01_3.0		✓
ES1325879-003	20-NOV-2013 15:00	D01_201113_AM		✓
ES1325879-004	11-NOV-2013 15:00	T.SPIKE 5	✓	
ES1325879-005	15-NOV-2013 15:00	T.BLANK	✓	
ES1325879-006	11-NOV-2013 15:00	TSC 5	✓	

## Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **SOIL**

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

Method	Due for extraction	Due for analysis	Samples Received		Instructions Received	
			Date	Evaluation	Date	Evaluation
<b>EP080: TPH Volatiles/BTEX</b>						
T.SPIKE 5	Soil Glass Jar - Unpreserved	25-NOV-2013	----	26-NOV-2013	✘	----
TSC 5	Soil Glass Jar - Unpreserved	25-NOV-2013	----	26-NOV-2013	✘	----



## Requested Deliverables

### JOHN EWING

- *AU Certificate of Analysis - NATA ( COA )	Email	john.ewing@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	john.ewing@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	john.ewing@erm.com
- A4 - AU Tax Invoice ( INV )	Email	john.ewing@erm.com
- Chain of Custody (CoC) ( COC )	Email	john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	john.ewing@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	john.ewing@erm.com
- EDI Format - XTab ( XTAB )	Email	john.ewing@erm.com

### MR JOSEPH FERRING

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTAB )	Email	joseph.ferring@erm.com

### SYMPHONY MACGEN

- *AU Certificate of Analysis - NATA ( COA )	Email	symphony.macgen@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	symphony.macgen@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	symphony.macgen@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	symphony.macgen@erm.com
- A4 - AU Tax Invoice ( INV )	Email	symphony.macgen@erm.com
- Chain of Custody (CoC) ( COC )	Email	symphony.macgen@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	symphony.macgen@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	symphony.macgen@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	symphony.macgen@erm.com
- EDI Format - XTab ( XTAB )	Email	symphony.macgen@erm.com

### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1325879</b>	Page	: 1 of 10
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193		
C-O-C number	: ----	Date Samples Received	: 26-NOV-2013
Sampler	: A. MORRIS	Issue Date	: 04-DEC-2013
Site	: BAYWATER		
Quote number	: SY/794/13	No. of samples received	: 6
		No. of samples analysed	: 6

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



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EP080: The TRIP SPIKE and TRIP SPIKE CONTROL have been analysed for volatile TPH and BTEX only. The TRIP SPIKE and TRIP SPIKE CONTROL were prepared in the lab using reagent grade sand spiked with petrol. The TRIP SPIKE was dispatched from the lab and the TRIP SPIKE CONTROL retained. The spike samples were extracted and analysed concurrently with samples reported in this batch.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

## Signatories

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

Signatories	Position	Accreditation Category
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB09_2.0	BI_MW01_3.0	D01_201113_AM	T.SPIKE 5	T.BLANK
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	11-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325879-001	ES1325879-002	ES1325879-003	ES1325879-004	ES1325879-005
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	----	6.0	----	----	----
<b>EA032: Electrical Conductivity (saturated paste)</b>								
Electrical Conductivity (Saturated Paste)	----	1	µS/cm	----	1940	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	15.3	17.1	19.3	----	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	----	<0.1	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	----	<0.1	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	----	0.7	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	----	0.6	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	----	1.2	----	----	----
Exchangeable Aluminium	----	0.1	meq/100g	----	<0.1	----	----	----
<b>ED040S : Soluble Sulfate by ICPAES</b>								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	1300	----	----	----
<b>ED045G: Chloride Discrete analyser</b>								
Chloride	16887-00-6	10	mg/kg	----	140	----	----	----
<b>ED093S: Soluble Major Cations</b>								
Calcium	7440-70-2	10	mg/kg	----	60	----	----	----
Magnesium	7439-95-4	10	mg/kg	----	40	----	----	----
Sodium	7440-23-5	10	mg/kg	----	560	----	----	----
Potassium	7440-09-7	10	mg/kg	----	60	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	16	15	15	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	17	17	19	----	----
Copper	7440-50-8	5	mg/kg	24	15	16	----	----
Lead	7439-92-1	5	mg/kg	27	18	20	----	----
Nickel	7440-02-0	2	mg/kg	18	10	10	----	----
Zinc	7440-66-6	5	mg/kg	68	35	32	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
<b>EP004: Organic Matter</b>								
Organic Matter	----	0.5	%	----	0.6	----	----	----





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB09_2.0	BI_MW01_3.0	D01_201113_AM	T.SPIKE 5	T.BLANK
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	11-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325879-001	ES1325879-002	ES1325879-003	ES1325879-004	ES1325879-005
<b>EP004: Organic Matter - Continued</b>								
Total Organic Carbon	----	0.5	%	----	<0.5	----	----	----
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	----	----	----	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074D: Fumigants</b>								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	----	----	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	----	----	----	----
Chloromethane	74-87-3	5	mg/kg	<5	----	----	----	----
Vinyl chloride	75-01-4	5	mg/kg	<5	----	----	----	----
Bromomethane	74-83-9	5	mg/kg	<5	----	----	----	----
Chloroethane	75-00-3	5	mg/kg	<5	----	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	----	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB09_2.0	BI_MW01_3.0	D01_201113_AM	T.SPIKE 5	T.BLANK
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	11-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325879-001	ES1325879-002	ES1325879-003	ES1325879-004	ES1325879-005
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	----	----	----	----
Iodomethane	74-88-4	0.5	mg/kg	<0.5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	----	----	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	----	----	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	----	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	----	----	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	----	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	----	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	----	----	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	----	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	----	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	----	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	----	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	----	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	----	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	----	----	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	----	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB09_2.0	BI_MW01_3.0	D01_201113_AM	T.SPIKE 5	T.BLANK
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	11-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325879-001	ES1325879-002	ES1325879-003	ES1325879-004	ES1325879-005
<b>EP074G: Trihalomethanes - Continued</b>								
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	----	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	----	----	----	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	----	----	----	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	----	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB09_2.0	BI_MW01_3.0	D01_201113_AM	T.SPIKE 5	T.BLANK
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	11-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325879-001	ES1325879-002	ES1325879-003	ES1325879-004	ES1325879-005
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<b>42</b>	<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	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<b>51</b>	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<b>28</b>	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	----	----
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<b>0.4</b>	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<b>11.1</b>	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<b>1.4</b>	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<b>6.9</b>	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<b>3.4</b>	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<b>23.2</b>	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<b>10.3</b>	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	<b>80.0</b>	----	----	----	----
<b>EP074S: VOC Surrogates</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB09_2.0	BI_MW01_3.0	D01_201113_AM	T.SPIKE 5	T.BLANK
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	11-NOV-2013 15:00	15-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325879-001	ES1325879-002	ES1325879-003	ES1325879-004	ES1325879-005
<b>EP074S: VOC Surrogates - Continued</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	102	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	108	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	98.5	----	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	91.7	89.0	88.1	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	102	100	96.3	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	102	97.2	101	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	100	97.5	99.1	----	----
Anthracene-d10	1719-06-8	0.1	%	97.6	95.6	95.0	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	94.3	91.6	93.4	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	93.8	71.2	78.2	79.0	97.6
Toluene-D8	2037-26-5	0.1	%	100	92.0	101	96.5	102
4-Bromofluorobenzene	460-00-4	0.1	%	95.2	74.3	89.2	101	104



## Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)

Client sample ID

**TSC 5**

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Client sampling date / time

11-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1325879-006	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>C6 - C9 Fraction</b>	----	10	mg/kg	<b>61</b>	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>C6 - C10 Fraction</b>	C6_C10	10	mg/kg	<b>73</b>	----	----	----	----
<b>C6 - C10 Fraction minus BTEX (F1)</b>	C6_C10-BTEX	10	mg/kg	<b>44</b>	----	----	----	----
<b>EP080: BTEXN</b>								
<b>Benzene</b>	71-43-2	0.2	mg/kg	<b>0.5</b>	----	----	----	----
<b>Toluene</b>	108-88-3	0.5	mg/kg	<b>13.9</b>	----	----	----	----
<b>Ethylbenzene</b>	100-41-4	0.5	mg/kg	<b>1.9</b>	----	----	----	----
<b>meta- &amp; para-Xylene</b>	108-38-3 106-42-3	0.5	mg/kg	<b>8.6</b>	----	----	----	----
<b>ortho-Xylene</b>	95-47-6	0.5	mg/kg	<b>4.2</b>	----	----	----	----
<b>Sum of BTEX</b>	----	0.2	mg/kg	<b>29.1</b>	----	----	----	----
<b>Total Xylenes</b>	1330-20-7	0.5	mg/kg	<b>12.8</b>	----	----	----	----
<b>Naphthalene</b>	91-20-3	1	mg/kg	<b>&lt;1</b>	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
<b>1,2-Dichloroethane-D4</b>	17060-07-0	0.1	%	<b>88.1</b>	----	----	----	----
<b>Toluene-D8</b>	2037-26-5	0.1	%	<b>108</b>	----	----	----	----
<b>4-Bromofluorobenzene</b>	460-00-4	0.1	%	<b>107</b>	----	----	----	----



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

## QUALITY CONTROL REPORT

Work Order	: <b>ES1325879</b>	Page	: 1 of 18
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYWATER	Date Samples Received	: 26-NOV-2013
C-O-C number	: ----	Issue Date	: 04-DEC-2013
Sampler	: A. MORRIS	No. of samples received	: 6
Order number	: 0224193	No. of samples analysed	: 6
Quote number	: SY/794/13		

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





## 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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3185860)</b>									
ES1325574-011	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.2	6.3	0.0	0% - 20%
ES1325738-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.2	7.2	0.0	0% - 20%
<b>EA032: Electrical Conductivity (saturated paste) (QC Lot: 3191306)</b>									
ES1325879-002	BI_MW01_3.0	EA032: Electrical Conductivity (Saturated Paste)	----	1	µS/cm	1940	1940	0.4	0% - 20%
ES1326079-011	Anonymous	EA032: Electrical Conductivity (Saturated Paste)	----	1	µS/cm	468	471	0.6	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3189005)</b>									
ES1325786-020	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	8.9	9.0	0.0	No Limit
ES1326040-008	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	<1.0	1.9	61.3	No Limit
<b>ED007: Exchangeable Cations (QC Lot: 3183542)</b>									
ES1325880-005	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	7.2	7.2	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.6	7.7	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	15.3	15.4	0.0	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1325882-003	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	4.8	4.7	2.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	10.4	10.2	1.8	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	3.2	3.0	4.5	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	18.7	18.2	2.6	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>ED040S: Soluble Major Anions (QC Lot: 3185864)</b>									
ES1325882-002	Anonymous	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	230	200	14.5	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 3185867)</b>									
ES1325784-001	Anonymous	ED045G: Chloride	16887-00-6	10	mg/kg	70	60	0.0	No Limit
ES1325883-001	Anonymous	ED045G: Chloride	16887-00-6	10	mg/kg	160	160	0.0	0% - 50%
<b>ED093S: Soluble Major Cations (QC Lot: 3185865)</b>									
ES1325784-004	Anonymous	ED093S: Calcium	7440-70-2	10	mg/kg	780	800	2.0	0% - 20%
		ED093S: Magnesium	7439-95-4	10	mg/kg	30	30	0.0	No Limit
		ED093S: Sodium	7440-23-5	10	mg/kg	300	290	0.0	0% - 20%
		ED093S: Potassium	7440-09-7	10	mg/kg	170	170	0.0	0% - 50%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3190208)</b>									
ES1325804-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	9	9	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	9	7	16.5	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3190208) - continued</b>									
ES1325804-001	Anonymous	EG005T: Arsenic	7440-38-2	5	mg/kg	5	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	8	9	19.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	14	43.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	40	38	2.9	No Limit
ES1325825-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	18	6.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	19	15	20.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	8	17.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	45	38	15.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	32	26	21.3	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	128	111	14.3	0% - 20%		
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3190209)</b>									
ES1325804-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325825-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
<b>EP004: Organic Matter (QC Lot: 3192491)</b>									
ES1325879-002	BI_MW01_3.0	EP004: Organic Matter	----	0.5	%	0.6	0.6	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3185564)</b>									
ES1325879-001	BV_SB09_2.0	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325884-005	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3187275)</b>									
ES1326040-001	Anonymous	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1326040-007	Anonymous	EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP074: n-Butylbenzene	104-51-8	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 (%)
<b>EP074B: Oxygenated Compounds (QC Lot: 3187275)</b>									
ES1326040-001	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
ES1326040-007	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3187275)</b>									
ES1326040-001	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1326040-007	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3187275)</b>									
ES1326040-001	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1326040-007	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3187275)</b>									
ES1326040-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	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 (%)		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3187275) - continued</b>											
ES1326040-001	Anonymous	EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit				
ES1326040-007	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
		<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3187275)</b>									



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 (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3187275) - continued</b>									
ES1326040-001	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1326040-007	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3187275)</b>									
ES1326040-001	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1326040-007	Anonymous	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3187275)</b>									
ES1326040-001	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
ES1326040-007	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3187297)</b>									
ES1326040-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	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 (%)
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3187297) - continued</b>									
ES1326040-001	Anonymous	EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES1326040-007	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3187297)</b>									
ES1326040-001	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES1326040-007	Anonymous	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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3187297) - continued</b>									
ES1326040-007	Anonymous	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	0.6	0.6	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	0.6	0.6	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	1.2	1.2	0.0	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3187274)</b>									
ES1326040-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1326040-007	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3187296)</b>									
ES1326040-001	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
ES1326040-007	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3187274)</b>									
ES1326040-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1326040-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3187296)</b>									
ES1326040-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1326040-007	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3187274)</b>									
ES1326040-001	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						





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 (%)	
<b>EP080: BTEXN (QC Lot: 3187274) - continued</b>										
ES1326040-001	Anonymous	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
ES1326040-007	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	
	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA032: Electrical Conductivity (saturated paste) (QCLot: 3191306)</b>									
EA032: Electrical Conductivity (Saturated Paste)	----	1	µS/cm	<1	1412 µS/cm	100	96	104	
<b>ED007: Exchangeable Cations (QCLot: 3183542)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>ED040S: Soluble Major Anions (QCLot: 3185864)</b>									
ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	<10	150 mg/kg	98.3	84	112	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3185867)</b>									
ED045G: Chloride	16887-00-6	10	mg/kg	<10	5000 mg/kg	95.6	79	125	
<b>ED093S: Soluble Major Cations (QCLot: 3185865)</b>									
ED093S: Calcium	7440-70-2	10	mg/kg	<10	50 mg/kg	102	85	113	
ED093S: Magnesium	7439-95-4	10	mg/kg	<10	50 mg/kg	99.7	86	116	
ED093S: Sodium	7440-23-5	10	mg/kg	<10	50 mg/kg	104	80	112	
ED093S: Potassium	7440-09-7	10	mg/kg	<10	50 mg/kg	102	88	114	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190208)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	110	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	105	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	110	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	106	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	110	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	104	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3190209)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	73.6	66	112	
<b>EP004: Organic Matter (QCLot: 3192491)</b>									
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	97.8	85	105	
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	97.7	84	106	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3185564)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	89.5	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3187275)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3187275) - continued</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	110	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	114	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	116	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	118	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	118	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	116	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	118	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	118	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	117	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3187275)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	106	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	100	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	101	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	109	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3187275)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	106	54	126	
<b>EP074D: Fumigants (QCLot: 3187275)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	97.8	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	108	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	106	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	99.5	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	103	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187275)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	123	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	117	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	118	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	107	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	112	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	117	49	135	
		5	mg/kg	<5	----	----	----	----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187275) - continued</b>									
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	110	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	114	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	107	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	108	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	106	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	98.6	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	113	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	107	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	109	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	110	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	101	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	114	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	112	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	113	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	97.0	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	103	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	109	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	105	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	110	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	115	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	92.7	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	116	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3187275)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	111	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	114	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	116	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	116	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	114	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	111	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	112	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	113	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	114	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3187275)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	103	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	102	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	102	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	105	60	126	
<b>EP074H: Naphthalene (QCLot: 3187275)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074H: Naphthalene (QCLot: 3187275) - continued</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	110	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3187297)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	105	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	107	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	87.6	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	91.8	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	101	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	89.1	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	85.6	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	88.5	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	101	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	82.6	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	79.7	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	24.0	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3187297)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	94.2	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	101	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	105	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	99.3	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	103	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	107	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	102	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	107	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	91.1	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	99.1	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	89.8	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	101	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	93.9	76	122	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	87.8	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	87.6	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	85.5	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187274)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	93.3	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187296)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	101	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	90.9	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	85.1	64	128	



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187274)</b>								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	95.1	68.4	128
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187296)</b>								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	100	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	86.6	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
		50	mg/kg	----	150 mg/kg	83.4	63	131
<b>EP080: BTEXN (QCLot: 3187274)</b>								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	92.2	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	89.6	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	92.0	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	91.1	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	97.1	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	91.6	62	138

### 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				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) Low High	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3185867)</b>							
ES1325784-001	Anonymous	ED045G: Chloride	16887-00-6	1250 mg/kg	98.1	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190208)</b>							
ES1325804-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	104	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	109	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	107	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	105	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	105	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3190209)</b>							
ES1325804-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.4	70	130
<b>EP004: Organic Matter (QCLot: 3192491)</b>							
ES1325879-002	BI_MW01_3.0	EP004: Organic Matter	----	0.47 %	98.5	----	----
		EP004: Total Organic Carbon	----	0.27 %	85.2	----	----



Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3185564)</b>								
ES1325879-001	BV_SB09_2.0	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	121	70	130	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187275)</b>								
ES1326040-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	129	70	130	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	112	70	130	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3187275)</b>								
ES1326040-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	121	70	130	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3187297)</b>								
ES1326040-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	88.6	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	91.5	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	91.6	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.4	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	44.0	20	130	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3187297)</b>								
ES1326040-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.8	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	105	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187274)</b>								
ES1326040-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.6	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187296)</b>								
ES1326040-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	84.7	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.5	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	69.5	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187274)</b>								
ES1326040-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	96.2	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187296)</b>								
ES1326040-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	105	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	73.5	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	53.5	52	132	
<b>EP080: BTEXN (QCLot: 3187274)</b>								
ES1326040-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	91.8	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	87.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.1	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	84.0	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	88.5	70	130	
EP080: Naphthalene	91-20-3	2.5 mg/kg	79.9	70	130			



## Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
					MS	MSD	Low	High	Value	Control Limit	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3185564)</b>											
ES1325879-001	BV_SB09_2.0	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	121	----	70	130	----	----	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3185867)</b>											
ES1325784-001	Anonymous	ED045G: Chloride	16887-00-6	1250 mg/kg	98.1	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187274)</b>											
ES1326040-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.6	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187274)</b>											
ES1326040-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	96.2	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3187274)</b>											
ES1326040-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	91.8	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	87.9	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.1	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	84.0	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	88.5	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	79.9	----	70	130	----	----	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3187275)</b>											
ES1326040-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	129	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	112	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3187275)</b>											
ES1326040-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	121	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3187296)</b>											
ES1326040-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	84.7	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.5	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	69.5	----	52	132	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3187296)</b>											
ES1326040-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	105	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	73.5	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	53.5	----	52	132	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3187297)</b>											
ES1326040-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	88.6	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	91.5	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	91.6	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.4	----	70	130	----	----	





Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3187297) - continued</b>										
ES1326040-001	Anonymous	EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	44.0	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3187297)</b>										
ES1326040-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.8	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	105	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190208)</b>										
ES1325804-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	104	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	109	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	107	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	107	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	105	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	105	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3190209)</b>										
ES1325804-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.4	----	70	130	----	----
<b>EP004: Organic Matter (QCLot: 3192491)</b>										
ES1325879-002	BI_MW01_3.0	EP004: Organic Matter	----	0.47 %	98.5	----	----	----	----	----
		EP004: Total Organic Carbon	----	0.27 %	85.2	----	----	----	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325879</b>	Page	: 1 of 10
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYWATER	Date Samples Received	: 26-NOV-2013
C-O-C number	: ----	Issue Date	: 04-DEC-2013
Sampler	: A. MORRIS	No. of samples received	: 6
Order number	: 0224193	No. of samples analysed	: 6
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA002 : pH (Soils)</b>							
Soil Glass Jar - Unpreserved (EA002) BI_MW01_3.0	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	29-NOV-2013	29-NOV-2013	✓
<b>EA032: Electrical Conductivity (saturated paste)</b>							
Soil Glass Jar - Unpreserved (EA032) BI_MW01_3.0	20-NOV-2013	----	----	----	04-DEC-2013	19-MAY-2014	✓
<b>EA055: Moisture Content</b>							
Soil Glass Jar - Unpreserved (EA055-103) BV_SB09_2.0, BI_MW01_3.0, D01_201113_AM	20-NOV-2013	----	----	----	02-DEC-2013	04-DEC-2013	✓
<b>ED007: Exchangeable Cations</b>							
Soil Glass Jar - Unpreserved (ED007) BI_MW01_3.0	20-NOV-2013	03-DEC-2013	18-DEC-2013	✓	03-DEC-2013	18-DEC-2013	✓
<b>ED040S : Soluble Sulfate by ICPAES</b>							
Soil Glass Jar - Unpreserved (ED040S) BI_MW01_3.0	20-NOV-2013	29-NOV-2013	18-DEC-2013	✓	29-NOV-2013	27-DEC-2013	✓
<b>ED045G: Chloride Discrete analyser</b>							
Soil Glass Jar - Unpreserved (ED045G) BI_MW01_3.0	20-NOV-2013	29-NOV-2013	18-DEC-2013	✓	29-NOV-2013	27-DEC-2013	✓
<b>ED093S: Soluble Major Cations</b>							
Soil Glass Jar - Unpreserved (ED093S) BI_MW01_3.0	20-NOV-2013	29-NOV-2013	19-MAY-2014	✓	29-NOV-2013	19-MAY-2014	✓
<b>EG005T: Total Metals by ICP-AES</b>							
Soil Glass Jar - Unpreserved (EG005T) BV_SB09_2.0, BI_MW01_3.0, D01_201113_AM	20-NOV-2013	03-DEC-2013	19-MAY-2014	✓	03-DEC-2013	19-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
Soil Glass Jar - Unpreserved (EG035T) BV_SB09_2.0, BI_MW01_3.0, D01_201113_AM	20-NOV-2013	03-DEC-2013	18-DEC-2013	✓	03-DEC-2013	18-DEC-2013	✓
<b>EP004: Organic Matter</b>							
Soil Glass Jar - Unpreserved (EP004) BI_MW01_3.0	20-NOV-2013	04-DEC-2013	18-DEC-2013	✓	04-DEC-2013	18-DEC-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
Soil Glass Jar - Unpreserved (EP066) BV_SB09_2.0	20-NOV-2013	02-DEC-2013	04-DEC-2013	✓	03-DEC-2013	11-JAN-2014	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Soil Glass Jar - Unpreserved (EP071) BV_SB09_2.0, BI_MW01_3.0, D01_201113_AM	20-NOV-2013	02-DEC-2013	04-DEC-2013	✓	03-DEC-2013	11-JAN-2014	✓
<b>EP074D: Fumigants</b>							
Soil Glass Jar - Unpreserved (EP074) BV_SB09_2.0	20-NOV-2013	02-DEC-2013	27-NOV-2013	*	03-DEC-2013	27-NOV-2013	*
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BV_SB09_2.0	20-NOV-2013	02-DEC-2013	27-NOV-2013	*	03-DEC-2013	27-NOV-2013	*
<b>EP074F: Halogenated Aromatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BV_SB09_2.0	20-NOV-2013	02-DEC-2013	27-NOV-2013	*	03-DEC-2013	27-NOV-2013	*
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP074) BV_SB09_2.0	20-NOV-2013	02-DEC-2013	27-NOV-2013	*	03-DEC-2013	27-NOV-2013	*
<b>EP074H: Naphthalene</b>							
Soil Glass Jar - Unpreserved (EP074) BV_SB09_2.0	20-NOV-2013	02-DEC-2013	27-NOV-2013	*	03-DEC-2013	27-NOV-2013	*
<b>EP074B: Oxygenated Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BV_SB09_2.0	20-NOV-2013	02-DEC-2013	27-NOV-2013	*	03-DEC-2013	27-NOV-2013	*
<b>EP074C: Sulfonated Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BV_SB09_2.0	20-NOV-2013	02-DEC-2013	27-NOV-2013	*	03-DEC-2013	27-NOV-2013	*
<b>EP074G: Trihalomethanes</b>							
Soil Glass Jar - Unpreserved (EP074) BV_SB09_2.0	20-NOV-2013	02-DEC-2013	27-NOV-2013	*	03-DEC-2013	27-NOV-2013	*
<b>EP075(SIM)A: Phenolic Compounds</b>							
Soil Glass Jar - Unpreserved (EP075(SIM)) BV_SB09_2.0, BI_MW01_3.0, D01_201113_AM	20-NOV-2013	02-DEC-2013	04-DEC-2013	✓	03-DEC-2013	11-JAN-2014	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP075(SIM)) BV_SB09_2.0, BI_MW01_3.0, D01_201113_AM	20-NOV-2013	02-DEC-2013	04-DEC-2013	✓	03-DEC-2013	11-JAN-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080: BTEXN</b>							
Soil Glass Jar - Unpreserved (EP080) T.SPIKE 5, TSC 5	11-NOV-2013	02-DEC-2013	25-NOV-2013	✖	03-DEC-2013	25-NOV-2013	✖
Soil Glass Jar - Unpreserved (EP080) T.BLANK	15-NOV-2013	02-DEC-2013	29-NOV-2013	✖	03-DEC-2013	29-NOV-2013	✖
Soil Glass Jar - Unpreserved (EP080) BV_SB09_2.0, D01_201113_AM BI_MW01_3.0,	20-NOV-2013	02-DEC-2013	04-DEC-2013	✔	03-DEC-2013	04-DEC-2013	✔
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Soil Glass Jar - Unpreserved (EP080) T.SPIKE 5, TSC 5	11-NOV-2013	02-DEC-2013	25-NOV-2013	✖	03-DEC-2013	25-NOV-2013	✖
Soil Glass Jar - Unpreserved (EP080) T.BLANK	15-NOV-2013	02-DEC-2013	29-NOV-2013	✖	03-DEC-2013	29-NOV-2013	✖
Soil Glass Jar - Unpreserved (EP080) BV_SB09_2.0, D01_201113_AM BI_MW01_3.0,	20-NOV-2013	02-DEC-2013	04-DEC-2013	✔	03-DEC-2013	04-DEC-2013	✔



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Cations - soluble by ICP-AES	ED093S	1	10	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	10	20.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (Saturated Paste)	EA032	2	11	18.2	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	2	13	15.4	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	7	14.3	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	13	15.4	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	19	10.5	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	19	10.5	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	13	15.4	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Cations - soluble by ICP-AES	ED093S	1	10	10.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	10	20.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (Saturated Paste)	EA032	1	11	9.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	7	14.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	5.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Cations - soluble by ICP-AES	ED093S	1	10	10.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	1	10	10.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (Saturated Paste)	EA032	1	11	9.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	7	14.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Method Blanks (MB) - Continued</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Chloride Soluble By Discrete Analyser	ED045G	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Electrical Conductivity (Saturated Paste)	EA032	SOIL	USEPA 600/2 - 78 - 054 - conductivity determined on a saturated paste.
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
Major Anions - Soluble	ED040S	SOIL	In-house. Soluble Anions are determined off a 1:5 soil / water extract by ICPAES.
Chloride Soluble By Discrete Analyser	ED045G	SOIL	APHA 21st edition 4500-Cl- E. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm. Analysis is performed on a 1:5 soil / water leachate.
Cations - soluble by ICP-AES	ED093S	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 (ICPAES) Water extracts of the soil are analyzed for major cations by ICPAES. 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 (2013) Schedule B(3)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Organic Matter	EP004	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
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 (2013) Schedule B(3) (Method 504)
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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)





Analytical Methods	Method	Matrix	Method Descriptions
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 (2013) 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 (2013) Schedule B(3) (Method 501)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH4Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) Schedule B(3) (Method 202)
Organic Matter	EP004-PR	SOIL	AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
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, Na2SO4 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, 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

- 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

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Samples Submitted</b>							
EP080S: TPH(V)/BTEX Surrogates	ES1325879-002	BI_MW01_3.0	1,2-Dichloroethane-D4	17060-07-0	71.2 %	72.8-133.2 %	Recovery less than lower 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.

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA002 : pH (Soils)</b>							
Soil Glass Jar - Unpreserved BI_MW01_3.0	29-NOV-2013	27-NOV-2013	2	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Soil Glass Jar - Unpreserved BV_SB09_2.0	02-DEC-2013	27-NOV-2013	5	03-DEC-2013	27-NOV-2013		6
<b>EP074B: Oxygenated Compounds</b>							
Soil Glass Jar - Unpreserved BV_SB09_2.0	02-DEC-2013	27-NOV-2013	5	03-DEC-2013	27-NOV-2013		6
<b>EP074C: Sulfonated Compounds</b>							
Soil Glass Jar - Unpreserved BV_SB09_2.0	02-DEC-2013	27-NOV-2013	5	03-DEC-2013	27-NOV-2013		6
<b>EP074D: Fumigants</b>							
Soil Glass Jar - Unpreserved BV_SB09_2.0	02-DEC-2013	27-NOV-2013	5	03-DEC-2013	27-NOV-2013		6
<b>EP074E: Halogenated Aliphatic Compounds</b>							



Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074E: Halogenated Aliphatic Compounds - Analysis Holding Time Compliance</b>						
Soil Glass Jar - Unpreserved BV_SB09_2.0	02-DEC-2013	27-NOV-2013	5	03-DEC-2013	27-NOV-2013	6
<b>EP074F: Halogenated Aromatic Compounds</b>						
Soil Glass Jar - Unpreserved BV_SB09_2.0	02-DEC-2013	27-NOV-2013	5	03-DEC-2013	27-NOV-2013	6
<b>EP074G: Trihalomethanes</b>						
Soil Glass Jar - Unpreserved BV_SB09_2.0	02-DEC-2013	27-NOV-2013	5	03-DEC-2013	27-NOV-2013	6
<b>EP074H: Naphthalene</b>						
Soil Glass Jar - Unpreserved BV_SB09_2.0	02-DEC-2013	27-NOV-2013	5	03-DEC-2013	27-NOV-2013	6
<b>EP080/071: Total Petroleum Hydrocarbons</b>						
Soil Glass Jar - Unpreserved T.SPIKE 5, TSC 5	02-DEC-2013	25-NOV-2013	7	03-DEC-2013	25-NOV-2013	8
Soil Glass Jar - Unpreserved T.BLANK	02-DEC-2013	29-NOV-2013	3	03-DEC-2013	29-NOV-2013	4
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>						
Soil Glass Jar - Unpreserved T.SPIKE 5, TSC 5	02-DEC-2013	25-NOV-2013	7	03-DEC-2013	25-NOV-2013	8
Soil Glass Jar - Unpreserved T.BLANK	02-DEC-2013	29-NOV-2013	3	03-DEC-2013	29-NOV-2013	4
<b>EP080: BTEXN</b>						
Soil Glass Jar - Unpreserved T.SPIKE 5, TSC 5	02-DEC-2013	25-NOV-2013	7	03-DEC-2013	25-NOV-2013	8
Soil Glass Jar - Unpreserved T.BLANK	02-DEC-2013	29-NOV-2013	3	03-DEC-2013	29-NOV-2013	4

### 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

ALS Laboratory  
Private Use Only

1200 GARDNER ST. MELBOURNE VIC 3113  
Ph: 03 9594 2200  
Fax: 03 9594 2201  
www.als.com.au

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Ph: 03 9594 2200  
Fax: 03 9594 2201  
www.als.com.au

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Fax: 03 9594 2201  
www.als.com.au

1200 GARDNER ST. MELBOURNE VIC 3113  
Ph: 03 9594 2200  
Fax: 03 9594 2201  
www.als.com.au

CLIENT: **ERN**

OFFICE: **Sydney**

PROJECT: **Project Symphony**

ORDER NUMBER: **0224193**

PROJECT MANAGER: **Joe Kenny**

SAMPLER: **Tom Callhorne**

COC emailed to ALS? (YES / NO)

Email Reports to (will default to PM if no other addresses are listed)

Email invoices to (will default to PM if no other addresses are listed)

TURNAROUND REQUIREMENTS:

Standard TAT may be longer for some tests e.g. (Ions, Zions, Dissolved)

ALS QUOTE NO.: **SY79413**

SITE: **BAYSWATER / MARRIOTT**

CONTACT PH: **Tom Callhorne**

SAMPLER MOBILE: **Tom Callhorne**

REINQUISHED BY: **Tom Callhorne**

RECEIVED BY: **Tom Callhorne**

DATE/TIME: **19/11/13**

FOR LABORATORY USE ONLY (Chain of Custody)

Free for frozen lots held, present upon receipt

Random Sample Temperature on Receipt

Other comment:

COCC SEQUENCE NUMBER (chain)

RECEIVED BY: **Tom Callhorne**

DATE/TIME: **26/11/13 1900**

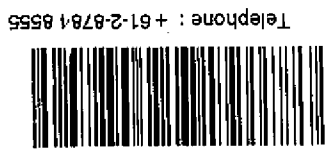
REINQUISHED BY: **Tom Callhorne**

DATE/TIME: **19/11/13**

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ANALYSIS REQUIRED INCLUDING SITES (N/A, State Codes must be listed to attract state price) (Where Metals are required, specify Total (unfiltered) or Dissolved (filtered bottom filtered))

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)	CONTAINER INFORMATION	TOTAL CONTAINERS	ANALYSIS REQUIRED INCLUDING SITES (N/A, State Codes must be listed to attract state price) (Where Metals are required, specify Total (unfiltered) or Dissolved (filtered bottom filtered))	Additional Information														
	LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	refer to	S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	S-24 TRH (C6-C40) (BTEXN, PAH, Phenols)	VOC Target Scan	PCB	pH (1:5) <b>KCEL</b>	Exchangeable cations (ED007)	PFOS/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)	Comments on heavy equipment, fuels, lubricants, or samples requiring specific COC analysis etc.	
	1	BL-SB02-2.5		SOIL			X	X	X	X	X	X	X	X	X	X	X		
	2	BL-SB01-2.9					X	X	X	X	X	X	X	X	X	X	X		
	3	BL-SB03-1.1					X	X	X	X	X	X	X	X	X	X	X		
	4	BL-MW02-3.1					X	X	X	X	X	X	X	X	X	X	X		
	5	BL-MW05-6.0					X	X	X	X	X	X	X	X	X	X	X		
	6	DOL-19113-ITL					X	X	X	X	X	X	X	X	X	X	X		
	7	BL-MW06-4.9					X	X	X	X	X	X	X	X	X	X	X		
	8	BL-MW07-0.8					X	X	X	X	X	X	X	X	X	X	X		
	9	TRIP BLANKS 1																	
	10	TRIP BLANK 07																	



Environmental Division  
Sydney  
Work Order  
ES1325880

Telephone : +61-2-8781 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Impresved Plastic; QIC = Nitric Impresved Plastic; SI = Sealed High-density Polyethylene; S = Sodium Hypochlorite Preserved Plastic; AG = Amber Glass Unpreserved; AN = Autoclave Unpreserved Plastic  
V = VOA Via HCl Preserved; VO = VOA Via Sodium Bisulfate Preserved; VS = VOA Via Sodium Preserved; NV = Aqueous Unpreserved Via SG = Sulfide Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Specimen Bottle; SP = Sulfide Preserved Plastic; F = Formaldehyde Preserved Glass  
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Strife Bottle; ASB = Plastic Bin for Soil Samples; B = Unpreserved Bin

Extra →

## Wael Saleh

---

**From:** Barbara Hanna  
**Sent:** Tuesday, 3 December 2013 9:14 AM  
**To:** Wael Saleh  
**Subject:** FW: Symphony MacGen  
**Attachments:** image001.jpg

Hi Wael,

Could you please arrange this ASAP.

Thanks!!

Kind Regards

### Barbara Hanna

**Client Services Manager**  
**ALS | Environmental Division**

277-289 Woodpark Road  
Smithfield NSW 2164 Australia

*How was your customer experience? [Please send us your feedback](#)*

*Please see our latest [EnviroMail 68 - Sampling and Analysis Implications of the new NEPM - July 2013](#)*

*[EnviroMail 69 - Testing Requirements of the new NEPM - July 2013](#)*

*[EnviroMail 70 - Variation of Naphthalene by SVOC and VOC Methods in Water - July 2013](#)*

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Reduction in Sample Volumes - Improving quality, safety, efficiency and sustainability in environmental practices



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---

From: John Ewing [mailto:John.Ewing@erm.com]  
Sent: Monday, 2 December 2013 6:01 PM  
To: Barbara Hanna  
Cc: ERM Australia Project Symphony MacGen  
Subject: Symphony MacGen

Hi Barbara,

Can you please make the following changes with regard to the Symphony MacGen work:

ES1325880-004 BH\_MW02\_3.1 Please remove analysis for PCBs and VOCs. Please add analysis for EC (paste) and pH

The following SRNs have been received but the Corresponding COC's have not been received. Can you please send the COC for the following work orders:

ES1325883 (There have been a few emails about this but no COC, was this one that got wet??)


ES1325882 (There have been a few emails about this but no COC, was this one that got wet??)

Can you please make the following Sample ID Changes

Lab ID	Current Sample ID	Correct Sample ID
ES1325843-012	LR_SB01_1.6	LQ_SB01_1.6
ES1325842-033	D01_251113_T2	D01_251113_TC
ES1325885-002	LQ_MW07_0.1	LQ_MW07_0.5
ES1325885-010	LQ_SB02_0.1	LA_SB02_0.1

Thanks a lot!

John



**John Ewing | Environmental Scientist**  
 Environmental Resources Management Australia  
 Building C, 33 Saunders Street, Pyrmont, Sydney  
 Locked Bag 24 Broadway NSW 2007

Switch: +61 2 8584 8888 Mobile: +61 450 890 302  
 Email: [john.ewing@erm.com](mailto:john.ewing@erm.com) Web: [www.erm.com](http://www.erm.com)

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ALS Group: Click [here](#) to report this email as spam.

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

**Work Order** : ES1325880

**Amendment** : 1

**Client** : ENVIRO RESOURCES MANAGEMENT  
**Laboratory** : Environmental Division Sydney

**Contact** : MR JOSEPH FERRING  
**Address** : GROUND FLOOR  
 33 SAUNDERS STREET, PYRMONT  
 NSW 2009  
 LOCKED BAG 24  
 BROADWAY NSW, AUSTRALIA 2007

**Contact** : Barbara Hanna  
**Address** : 277-289 Woodpark Road Smithfield  
 NSW Australia 2164

**E-mail** : joseph.ferring@erm.com  
**Telephone** : +61 02 8584 8888  
**Facsimile** : +61 02 8584 8800

**E-mail** : Barbara.Hanna@alsglobal.com  
**Telephone** : +61 2 8784 8555  
**Facsimile** : +61 2 8784 8555

**Project** : Project Symphony  
**Order number** : 0224193  
**C-O-C number** : ----  
**Site** : ----  
**Sampler** : T.C

**Page** : 1 of 3  
**Quote number** : ES2013ENVRES0369 (SY/794/13)

**QC Level** : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

#### Dates

**Date Samples Received** : 26-NOV-2013  
**Client Requested Due Date** : 04-DEC-2013  
**Issue Date** : 06-JAN-2014 16:04  
**Scheduled Reporting Date** : **04-DEC-2013**

#### Delivery Details

**Mode of Delivery** : Carrier  
**No. of coolers/boxes** : 7 HARD  
**Security Seal** : Intact

**Temperature** : 4.8°C - Ice present  
**No. of samples received** : 10  
**No. of samples analysed** : 10

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Sample Trip Spike was not received. Sample Trip Blank 7 was received extra and will be analysed.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - EA032 Electrical Conductivity (Saturated Paste)	SOIL - ED007 CEC / Exchangeable Cations (ED007) -All	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-18 (NO MOIST)	TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1325880-001	20-NOV-2013 15:00	BV_SB02_2.5				✓	✓			✓
ES1325880-002	20-NOV-2013 15:00	BV_SB01_2.9				✓	✓			✓
ES1325880-003	20-NOV-2013 15:00	BV_SB03_1.1				✓	✓			✓
ES1325880-004	20-NOV-2013 15:00	BV_MW02_3.1	✓	✓						✓
ES1325880-005	20-NOV-2013 15:00	BH_MW05_6.0	✓		✓					✓
ES1325880-006	20-NOV-2013 15:00	D01_191113_TC	✓		✓					✓
ES1325880-007	20-NOV-2013 15:00	BH_MW06_4.9	✓		✓					✓
ES1325880-008	20-NOV-2013 15:00	BH_MW07_0.8	✓		✓					✓
ES1325880-009	20-NOV-2013 15:00	TB1_201113						✓		
ES1325880-010	20-NOV-2013 15:00	TB7_201113						✓		

## Proactive Holding Time Report

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





## Requested Deliverables

### JOHN EWING

- *AU Certificate of Analysis - NATA ( COA )	Email	john.ewing@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	john.ewing@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	john.ewing@erm.com
- A4 - AU Tax Invoice ( INV )	Email	john.ewing@erm.com
- Chain of Custody (CoC) ( COC )	Email	john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	john.ewing@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	john.ewing@erm.com
- EDI Format - XTab ( XTAB )	Email	john.ewing@erm.com

### MR JOSEPH FERRING

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTAB )	Email	joseph.ferring@erm.com

### SYMPHONY MACGEN

- *AU Certificate of Analysis - NATA ( COA )	Email	symphony.macgen@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	symphony.macgen@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	symphony.macgen@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	symphony.macgen@erm.com
- A4 - AU Tax Invoice ( INV )	Email	symphony.macgen@erm.com
- Chain of Custody (CoC) ( COC )	Email	symphony.macgen@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	symphony.macgen@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	symphony.macgen@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	symphony.macgen@erm.com
- EDI Format - XTab ( XTAB )	Email	symphony.macgen@erm.com

### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1325880</b>	Page	: 1 of 12
Amendment	: <b>1</b>		
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193		
C-O-C number	: ----	Date Samples Received	: 26-NOV-2013
Sampler	: T.C	Issue Date	: 06-JAN-2014
Site	: ----		
Quote number	: SY/794/13	No. of samples received	: 10
		No. of samples analysed	: 10

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EG005T: Poor precision and poor spike recovery was obtained for some elements on sample ES1325846-023. Results have been confirmed by re-extraction and reanalysis. Sample has been found to be heterogenous.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

## Signatories

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

Signatories	Position	Accreditation Category
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Di-An Dao		Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_2.5	BV_SB01_2.9	BV_SB03_1.1	BV_MW02_3.1	BH_MW05_6.0
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325880-001	ES1325880-002	ES1325880-003	ES1325880-004	ES1325880-005
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	----	----	----	7.5	7.8
<b>EA032: Electrical Conductivity (saturated paste)</b>								
Electrical Conductivity (Saturated Paste)	----	1	µS/cm	----	----	----	2000	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	16.1	20.3	9.5	23.0	12.5
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	----	----	----	----	7.2
Exchangeable Magnesium	----	0.1	meq/100g	----	----	----	----	7.6
Exchangeable Potassium	----	0.1	meq/100g	----	----	----	----	0.2
Exchangeable Sodium	----	0.1	meq/100g	----	----	----	----	0.3
Cation Exchange Capacity	----	0.1	meq/100g	----	----	----	----	15.3
Exchangeable Aluminium	----	0.1	meq/100g	----	----	----	----	<0.1
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	9	11	14	11	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	14	14	7	16	9
Copper	7440-50-8	5	mg/kg	23	28	18	36	20
Lead	7439-92-1	5	mg/kg	11	21	17	16	14
Nickel	7440-02-0	2	mg/kg	14	21	21	18	25
Zinc	7440-66-6	5	mg/kg	79	93	71	94	57
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_2.5	BV_SB01_2.9	BV_SB03_1.1	BV_MW02_3.1	BH_MW05_6.0
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325880-001	ES1325880-002	ES1325880-003	ES1325880-004	ES1325880-005
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>								
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	----	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	----	----
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	----	----
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	----	----
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	----	----
Chloroethane	75-00-3	5	mg/kg	<5	<5	<5	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	----	----
1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_2.5	BV_SB01_2.9	BV_SB03_1.1	BV_MW02_3.1	BH_MW05_6.0
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325880-001	ES1325880-002	ES1325880-003	ES1325880-004	ES1325880-005
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_2.5	BV_SB01_2.9	BV_SB03_1.1	BV_MW02_3.1	BH_MW05_6.0
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325880-001	ES1325880-002	ES1325880-003	ES1325880-004	ES1325880-005
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_2.5	BV_SB01_2.9	BV_SB03_1.1	BV_MW02_3.1	BH_MW05_6.0
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325880-001	ES1325880-002	ES1325880-003	ES1325880-004	ES1325880-005
<b>EP080/071: Total Petroleum Hydrocarbons - Continued</b>								
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	91.5	78.6	91.4	----	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	102	94.6	96.5	----	----
Toluene-D8	2037-26-5	0.1	%	111	103	103	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	104	93.2	92.6	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	89.0	83.9	95.1	87.3	86.2
2-Chlorophenol-D4	93951-73-6	0.1	%	96.8	91.6	105	95.4	93.6
2,4,6-Tribromophenol	118-79-6	0.1	%	106	101	108	105	105
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	104	98.4	110	103	105
Anthracene-d10	1719-06-8	0.1	%	90.9	88.4	97.6	94.0	93.2
4-Terphenyl-d14	1718-51-0	0.1	%	92.0	84.1	92.7	89.2	94.7





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_SB02_2.5	BV_SB01_2.9	BV_SB03_1.1	BV_MW02_3.1	BH_MW05_6.0
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325880-001	ES1325880-002	ES1325880-003	ES1325880-004	ES1325880-005
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	107	99.2	101	98.9	90.1
Toluene-D8	2037-26-5	0.1	%	104	96.6	96.3	99.2	86.2
4-Bromofluorobenzene	460-00-4	0.1	%	104	94.1	94.1	96.3	83.8



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				D01_191113_TC	BH_MW06_4.9	BH_MW07_0.8	TB1_201113	TB7_201113
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325880-006	ES1325880-007	ES1325880-008	ES1325880-009	ES1325880-010
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	7.5	7.2	7.0	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	12.5	20.7	9.0	----	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	7.2	7.3	6.6	----	----
Exchangeable Magnesium	----	0.1	meq/100g	7.7	4.5	4.6	----	----
Exchangeable Potassium	----	0.1	meq/100g	0.2	0.3	0.3	----	----
Exchangeable Sodium	----	0.1	meq/100g	0.3	0.3	<0.1	----	----
Cation Exchange Capacity	----	0.1	meq/100g	15.4	12.4	11.6	----	----
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	<0.1	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	9	<5	17	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	9	8	8	----	----
Copper	7440-50-8	5	mg/kg	22	13	18	----	----
Lead	7439-92-1	5	mg/kg	16	10	15	----	----
Nickel	7440-02-0	2	mg/kg	25	13	24	----	----
Zinc	7440-66-6	5	mg/kg	58	53	76	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				D01_191113_TC	BH_MW06_4.9	BH_MW07_0.8	TB1_201113	TB7_201113
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325880-006	ES1325880-007	ES1325880-008	ES1325880-009	ES1325880-010
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	<b>0.5</b>	----	----
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	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<b>0.5</b>	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<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	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				D01_191113_TC	BH_MW06_4.9	BH_MW07_0.8	TB1_201113	TB7_201113
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325880-006	ES1325880-007	ES1325880-008	ES1325880-009	ES1325880-010
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued</b>								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	----	----
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	92.4	90.3	91.2	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	102	99.5	99.4	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	108	105	108	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	109	107	106	----	----
Anthracene-d10	1719-06-8	0.1	%	95.8	93.8	97.2	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	97.4	89.7	98.1	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	84.1	87.2	92.9	86.5	84.8
Toluene-D8	2037-26-5	0.1	%	84.8	85.1	88.2	79.0	75.9
4-Bromofluorobenzene	460-00-4	0.1	%	82.9	83.4	87.7	78.1	75.2



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

## QUALITY CONTROL REPORT

Work Order	: <b>ES1325880</b>	Page	: 1 of 16
Amendment	: <b>1</b>		
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 26-NOV-2013
Sampler	: T.C	Issue Date	: 06-JAN-2014
Order number	: 0224193		
Quote number	: SY/794/13	No. of samples received	: 10
		No. of samples analysed	: 10

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

This 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



## 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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Di-An Dao		Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3188137)</b>									
ES1325692-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.4	6.3	0.0	0% - 20%
ES1325726-018	Anonymous	EA002: pH Value	----	0.1	pH Unit	3.5	3.6	2.8	0% - 20%
<b>EA002 : pH (Soils) (QC Lot: 3188139)</b>									
ES1325880-006	D01_191113_TC	EA002: pH Value	----	0.1	pH Unit	7.5	7.6	1.3	0% - 20%
ES1325961-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	8.2	8.3	0.0	0% - 20%
<b>EA002 : pH (Soils) (QC Lot: 3190687)</b>									
ES1325880-004	BV_MW02_3.1	EA002: pH Value	----	0.1	pH Unit	7.5	7.5	0.0	0% - 20%
ES1326181-006	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.4	7.5	0.0	0% - 20%
<b>EA032: Electrical Conductivity (saturated paste) (QC Lot: 3191306)</b>									
ES1325879-002	Anonymous	EA032: Electrical Conductivity (Saturated Paste)	----	1	µS/cm	1940	1940	0.4	0% - 20%
ES1326079-011	Anonymous	EA032: Electrical Conductivity (Saturated Paste)	----	1	µS/cm	468	471	0.6	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3189042)</b>									
ES1325842-028	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	17.8	18.3	3.0	0% - 50%
ES1325842-041	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.9	16.5	2.5	0% - 50%
<b>EA055: Moisture Content (QC Lot: 3189043)</b>									
ES1325880-007	BH_MW06_4.9	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	20.7	20.6	0.7	0% - 20%
ES1325883-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	18.8	19.7	4.7	0% - 50%
<b>ED007: Exchangeable Cations (QC Lot: 3183542)</b>									
ES1325880-005	BH_MW05_6.0	ED007: Exchangeable Calcium	----	0.1	meq/100g	7.2	7.2	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.6	7.7	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	15.3	15.4	0.0	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1325882-003	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	4.8	4.7	2.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	10.4	10.2	1.8	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	3.2	3.0	4.5	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	18.7	18.2	2.6	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3188167)</b>									
ES1325846-023	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	2	2	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	135	105	# 25.0	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	33	37	10.9	0% - 50%
		EG005T: Arsenic	7440-38-2	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3188167) - continued</b>									
ES1325846-023	Anonymous	EG005T: Copper	7440-50-8	5	mg/kg	20	20	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	132	130	1.0	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	97	103	6.2	0% - 20%
ES1325846-035	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	21	30.2	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	21	16	29.6	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	17	44.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	38	37	3.7	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	34	33	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	53	52	2.7	0% - 50%
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3188168)</b>									
ES1325846-023	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325846-035	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3190624)</b>									
ES1325880-001	BV_SB02_2.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325886-004	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3183219)</b>									
ES1325880-001	BV_SB02_2.5	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 3183219)</b>									
ES1325880-001	BV_SB02_2.5	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3183219)</b>									
ES1325880-001	BV_SB02_2.5	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3183219)</b>									
ES1325880-001	BV_SB02_2.5	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3183219)</b>									
ES1325880-001	BV_SB02_2.5	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3183219)</b>									
ES1325880-001	BV_SB02_2.5	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 3183219)</b>									
ES1325880-001	BV_SB02_2.5	EP074: Chloroform	67-66-3	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 (%)
<b>EP074G: Trihalomethanes (QC Lot: 3183219) - continued</b>									
ES1325880-001	BV_SB02_2.5	EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3183219)</b>									
ES1325880-001	BV_SB02_2.5	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3183221)</b>									
ES1325880-001	BV_SB02_2.5	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		ES1325881-003	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5
EP075(SIM): 2-Chlorophenol	95-57-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 3- & 4-Methylphenol	1319-77-3			1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM): Pentachlorophenol	87-86-5			2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3183221)</b>									
ES1325880-001	BV_SB02_2.5	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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3183221) - continued</b>									
ES1325880-001	BV_SB02_2.5	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325881-003	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3183218)</b>									
ES1325880-001	BV_SB02_2.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325881-003	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3183220)</b>									
ES1325880-001	BV_SB02_2.5	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
ES1325881-003	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183218)</b>									



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 (%)	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183218) - continued</b>										
ES1325880-001	BV_SB02_2.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1325881-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183220)</b>										
ES1325880-001	BV_SB02_2.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
ES1325881-003	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3183218)</b>										
ES1325880-001	BV_SB02_2.5	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							
			95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
ES1325881-003	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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							
	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit			
	91-20-3	1	mg/kg	<1	<1	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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA032: Electrical Conductivity (saturated paste) (QCLot: 3191306)</b>									
EA032: Electrical Conductivity (Saturated Paste)	----	1	µS/cm	<1	1412 µS/cm	100	96	104	
<b>ED007: Exchangeable Cations (QCLot: 3183542)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3188167)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	119	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	104	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	118	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	114	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	108	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	116	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	119	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3188168)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	74.0	66	112	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3190624)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	85.0	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3183219)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	101	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	104	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	102	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	104	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	106	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	104	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	103	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	105	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	105	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3183219)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	40.4	29.6	156	
		5	mg/kg	<5	----	----	----	----	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074B: Oxygenated Compounds (QCLot: 3183219) - continued</b>									
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	121	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	96.1	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	102	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3183219)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	62.0	54	126	
<b>EP074D: Fumigants (QCLot: 3183219)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	83.2	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	101	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	94.5	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	81.8	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	91.5	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183219)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	46.3	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	61.9	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	84.4	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	71.8	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	82.4	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	87.9	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	90.5	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	80.5	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	93.3	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	99.3	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	101	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	84.5	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	103	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	91.6	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	107	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	100	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	98.8	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	104	70	130	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183219) - continued</b>									
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	102	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	102	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	84.5	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	93.7	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	97.7	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	93.5	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	104	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	93.1	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	68.9	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	103	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3183219)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	103	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	100	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	103	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	103	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	104	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	103	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	102	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	97.7	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	105	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3183219)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	96.7	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	86.8	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	87.9	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	92.8	60	126	
<b>EP074H: Naphthalene (QCLot: 3183219)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	98.6	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183221)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	103	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	107	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	108	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	109	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	93.1	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	106	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	105	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	109	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	101	76.4	114	





Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183221) - continued</b>									
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	102	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	103	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	46.9	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183221)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	107	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	112	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	116	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	112	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	111	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	114	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	115	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	111	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	111	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	111	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	101	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	112	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	108	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	107	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	105	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183218)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	86.0	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183220)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	96.6	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	106	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	96.3	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183218)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	86.6	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183220)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	97.8	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	105	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	82.8	63	131	
<b>EP080: BTEXN (QCLot: 3183218)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	87.4	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	87.1	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	86.7	58	118	



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
<b>EP080: BTEXN (QCLot: 3183218) - continued</b>								
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	89.5	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	90.4	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	87.9	62	138

### 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				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%) Low High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3188167)</b>							
ES1325846-023	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	125	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	# 960	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	111	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	91.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	# 151	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	120	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3188168)</b>							
ES1325846-023	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	91.1	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3190624)</b>							
ES1325880-001	BV_SB02_2.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	82.0	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183219)</b>							
ES1325880-001	BV_SB02_2.5	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	91.7	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.5	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3183219)</b>							
ES1325880-001	BV_SB02_2.5	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	94.9	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183221)</b>							
ES1325880-001	BV_SB02_2.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	91.4	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.2	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	97.5	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	93.6	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	101	20	130
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183221)</b>							
ES1325880-001	BV_SB02_2.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	101	70	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report				
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183221) - continued</b>								
ES1325880-001	BV_SB02_2.5	EP075(SIM): Pyrene	129-00-0	10 mg/kg	109	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183218)</b>								
ES1325880-001	BV_SB02_2.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.7	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183220)</b>								
ES1325880-001	BV_SB02_2.5	EP071: C10 - C14 Fraction	----	640 mg/kg	80.1	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	83.2	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	69.0	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183218)</b>								
ES1325880-001	BV_SB02_2.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	96.8	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183220)</b>								
ES1325880-001	BV_SB02_2.5	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	102	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	74.9	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	56.6	52	132	
<b>EP080: BTEXN (QCLot: 3183218)</b>								
ES1325880-001	BV_SB02_2.5	EP080: Benzene	71-43-2	2.5 mg/kg	90.6	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	84.1	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	85.6	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	88.2	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.8	70	130	
	91-20-3	2.5 mg/kg	83.6	70	130			

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183218)</b>										
ES1325880-001	BV_SB02_2.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.7	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183218)</b>										
ES1325880-001	BV_SB02_2.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	96.8	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3183218)</b>										
ES1325880-001	BV_SB02_2.5	EP080: Benzene	71-43-2	2.5 mg/kg	90.6	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	84.1	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	85.6	----	70	130	----	----



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 Work Order : ES1325880 Amendment 1  
 Client : ENVIRO RESOURCES MANAGEMENT  
 Project : Project Symphony



Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3190624) - continued</b>										
ES1325880-001	BV_SB02_2.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	82.0	----	70	130	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325880</b>	Page	: 1 of 10
Amendment	: <b>1</b>		
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 26-NOV-2013
Sampler	: T.C	Issue Date	: 06-JAN-2014
Order number	: 0224193		
Quote number	: SY/794/13	No. of samples received	: 10
		No. of samples analysed	: 10

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA002 : pH (Soils)</b>								
<b>Soil Glass Jar - Unpreserved (EA002)</b> BH_MW05_6.0, BH_MW06_4.9,	D01_191113_TC, BH_MW07_0.8	20-NOV-2013	02-DEC-2013	27-NOV-2013	*	02-DEC-2013	02-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EA002)</b> BV_MW02_3.1		20-NOV-2013	04-DEC-2013	27-NOV-2013	*	04-DEC-2013	04-DEC-2013	✓
<b>EA032: Electrical Conductivity (saturated paste)</b>								
<b>Soil Glass Jar - Unpreserved (EA032)</b> BV_MW02_3.1		20-NOV-2013	----	----	----	04-DEC-2013	19-MAY-2014	✓
<b>EA055: Moisture Content</b>								
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BV_SB02_2.5, BV_SB03_1.1, BH_MW05_6.0, BH_MW06_4.9,	BV_SB01_2.9, BV_MW02_3.1, D01_191113_TC, BH_MW07_0.8	20-NOV-2013	----	----	----	02-DEC-2013	04-DEC-2013	✓
<b>ED007: Exchangeable Cations</b>								
<b>Soil Glass Jar - Unpreserved (ED007)</b> BH_MW05_6.0, BH_MW06_4.9,	D01_191113_TC, BH_MW07_0.8	20-NOV-2013	03-DEC-2013	18-DEC-2013	✓	03-DEC-2013	18-DEC-2013	✓
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BV_SB02_2.5, BV_SB03_1.1, BH_MW05_6.0, BH_MW06_4.9,	BV_SB01_2.9, BV_MW02_3.1, D01_191113_TC, BH_MW07_0.8	20-NOV-2013	02-DEC-2013	19-MAY-2014	✓	02-DEC-2013	19-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BV_SB02_2.5, BV_SB03_1.1, BH_MW05_6.0, BH_MW06_4.9,	BV_SB01_2.9, BV_MW02_3.1, D01_191113_TC, BH_MW07_0.8	20-NOV-2013	02-DEC-2013	18-DEC-2013	✓	04-DEC-2013	18-DEC-2013	✓



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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Soil Glass Jar - Unpreserved (EP066) BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9	20-NOV-2013	03-DEC-2013	04-DEC-2013	✓	03-DEC-2013	12-JAN-2014	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
Soil Glass Jar - Unpreserved (EP071) BV_SB02_2.5, BV_SB03_1.1, BH_MW05_6.0, BH_MW06_4.9	BV_SB01_2.9, BV_MW02_3.1, D01_191113_TC, BH_MW07_0.8	20-NOV-2013	03-DEC-2013	04-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>EP074D: Fumigants</b>								
Soil Glass Jar - Unpreserved (EP074) BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*
<b>EP074F: Halogenated Aromatic Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Soil Glass Jar - Unpreserved (EP074) BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*
<b>EP074H: Naphthalene</b>								
Soil Glass Jar - Unpreserved (EP074) BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*
<b>EP074B: Oxygenated Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*
<b>EP074C: Sulfonated Compounds</b>								
Soil Glass Jar - Unpreserved (EP074) BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*
<b>EP074G: Trihalomethanes</b>								
Soil Glass Jar - Unpreserved (EP074) BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*





Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP075(SIM)A: Phenolic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BV_SB02_2.5, BV_SB03_1.1, BH_MW05_6.0, BH_MW06_4.9	BV_SB01_2.9, BV_MW02_3.1, D01_191113_TC, BH_MW07_0.8	20-NOV-2013	03-DEC-2013	04-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BV_SB02_2.5, BV_SB03_1.1, BH_MW05_6.0, BH_MW06_4.9	BV_SB01_2.9, BV_MW02_3.1, D01_191113_TC, BH_MW07_0.8	20-NOV-2013	03-DEC-2013	04-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>EP080: BTEXN</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BV_SB02_2.5, BV_SB03_1.1, BH_MW05_6.0, BH_MW06_4.9, TB1_201113,	BV_SB01_2.9, BV_MW02_3.1, D01_191113_TC, BH_MW07_0.8, TB7_201113	20-NOV-2013	29-NOV-2013	04-DEC-2013	✓	01-DEC-2013	04-DEC-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BV_SB02_2.5, BV_SB03_1.1, BH_MW05_6.0, BH_MW06_4.9, TB1_201113,	BV_SB01_2.9, BV_MW02_3.1, D01_191113_TC, BH_MW07_0.8, TB7_201113	20-NOV-2013	29-NOV-2013	04-DEC-2013	✓	01-DEC-2013	04-DEC-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Electrical Conductivity (Saturated Paste)	EA032	2	11	18.2	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	2	13	15.4	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	6	53	11.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	15	13.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Electrical Conductivity (Saturated Paste)	EA032	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Electrical Conductivity (Saturated Paste)	EA032	1	11	9.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<i>Analytical Methods</i>							
<b>Matrix Spikes (MS) - Continued</b>							
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Electrical Conductivity (Saturated Paste)	EA032	SOIL	USEPA 600/2 - 78 - 054 - conductivity determined on a saturated paste.
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) Schedule B(3) (Method 504)
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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) Schedule B(3) (Method 501)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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 (2013) 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 A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na <sub>2</sub> SO <sub>4</sub> 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 <sub>2</sub> SO <sub>4</sub> 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
<b>Duplicate (DUP) RPDs</b>							
EG005T: Total Metals by ICP-AES	ES1325846-023	Anonymous	Chromium	7440-47-3	25.0 %	0-20%	RPD exceeds LOR based limits
<b>Matrix Spike (MS) Recoveries</b>							
EG005T: Total Metals by ICP-AES	ES1325846-023	Anonymous	Chromium	7440-47-3	960 %	70-130%	Recovery greater than upper data quality objective
EG005T: Total Metals by ICP-AES	ES1325846-023	Anonymous	Nickel	7440-02-0	151 %	70-130%	Recovery greater than upper data quality objective

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

#### Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

### Outliers : Analysis Holding Time Compliance

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

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA002 : pH (Soils)</b>							
<b>Soil Glass Jar - Unpreserved</b> BH_MW05_6.0, BH_MW06_4.9,	D01_191113_TC, BH_MW07_0.8	02-DEC-2013	27-NOV-2013	5	----	----	----
<b>Soil Glass Jar - Unpreserved</b> BV_MW02_3.1		04-DEC-2013	27-NOV-2013	7	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9,	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074B: Oxygenated Compounds</b>							
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9,	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074C: Sulfonated Compounds</b>							



Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis			
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue	
<b>EP074C: Sulfonated Compounds - Analysis Holding Time Compliance</b>							
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9,	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074D: Fumigants</b>							
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9,	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074E: Halogenated Aliphatic Compounds</b>							
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9,	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074F: Halogenated Aromatic Compounds</b>							
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9,	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074G: Trihalomethanes</b>							
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9,	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074H: Naphthalene</b>							
<b>Soil Glass Jar - Unpreserved</b> BV_SB02_2.5, BV_SB03_1.1	BV_SB01_2.9,	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4

**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.





## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

**Work Order : ES1325881**

<p><b>Client : ENVIRO RESOURCES MANAGEMENT</b></p> <p><b>Contact : MR JOSEPH FERRING</b></p> <p><b>Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</b></p>	<p><b>Laboratory : Environmental Division Sydney</b></p> <p><b>Contact : Barbara Hanna</b></p> <p><b>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</b></p>
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<p><b>E-mail : joseph.ferring@erm.com</b></p> <p><b>Telephone : +61 02 8584 8888</b></p> <p><b>Facsimile : +61 02 8584 8800</b></p>	<p><b>E-mail : Barbara.Hanna@alsglobal.com</b></p> <p><b>Telephone : +61 2 8784 8555</b></p> <p><b>Facsimile : +61 2 8784 8555</b></p>
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<p><b>Project : Project Symphony</b></p> <p><b>Order number : 0224193</b></p> <p><b>C-O-C number : ----</b></p> <p><b>Site : Bayswater</b></p> <p><b>Sampler : T.C</b></p>	<p><b>Page : 1 of 2</b></p> <p><b>Quote number : ES2013ENVRES0369 (SY/794/13)</b></p> <p><b>QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement</b></p>
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#### Dates

<p><b>Date Samples Received : 26-NOV-2013</b></p> <p><b>Client Requested Due Date : 04-DEC-2013</b></p>	<p><b>Issue Date : 27-NOV-2013 19:52</b></p> <p><b>Scheduled Reporting Date : <b>04-DEC-2013</b></b></p>
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#### Delivery Details

<p><b>Mode of Delivery : Carrier</b></p> <p><b>No. of coolers/boxes : 7 HARD</b></p> <p><b>Security Seal : Intact.</b></p>	<p><b>Temperature : 4.8°C - Ice present</b></p> <p><b>No. of samples received : 4</b></p> <p><b>No. of samples analysed : 4</b></p>
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#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - ED007 CEC / Exchangeable Cations (ED007)	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-27 TRH/BTEX/PAH/Phenols/8Metals
ES1325881-001	20-NOV-2013 15:00	BH_SB01_1.7	✓	✓		✓
ES1325881-002	20-NOV-2013 15:00	BH_SB03_1.1	✓	✓		✓
ES1325881-003	20-NOV-2013 15:00	BP_MW04_5.0			✓	✓
ES1325881-004	20-NOV-2013 15:00	BP_MW05_6.0			✓	✓

## Proactive Holding Time Report

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

## Requested Deliverables

### JOHN EWING

- *AU Certificate of Analysis - NATA ( COA )	Email	john.ewing@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	john.ewing@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	john.ewing@erm.com
- A4 - AU Tax Invoice ( INV )	Email	john.ewing@erm.com
- Chain of Custody (CoC) ( COC )	Email	john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	john.ewing@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	john.ewing@erm.com
- EDI Format - XTab ( XTab )	Email	john.ewing@erm.com

### MR JOSEPH FERRING

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTab )	Email	joseph.ferring@erm.com

### SYMPHONY MACGEN

- *AU Certificate of Analysis - NATA ( COA )	Email	symphony.macgen@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	symphony.macgen@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	symphony.macgen@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	symphony.macgen@erm.com
- A4 - AU Tax Invoice ( INV )	Email	symphony.macgen@erm.com
- Chain of Custody (CoC) ( COC )	Email	symphony.macgen@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	symphony.macgen@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	symphony.macgen@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	symphony.macgen@erm.com
- EDI Format - XTab ( XTab )	Email	symphony.macgen@erm.com

### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1325881</b>	Page	: 1 of 8
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193	Date Samples Received	: 26-NOV-2013
C-O-C number	: ----	Issue Date	: 04-DEC-2013
Sampler	: T.C	No. of samples received	: 4
Site	: Bayswater	No. of samples analysed	: 4
Quote number	: SY/794/13		

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



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Di-An Dao		Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB01_1.7	BH_SB03_1.1	BP_MW04_5.0	BP_MW05_6.0	----
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1325881-001	ES1325881-002	ES1325881-003	ES1325881-004	----
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	7.7	7.0	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	9.5	8.4	22.6	17.8	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	9.9	5.7	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	3.9	5.2	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	0.4	0.3	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	<0.1	0.2	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	14.2	11.4	----	----	----
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	16	18	9	30	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	9	11	28	18	----
Copper	7440-50-8	5	mg/kg	20	16	12	30	----
Lead	7439-92-1	5	mg/kg	19	20	16	25	----
Nickel	7440-02-0	2	mg/kg	29	27	15	52	----
Zinc	7440-66-6	5	mg/kg	87	80	24	109	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	----	<0.5	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	<0.5	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	<0.5	<0.5	----
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	<0.5	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	<0.5	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	<0.5	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	<0.5	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	<5	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	<5	<5	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BH_SB01_1.7	BH_SB03_1.1	BP_MW04_5.0	BP_MW05_6.0	----
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1325881-001	ES1325881-002	ES1325881-003	ES1325881-004	----
<b>EP074B: Oxygenated Compounds - Continued</b>								
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	<5	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	<5	<5	----
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dichloropropane	78-87-5	0.5	mg/kg	----	----	<0.5	<0.5	----
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	----	<0.5	<0.5	----
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	----	<5	<5	----
Chloromethane	74-87-3	5	mg/kg	----	----	<5	<5	----
Vinyl chloride	75-01-4	5	mg/kg	----	----	<5	<5	----
Bromomethane	74-83-9	5	mg/kg	----	----	<5	<5	----
Chloroethane	75-00-3	5	mg/kg	----	----	<5	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	<5	<5	----
1,1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	<0.5	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg	----	----	<0.5	<0.5	----
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	<0.5	<0.5	----
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	<0.5	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	<0.5	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg	----	----	<0.5	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	<0.5	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	<0.5	<0.5	----
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	<0.5	<0.5	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB01_1.7	BH_SB03_1.1	BP_MW04_5.0	BP_MW05_6.0	----
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1325881-001	ES1325881-002	ES1325881-003	ES1325881-004	----
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	<0.5	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	<0.5	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	<0.5	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg	----	----	<0.5	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	<0.5	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	<0.5	<0.5	----
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	<0.5	<0.5	----
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	<0.5	<0.5	----
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	<0.5	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	<0.5	<0.5	----
Bromoform	75-25-2	0.5	mg/kg	----	----	<0.5	<0.5	----
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	----	<5	<5	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BH_SB01_1.7	BH_SB03_1.1	BP_MW04_5.0	BP_MW05_6.0	----
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1325881-001	ES1325881-002	ES1325881-003	ES1325881-004	----
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	<b>0.6</b>	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	<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	----
Chrysene	218-01-9	0.5	mg/kg	<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	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<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	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<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	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<b>0.6</b>	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	----





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB01_1.7	BH_SB03_1.1	BP_MW04_5.0	BP_MW05_6.0	----
				20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	20-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1325881-001	ES1325881-002	ES1325881-003	ES1325881-004	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued</b>								
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	----
<b>EP080: BTEXN</b>								
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	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	----
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	87.7	91.7	----
Toluene-D8	2037-26-5	0.1	%	----	----	94.9	99.6	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	84.2	91.9	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	83.9	84.4	89.3	89.2	----
2-Chlorophenol-D4	93951-73-6	0.1	%	91.9	91.8	99.2	97.7	----
2,4,6-Tribromophenol	118-79-6	0.1	%	99.6	106	104	106	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	99.6	99.9	105	105	----
Anthracene-d10	1719-06-8	0.1	%	91.1	94.6	91.8	94.6	----
4-Terphenyl-d14	1718-51-0	0.1	%	87.0	89.6	93.8	95.5	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	95.0	95.2	92.0	96.0	----
Toluene-D8	2037-26-5	0.1	%	84.2	89.2	88.9	93.4	----
4-Bromofluorobenzene	460-00-4	0.1	%	83.3	89.2	87.2	93.4	----



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

## QUALITY CONTROL REPORT

Work Order	: <b>ES1325881</b>	Page	: 1 of 16
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: Bayswater	Date Samples Received	: 26-NOV-2013
C-O-C number	: ----	Issue Date	: 04-DEC-2013
Sampler	: T.C	No. of samples received	: 4
Order number	: 0224193	No. of samples analysed	: 4
Quote number	: SY/794/13		

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



## 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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Di-An Dao		Sydney Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Organics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3185860)</b>									
ES1325574-011	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.2	6.3	0.0	0% - 20%
ES1325738-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.2	7.2	0.0	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3189043)</b>									
ES1325880-007	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	20.7	20.6	0.7	0% - 20%
ES1325883-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	18.8	19.7	4.7	0% - 50%
<b>ED007: Exchangeable Cations (QC Lot: 3183542)</b>									
ES1325880-005	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	7.2	7.2	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.6	7.7	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	15.3	15.4	0.0	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1325882-003	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	4.8	4.7	2.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	10.4	10.2	1.8	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	3.2	3.0	4.5	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	18.7	18.2	2.6	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3190208)</b>									
ES1325804-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	9	9	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	9	7	16.5	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	5	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	8	9	19.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	14	43.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	40	38	2.9	No Limit
ES1325825-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	18	6.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	19	15	20.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	8	17.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	45	38	15.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	32	26	21.3	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	128	111	14.3	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3190210)</b>									
ES1325881-004	BP_MW05_6.0	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3190210) - continued</b>									
ES1325881-004	BP_MW05_6.0	EG005T: Chromium	7440-47-3	2	mg/kg	18	16	9.7	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	52	43	19.2	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	30	22	30.3	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	30	28	7.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	25	22	11.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	109	101	7.6	0% - 20%
ES1325883-005	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	9	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	22	27	22.5	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	23	22	8.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	15	0.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	88	84	4.7	0% - 50%		
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3190209)</b>									
ES1325804-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325825-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3183219)</b>									
ES1325880-001	Anonymous	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074B: Oxygenated Compounds (QC Lot: 3183219)</b>									
ES1325880-001	Anonymous	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3183219)</b>									
ES1325880-001	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3183219)</b>									
ES1325880-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	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 (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3183219)</b>									
ES1325880-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3183219)</b>									
ES1325880-001	Anonymous	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074G: Trihalomethanes (QC Lot: 3183219)</b>									
ES1325880-001	Anonymous	EP074: Chloroform	67-66-3	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 (%)
<b>EP074G: Trihalomethanes (QC Lot: 3183219) - continued</b>									
ES1325880-001	Anonymous	EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3183219)</b>									
ES1325880-001	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3183221)</b>									
ES1325880-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		ES1325881-003	BP_MW04_5.0	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5
EP075(SIM): 2-Chlorophenol	95-57-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 3- & 4-Methylphenol	1319-77-3			1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM): Pentachlorophenol	87-86-5			2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3183221)</b>									
ES1325880-001	Anonymous	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





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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3183221) - continued</b>									
ES1325880-001	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325881-003	BP_MW04_5.0	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3183218)</b>									
ES1325880-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325881-003	BP_MW04_5.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3183220)</b>									
ES1325880-001	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
ES1325881-003	BP_MW04_5.0	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183218)</b>									



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 (%)
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183218) - continued</b>									
ES1325880-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1325881-003	BP_MW04_5.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183220)</b>									
ES1325880-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1325881-003	BP_MW04_5.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3183218)</b>									
ES1325880-001	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	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1325881-003	BP_MW04_5.0	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
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>ED007: Exchangeable Cations (QCLot: 3183542)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190208)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	110	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	102	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	105	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	110	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	106	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	110	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	104	81	133	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190210)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	110	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	107	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	106	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	110	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	108	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	115	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	112	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3190209)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	73.6	66	112	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3183219)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	101	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	104	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	102	63	129	
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	104	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	106	64	130	
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	104	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	103	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	105	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	105	61	131	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074B: Oxygenated Compounds (QCLot: 3183219)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	40.4	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	121	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	96.1	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	102	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3183219)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	62.0	54	126	
<b>EP074D: Fumigants (QCLot: 3183219)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	83.2	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	101	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	94.5	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	81.8	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	91.5	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183219)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	46.3	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	61.9	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	84.4	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	71.8	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	82.4	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	87.9	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	90.5	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	80.5	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	93.3	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	99.3	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	101	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	84.5	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	103	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	91.6	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	107	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	100	64	120	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183219) - continued</b>									
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	98.8	65	127	
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	104	70	130	
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	102	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	102	67	143	
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	84.5	62	122	
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	93.7	54	128	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	97.7	55	129	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	93.5	56	132	
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	104	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	93.1	19.8	134	
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	68.9	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	103	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3183219)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	103	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	100	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	103	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	103	62	130	
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	104	63	129	
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	103	63	129	
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	102	66	128	
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	97.7	54	134	
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	105	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3183219)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	96.7	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	86.8	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	87.9	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	92.8	60	126	
<b>EP074H: Naphthalene (QCLot: 3183219)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	98.6	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183221)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	103	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	107	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	108	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	109	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	93.1	60.3	117	
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	106	69	117	
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	105	68	112	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183221) - continued</b>									
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	109	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	101	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	102	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	103	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	46.9	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183221)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	107	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	112	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	116	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	112	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	111	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	114	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	115	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	111	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	111	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	111	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	101	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	112	76	122	
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	108	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	107	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	105	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183218)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	86.0	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183220)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	96.6	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	106	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	96.3	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183218)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	86.6	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183220)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	97.8	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	105	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	82.8	63	131	
<b>EP080: BTEXN (QCLot: 3183218)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	87.4	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	87.1	62	128	



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High
<b>EP080: BTEXN (QCLot: 3183218) - continued</b>								
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	86.7	58	118
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	89.5	60	120
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	90.4	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	87.9	62	138

### 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				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) Low High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190208)</b>							
ES1325804-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	104	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	109	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	107	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	105	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	105	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190210)</b>							
ES1325881-004	BP_MW05_6.0	EG005T: Arsenic	7440-38-2	50 mg/kg	100	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	106	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	104	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	77.5	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	104	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3190209)</b>							
ES1325804-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.4	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183219)</b>							
ES1325880-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	91.7	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.5	70	130
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3183219)</b>							
ES1325880-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	94.9	70	130
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183221)</b>							



Sub-Matrix: SOIL				Matrix Spike (MS) Report				
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183221) - continued</b>								
ES1325880-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	91.4	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.2	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	97.5	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	93.6	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	101	20	130	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183221)</b>								
ES1325880-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	101	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	109	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183218)</b>								
ES1325880-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.7	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183220)</b>								
ES1325880-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	80.1	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	83.2	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	69.0	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183218)</b>								
ES1325880-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	96.8	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183220)</b>								
ES1325880-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	102	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	74.9	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	56.6	52	132	
<b>EP080: BTEXN (QCLot: 3183218)</b>								
ES1325880-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.6	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	84.1	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	85.6	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	88.2	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.8	70	130	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	83.6	70	130	

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183218)</b>										





Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
					MS	MSD	Low	High	Value	Control Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183218) - continued</b>											
ES1325880-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.7	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183218)</b>											
ES1325880-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	96.8	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3183218)</b>											
ES1325880-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.6	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	84.1	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	85.6	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	88.2	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.8	----	70	130	----	----	
	EP080: Naphthalene	91-20-3		2.5 mg/kg	83.6	----	70	130	----	----	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183219)</b>											
ES1325880-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	91.7	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	91.5	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3183219)</b>											
ES1325880-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	94.9	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183220)</b>											
ES1325880-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	80.1	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	83.2	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	69.0	----	52	132	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183220)</b>											
ES1325880-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	102	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	74.9	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	56.6	----	52	132	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183221)</b>											
ES1325880-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	91.4	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.2	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	97.5	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	93.6	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	101	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183221)</b>											
ES1325880-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	101	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	109	----	70	130	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190208)</b>											
ES1325804-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	104	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	109	----	70	130	----	----	



Sub-Matrix: SOIL

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190208) - continued</b>										
ES1325804-001	Anonymous	EG005T: Copper	7440-50-8	125 mg/kg	107	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	107	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	105	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	105	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3190209)</b>										
ES1325804-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.4	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190210)</b>										
ES1325881-004	BP_MW05_6.0	EG005T: Arsenic	7440-38-2	50 mg/kg	100	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	106	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	107	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	104	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	77.5	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	104	----	70	130	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325881</b>	Page	: 1 of 8
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: Bayswater	Date Samples Received	: 26-NOV-2013
C-O-C number	: ----	Issue Date	: 04-DEC-2013
Sampler	: T.C	No. of samples received	: 4
Order number	: 0224193	No. of samples analysed	: 4
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA002 : pH (Soils)</b>							
Soil Glass Jar - Unpreserved (EA002) BH_SB01_1.7, BH_SB03_1.1	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	29-NOV-2013	29-NOV-2013	✓
<b>EA055: Moisture Content</b>							
Soil Glass Jar - Unpreserved (EA055-103) BH_SB01_1.7, BP_MW04_5.0, BH_SB03_1.1, BP_MW05_6.0	20-NOV-2013	----	----	----	02-DEC-2013	04-DEC-2013	✓
<b>ED007: Exchangeable Cations</b>							
Soil Glass Jar - Unpreserved (ED007) BH_SB01_1.7, BH_SB03_1.1	20-NOV-2013	03-DEC-2013	18-DEC-2013	✓	03-DEC-2013	18-DEC-2013	✓
<b>EG005T: Total Metals by ICP-AES</b>							
Soil Glass Jar - Unpreserved (EG005T) BH_SB01_1.7, BP_MW04_5.0, BH_SB03_1.1, BP_MW05_6.0	20-NOV-2013	03-DEC-2013	19-MAY-2014	✓	03-DEC-2013	19-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
Soil Glass Jar - Unpreserved (EG035T) BH_SB01_1.7, BP_MW04_5.0, BH_SB03_1.1, BP_MW05_6.0	20-NOV-2013	03-DEC-2013	18-DEC-2013	✓	03-DEC-2013	18-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Soil Glass Jar - Unpreserved (EP071) BH_SB01_1.7, BP_MW04_5.0, BH_SB03_1.1, BP_MW05_6.0	20-NOV-2013	03-DEC-2013	04-DEC-2013	✓	04-DEC-2013	12-JAN-2014	✓
<b>EP074D: Fumigants</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW04_5.0, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW04_5.0, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*
<b>EP074F: Halogenated Aromatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW04_5.0, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	27-NOV-2013	*	01-DEC-2013	27-NOV-2013	*



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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW04_5.0, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	27-NOV-2013	✖	01-DEC-2013	27-NOV-2013	✖
<b>EP074H: Naphthalene</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW04_5.0, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	27-NOV-2013	✖	01-DEC-2013	27-NOV-2013	✖
<b>EP074B: Oxygenated Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW04_5.0, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	27-NOV-2013	✖	01-DEC-2013	27-NOV-2013	✖
<b>EP074C: Sulfonated Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW04_5.0, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	27-NOV-2013	✖	01-DEC-2013	27-NOV-2013	✖
<b>EP074G: Trihalomethanes</b>							
Soil Glass Jar - Unpreserved (EP074) BP_MW04_5.0, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	27-NOV-2013	✖	01-DEC-2013	27-NOV-2013	✖
<b>EP075(SIM)A: Phenolic Compounds</b>							
Soil Glass Jar - Unpreserved (EP075(SIM)) BH_SB01_1.7, BP_MW04_5.0, BH_SB03_1.1, BP_MW05_6.0	20-NOV-2013	03-DEC-2013	04-DEC-2013	✔	04-DEC-2013	12-JAN-2014	✔
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP075(SIM)) BH_SB01_1.7, BP_MW04_5.0, BH_SB03_1.1, BP_MW05_6.0	20-NOV-2013	03-DEC-2013	04-DEC-2013	✔	04-DEC-2013	12-JAN-2014	✔
<b>EP080: BTEXN</b>							
Soil Glass Jar - Unpreserved (EP080) BH_SB01_1.7, BP_MW04_5.0, BH_SB03_1.1, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	04-DEC-2013	✔	01-DEC-2013	04-DEC-2013	✔
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Soil Glass Jar - Unpreserved (EP080) BH_SB01_1.7, BP_MW04_5.0, BH_SB03_1.1, BP_MW05_6.0	20-NOV-2013	29-NOV-2013	04-DEC-2013	✔	01-DEC-2013	04-DEC-2013	✔



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Exchangeable Cations	ED007	2	13	15.4	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	34	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Exchangeable Cations	ED007	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	34	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Exchangeable Cations	ED007	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	34	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	34	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) 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 (2013) Schedule B(3) (Method 501)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) Schedule B(3) (Method 202)

Page : 6 of 8  
Work Order : ES1325881  
Client : ENVIRO RESOURCES MANAGEMENT  
Project : Project Symphony



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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

- 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.

Matrix: SOIL

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA002 : pH (Soils)</b>						
Soil Glass Jar - Unpreserved BH_SB01_1.7, BH_SB03_1.1	29-NOV-2013	27-NOV-2013	2	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>						
Soil Glass Jar - Unpreserved BP_MW04_5.0, BP_MW05_6.0	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074B: Oxygenated Compounds</b>						
Soil Glass Jar - Unpreserved BP_MW04_5.0, BP_MW05_6.0	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074C: Sulfonated Compounds</b>						
Soil Glass Jar - Unpreserved BP_MW04_5.0, BP_MW05_6.0	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074D: Fumigants</b>						
Soil Glass Jar - Unpreserved BP_MW04_5.0, BP_MW05_6.0	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074E: Halogenated Aliphatic Compounds</b>						
Soil Glass Jar - Unpreserved BP_MW04_5.0, BP_MW05_6.0	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074F: Halogenated Aromatic Compounds</b>						
Soil Glass Jar - Unpreserved BP_MW04_5.0, BP_MW05_6.0	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4



Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074G: Trihalomethanes</b>						
<b>Soil Glass Jar - Unpreserved</b> BP_MW04_5.0, BP_MW05_6.0	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4
<b>EP074H: Naphthalene</b>						
<b>Soil Glass Jar - Unpreserved</b> BP_MW04_5.0, BP_MW05_6.0	29-NOV-2013	27-NOV-2013	2	01-DEC-2013	27-NOV-2013	4

### 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.**

041213

**CHAIN OF CUSTODY**  
 ALS Laboratory  
 please link →

**TURNAROUND REQUIREMENTS:**  
 Standard TAT (List due date)  
 Non Standard or urgent TAT (List due date):

**FOR LABORATORY USE ONLY (Circle)**  
 Custody Seal Intact? Yes No N/A  
 Free Ice / frozen ice bricks present upon receipt? Yes No N/A  
 Random Sample Temperature on Receipt: °C  
 Other comment:

**CLIENT:** ERM  
**OFFICE:** Sydney  
**PROJECT:** Project Symphony  
**ORDER NUMBER:** 0224193  
**PROJECT MANAGER:** JOSEPH FERRING  
**SAMPLER:** STEPHEN MULLIGAN  
**SAMPLER MOBILE:**  
**EDD FORMAT (or default):**  
**Standard TAT may be longer for some tests e.g. Ultra Trace Organics**  
**ALS QUOTE NO.:** SY794713  
**SITE:** BAYSWATER LIDDELL  
**CONTACT PH:**  
**RECEIVED BY:** Stephen Mulligan  
**DATE/TIME:** 19/11/13  
**RELINQUISHED BY:** Frank AS  
**DATE/TIME:** 26-11-13 900  
**RECEIVED BY:**  
**DATE/TIME:**

**COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:**

LAB ID	SAMPLE ID	MATRIX	DATE / TIME	TYPE & PRESERVATIVE codes (below)	CONTAINER INFORMATION (refer to)	ANALYSIS REQUIRED including SUITES (N/A). Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottles required) or Dissolved (field filtered bottles required).	Additional Information
1	BH-SB06-1-6	SOIL	19/11/13	1 x Jar	TOTAL	9-2 Metals (As, Ba, Pb, Zn, Hg) 17 Metals (As, Ba, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se) S-24 TRHCe- C40/BTEXN, PAH, Phenols VOC Target Scan PCB pH (1-s) Exchangeable Cations (ED007) PFOS/PFOA Asbestos (absence/presence) Particle String to 75µm (Sieve) Organic Matter plus Total Organic Carbon (EP004)	Comments on likely contaminant levels, dilutions or samples requiring specific analysis etc.
2	BH-MW04-3-0	soil	19/11/13	1 x Jar	TOTAL	9-2 Metals (As, Ba, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se) 17 Metals (As, Ba, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se) S-24 TRHCe- C40/BTEXN, PAH, Phenols VOC Target Scan PCB pH (1-s) Exchangeable Cations (ED007) PFOS/PFOA Asbestos (absence/presence) Particle String to 75µm (Sieve) Organic Matter plus Total Organic Carbon (EP004)	
3	BH-SB08-3-0	soil	19/11/13	1 x Jar	TOTAL	9-2 Metals (As, Ba, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se) 17 Metals (As, Ba, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se) S-24 TRHCe- C40/BTEXN, PAH, Phenols VOC Target Scan PCB pH (1-s) Exchangeable Cations (ED007) PFOS/PFOA Asbestos (absence/presence) Particle String to 75µm (Sieve) Organic Matter plus Total Organic Carbon (EP004)	
4	BH-MW03-4-5	soil	19/11/13	1 x Jar	TOTAL	9-2 Metals (As, Ba, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se) 17 Metals (As, Ba, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se) S-24 TRHCe- C40/BTEXN, PAH, Phenols VOC Target Scan PCB pH (1-s) Exchangeable Cations (ED007) PFOS/PFOA Asbestos (absence/presence) Particle String to 75µm (Sieve) Organic Matter plus Total Organic Carbon (EP004)	
5	BV-MW12-4-0	soil	19/11/13	1 x Jar	TOTAL	9-2 Metals (As, Ba, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se) 17 Metals (As, Ba, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se) S-24 TRHCe- C40/BTEXN, PAH, Phenols VOC Target Scan PCB pH (1-s) Exchangeable Cations (ED007) PFOS/PFOA Asbestos (absence/presence) Particle String to 75µm (Sieve) Organic Matter plus Total Organic Carbon (EP004)	

Environmental Division  
 Sydney  
 Work Order  
**ES1325882**



Telephone : +61-2-8784 8555

**Water Container Codes:** P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass; Unpreserved; AP = Airflight Unpreserved Plastic  
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airflight Sulfuric Preserved; VV = VOA Vial Sulfuric Preserved; VV = VOA Vial Sulfuric Preserved; VV = VOA Vial Sulfuric Preserved; VV = VOA Vial Sulfuric Preserved  
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ABS = Plastic Bag for Acid Sulfate Soils; B = Unpreserved Bag

## Jacob Waugh

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**From:** Barbara Hanna  
**Sent:** Friday, 29 November 2013 3:55 PM  
**To:** Jacob Waugh  
**Subject:** FW: ERM Symphony: labelling and additional analysis  
**Attachments:** image001.jpg

Hi Jacob,

Could you please arrange the following and I will arrange the sample ID changes.

Thanks!!!

Additionally:

ES1325573-011 (T01\_221113\_TH) – please forward to Envirolab for analysis

ES1325883-001 (BI\_MW03\_0.6) – analyse for Electrical Conductivity (paste)

ES1325882-001 (BH\_SB06\_1.6) – analyse for Electrical Conductivity (paste)

ES1325882-002 (BH\_MW04\_3.0) – analyse for Electrical Conductivity (paste)

ES1325882-003 (BH\_SB08\_3.0) – analyse for Electrical Conductivity (paste)

ES1325882-004 (BH\_MW03\_4.5) – analyse for Electrical Conductivity (paste)

ES1325879-002 (BI\_MW01\_3.0) – analyse for Electrical Conductivity (paste)

Kind Regards

## Barbara Hanna

**Client Services Manager**  
**ALS | Environmental Division**

277-289 Woodpark Road  
Smithfield NSW 2164 Australia

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*Please see our latest [EnviroMail 68 - Sampling and Analysis Implications of the new NEPM - July 2013](#)*

*[EnviroMail 69 - Testing Requirements of the new NEPM - July 2013](#)*

*[EnviroMail 70 - Variation of Naphthalene by SVOC and VOC Methods in Water - July 2013](#)*

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Reduction in Sample Volumes - Improving quality, safety, efficiency and sustainability in environmental practices



Please consider the environment before printing this email.

From: Kate Fox [mailto:Kate.Fox@erm.com]  
Sent: Friday, 29 November 2013 2:27 PM  
To: Barbara Hanna  
Cc: ERM Australia Project Symphony MacGen  
Subject: ERM Symphony: labelling and additional analysis

Hi Barbara,

A few more requests re: Symphony samples please!

Could the following be re-labelled:

Lab Sample ID	Current ID	Correct ID
ES1325579-001	LO_SB06_2.9-3.0	LO_SB06_3.0
ES1325579-002	LO_SB07_2.9-3.0	LO_SB07_3.0
ES1325579-003	LO_SB09_2.9-3.0	LO_SB09_3.0
ES1325579-004	LP_MW01_2.9-3.0	LP_MW01_3.0
ES1325579-005	LP_SB11_1.1-1.2	LP_SB11_1.2
ES1325579-006	LP_SB11_2.9-3.0	LP_SB11_3.0
ES1325579-007	LP_SB12_0.7-0.8	LP_SB12_0.8
ES1325579-008	LP_SB12_2.9-3.0	LP_SB12_3.0
ES1325579-009	LN_MW04_2.9-3.0	LN_MW04_3.0
ES1325572-001	BR_MW05_14 mbgs	BR_MW05_14.0
ES1325572-002	BR_MW05_31 mbgs	BR_MW05_31.0
ES1325572-003	TRIP BLANK_(10)	TB10_151113
ES1325572-004	TRIP SPIKE_WG(2)	TS2_151113
ES1325572-005	TSC	TSC_151113
ES1325880-001	BU_SB02_2.5	BV_SB02_2.5
ES1325880-009	TRIP BLANK 1	TB1_201113
ES1325880-010	TRIP BLANK 7	TB7_201113
ES1325573-001	TRIP BLANK	TB_221113
ES1325573-002	TRIP SPIKE	TS_221113
ES1325573-012	RINSATE_201113_NH	R01_201113_TH
ES1325573-013	RINSATE_211113_TH	R01_211113_TH
ES1325573-014	RINSATE_221113_TH	R01_221113_TH

Additionally:

ES1325573-011 (T01\_221113\_TH) – please forward to Envirolab for analysis

ES1325883-001 (BI\_MW03\_0.6) – analyse for Electrical Conductivity (paste)

ES1325882-001 (BH\_SB06\_1.6) – analyse for Electrical Conductivity (paste)

ES1325882-002 (BH\_MW04\_3.0) – analyse for Electrical Conductivity (paste)

ES1325882-003 (BH\_SB08\_3.0) – analyse for Electrical Conductivity (paste)

ES1325882-004 (BH\_MW03\_4.5) – analyse for Electrical Conductivity (paste)

ES1325879-002 (BI\_MW01\_3.0) – analyse for Electrical Conductivity (paste)

Many thanks,  
Kate



**Kate Fox**  
Environmental Resources Management  
Level 1, 60 Leichhardt Street  
Spring Hill, Brisbane, QLD, 4000

Switch: +61 7 3839 8393 | Direct : +61 7 3007 8439 | [www.erm.com](http://www.erm.com)

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## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

<b>Work Order</b>	<b>: ES1325882</b>		
<b>Client</b>	<b>: ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	<b>: Environmental Division Sydney</b>
<b>Contact Address</b>	<b>: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</b>	<b>Contact Address</b>	<b>: Barbara Hanna 277-289 Woodpark Road Smithfield NSW Australia 2164</b>
<b>E-mail</b>	<b>: joseph.ferring@erm.com</b>	<b>E-mail</b>	<b>: Barbara.Hanna@alsglobal.com</b>
<b>Telephone</b>	<b>: +61 02 8584 8888</b>	<b>Telephone</b>	<b>: +61 2 8784 8555</b>
<b>Facsimile</b>	<b>: +61 02 8584 8800</b>	<b>Facsimile</b>	<b>: +61 2 8784 8555</b>
<b>Project</b>	<b>: Project Symphony</b>	<b>Page</b>	<b>: 1 of 3</b>
<b>Order number</b>	<b>: 0224193</b>	<b>Quote number</b>	<b>: ES2013ENVRES0369 (SY/794/13)</b>
<b>C-O-C number</b>	<b>: ----</b>	<b>QC Level</b>	<b>: NEPM 2013 Schedule B(3) and ALS QCS3 requirement</b>
<b>Site</b>	<b>: BAYSWATER</b>		
<b>Sampler</b>	<b>: S.M</b>		

#### Dates

Date Samples Received	: 26-NOV-2013	Issue Date	: 29-NOV-2013 16:52
Client Requested Due Date	: 04-DEC-2013	Scheduled Reporting Date	: <b>04-DEC-2013</b>

#### Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.8°C - Ice present
No. of coolers/boxes	: 7 HARD	No. of samples received	: 5
Security Seal	: Intact.	No. of samples analysed	: 5

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample D01\_191113\_SM send to Envirolab**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



## Sample Container(s)/Preservation Non-Compliances

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

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

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - EA032 Electrical Conductivity (Saturated Paste)	SOIL - ED007 CEC / Exchangeable Cations (ED007) -All	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - NT-1S Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S Major Anions (Cl, SO4)	SOIL - S-27 TRH/BTEX/NP/AH/Phenols/8Metals
ES1325882-001	19-NOV-2013 15:00	BH_SB06_1.6	✓	✓	✓			✓	✓	✓
ES1325882-002	19-NOV-2013 15:00	BH_MW04_3.0	✓	✓	✓			✓	✓	✓
ES1325882-003	19-NOV-2013 15:00	BH_SB08_3.0	✓	✓	✓			✓	✓	✓
ES1325882-004	19-NOV-2013 15:00	BH_MW03_4.5	✓	✓	✓			✓	✓	✓
ES1325882-005	19-NOV-2013 15:00	BV_MW12_4.0				✓	✓			✓

## Proactive Holding Time Report

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





## Requested Deliverables

### JOHN EWING

- *AU Certificate of Analysis - NATA ( COA )	Email	john.ewing@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	john.ewing@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	john.ewing@erm.com
- A4 - AU Tax Invoice ( INV )	Email	john.ewing@erm.com
- Chain of Custody (CoC) ( COC )	Email	john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	john.ewing@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	john.ewing@erm.com
- EDI Format - XTab ( XTAB )	Email	john.ewing@erm.com

### MR JOSEPH FERRING

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTAB )	Email	joseph.ferring@erm.com

### SYMPHONY MACGEN

- *AU Certificate of Analysis - NATA ( COA )	Email	symphony.macgen@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	symphony.macgen@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	symphony.macgen@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	symphony.macgen@erm.com
- A4 - AU Tax Invoice ( INV )	Email	symphony.macgen@erm.com
- Chain of Custody (CoC) ( COC )	Email	symphony.macgen@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	symphony.macgen@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	symphony.macgen@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	symphony.macgen@erm.com
- EDI Format - XTab ( XTAB )	Email	symphony.macgen@erm.com

### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1325882</b>	Page	: 1 of 9
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193	Date Samples Received	: 26-NOV-2013
C-O-C number	: ----	Issue Date	: 04-DEC-2013
Sampler	: S.M	No. of samples received	: 5
Site	: BAYSWATER	No. of samples analysed	: 5
Quote number	: SY/794/13		

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



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Di-An Dao		Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BH_SB06_1.6	BH_MW04_3.0	BH_SB08_3.0	BH_MW03_4.5	BV_MW12_4.0
				19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325882-001	ES1325882-002	ES1325882-003	ES1325882-004	ES1325882-005
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	5.5	8.5	6.7	4.4	----
<b>EA032: Electrical Conductivity (saturated paste)</b>								
Electrical Conductivity (Saturated Paste)	----	1	µS/cm	2920	613	918	1300	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	17.4	20.0	22.0	14.5	21.5
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	24.1	22.2	4.8	5.4	----
Exchangeable Magnesium	----	0.1	meq/100g	4.7	6.9	10.4	4.3	----
Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.3	0.4	----
Exchangeable Sodium	----	0.1	meq/100g	1.1	1.5	3.2	1.9	----
Cation Exchange Capacity	----	0.1	meq/100g	30.1	30.8	18.7	12.0	----
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	<0.1	<0.1	----
<b>ED040S : Soluble Sulfate by ICPAES</b>								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	3740	230	220	1540	----
<b>ED045G: Chloride Discrete analyser</b>								
Chloride	16887-00-6	10	mg/kg	260	50	20	210	----
<b>ED093S: Soluble Major Cations</b>								
Calcium	7440-70-2	10	mg/kg	500	<10	<10	100	----
Magnesium	7439-95-4	10	mg/kg	160	<10	20	40	----
Sodium	7440-23-5	10	mg/kg	1170	470	130	690	----
Potassium	7440-09-7	10	mg/kg	40	10	60	40	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	23	7	6	7	13
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	23	25	28	24	12
Copper	7440-50-8	5	mg/kg	48	24	30	29	28
Lead	7439-92-1	5	mg/kg	42	14	19	24	27
Nickel	7440-02-0	2	mg/kg	18	27	18	19	18
Zinc	7440-66-6	5	mg/kg	75	82	64	69	77
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB06_1.6	BH_MW04_3.0	BH_SB08_3.0	BH_MW03_4.5	BV_MW12_4.0
				19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325882-001	ES1325882-002	ES1325882-003	ES1325882-004	ES1325882-005
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Styrene	100-42-5	0.5	mg/kg	----	----	----	----	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	----	----	----	----	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	----	----	----	----	<0.5
1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	----	----	----	----	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	----	----	----	----	<0.5
1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	----	----	----	----	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	----	----	----	----	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	----	----	----	----	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074B: Oxygenated Compounds</b>								
Vinyl Acetate	108-05-4	5	mg/kg	----	----	----	----	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	----	----	----	----	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	----	----	----	----	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	----	----	----	----	<5
<b>EP074C: Sulfonated Compounds</b>								
Carbon disulfide	75-15-0	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074D: Fumigants</b>								
2,2-Dichloropropane	594-20-7	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dichloropropane	78-87-5	0.5	mg/kg	----	----	----	----	<0.5
cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	----	----	----	----	<0.5
trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Dichlorodifluoromethane	75-71-8	5	mg/kg	----	----	----	----	<5
Chloromethane	74-87-3	5	mg/kg	----	----	----	----	<5
Vinyl chloride	75-01-4	5	mg/kg	----	----	----	----	<5
Bromomethane	74-83-9	5	mg/kg	----	----	----	----	<5
Chloroethane	75-00-3	5	mg/kg	----	----	----	----	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	----	----	----	----	<5
1,1-Dichloroethene	75-35-4	0.5	mg/kg	----	----	----	----	<0.5
Iodomethane	74-88-4	0.5	mg/kg	----	----	----	----	<0.5
trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	----	----	----	----	<0.5
1,1-Dichloroethane	75-34-3	0.5	mg/kg	----	----	----	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB06_1.6	BH_MW04_3.0	BH_SB08_3.0	BH_MW03_4.5	BV_MW12_4.0
				19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325882-001	ES1325882-002	ES1325882-003	ES1325882-004	ES1325882-005
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>								
cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	----	----	----	----	<0.5
1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	----	----	----	----	<0.5
1,1-Dichloropropylene	563-58-6	0.5	mg/kg	----	----	----	----	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dichloroethane	107-06-2	0.5	mg/kg	----	----	----	----	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	----	----	----	----	<0.5
Dibromomethane	74-95-3	0.5	mg/kg	----	----	----	----	<0.5
1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	----	----	----	----	<0.5
1,3-Dichloropropane	142-28-9	0.5	mg/kg	----	----	----	----	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	----	----	----	----	<0.5
1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	----	----	----	----	<0.5
trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	----	----	----	----	<0.5
cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	----	----	----	----	<0.5
1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	----	----	----	----	<0.5
1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	----	----	----	----	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	----	----	----	----	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074F: Halogenated Aromatic Compounds</b>								
Chlorobenzene	108-90-7	0.5	mg/kg	----	----	----	----	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	----	----	----	----	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	----	----	----	----	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	----	----	----	----	<0.5
1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	----	----	----	----	<0.5
1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	----	----	----	----	<0.5
1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	----	----	----	----	<0.5
1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	----	----	----	----	<0.5
1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	----	----	----	----	<0.5
<b>EP074G: Trihalomethanes</b>								
Chloroform	67-66-3	0.5	mg/kg	----	----	----	----	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	----	----	----	----	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	----	----	----	----	<0.5
Bromoform	75-25-2	0.5	mg/kg	----	----	----	----	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB06_1.6	BH_MW04_3.0	BH_SB08_3.0	BH_MW03_4.5	BV_MW12_4.0
				19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325882-001	ES1325882-002	ES1325882-003	ES1325882-004	ES1325882-005
<b>EP074H: Naphthalene</b>								
Naphthalene	91-20-3	5	mg/kg	----	----	----	----	<5
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB06_1.6	BH_MW04_3.0	BH_SB08_3.0	BH_MW03_4.5	BV_MW12_4.0
				19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325882-001	ES1325882-002	ES1325882-003	ES1325882-004	ES1325882-005
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	----	91.0
<b>EP074S: VOC Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	----	----	90.4
Toluene-D8	2037-26-5	0.1	%	----	----	----	----	94.4
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	----	----	90.8
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	84.9	90.6	91.9	89.2	88.8





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BH_SB06_1.6	BH_MW04_3.0	BH_SB08_3.0	BH_MW03_4.5	BV_MW12_4.0
				19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00	19-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1325882-001	ES1325882-002	ES1325882-003	ES1325882-004	ES1325882-005
<b>EP075(SIM)S: Phenolic Compound Surrogates - Continued</b>								
2-Chlorophenol-D4	93951-73-6	0.1	%	93.1	99.1	100	97.8	97.3
2,4,6-Tribromophenol	118-79-6	0.1	%	86.9	95.1	96.6	92.1	94.7
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	97.6	104	106	103	104
Anthracene-d10	1719-06-8	0.1	%	86.4	92.8	94.9	90.8	91.7
4-Terphenyl-d14	1718-51-0	0.1	%	86.7	90.2	91.8	91.1	89.2
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	97.7	97.8	93.8	93.1	91.0
Toluene-D8	2037-26-5	0.1	%	104	102	97.4	99.0	93.8
4-Bromofluorobenzene	460-00-4	0.1	%	105	102	89.7	100	93.5



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

## QUALITY CONTROL REPORT

Work Order	: <b>ES1325882</b>	Page	: 1 of 16
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 26-NOV-2013
C-O-C number	: ----	Issue Date	: 04-DEC-2013
Sampler	: S.M	No. of samples received	: 5
Order number	: 0224193	No. of samples analysed	: 5
Quote number	: SY/794/13		

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



## 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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

## Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Ashesh Patel	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Di-An Dao		Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3185860)</b>									
ES1325574-011	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.2	6.3	0.0	0% - 20%
ES1325738-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	7.2	7.2	0.0	0% - 20%
<b>EA032: Electrical Conductivity (saturated paste) (QC Lot: 3191306)</b>									
ES1325879-002	Anonymous	EA032: Electrical Conductivity (Saturated Paste)	----	1	µS/cm	1940	1940	0.4	0% - 20%
ES1326079-011	Anonymous	EA032: Electrical Conductivity (Saturated Paste)	----	1	µS/cm	468	471	0.6	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3189043)</b>									
ES1325880-007	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	20.7	20.6	0.7	0% - 20%
ES1325883-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	18.8	19.7	4.7	0% - 50%
<b>ED007: Exchangeable Cations (QC Lot: 3183542)</b>									
ES1325880-005	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	7.2	7.2	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.6	7.7	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	15.3	15.4	0.0	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1325882-003	BH_SB08_3.0	ED007: Exchangeable Calcium	----	0.1	meq/100g	4.8	4.7	2.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	10.4	10.2	1.8	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	3.2	3.0	4.5	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	18.7	18.2	2.6	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
<b>ED040S: Soluble Major Anions (QC Lot: 3185864)</b>									
ES1325882-002	BH_MW04_3.0	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	230	200	14.5	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 3185867)</b>									
ES1325784-001	Anonymous	ED045G: Chloride	16887-00-6	10	mg/kg	70	60	0.0	No Limit
ES1325883-001	Anonymous	ED045G: Chloride	16887-00-6	10	mg/kg	160	160	0.0	0% - 50%
<b>ED093S: Soluble Major Cations (QC Lot: 3185865)</b>									
ES1325784-004	Anonymous	ED093S: Calcium	7440-70-2	10	mg/kg	780	800	2.0	0% - 20%
		ED093S: Magnesium	7439-95-4	10	mg/kg	30	30	0.0	No Limit
		ED093S: Sodium	7440-23-5	10	mg/kg	300	290	0.0	0% - 20%
		ED093S: Potassium	7440-09-7	10	mg/kg	170	170	0.0	0% - 50%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3190210)</b>									
ES1325881-004	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	16	9.7	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	52	43	19.2	0% - 20%



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 (%)
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3190210) - continued</b>									
ES1325881-004	Anonymous	EG005T: Arsenic	7440-38-2	5	mg/kg	30	22	30.3	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	30	28	7.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	25	22	11.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	109	101	7.6	0% - 20%
ES1325883-005	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	9	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	22	27	22.5	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	23	22	8.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	15	0.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	88	84	4.7	0% - 50%		
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3190211)</b>									
ES1325881-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325883-005	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3185564)</b>									
ES1325879-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1325884-005	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3183201)</b>									
ES1325882-005	BV_MW12_4.0	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
<b>EP074B: Oxygenated Compounds (QC Lot: 3183201)</b>									
ES1325882-005	BV_MW12_4.0	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.0	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 3183201)</b>									
ES1325882-005	BV_MW12_4.0	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074D: Fumigants (QC Lot: 3183201)</b>									
ES1325882-005	BV_MW12_4.0	EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	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 (%)
<b>EP074D: Fumigants (QC Lot: 3183201) - continued</b>									
ES1325882-005	BV_MW12_4.0	EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 3183201)</b>									
ES1325882-005	BV_MW12_4.0	EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.0	No Limit
EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.0	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 3183201)</b>									
ES1325882-005	BV_MW12_4.0	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	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 (%)
<b>EP074G: Trihalomethanes (QC Lot: 3183201)</b>									
ES1325882-005	BV_MW12_4.0	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP074H: Naphthalene (QC Lot: 3183201)</b>									
ES1325882-005	BV_MW12_4.0	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3183195)</b>									
ES1325882-001	BH_SB06_1.6	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		ES1325885-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5
EP075(SIM): 2-Chlorophenol	95-57-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 3- & 4-Methylphenol	1319-77-3			1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM): Pentachlorophenol	87-86-5			2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3183195)</b>									
ES1325882-001	BH_SB06_1.6	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





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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3183195) - continued</b>									
ES1325882-001	BH_SB06_1.6	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1325885-001	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3183194)</b>									
ES1325882-001	BH_SB06_1.6	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
ES1325885-001	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
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3183200)</b>									
ES1325882-005	BV_MW12_4.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1325885-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	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 (%)
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183194)</b>									
ES1325882-001	BH_SB06_1.6	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
ES1325885-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3183200)</b>									
ES1325882-005	BV_MW12_4.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1325885-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3183200)</b>									
ES1325882-005	BV_MW12_4.0	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
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1325885-001	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	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA032: Electrical Conductivity (saturated paste) (QCLot: 3191306)</b>									
EA032: Electrical Conductivity (Saturated Paste)	----	1	µS/cm	<1	1412 µS/cm	100	96	104	
<b>ED007: Exchangeable Cations (QCLot: 3183542)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>ED040S: Soluble Major Anions (QCLot: 3185864)</b>									
ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	<10	150 mg/kg	98.3	84	112	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3185867)</b>									
ED045G: Chloride	16887-00-6	10	mg/kg	<10	5000 mg/kg	95.6	79	125	
<b>ED093S: Soluble Major Cations (QCLot: 3185865)</b>									
ED093S: Calcium	7440-70-2	10	mg/kg	<10	50 mg/kg	102	85	113	
ED093S: Magnesium	7439-95-4	10	mg/kg	<10	50 mg/kg	99.7	86	116	
ED093S: Sodium	7440-23-5	10	mg/kg	<10	50 mg/kg	104	80	112	
ED093S: Potassium	7440-09-7	10	mg/kg	<10	50 mg/kg	102	88	114	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190210)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	110	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	107	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	106	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	110	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	108	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	115	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	112	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3190211)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	76.5	66	112	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3185564)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	89.5	57.4	117	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3183201)</b>									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	102	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	111	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	118	63	129	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3183201) - continued</b>									
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	116	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	121	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	117	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	118	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	116	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	114	61	131	
<b>EP074B: Oxygenated Compounds (QCLot: 3183201)</b>									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	100	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	109	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	102	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	104	54	136	
		5	mg/kg	<5	----	----	----	----	
<b>EP074C: Sulfonated Compounds (QCLot: 3183201)</b>									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	92.2	54	126	
<b>EP074D: Fumigants (QCLot: 3183201)</b>									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	107	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	117	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	94.0	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	92.4	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	107	66	126	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183201)</b>									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	90.9	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	104	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	105	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	101	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	104	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	106	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	105	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	103	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	109	62	130	



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183201) - continued</b>									
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	112	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	109	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	102	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	103	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	92.5	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	115	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	118	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	101	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	119	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	115	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	113	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	99.2	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	107	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	106	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	97.2	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	116	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	90.8	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	89.9	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	125	48	136	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3183201)</b>									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	114	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	118	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	122	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	122	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	120	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	123	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	119	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	119	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	118	60	132	
<b>EP074G: Trihalomethanes (QCLot: 3183201)</b>									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	110	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	93.2	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	85.4	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	96.8	60	126	
<b>EP074H: Naphthalene (QCLot: 3183201)</b>									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	123	63	133	
		5	mg/kg	<5	----	----	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183195)</b>									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183195) - continued</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	99.0	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	101	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	104	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	106	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	88.6	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	90.9	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	98.7	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	102	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	93.9	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	94.4	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	96.9	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	16.8	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183195)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	102	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	112	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	111	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	113	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	113	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	111	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	113	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	113	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	104	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	106	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	99.0	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	112	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	102	76	122	
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	98.7	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	98.6	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	97.4	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183194)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	85.8	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	95.8	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	96.5	64	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183200)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	104	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183194)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	87.6	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	99.1	74	138	



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
Method: Compound	CAS Number	LOR	Unit		Result	Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183194) - continued</b>									
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	----
		50	mg/kg	----	150 mg/kg	84.2	63	131	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183200)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	106	68.4	128	
<b>EP080: BTEXN (QCLot: 3183200)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	99.1	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	105	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	105	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	102	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	102	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	101	62	138	

### 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				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%) Low High	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3185867)</b>							
ES1325784-001	Anonymous	ED045G: Chloride	16887-00-6	1250 mg/kg	98.1	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190210)</b>							
ES1325881-004	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	100	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	106	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	104	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	77.5	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	104	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3190211)</b>							
ES1325881-004	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	86.7	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3185564)</b>							
ES1325879-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	121	70	130
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183201)</b>							
ES1325882-005	BV_MW12_4.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	107	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	96.3	70	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3183201)</b>								
ES1325882-005	BV_MW12_4.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	108	70	130	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183195)</b>								
ES1325882-001	BH_SB06_1.6	EP075(SIM): Phenol	108-95-2	10 mg/kg	83.1	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	86.5	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	81.8	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	82.2	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	46.3	20	130	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183195)</b>								
ES1325882-001	BH_SB06_1.6	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.6	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	95.4	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183194)</b>								
ES1325882-001	BH_SB06_1.6	EP071: C10 - C14 Fraction	----	640 mg/kg	78.2	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.6	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	72.9	52	132	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183200)</b>								
ES1325882-005	BV_MW12_4.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.8	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183194)</b>								
ES1325882-001	BH_SB06_1.6	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	100	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	75.3	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	58.4	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183200)</b>								
ES1325882-005	BV_MW12_4.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	87.3	70	130	
<b>EP080: BTEXN (QCLot: 3183200)</b>								
ES1325882-005	BV_MW12_4.0	EP080: Benzene	71-43-2	2.5 mg/kg	79.8	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	86.5	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	84.4	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	86.2	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	86.7	70	130		

**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report**

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Spike	Spike Recovery (%)	Recovery Limits (%)	RPDs (%)





Sub-Matrix: SOIL

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
					MS	MSD	Low	High	Value	Control Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183194)</b>											
ES1325882-001	BH_SB06_1.6	EP071: C10 - C14 Fraction	----	640 mg/kg	78.2	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.6	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	72.9	----	52	132	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183194)</b>											
ES1325882-001	BH_SB06_1.6	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	100	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	75.3	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	58.4	----	52	132	----	----	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3183195)</b>											
ES1325882-001	BH_SB06_1.6	EP075(SIM): Phenol	108-95-2	10 mg/kg	83.1	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	86.5	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	81.8	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	82.2	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	46.3	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3183195)</b>											
ES1325882-001	BH_SB06_1.6	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	90.6	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	95.4	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3183200)</b>											
ES1325882-005	BV_MW12_4.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.8	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3183200)</b>											
ES1325882-005	BV_MW12_4.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	87.3	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3183200)</b>											
ES1325882-005	BV_MW12_4.0	EP080: Benzene	71-43-2	2.5 mg/kg	79.8	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	86.5	----	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	84.4	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	86.2	----	70	130	----	----	
	91-20-3	EP080: Naphthalene		2.5 mg/kg	86.7	----	70	130	----	----	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 3183201)</b>											
ES1325882-005	BV_MW12_4.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	107	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	96.3	----	70	130	----	----	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 3183201)</b>											
ES1325882-005	BV_MW12_4.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	108	----	70	130	----	----	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3185564)</b>											
ES1325879-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	121	----	70	130	----	----	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 3185867)</b>											
ES1325784-001	Anonymous	ED045G: Chloride	16887-00-6	1250 mg/kg	98.1	----	70	130	----	----	



Sub-Matrix: SOIL

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG005T: Total Metals by ICP-AES (QCLot: 3190210)</b>										
ES1325881-004	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	100	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	106	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	107	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	104	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	77.5	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	104	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3190211)</b>										
ES1325881-004	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	86.7	----	70	130	----	----

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1325882</b>	Page	: 1 of 10
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 26-NOV-2013
C-O-C number	: ----	Issue Date	: 04-DEC-2013
Sampler	: S.M	No. of samples received	: 5
Order number	: 0224193	No. of samples analysed	: 5
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA002 : pH (Soils)</b>							
<b>Soil Glass Jar - Unpreserved (EA002)</b> BH_SB06_1.6, BH_MW04_3.0, BH_SB08_3.0, BH_MW03_4.5	19-NOV-2013	29-NOV-2013	26-NOV-2013	*	29-NOV-2013	29-NOV-2013	✓
<b>EA032: Electrical Conductivity (saturated paste)</b>							
<b>Soil Glass Jar - Unpreserved (EA032)</b> BH_SB06_1.6, BH_MW04_3.0, BH_SB08_3.0, BH_MW03_4.5	19-NOV-2013	----	----	----	04-DEC-2013	18-MAY-2014	✓
<b>EA055: Moisture Content</b>							
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BH_SB06_1.6, BH_MW04_3.0, BH_SB08_3.0, BH_MW03_4.5, BV_MW12_4.0	19-NOV-2013	----	----	----	02-DEC-2013	03-DEC-2013	✓
<b>ED007: Exchangeable Cations</b>							
<b>Soil Glass Jar - Unpreserved (ED007)</b> BH_SB06_1.6, BH_MW04_3.0, BH_SB08_3.0, BH_MW03_4.5	19-NOV-2013	03-DEC-2013	17-DEC-2013	✓	03-DEC-2013	17-DEC-2013	✓
<b>ED040S : Soluble Sulfate by ICPAES</b>							
<b>Soil Glass Jar - Unpreserved (ED040S)</b> BH_SB06_1.6, BH_MW04_3.0, BH_SB08_3.0, BH_MW03_4.5	19-NOV-2013	29-NOV-2013	17-DEC-2013	✓	29-NOV-2013	27-DEC-2013	✓
<b>ED045G: Chloride Discrete analyser</b>							
<b>Soil Glass Jar - Unpreserved (ED045G)</b> BH_SB06_1.6, BH_MW04_3.0, BH_SB08_3.0, BH_MW03_4.5	19-NOV-2013	29-NOV-2013	17-DEC-2013	✓	29-NOV-2013	27-DEC-2013	✓
<b>ED093S: Soluble Major Cations</b>							
<b>Soil Glass Jar - Unpreserved (ED093S)</b> BH_SB06_1.6, BH_MW04_3.0, BH_SB08_3.0, BH_MW03_4.5	19-NOV-2013	29-NOV-2013	18-MAY-2014	✓	29-NOV-2013	18-MAY-2014	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG005T: Total Metals by ICP-AES</b>							
Soil Glass Jar - Unpreserved (EG005T) BH_SB06_1.6, BH_SB08_3.0, BV_MW12_4.0 BH_MW04_3.0, BH_MW03_4.5	19-NOV-2013	03-DEC-2013	18-MAY-2014	✓	03-DEC-2013	18-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
Soil Glass Jar - Unpreserved (EG035T) BH_SB06_1.6, BH_SB08_3.0, BV_MW12_4.0 BH_MW04_3.0, BH_MW03_4.5	19-NOV-2013	03-DEC-2013	17-DEC-2013	✓	03-DEC-2013	17-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>							
Soil Glass Jar - Unpreserved (EP066) BV_MW12_4.0	19-NOV-2013	02-DEC-2013	03-DEC-2013	✓	03-DEC-2013	11-JAN-2014	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Soil Glass Jar - Unpreserved (EP071) BH_SB06_1.6, BH_SB08_3.0, BV_MW12_4.0 BH_MW04_3.0, BH_MW03_4.5	19-NOV-2013	03-DEC-2013	03-DEC-2013	✓	03-DEC-2013	12-JAN-2014	✓
<b>EP074D: Fumigants</b>							
Soil Glass Jar - Unpreserved (EP074) BV_MW12_4.0	19-NOV-2013	29-NOV-2013	26-NOV-2013	*	02-DEC-2013	26-NOV-2013	*
<b>EP074E: Halogenated Aliphatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BV_MW12_4.0	19-NOV-2013	29-NOV-2013	26-NOV-2013	*	02-DEC-2013	26-NOV-2013	*
<b>EP074F: Halogenated Aromatic Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BV_MW12_4.0	19-NOV-2013	29-NOV-2013	26-NOV-2013	*	02-DEC-2013	26-NOV-2013	*
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
Soil Glass Jar - Unpreserved (EP074) BV_MW12_4.0	19-NOV-2013	29-NOV-2013	26-NOV-2013	*	02-DEC-2013	26-NOV-2013	*
<b>EP074H: Naphthalene</b>							
Soil Glass Jar - Unpreserved (EP074) BV_MW12_4.0	19-NOV-2013	29-NOV-2013	26-NOV-2013	*	02-DEC-2013	26-NOV-2013	*
<b>EP074B: Oxygenated Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BV_MW12_4.0	19-NOV-2013	29-NOV-2013	26-NOV-2013	*	02-DEC-2013	26-NOV-2013	*
<b>EP074C: Sulfonated Compounds</b>							
Soil Glass Jar - Unpreserved (EP074) BV_MW12_4.0	19-NOV-2013	29-NOV-2013	26-NOV-2013	*	02-DEC-2013	26-NOV-2013	*
<b>EP074G: Trihalomethanes</b>							
Soil Glass Jar - Unpreserved (EP074) BV_MW12_4.0	19-NOV-2013	29-NOV-2013	26-NOV-2013	*	02-DEC-2013	26-NOV-2013	*



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP075(SIM)A: Phenolic Compounds</b>							
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BH_SB06_1.6, BH_SB08_3.0, BV_MW12_4.0 BH_MW04_3.0, BH_MW03_4.5	19-NOV-2013	03-DEC-2013	03-DEC-2013	✓	03-DEC-2013	12-JAN-2014	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BH_SB06_1.6, BH_SB08_3.0, BV_MW12_4.0 BH_MW04_3.0, BH_MW03_4.5	19-NOV-2013	03-DEC-2013	03-DEC-2013	✓	03-DEC-2013	12-JAN-2014	✓
<b>EP080: BTEXN</b>							
<b>Soil Glass Jar - Unpreserved (EP080)</b> BH_SB06_1.6, BH_SB08_3.0, BV_MW12_4.0 BH_MW04_3.0, BH_MW03_4.5	19-NOV-2013	29-NOV-2013	03-DEC-2013	✓	02-DEC-2013	03-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
<b>Soil Glass Jar - Unpreserved (EP080)</b> BH_SB06_1.6, BH_SB08_3.0, BV_MW12_4.0 BH_MW04_3.0, BH_MW03_4.5	19-NOV-2013	29-NOV-2013	03-DEC-2013	✓	02-DEC-2013	03-DEC-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Cations - soluble by ICP-AES	ED093S	1	10	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	10	20.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (Saturated Paste)	EA032	2	11	18.2	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	2	13	15.4	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	7	14.3	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	19	10.5	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	14	14.3	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	15	13.3	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	6	16.7	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Cations - soluble by ICP-AES	ED093S	1	10	10.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	2	10	20.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (Saturated Paste)	EA032	1	11	9.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	7	14.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	15	6.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	6	16.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Cations - soluble by ICP-AES	ED093S	1	10	10.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Chloride Soluble By Discrete Analyser	ED045G	1	10	10.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Electrical Conductivity (Saturated Paste)	EA032	1	11	9.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	1	13	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Major Anions - Soluble	ED040S	1	7	14.3	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<i>Analytical Methods</i>							
<b>Method Blanks (MB) - Continued</b>							
Total Metals by ICP-AES	EG005T	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	6	16.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Chloride Soluble By Discrete Analyser	ED045G	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	6	16.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement





## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Electrical Conductivity (Saturated Paste)	EA032	SOIL	USEPA 600/2 - 78 - 054 - conductivity determined on a saturated paste.
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
Major Anions - Soluble	ED040S	SOIL	In-house. Soluble Anions are determined off a 1:5 soil / water extract by ICPAES.
Chloride Soluble By Discrete Analyser	ED045G	SOIL	APHA 21st edition 4500-Cl- E. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm. Analysis is performed on a 1:5 soil / water leachate.
Cations - soluble by ICP-AES	ED093S	SOIL	APHA 21st ed., 3120; USEPA SW 846 - 6010 (ICPAES) Water extracts of the soil are analyzed for major cations by ICPAES. 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 (2013) Schedule B(3)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) Schedule B(3) (Method 504)
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 (2013) Schedule B(3) (Method 506.1)
Volatile Organic Compounds	EP074	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 (2013) Schedule B(3) (Method 501)
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 (2013) Schedule B(3) (Method 502 and 507)



Analytical Methods	Method	Matrix	Method Descriptions
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 (2013) Schedule B(3) (Method 501)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH <sub>4</sub> Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) 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 A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na <sub>2</sub> SO <sub>4</sub> 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 <sub>2</sub> SO <sub>4</sub> 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.

Matrix: SOIL

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA002 : pH (Soils)</b>						
Soil Glass Jar - Unpreserved BH_SB06_1.6, BH_MW04_3.0, BH_SB08_3.0, BH_MW03_4.5	29-NOV-2013	26-NOV-2013	3	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>						
Soil Glass Jar - Unpreserved BV_MW12_4.0	29-NOV-2013	26-NOV-2013	3	02-DEC-2013	26-NOV-2013	6
<b>EP074B: Oxygenated Compounds</b>						
Soil Glass Jar - Unpreserved BV_MW12_4.0	29-NOV-2013	26-NOV-2013	3	02-DEC-2013	26-NOV-2013	6
<b>EP074C: Sulfonated Compounds</b>						
Soil Glass Jar - Unpreserved BV_MW12_4.0	29-NOV-2013	26-NOV-2013	3	02-DEC-2013	26-NOV-2013	6
<b>EP074D: Fumigants</b>						
Soil Glass Jar - Unpreserved BV_MW12_4.0	29-NOV-2013	26-NOV-2013	3	02-DEC-2013	26-NOV-2013	6
<b>EP074E: Halogenated Aliphatic Compounds</b>						
Soil Glass Jar - Unpreserved BV_MW12_4.0	29-NOV-2013	26-NOV-2013	3	02-DEC-2013	26-NOV-2013	6
<b>EP074F: Halogenated Aromatic Compounds</b>						



Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074F: Halogenated Aromatic Compounds - Analysis Holding Time Compliance</b>						
<b>Soil Glass Jar - Unpreserved</b> BV_MW12_4.0	29-NOV-2013	26-NOV-2013	3	02-DEC-2013	26-NOV-2013	6
<b>EP074G: Trihalomethanes</b>						
<b>Soil Glass Jar - Unpreserved</b> BV_MW12_4.0	29-NOV-2013	26-NOV-2013	3	02-DEC-2013	26-NOV-2013	6
<b>EP074H: Naphthalene</b>						
<b>Soil Glass Jar - Unpreserved</b> BV_MW12_4.0	29-NOV-2013	26-NOV-2013	3	02-DEC-2013	26-NOV-2013	6

### 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.**

## CERTIFICATE OF ANALYSIS

Work Order	: <b>ES1324590</b>	Page	: 1 of 15
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Order number	: 0224193	Date Samples Received	: 08-NOV-2013
C-O-C number	: ----	Issue Date	: 21-NOV-2013
Sampler	: AM	No. of samples received	: 17
Site	: LIDDELL	No. of samples analysed	: 15
Quote number	: SY/794/13		

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



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**
- **EP080: The TRIP SPIKE and TRIP SPIKE CONTROL have been analysed for volatile TPH and BTEX only. The TRIP SPIKE and TRIP SPIKE CONTROL were prepared in the lab using reagent grade sand spiked with petrol. The TRIP SPIKE was dispatched from the lab and the TRIP SPIKE CONTROL retained. The spike samples were extracted and analysed concurrently with samples reported in this batch.**



NATA Accredited Laboratory 825

Accredited for compliance with  
ISO/IEC 17025.

## Signatories

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

Signatories	Position	Accreditation Category
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Peter Rennie	Asbestos Identifier	Newcastle - Asbestos
Phalak Inthaksone	Laboratory Manager - Organics	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_MW01_0.1	BH_MW02_0.1	BH_MW02_0.5	BH_MW02_1.0	BH_MW03_0.3
				08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324590-001	ES1324590-002	ES1324590-003	ES1324590-004	ES1324590-005
<b>EA150: Particle Sizing</b>								
+75µm	----	1	%	65	----	44	----	----
+150µm	----	1	%	55	----	40	----	----
+300µm	----	1	%	40	----	39	----	----
+425µm	----	1	%	36	----	39	----	----
+600µm	----	1	%	33	----	38	----	----
+1180µm	----	1	%	29	----	36	----	----
+2.36mm	----	1	%	25	----	30	----	----
+4.75mm	----	1	%	21	----	22	----	----
+9.5mm	----	1	%	17	----	11	----	----
+19.0mm	----	1	%	<1	----	<1	----	----
+37.5mm	----	1	%	<1	----	<1	----	----
+75.0mm	----	1	%	<1	----	<1	----	----
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	7.2	----	7.2	4.1	6.2
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	12.0	----	17.1	19.9	10.3
<b>EA150: Soil Classification based on Particle Size</b>								
Fines (<75 µm)	----	1	%	35	----	56	----	----
Sand (>75 µm)	----	1	%	40	----	15	----	----
Gravel (>2mm)	----	1	%	25	----	30	----	----
Cobbles (>6cm)	----	1	%	<1	----	<1	----	----
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	----	----
Asbestos Type	1332-21-4	0.1	--	-	-	----	----	----
Sample weight (dry)	----	0.01	g	421	258	----	----	----
APPROVED IDENTIFIER:	----	-	--	P.RENNIE	P.RENNIE	----	----	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	11.7	----	55.6	7.9	3.4
Exchangeable Magnesium	----	0.1	meq/100g	1.7	----	3.8	2.3	1.0
Exchangeable Potassium	----	0.1	meq/100g	0.4	----	0.3	0.3	0.2
Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	0.3	0.2	<0.1
Cation Exchange Capacity	----	0.1	meq/100g	13.9	----	60.0	10.7	4.7
<b>EG005T: Total Metals by ICP-AES</b>								



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_MW01_0.1	BH_MW02_0.1	BH_MW02_0.5	BH_MW02_1.0	BH_MW03_0.3
				08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324590-001	ES1324590-002	ES1324590-003	ES1324590-004	ES1324590-005
<b>EG005T: Total Metals by ICP-AES - Continued</b>								
Arsenic	7440-38-2	5	mg/kg	7	----	18	19	<5
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	19	----	12	11	14
Copper	7440-50-8	5	mg/kg	31	----	27	27	8
Lead	7439-92-1	5	mg/kg	29	----	21	38	6
Nickel	7440-02-0	2	mg/kg	19	----	55	17	8
Zinc	7440-66-6	5	mg/kg	288	----	162	80	30
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	----	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<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
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_MW01_0.1	BH_MW02_0.1	BH_MW02_0.5	BH_MW02_1.0	BH_MW03_0.3
				08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324590-001	ES1324590-002	ES1324590-003	ES1324590-004	ES1324590-005
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<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
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<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
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	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	----	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	----	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<b>150</b>	----	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<b>150</b>	----	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_MW01_0.1	BH_MW02_0.1	BH_MW02_0.5	BH_MW02_1.0	BH_MW03_0.3
				08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324590-001	ES1324590-002	ES1324590-003	ES1324590-004	ES1324590-005
<b>EP080: BTEXN - Continued</b>								
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	<1	<1
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	82.8	----	80.6	87.0	89.6
2-Chlorophenol-D4	93951-73-6	0.1	%	87.6	----	88.3	93.9	98.1
2,4,6-Tribromophenol	118-79-6	0.1	%	74.7	----	68.7	76.7	75.4
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	86.5	----	84.4	89.8	91.0
Anthracene-d10	1719-06-8	0.1	%	82.1	----	79.7	86.6	85.4
4-Terphenyl-d14	1718-51-0	0.1	%	86.8	----	82.6	92.0	89.5
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	108	----	102	101	117
Toluene-D8	2037-26-5	0.1	%	96.5	----	103	94.2	103
4-Bromofluorobenzene	460-00-4	0.1	%	98.8	----	101	97.6	103



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB08_0.3	BH_SB08_0.5	BE_MW09_0.1	BE_MW03_0.1	DUP20131108_01
				08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324590-007	ES1324590-008	ES1324590-009	ES1324590-010	ES1324590-011
<b>EA002 : pH (Soils)</b>								
pH Value	----	0.1	pH Unit	----	6.8	----	----	----
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	----	16.4	8.2	11.5	10.8
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	----	----
Asbestos Type	1332-21-4	0.1	--	-	----	-	----	----
Sample weight (dry)	----	0.01	g	270	----	548	----	----
APPROVED IDENTIFIER:	----	-	--	P.RENNIE	----	P.RENNIE	----	----
<b>ED007: Exchangeable Cations</b>								
Exchangeable Calcium	----	0.1	meq/100g	----	7.1	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	----	5.9	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	----	0.3	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	----	0.3	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	----	13.6	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	----	12	9	6	8
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	16	12	9	20
Copper	7440-50-8	5	mg/kg	----	20	19	16	20
Lead	7439-92-1	5	mg/kg	----	20	22	13	18
Nickel	7440-02-0	2	mg/kg	----	15	16	12	21
Zinc	7440-66-6	5	mg/kg	----	79	193	64	131
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	0.1	<0.1
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB08_0.3	BH_SB08_0.5	BE_MW09_0.1	BE_MW03_0.1	DUP20131108_01
				08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324590-007	ES1324590-008	ES1324590-009	ES1324590-010	ES1324590-011
<b>EP075(SIM)A: Phenolic Compounds - Continued</b>								
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	----	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	<0.5	1.7	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	<0.5	1.8	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	<0.5	1.3	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	<0.5	0.8	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	<0.5	0.8	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	----	<0.5	<0.5	0.7	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<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
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<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
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	<0.5	7.1	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	0.6	0.6	0.7	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	1.2	1.2	1.3	1.2
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	----	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	----	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	----	<100	<100	120	<100
C29 - C36 Fraction	----	100	mg/kg	----	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	<50	<50	120	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	<10	<10	<10



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB08_0.3	BH_SB08_0.5	BE_MW09_0.1	BE_MW03_0.1	DUP20131108_01
				08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00	08-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324590-007	ES1324590-008	ES1324590-009	ES1324590-010	ES1324590-011
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued</b>								
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	----	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	----	<100	<100	<b>140</b>	<b>110</b>
>C34 - C40 Fraction	----	100	mg/kg	----	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	<50	<50	<b>140</b>	<b>110</b>
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	----	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	----	<1	<1	<1	<1
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	----	<b>88.1</b>	<b>83.5</b>	<b>88.0</b>	<b>84.2</b>
2-Chlorophenol-D4	93951-73-6	0.1	%	----	<b>95.4</b>	<b>86.8</b>	<b>92.8</b>	<b>90.2</b>
2,4,6-Tribromophenol	118-79-6	0.1	%	----	<b>75.5</b>	<b>71.9</b>	<b>68.8</b>	<b>75.3</b>
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	----	<b>91.9</b>	<b>84.5</b>	<b>91.3</b>	<b>88.3</b>
Anthracene-d10	1719-06-8	0.1	%	----	<b>85.5</b>	<b>79.0</b>	<b>79.1</b>	<b>83.4</b>
4-Terphenyl-d14	1718-51-0	0.1	%	----	<b>91.3</b>	<b>84.0</b>	<b>86.4</b>	<b>87.9</b>
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	<b>111</b>	<b>114</b>	<b>102</b>	<b>109</b>
Toluene-D8	2037-26-5	0.1	%	----	<b>95.5</b>	<b>98.3</b>	<b>86.1</b>	<b>88.4</b>
4-Bromofluorobenzene	460-00-4	0.1	%	----	<b>98.4</b>	<b>98.0</b>	<b>80.1</b>	<b>92.0</b>



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				DUP20131108_02	TRIP SPIKE 04	BLANK	TSC	----
				08-NOV-2013 15:00	05-NOV-2013 15:00	08-NOV-2013 15:00	05-NOV-2013 15:00	----
				ES1324590-012	ES1324590-014	ES1324590-015	ES1324590-016	----
Compound	CAS Number	LOR	Unit					
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	11.5	----	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	7	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	24	----	----	----	----
Copper	7440-50-8	5	mg/kg	21	----	----	----	----
Lead	7439-92-1	5	mg/kg	19	----	----	----	----
Nickel	7440-02-0	2	mg/kg	19	----	----	----	----
Zinc	7440-66-6	5	mg/kg	128	----	----	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	----	----	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	----	----	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	----	----	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	----	----	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	----	----	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	----	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	----	----	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				DUP20131108_02	TRIP SPIKE 04	BLANK	TSC	----
				08-NOV-2013 15:00	05-NOV-2013 15:00	08-NOV-2013 15:00	05-NOV-2013 15:00	----
Compound	CAS Number	LOR	Unit	ES1324590-012	ES1324590-014	ES1324590-015	ES1324590-016	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<b>54</b>	<10	<b>79</b>	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<b>130</b>	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<b>180</b>	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<b>310</b>	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<b>59</b>	<10	<b>84</b>	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<b>32</b>	<10	<b>50</b>	----
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<b>270</b>	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<b>100</b>	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<b>370</b>	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<b>0.6</b>	<0.2	<b>0.8</b>	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<b>14.7</b>	<0.5	<b>18.5</b>	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<b>1.5</b>	<0.5	<b>1.9</b>	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<b>7.5</b>	<0.5	<b>9.2</b>	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<b>3.2</b>	<0.5	<b>3.7</b>	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				DUP20131108_02	TRIP SPIKE 04	BLANK	TSC	----
				08-NOV-2013 15:00	05-NOV-2013 15:00	08-NOV-2013 15:00	05-NOV-2013 15:00	----
				ES1324590-012	ES1324590-014	ES1324590-015	ES1324590-016	----
Compound	CAS Number	LOR	Unit					
<b>EP080: BTEXN - Continued</b>								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	27.5	<0.2	34.1	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	10.7	<0.5	12.9	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	89.1	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	94.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	75.9	----	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	89.6	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	84.7	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	89.9	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	115	105	120	116	----
Toluene-D8	2037-26-5	0.1	%	101	91.8	114	98.1	----
4-Bromofluorobenzene	460-00-4	0.1	%	102	93.5	115	100	----





**Analytical Results**

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R20131108\_AM

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Client sampling date / time

08-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1324590-013	---	---	---	---
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**EG020T: Total Metals by ICP-MS**

Arsenic	7440-38-2	0.001	mg/L	<0.001	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	---	---	---	---
Chromium	7440-47-3	0.001	mg/L	<0.001	---	---	---	---
Copper	7440-50-8	0.001	mg/L	<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	---	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	---	---	---	---
Zinc	7440-66-6	0.005	mg/L	<0.005	---	---	---	---

**EG035T: Total Recoverable Mercury by FIMS**

Mercury	7439-97-6	0.0001	mg/L	<0.0001	---	---	---	---
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**EP080/071: Total Petroleum Hydrocarbons**

C6 - C9 Fraction	---	20	µg/L	<20	---	---	---	---
------------------	-----	----	------	-----	-----	-----	-----	-----

**EP080/071: Total Recoverable Hydrocarbons - NEPM 2013**

C6 - C10 Fraction	C6_C10	20	µg/L	<20	---	---	---	---
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	---	---	---	---

**EP080: BTEXN**

Benzene	71-43-2	1	µg/L	<1	---	---	---	---
Toluene	108-88-3	2	µg/L	<2	---	---	---	---
Ethylbenzene	100-41-4	2	µg/L	<2	---	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	---	---	---	---
ortho-Xylene	95-47-6	2	µg/L	<2	---	---	---	---
Total Xylenes	1330-20-7	2	µg/L	<2	---	---	---	---
Sum of BTEX	---	1	µg/L	<1	---	---	---	---
Naphthalene	91-20-3	5	µg/L	<5	---	---	---	---

**EP080S: TPH(V)/BTEX Surrogates**

1,2-Dichloroethane-D4	17060-07-0	0.1	%	84.5	---	---	---	---
Toluene-D8	2037-26-5	0.1	%	105	---	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	96.0	---	---	---	---



## Analytical Results

### Descriptive Results

Sub-Matrix: **SOIL**

<i>Method: Compound</i>	<i>Client sample ID - Client sampling date / time</i>	<i>Analytical Results</i>
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BH_MW01_0.1 - 08-NOV-2013 15:00	Dark brown soil with large quantity vegetation
EA200: Description	BH_MW02_0.1 - 08-NOV-2013 15:00	Brown soil with large quantity vegetation
EA200: Description	BH_SB08_0.3 - 08-NOV-2013 15:00	Light brown clay soil with some vegetation
EA200: Description	BE_MW09_0.1 - 08-NOV-2013 15:00	Mixture of light and dark brown soil with some vegetation



### Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1.2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

# Certificate of Analysis

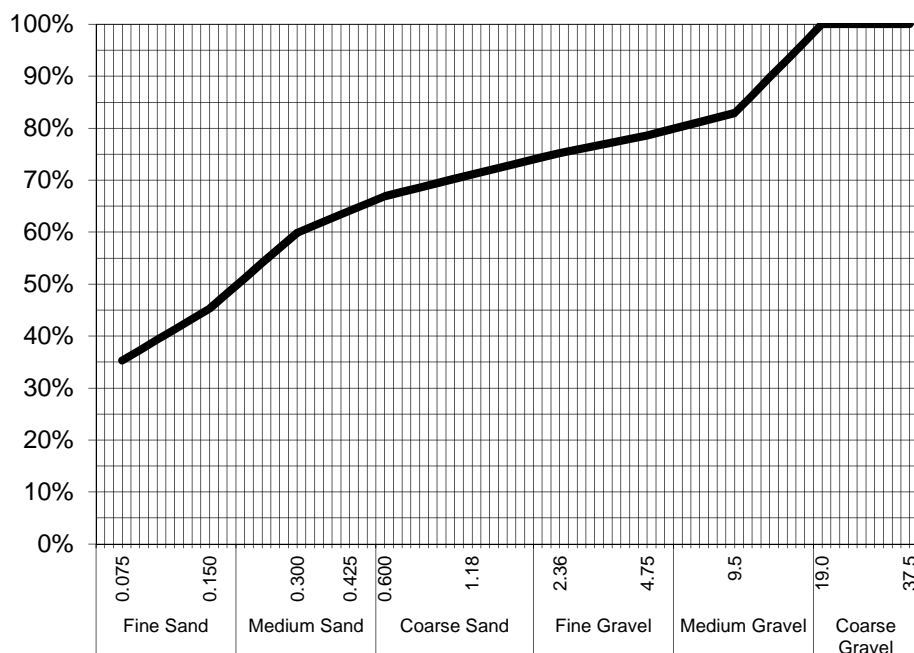
ALS Laboratory Group Pty Ltd  
 5 Rosegum Road  
 Warabrook, NSW 2304  
 pH 02 4968 9433  
 fax 02 4968 0349  
 samples.newcastle@alsenviro.com

**ALS Environmental**  
**Newcastle, NSW**



**CLIENT:** Joseph Ferring **DATE REPORTED:** 20-Nov-2013  
**COMPANY:** Enviro Resources Management **DATE RECEIVED:** 8-Nov-2013  
**ADDRESS:** Ground Floor **REPORT NO:** ES1324590-001 / PSD  
 33 Saunders Street, Pyrmont  
 NSW 2009  
**PROJECT:** Project Symphony **SAMPLE ID:** BH\_MW01\_0.1

## Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	83%
4.75	79%
2.36	75%
1.18	71%
0.600	67%
0.425	64%
0.300	60%
0.150	45%
0.075	35%

Samples analysed as received.

## Sample Comments:

**Analysed:** 15-Nov-13

**Loss on Pretreatment:** NA

**Limit of Reporting:** 1%

**Sample Description:** Sand, fines and gravel

**Test Method:** AS1289.3.6.1

**Hamish Murray**  
 Laboratory Supervisor, Newcastle  
**Authorised Signatory**

**NATA Accreditation: 825 Site: Newcastle**  
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# Certificate of Analysis

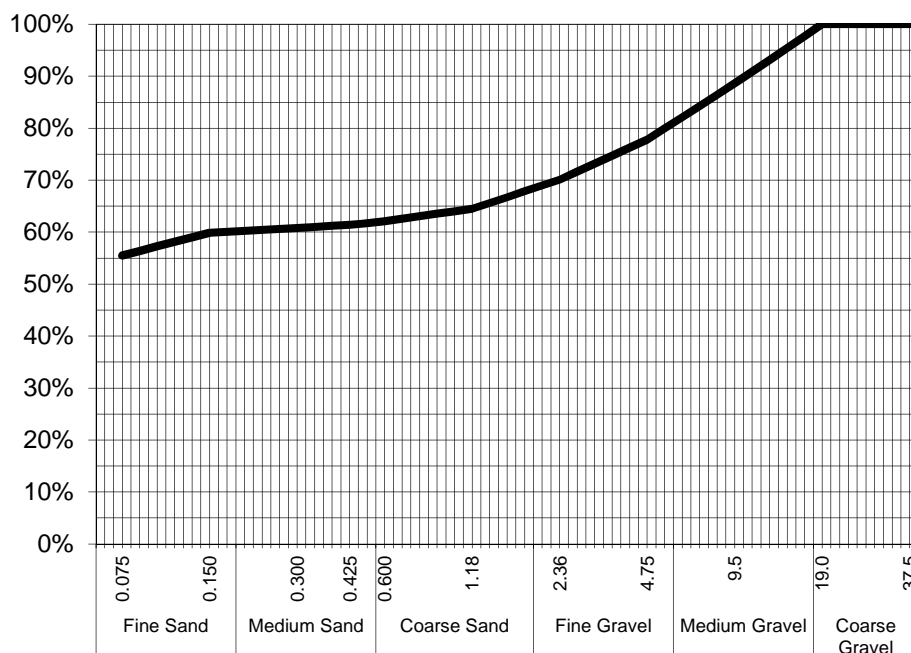
ALS Laboratory Group Pty Ltd  
 5 Rosegum Road  
 Warabrook, NSW 2304  
 pH 02 4968 9433  
 fax 02 4968 0349  
 samples.newcastle@alsenviro.com

**ALS Environmental**  
**Newcastle, NSW**



**CLIENT:** Joseph Ferring **DATE REPORTED:** 20-Nov-2013  
**COMPANY:** Enviro Resources Management **DATE RECEIVED:** 8-Nov-2013  
**ADDRESS:** Ground Floor **REPORT NO:** ES1324590-003 / PSD  
 33 Saunders Street, Pyrmont  
 NSW 2009  
**PROJECT:** Project Symphony **SAMPLE ID:** BH\_MW02\_0.5

## Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	89%
4.75	78%
2.36	70%
1.18	65%
0.600	62%
0.425	61%
0.300	61%
0.150	60%
0.075	56%

Samples analysed as received.

### Sample Comments:

**Loss on Pretreatment** NA

**Sample Description:** Fines, gravel and sand

**Test Method:** AS1289.3.6.1

**Analysed:** 15-Nov-13

**Limit of Reporting:** 1%

**NATA Accreditation: 825 Site: Newcastle**  
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**Hamish Murray**  
 Laboratory Supervisor, Newcastle  
**Authorised Signatory**

## QUALITY CONTROL REPORT

Work Order	: <b>ES1324590</b>	Page	: 1 of 14
Client	: <b>ENVIRO RESOURCES MANAGEMENT</b>	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: LIDDELL	Date Samples Received	: 08-NOV-2013
C-O-C number	: ---	Issue Date	: 21-NOV-2013
Sampler	: AM	No. of samples received	: 17
Order number	: 0224193	No. of samples analysed	: 15
Quote number	: SY/794/13		

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



## 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



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Laboratory 825

Accredited for  
compliance with  
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## 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	Senior Spectroscopist	Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Hoa Nguyen	Senior Inorganic Chemist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Peter Rennie	Asbestos Identifier	Newcastle - Asbestos
Phalak Inthaksone	Laboratory Manager - Organics	Sydney Organics
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics



## 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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA002 : pH (Soils) (QC Lot: 3159423)</b>									
ES1324506-018	Anonymous	EA002: pH Value	----	0.1	pH Unit	9.3	9.2	0.0	0% - 20%
ES1324590-001	BH_MW01_0.1	EA002: pH Value	----	0.1	pH Unit	7.2	7.2	0.0	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3159596)</b>									
ES1324542-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.6	12.9	2.9	0% - 50%
ES1324558-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	53.6	53.0	1.0	0% - 20%
<b>EA055: Moisture Content (QC Lot: 3159597)</b>									
ES1324590-009	BE_MW09_0.1	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	8.2	8.6	4.9	No Limit
ES1324649-008	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	5.5	5.3	4.2	No Limit
<b>ED007: Exchangeable Cations (QC Lot: 3161477)</b>									
ES1324436-001	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	5.5	5.4	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.1	0.1	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	5.9	5.9	0.0	0% - 20%
ES1324590-008	BH_SB08_0.5	ED007: Exchangeable Calcium	----	0.1	meq/100g	7.1	6.8	4.1	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	5.9	5.8	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.3	0.3	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	13.6	13.3	2.6	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3158839)</b>									
ES1324470-036	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	4	5	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	10	9	12.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	7	6	19.9	No Limit
ES1324590-001	BH_MW01_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	21	12.4	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	19	20	6.4	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	8	14.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	31	36	14.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	29	36	21.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	288	326	12.3	0% - 20%
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3158840)</b>									





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 (%)
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3158840) - continued</b>									
ES1324470-036	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1324590-001	BH_MW01_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3158392)</b>									
ES1324472-002	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
ES1324590-001	BH_MW01_0.1	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit		
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3158392)</b>									
ES1324472-002	Anonymous	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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3158392) - continued</b>									
ES1324472-002	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1324590-001	BH_MW01_0.1	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3157004)</b>									
ES1324508-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1324590-004	BH_MW02_1.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3158391)</b>									
ES1324472-002	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
ES1324590-001	BH_MW01_0.1	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
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3157004)</b>									
ES1324508-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1324590-004	BH_MW02_1.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3158391)</b>									



Sub-Matrix: <b>SOIL</b>				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3158391) - continued</b>										
ES1324472-002	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
ES1324590-001	BH_MW01_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	150	170	13.6	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3157004)</b>										
ES1324508-001	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							
			95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
ES1324590-004	BH_MW02_1.0	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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							
	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit			
	91-20-3	1	mg/kg	<1	<1	0.0	No Limit			
<b>Sub-Matrix: <b>WATER</b></b>										
Sub-Matrix: <b>WATER</b>				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EG020T: Total Metals by ICP-MS (QC Lot: 3160326)</b>										
ES1324238-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0004	0.0003	0.0	No Limit	
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit	
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.017	0.018	0.0	0% - 50%	
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.040	0.037	6.6	No Limit	
ES1324623-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	0.0	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.0	No Limit	
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.005	0.003	42.4	No Limit	
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.004	0.004	0.0	No Limit	
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.003	0.0	No Limit	
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.037	0.034	7.0	No Limit	
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3156050)</b>										
ES1324543-016	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	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 (%)
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3159644)</b>									
ES1324434-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES1324642-003	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	70	100	32.9	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3159644)</b>									
ES1324434-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES1324642-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	70	100	34.0	No Limit
<b>EP080: BTEXN (QC Lot: 3159644)</b>									
ES1324434-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES1324642-003	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<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

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>ED007: Exchangeable Cations (QCLot: 3161477)</b>									
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	----	----	----	----	
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3158839)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	109	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	104	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	108	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	108	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	104	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	114	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	107	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3158840)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	79.7	66	112	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3158392)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	91.4	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	87.4	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	101	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	98.5	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	79.8	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	83.8	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	80.4	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	82.4	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	85.9	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	73.2	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	70.2	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	19.5	3.9	57	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3158392)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	84.6	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	89.5	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	87.9	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	92.4	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	92.1	79	123	



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3158392) - continued</b>									
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	92.5	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	94.0	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	95.5	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	88.2	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	91.8	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	87.8	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	91.0	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	83.1	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	76.3	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	77.0	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	80.5	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3157004)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	104	68.4	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3158391)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	90.4	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	95.4	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	101	64	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3157004)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	106	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3158391)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	95.6	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	96.8	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	93.8	63	131	
<b>EP080: BTEXN (QCLot: 3157004)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	113	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	113	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	107	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	105	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	111	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	108	62	138	

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 3160326)</b>									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	94.6	79	121	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	82	114	



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 3160326) - continued</b>									
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.1	83	115	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	103	83	117	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	106	85	115	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.3	83	117	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.2	76	118	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3156050)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	102	77	115	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3159644)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	110	75	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3159644)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	113	75	127	
<b>EP080: BTEXN (QCLot: 3159644)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	98.3	70	124	
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	94.6	65	129	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	96.3	70	120	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	99.3	69	121	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	106	72	122	
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	97.8	70	124	

**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**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report				
				Spike Concentration	Spike Recovery(%)		Recovery Limits (%)	
					MS	Low	High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3158839)</b>								
ES1324470-036	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70	130	
		EG005T: Cadmium	7440-43-9	50 mg/kg	105	70	130	
		EG005T: Chromium	7440-47-3	50 mg/kg	106	70	130	
		EG005T: Copper	7440-50-8	125 mg/kg	100	70	130	
		EG005T: Lead	7439-92-1	125 mg/kg	108	70	130	
		EG005T: Nickel	7440-02-0	50 mg/kg	108	70	130	
		EG005T: Zinc	7440-66-6	125 mg/kg	101	70	130	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3158840)</b>								
ES1324470-036	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	93.0	70	130	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3158392)</b>								



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3158392) - continued</b>								
ES1324472-002	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	77.6	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	79.4	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	67.9	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	77.9	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	48.5	20	130	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3158392)</b>								
ES1324472-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	76.4	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	82.8	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3157004)</b>								
ES1324508-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	120	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3158391)</b>								
ES1324472-002	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	75.7	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	77.1	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	69.8	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3157004)</b>								
ES1324508-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	114	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3158391)</b>								
ES1324472-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	94.2	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	72.3	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	56.2	52	132	
<b>EP080: BTEXN (QCLot: 3157004)</b>								
ES1324508-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	112	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	106	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	106	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	104	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	106	70	130	
EP080: Naphthalene	91-20-3	2.5 mg/kg	93.6	70	130			

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 3160326)</b>							
ES1324456-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	109	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	105	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	107	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	116	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	114	70	130





Sub-Matrix: **WATER**

				Matrix Spike (MS) Report				
				Spike	Spike Recovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 3160326) - continued</b>								
ES1324456-001	Anonymous	EG020A-T: Nickel	7440-02-0	1 mg/L	104	70	130	
		EG020A-T: Zinc	7440-66-6	1 mg/L	110	70	130	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3156050)</b>								
ES1324543-017	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	80.5	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3159644)</b>								
ES1324434-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	116	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3159644)</b>								
ES1324434-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	70	130	
<b>EP080: BTEXN (QCLot: 3159644)</b>								
ES1324434-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	101	70	130	
		EP080: Toluene	108-88-3	25 µg/L	96.4	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	93.2	70	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	96.1	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.8	70	130	
	EP080: Naphthalene	91-20-3	25 µg/L	101	70	130		

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3157004)</b>											
ES1324508-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	120	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3157004)</b>											
ES1324508-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	114	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3157004)</b>											
ES1324508-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	112	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	106	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	106	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	104	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	106	----	70	130	----	----	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	93.6	----	70	130	----	----		
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3158391)</b>											



Sub-Matrix: **SOIL**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3158391) - continued</b>										
ES1324472-002	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	75.7	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	77.1	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	69.8	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3158391)</b>										
ES1324472-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	94.2	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	72.3	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	56.2	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3158392)</b>										
ES1324472-002	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	77.6	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	79.4	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	67.9	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	77.9	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	48.5	----	20	130	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3158392)</b>										
ES1324472-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	76.4	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	82.8	----	70	130	----	----
<b>EG005T: Total Metals by ICP-AES (QCLot: 3158839)</b>										
ES1324470-036	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	105	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	106	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	100	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	108	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	108	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	101	----	70	130	----	----
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3158840)</b>										
ES1324470-036	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	93.0	----	70	130	----	----

Sub-Matrix: **WATER**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3156050)</b>										
ES1324543-017	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	80.5	----	70	130	----	----
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3159644)</b>										
ES1324434-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	116	----	70	130	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3159644)</b>										
ES1324434-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	----	70	130	----	----
<b>EP080: BTEXN (QCLot: 3159644)</b>										
ES1324434-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	101	----	70	130	----	----



Sub-Matrix: **WATER**

					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
					MS	MSD	Low	High	Value	Control Limit	
<b>EP080: BTEXN (QCLot: 3159644) - continued</b>											
ES1324434-001	Anonymous	EP080: Toluene	108-88-3	25 µg/L	96.4	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	25 µg/L	93.2	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	96.1	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.8	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	25 µg/L	101	----	70	130	----	----	
<b>EG020T: Total Metals by ICP-MS (QCLot: 3160326)</b>											
ES1324456-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	109	----	70	130	----	----	
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	105	----	70	130	----	----	
		EG020A-T: Chromium	7440-47-3	1 mg/L	107	----	70	130	----	----	
		EG020A-T: Copper	7440-50-8	1 mg/L	116	----	70	130	----	----	
		EG020A-T: Lead	7439-92-1	1 mg/L	114	----	70	130	----	----	
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	----	70	130	----	----	
		EG020A-T: Zinc	7440-66-6	1 mg/L	110	----	70	130	----	----	

## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1324590</b>	Page	: 1 of 9
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: Project Symphony	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: LIDDELL	Date Samples Received	: 08-NOV-2013
C-O-C number	: ----	Issue Date	: 21-NOV-2013
Sampler	: AM	No. of samples received	: 17
Order number	: 0224193	No. of samples analysed	: 15
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA002 : pH (Soils)</b>							
<b>Snap Lock Bag (EA002)</b> BH_MW03_0.3	08-NOV-2013	15-NOV-2013	15-NOV-2013	✓	15-NOV-2013	16-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EA002)</b> BH_MW01_0.1, BH_MW02_1.0, BH_MW02_0.5, BH_SB08_0.5	08-NOV-2013	15-NOV-2013	15-NOV-2013	✓	15-NOV-2013	16-NOV-2013	✓
<b>EA055: Moisture Content</b>							
<b>Snap Lock Bag (EA055-103)</b> BH_MW03_0.3	08-NOV-2013	----	----	----	15-NOV-2013	22-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BH_MW01_0.1, BH_MW02_1.0, BE_MW09_0.1, DUP20131108_01, BH_MW02_0.5, BH_SB08_0.5, BE_MW03_0.1, DUP20131108_02	08-NOV-2013	----	----	----	15-NOV-2013	22-NOV-2013	✓
<b>EA150: Particle Sizing</b>							
<b>Snap Lock Bag (EA150)</b> BH_MW01_0.1, BH_MW02_0.5	08-NOV-2013	---	07-MAY-2014	----	18-NOV-2013	14-MAY-2014	✓
<b>EA150: Soil Classification based on Particle Size</b>							
<b>Snap Lock Bag (EA150)</b> BH_MW01_0.1, BH_MW02_0.5	08-NOV-2013	---	07-MAY-2014	----	18-NOV-2013	14-MAY-2014	✓
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>							
<b>Snap Lock Bag (EA200)</b> BH_MW01_0.1, BE_MW09_0.1, BH_SB08_0.3,	08-NOV-2013	---	07-MAY-2014	----	19-NOV-2013	18-MAY-2014	✓
<b>Soil Glass Jar - Unpreserved (EA200)</b> BH_MW02_0.1	08-NOV-2013	---	07-MAY-2014	----	19-NOV-2013	18-MAY-2014	✓
<b>ED007: Exchangeable Cations</b>							
<b>Snap Lock Bag (ED007)</b> BH_MW03_0.3	08-NOV-2013	15-NOV-2013	06-DEC-2013	✓	19-NOV-2013	06-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (ED007)</b> BH_MW01_0.1, BH_MW02_1.0, BH_MW02_0.5, BH_SB08_0.5	08-NOV-2013	15-NOV-2013	06-DEC-2013	✓	19-NOV-2013	06-DEC-2013	✓



Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG005T: Total Metals by ICP-AES</b>							
<b>Snap Lock Bag (EG005T)</b> BH_MW03_0.3	08-NOV-2013	14-NOV-2013	07-MAY-2014	✓	15-NOV-2013	07-MAY-2014	✓
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BH_MW01_0.1, BH_MW02_1.0, BE_MW09_0.1, DUP20131108_01, BH_MW02_0.5, BH_SB08_0.5, BE_MW03_0.1, DUP20131108_02	08-NOV-2013	14-NOV-2013	07-MAY-2014	✓	15-NOV-2013	07-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
<b>Snap Lock Bag (EG035T)</b> BH_MW03_0.3	08-NOV-2013	14-NOV-2013	06-DEC-2013	✓	15-NOV-2013	06-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BH_MW01_0.1, BH_MW02_1.0, BE_MW09_0.1, DUP20131108_01, BH_MW02_0.5, BH_SB08_0.5, BE_MW03_0.1, DUP20131108_02	08-NOV-2013	14-NOV-2013	06-DEC-2013	✓	15-NOV-2013	06-DEC-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
<b>Snap Lock Bag (EP071)</b> BH_MW03_0.3	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	15-NOV-2013	24-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP071)</b> BH_MW01_0.1, BH_MW02_1.0, BE_MW09_0.1, DUP20131108_01, BH_MW02_0.5, BH_SB08_0.5, BE_MW03_0.1, DUP20131108_02	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	15-NOV-2013	24-DEC-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
<b>Snap Lock Bag (EP075(SIM))</b> BH_MW03_0.3	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	15-NOV-2013	24-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BH_MW01_0.1, BH_MW02_1.0, BE_MW09_0.1, DUP20131108_01, BH_MW02_0.5, BH_SB08_0.5, BE_MW03_0.1, DUP20131108_02	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	15-NOV-2013	24-DEC-2013	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
<b>Snap Lock Bag (EP075(SIM))</b> BH_MW03_0.3	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	15-NOV-2013	24-DEC-2013	✓
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BH_MW01_0.1, BH_MW02_1.0, BE_MW09_0.1, DUP20131108_01, BH_MW02_0.5, BH_SB08_0.5, BE_MW03_0.1, DUP20131108_02	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	15-NOV-2013	24-DEC-2013	✓



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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Snap Lock Bag (EP080)</b> BH_MW03_0.3	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	18-NOV-2013	22-NOV-2013	✓	
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPIKE 04,	TSC	05-NOV-2013	14-NOV-2013	19-NOV-2013	✓	18-NOV-2013	19-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BH_MW01_0.1, BH_MW02_1.0, BE_MW09_0.1, DUP20131108_01, BLANK	BH_MW02_0.5, BH_SB08_0.5, BE_MW03_0.1, DUP20131108_02,	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	18-NOV-2013	22-NOV-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
<b>Snap Lock Bag (EP080)</b> BH_MW03_0.3	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	18-NOV-2013	22-NOV-2013	✓	
<b>Soil Glass Jar - Unpreserved (EP080)</b> TRIP SPIKE 04,	TSC	05-NOV-2013	14-NOV-2013	19-NOV-2013	✓	18-NOV-2013	19-NOV-2013	✓
<b>Soil Glass Jar - Unpreserved (EP080)</b> BH_MW01_0.1, BH_MW02_1.0, BE_MW09_0.1, DUP20131108_01, BLANK	BH_MW02_0.5, BH_SB08_0.5, BE_MW03_0.1, DUP20131108_02,	08-NOV-2013	14-NOV-2013	22-NOV-2013	✓	18-NOV-2013	22-NOV-2013	✓

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG020T: Total Metals by ICP-MS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> R20131108_AM	08-NOV-2013	15-NOV-2013	07-MAY-2014	✓	15-NOV-2013	07-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> R20131108_AM	08-NOV-2013	----	----	----	13-NOV-2013	06-DEC-2013	✓
<b>EP080: BTEXN</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> R20131108_AM	08-NOV-2013	15-NOV-2013	22-NOV-2013	✓	15-NOV-2013	22-NOV-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> R20131108_AM	08-NOV-2013	15-NOV-2013	22-NOV-2013	✓	15-NOV-2013	22-NOV-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Exchangeable Cations	ED007	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	4	39	10.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	16	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	16	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
Exchangeable Cations	ED007	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Exchangeable Cations	ED007	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Duplicates (DUP)</b>							
Total Mercury by FIMS	EG035T	1	9	11.1	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	2	16	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement





Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS)</b>							
Total Mercury by FIMS	EG035T	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Total Mercury by FIMS	EG035T	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Total Mercury by FIMS	EG035T	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	16	6.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Particle Size Analysis (Sieving)	EA150	SOIL	Particle Size Analysis by Sieving according to AS1289.3.6.1 - 2009
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Exchangeable Cations	ED007	SOIL	Rayment & Lyons (2011) Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM (2013) Schedule B(3) (Method 301)
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) 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 (2013) 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 (2013) Schedule B(3) (Method 501)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)



Analytical Methods	Method	Matrix	Method Descriptions
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH4Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
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 (2013) 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, 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.
Digestion for Total Recoverable Metals	EN25	WATER	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 (2013) Schedule B(3) (Appdx. 2)



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## 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.
-

ES1324722

**CHAIN OF CUSTODY**  
ALS Laboratory  
Please tick →

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UNIPACK 754, Newmarket Road, Sydney, NSW 1585  
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UNIPACK 754, Newmarket Road, Sydney, NSW 1585  
Ph: 02 959 5100 E: [enquiries@unipack.com.au](mailto:enquiries@unipack.com.au)

CLIENT: **ERM**  
PROJECT: **Sydney**  
ORDER NUMBER: **0224193**  
PROJECT MANAGER: **Joe Perry**  
SAMPLER: **A. Marcus**  
CONTACT PH: **02 959 5100**  
SAMPLER MOBILE: **0437161414**  
EDD FORMAT (or default): **ASBESTOS**

TURNAROUND REQUIREMENTS:  
(Standard TAT may be longer for some tests e.g. Ultra Trace Elements)  
ALS QUOTE NO.: **SY79413**  
SITE: **BAYSWATER DOCKET**

RELINQUISHED BY: **John Perry**  
DATE/TIME: **14/11/13 1055**  
RECEIVED BY: **REN**  
DATE/TIME: **14/11/13 1700**

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:  
**Asbestos @ EN.**

FOR LABORATORY USE ONLY (Circle)  
Substudy Seal broken? Yes No **NA**  
Free Ice / Accurate Temperature upon receipt? **NA**  
Random Sample Temperature on Receipt: °C

RELINQUISHED BY: **REN**  
DATE/TIME: **14/11/13 1700**  
RECEIVED BY: **REN**  
DATE/TIME: **14/11/13 1920**

COC SEQUENCE NUMBER (Circle)  
COC: **0** 2 3 4 5 6 7  
OF: **1** 2 3 4 5 6 7

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below	CONTAINER INFORMATION (refer to TOTAL)	ANALYSIS REQUIRED INCLUDING SUITES (NB. Scale Codes must be listed to extract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).										Additional Information	
						17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Tl, Se)	S-24 TRHC6-C40/BTEXN, PAH	Phenols	PCB	Exchangeable cations (ED07)	PFOS/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Stev)	Organic Matter plus Total Organic Carbon (EP04)	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.		
1	BV-MW07-0.5	11-11-13	SOIL	1x Jar + 1x Bag	2	X	X	X	X	X	X	X	X	X	X		
2	BV-MW02-0.1			1x Jar + 1x Bag	2	X	X	X	X	X	X	X	X	X	X		
13	BV-MW02-0.5			1x Jar	1	X	X	X	X	X	X	X	X	X	X		
3	BV-SB04-0.1			1x Jar 1x Bag	2	X	X	X	X	X	X	X	X	X	X		
4	BV-MW03-0.3			1x Jar 1x Bag	2	X	X	X	X	X	X	X	X	X	X		
14	BV-MW03-1.0			1x Jar	1	X	X	X	X	X	X	X	X	X	X		
5	BV-MW05-0.2			1x Jar 1x Bag	2	X	X	X	X	X	X	X	X	X	X		
15	BV-MW06-0.1			1x Jar	1	X	X	X	X	X	X	X	X	X	X		
6	BV-MW06-0.5			1x Jar + 1x Bag	2	X	X	X	X	X	X	X	X	X	X		
7	BV-MW04-0.5			1x Jar + 1x Bag	2	X	X	X	X	X	X	X	X	X	X		
8	DUP 20131111-AM01			1x Jar	1	X	X	X	X	X	X	X	X	X	X		
XTRIP 20131111-AM01						19	8+1	8+1	0	0	0	0	0	0	0	7	Forward to EnviroLab

Water Container codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SFI = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved; Amber Glass; H5 = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Stoichiometric; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.



### CHAIN OF CUSTODY

ENGLADE 21 Burnt Road Prospect SA 5095  
Ph: 08 8350 8882 E: [enlade@als.com.au](mailto:enlade@als.com.au)

GERBINE 337 Shaw Street Adelaide SA 5000  
Ph: 08 8350 7222 E: [gerbine@als.com.au](mailto:gerbine@als.com.au)

ALS Laboratory:  
please tick →

ALMENA 71 Macdonald Road Fishery QLD 4740  
Ph: 07 4644 0177 E: [almena@als.com.au](mailto:almena@als.com.au)

UNELBOURNE 7-11 Westwood Springs VIC 3171  
Ph: 03 8510 0060 E: [unelbo@als.com.au](mailto:unelbo@als.com.au)

JINDRICE 27 Sydney Road Manager NSW 2850  
Ph: 02 7471 5556 E: [jindr@als.com.au](mailto:jindr@als.com.au)

JUNEWCASTLE 5 Ross Court Westwood NSW 2204  
Ph: 02 2903 9433 E: [junew@als.com.au](mailto:junew@als.com.au)

JINDYRA 419 Centre Place North Haven NSW 7511  
Ph: 02 4242 2003 E: [jindy@als.com.au](mailto:jindy@als.com.au)

JUPERTH 10 Had Way Malaga WA 6060  
Ph: 08 9209 1055 E: [jupert@als.com.au](mailto:jupert@als.com.au)

DISVONEY 77-285 Woodpark Road Smithfield NSW 2114  
Ph: 02 8761 8555 E: [disvone@als.com.au](mailto:disvone@als.com.au)

STONINGVILLE 1-1-8 Deane Court Dore QLD 4018  
Ph: 07 4799 0500 E: [stoning@als.com.au](mailto:stoning@als.com.au)

UNCOLONGONG 25 Kenny Street Wodonga NSW 2460  
Ph: 02 3223 3155 E: [uncol@als.com.au](mailto:uncol@als.com.au)

CLIENT: ERM

OFFICE: Sydney

PROJECT: Project Symphony

ORDER NUMBER: 0224193

PROJECT MANAGER: Joe Rynj

SAMPLER: A. Morris / U. Campbell

COC emailed to ALS? (YES / NO)

Email reports to (will default to PM if no other addresses are listed):

Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

---

TURNAROUND REQUIREMENTS:  Standard TAT (List due date):

(Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

ALS QUOTE NO.: SV784113

SITE: BAYSWATER / DOWELL

CONTACT PH: \_\_\_\_\_

EDD FORMAT (or default): \_\_\_\_\_

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FOR LABORATORY USE ONLY (Circled)

Custody Seal Intact?  No  NA

Free Ice / frozen Ice bricks present upon receipt?  No  NA

Random Sample Temperature on Receipt: \_\_\_\_\_ °C

Other comment: APR

RECEIVED BY: REMOVED

DATE/TIME: 14/11/13 1800

RELINQUISHED BY: REMOVED

DATE/TIME: 14/11/13 1800

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	CONTAINER INFORMATION		ANALYSIS REQUIRED INCLUDING SUITES (NB. Suite Codes must be listed to attract suite price)													Additional Information					
				TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS (refer to)	Where Metals are required, specify Total (unfiltered bottles required) or Dissolved (acid filtered) (note required).																		
9	R2013111-AM	11/11/13	Water			As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	X	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Ni, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	X	S-24 TRHCs-COYBTEXN, PAH, Phenols	X	VOC Target Scan		Exchangeable cations (ED07)		PFOS/PFOA		Asbestos (absence/presence)		Particle Sizing to Tyfun (Sieve)		Organic Matter plus Carbon (EP04)		Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
10	Trip Spike (TSC)		S																					
11	Trip Blank		S																					
16	2V-5801-0.05																							
17	6V-5801-1.0																							
18	8V-5801-1.5																							
19	TSC 6-6/11/13																							

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Fertilizide Preserved Glass;

Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

<b>Work Order</b> : <b>ES1324722</b>	
<b>Client</b> : <b>ENVIRO RESOURCES MANAGEMENT</b> <b>Contact</b> : MR JOSEPH FERRING <b>Address</b> : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Laboratory</b> : Environmental Division Sydney  <b>Contact</b> : Barbara Hanna <b>Address</b> : 277-289 Woodpark Road Smithfield NSW Australia 2164  <b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800  <b>Project</b> : PROJECT SYMPHONY <b>Order number</b> : 0224193 <b>C-O-C number</b> : ---- <b>Site</b> : ---- <b>Sampler</b> : AM
<b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800  <b>Project</b> : PROJECT SYMPHONY <b>Order number</b> : 0224193 <b>C-O-C number</b> : ---- <b>Site</b> : ---- <b>Sampler</b> : AM	<b>E-mail</b> : Barbara.Hanna@alsglobal.com <b>Telephone</b> : +61 2 8784 8555 <b>Facsimile</b> : +61 2 8784 8555  <b>Page</b> : 1 of 3  <b>Quote number</b> : ES2013ENVRES0369 (SY/794/13)  <b>QC Level</b> : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

#### Dates

<b>Date Samples Received</b> : 14-NOV-2013 <b>Client Requested Due Date</b> : 21-NOV-2013	<b>Issue Date</b> : 15-NOV-2013 11:19 <b>Scheduled Reporting Date</b> : <b>21-NOV-2013</b>
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#### Delivery Details

<b>Mode of Delivery</b> : Carrier <b>No. of coolers/boxes</b> : 1 HARD <b>Security Seal</b> : Intact.	<b>Temperature</b> : 4.8' C - Ice present <b>No. of samples received</b> : 19 <b>No. of samples analysed</b> : 13
---	---

#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Sample TRIP201311 11\_AM01 will be forwarded to Envirolab as per COC.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.



### Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exist.

### Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA200 Asbestos Identification in Soils	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1324722-001	11-NOV-2013 15:00	BV_MW09_0.5		✓			✓
ES1324722-002	11-NOV-2013 15:00	BV_MW02_0.1		✓	✓		✓
ES1324722-003	11-NOV-2013 15:00	BV_SB04_0.1		✓			✓
ES1324722-004	11-NOV-2013 15:00	BV_MW03_0.3		✓			✓
ES1324722-005	11-NOV-2013 15:00	BV_MW05_0.2		✓	✓		✓
ES1324722-006	11-NOV-2013 15:00	BV_MW06_0.5		✓	✓		✓
ES1324722-007	11-NOV-2013 15:00	BV_MW04_0.5		✓			✓
ES1324722-008	11-NOV-2013 15:00	DUP201311 11_AM01					✓
ES1324722-010	11-NOV-2013 15:00	TRIP SPIKE (TS6)				✓	
ES1324722-011	11-NOV-2013 15:00	TRIP BLANK				✓	
ES1324722-012	11-NOV-2013 15:00	BV_SB01_0.5		✓			✓
ES1324722-013	11-NOV-2013 15:00	BV_MW02_0.5	✓				
ES1324722-014	11-NOV-2013 15:00	BV_MW03_1.0	✓				
ES1324722-015	11-NOV-2013 15:00	BV_MW06_0.1	✓				
ES1324722-016	11-NOV-2013 15:00	BV_SB01_0.05	✓				
ES1324722-017	11-NOV-2013 15:00	BV_SB01_1.0	✓				
ES1324722-018	11-NOV-2013 15:00	BV_SB01_1.5	✓				
ES1324722-019	11-NOV-2013 15:00	TSC				✓	

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-27 TRH/BTEXN/PAH/Phenols/8 Metals
ES1324722-009	11-NOV-2013 15:00	R20131111_AM	✓





## Proactive Holding Time Report

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

### Requested Deliverables

#### JOHN EWING

- \*AU Certificate of Analysis - NATA ( COA ) Email john.ewing@erm.com
- \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI ) Email john.ewing@erm.com
- \*AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC ) Email john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN ) Email john.ewing@erm.com
- Chain of Custody (CoC) ( COC ) Email john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG ) Email john.ewing@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS\_V5\_ERM ) Email john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT ) Email john.ewing@erm.com
- EDI Format - XTab ( XTAB ) Email john.ewing@erm.com

#### MR JOSEPH FERRING

- \*AU Certificate of Analysis - NATA ( COA ) Email joseph.ferring@erm.com
- \*AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI ) Email joseph.ferring@erm.com
- \*AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC ) Email joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN ) Email joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC ) Email joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG ) Email joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS\_V5\_ERM ) Email joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT ) Email joseph.ferring@erm.com
- EDI Format - XTab ( XTAB ) Email joseph.ferring@erm.com

#### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV ) Email au.accounts@erm.com

## CERTIFICATE OF ANALYSIS

<b>Work Order</b> : <b>ES1324722</b> <b>Client</b> : <b>ENVIRO RESOURCES MANAGEMENT</b> <b>Contact</b> : MR JOSEPH FERRING <b>Address</b> : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007  <b>E-mail</b> : joseph.ferring@erm.com <b>Telephone</b> : +61 02 8584 8888 <b>Facsimile</b> : +61 02 8584 8800 <b>Project</b> : PROJECT SYMPHONY <b>Order number</b> : 0224193 <b>C-O-C number</b> : ---- <b>Sampler</b> : AM <b>Site</b> : ----  <b>Quote number</b> : SY/794/13	<b>Page</b> : 1 of 15  <b>Laboratory</b> : Environmental Division Sydney <b>Contact</b> : Barbara Hanna <b>Address</b> : 277-289 Woodpark Road Smithfield NSW Australia 2164  <b>E-mail</b> : Barbara.Hanna@alsglobal.com <b>Telephone</b> : +61 2 8784 8555 <b>Facsimile</b> : +61 2 8784 8555 <b>QC Level</b> : NEPM 2013 Schedule B(3) and ALS QCS3 requirement  <b>Date Samples Received</b> : 14-NOV-2013 <b>Issue Date</b> : 21-NOV-2013  <b>No. of samples received</b> : 19 <b>No. of samples analysed</b> : 13
--	--

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  
 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	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Peter Rennie	Asbestos Identifier	Newcastle - Asbestos



## General Comments

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

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

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

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

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

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

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

- **EA200 Legend**
- **EA200 'Am' Amosite (brown asbestos)**
- **EA200 'Ch' Chrysotile (white asbestos)**
- **EA200 'Cr' Crocidolite (blue asbestos)**
- **EA200 'Trace' - Asbestos fibres detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres**
- **EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.**
- **EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.**
- **EP080: The TRIP SPIKE and TRIP SPIKE CONTROL have been analysed for volatile TPH and BTEX only. The TRIP SPIKE and TRIP SPIKE CONTROL were prepared in the lab using reagent grade sand spiked with petrol. The TRIP SPIKE was dispatched from the lab and the TRIP SPIKE CONTROL retained. The spike samples were extracted and analysed concurrently with samples reported in this batch.**



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW09_0.5	BV_MW02_0.1	BV_SB04_0.1	BV_MW03_0.3	BV_MW05_0.2
				11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324722-001	ES1324722-002	ES1324722-003	ES1324722-004	ES1324722-005
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	14.2	18.7	16.0	18.2	21.3
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	0.1	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	291	233	261	234	514
APPROVED IDENTIFIER:	----	-	--	P.RENNIE	P.RENNIE	P.RENNIE	P.RENNIE	P.RENNIE
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	9	12	12	10	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	14	28	15	12	15
Copper	7440-50-8	5	mg/kg	26	20	28	21	22
Lead	7439-92-1	5	mg/kg	16	16	18	15	12
Nickel	7440-02-0	2	mg/kg	28	24	22	19	21
Zinc	7440-66-6	5	mg/kg	79	47	83	62	66
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	----	<0.1
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW09_0.5	BV_MW02_0.1	BV_SB04_0.1	BV_MW03_0.3	BV_MW05_0.2
				11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324722-001	ES1324722-002	ES1324722-003	ES1324722-004	ES1324722-005
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
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	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW09_0.5	BV_MW02_0.1	BV_SB04_0.1	BV_MW03_0.3	BV_MW05_0.2
				11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324722-001	ES1324722-002	ES1324722-003	ES1324722-004	ES1324722-005
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued</b>								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
<b>EP080: BTEXN</b>								
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
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	----	62.3	----	----	68.3
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	109	111	109	110	114
2-Chlorophenol-D4	93951-73-6	0.1	%	114	114	118	110	116
2,4,6-Tribromophenol	118-79-6	0.1	%	99.2	83.3	100	95.1	88.0
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	119	103	117	103	111
Anthracene-d10	1719-06-8	0.1	%	101	86.3	101	103	93.8
4-Terphenyl-d14	1718-51-0	0.1	%	97.0	83.5	97.0	98.1	90.0
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	87.6	84.4	76.8	78.5	74.0
Toluene-D8	2037-26-5	0.1	%	93.3	82.5	88.5	87.9	80.9
4-Bromofluorobenzene	460-00-4	0.1	%	89.6	78.2	85.1	83.6	75.9



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW06_0.5	BV_MW04_0.5	DUP201311 11_AM01	TRIP SPIKE (TS6)	TRIP BLANK
				11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324722-006	ES1324722-007	ES1324722-008	ES1324722-010	ES1324722-011
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	----	1.0	%	13.3	14.5	15.7	----	----
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	----	----
Asbestos Type	1332-21-4	0.1	--	-	-	----	----	----
Sample weight (dry)	----	0.01	g	218	118	----	----	----
APPROVED IDENTIFIER:	----	-	--	P.RENNIE	P.RENNIE	----	----	----
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	22	14	8	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	13	10	15	----	----
Copper	7440-50-8	5	mg/kg	19	24	25	----	----
Lead	7439-92-1	5	mg/kg	17	25	15	----	----
Nickel	7440-02-0	2	mg/kg	33	14	26	----	----
Zinc	7440-66-6	5	mg/kg	62	56	79	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW06_0.5	BV_MW04_0.5	DUP201311 11_AM01	TRIP SPIKE (TS6)	TRIP BLANK
				11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324722-006	ES1324722-007	ES1324722-008	ES1324722-010	ES1324722-011
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>								
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	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	<b>0.6</b>	<b>0.6</b>	<b>0.6</b>	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<b>97</b>	<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	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<b>106</b>	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<b>71</b>	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----





## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BV_MW06_0.5	BV_MW04_0.5	DUP201311 11_AM01	TRIP SPIKE (TS6)	TRIP BLANK
				11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1324722-006	ES1324722-007	ES1324722-008	ES1324722-010	ES1324722-011
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued</b>								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	----	----
<b>EP080: BTEXN</b>								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	0.8	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	17.8	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	2.0	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	10.3	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	4.1	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	35.0	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	14.4	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
<b>EP066S: PCB Surrogate</b>								
Decachlorobiphenyl	2051-24-3	0.1	%	69.1	----	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
Phenol-d6	13127-88-3	0.1	%	112	104	108	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	113	109	117	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	94.0	82.5	75.1	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
2-Fluorobiphenyl	321-60-8	0.1	%	103	94.1	103	----	----
Anthracene-d10	1719-06-8	0.1	%	101	92.5	87.1	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	96.4	89.8	83.7	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	79.2	85.0	76.1	91.9	97.4
Toluene-D8	2037-26-5	0.1	%	75.0	88.4	82.8	93.6	97.1
4-Bromofluorobenzene	460-00-4	0.1	%	76.5	83.4	82.4	89.4	92.8



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB01_0.5	TSC	---	---	---
				11-NOV-2013 15:00	11-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1324722-012	ES1324722-019	---	---	---
<b>EA055: Moisture Content</b>								
Moisture Content (dried @ 103°C)	---	1.0	%	15.1	---	---	---	---
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
Asbestos Detected	1332-21-4	0.1	g/kg	No	---	---	---	---
Asbestos Type	1332-21-4	0.1	--	-	---	---	---	---
Sample weight (dry)	---	0.01	g	385	---	---	---	---
APPROVED IDENTIFIER:	---	-	--	P.RENNIE	---	---	---	---
<b>EG005T: Total Metals by ICP-AES</b>								
Arsenic	7440-38-2	5	mg/kg	12	---	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	---	---	---	---
Chromium	7440-47-3	2	mg/kg	11	---	---	---	---
Copper	7440-50-8	5	mg/kg	27	---	---	---	---
Lead	7439-92-1	5	mg/kg	17	---	---	---	---
Nickel	7440-02-0	2	mg/kg	26	---	---	---	---
Zinc	7440-66-6	5	mg/kg	86	---	---	---	---
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Mercury	7439-97-6	0.1	mg/kg	<0.1	---	---	---	---
<b>EP075(SIM)A: Phenolic Compounds</b>								
Phenol	108-95-2	0.5	mg/kg	<0.5	---	---	---	---
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	---	---	---	---
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	---	---	---	---
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	---	---	---	---
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	---	---	---	---
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	---	---	---	---
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	---	---	---	---
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	---	---	---	---
Pentachlorophenol	87-86-5	2	mg/kg	<2	---	---	---	---
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
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	---	---	---	---



## Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BV_SB01_0.5	TSC	---	---	---
Client sampling date / time				11-NOV-2013 15:00	11-NOV-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1324722-012	ES1324722-019	---	---	---

### EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued

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	---	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	---	0.5	mg/kg	<0.5	---	---	---	---
^ Benzo(a)pyrene TEQ (zero)	---	0.5	mg/kg	<0.5	---	---	---	---
^ Benzo(a)pyrene TEQ (half LOR)	---	0.5	mg/kg	<b>0.6</b>	---	---	---	---
^ Benzo(a)pyrene TEQ (LOR)	---	0.5	mg/kg	<b>1.2</b>	---	---	---	---

### EP080/071: Total Petroleum Hydrocarbons

C6 - C9 Fraction	---	10	mg/kg	<10	<b>105</b>	---	---	---
C10 - C14 Fraction	---	50	mg/kg	<50	---	---	---	---
C15 - C28 Fraction	---	100	mg/kg	<100	---	---	---	---
C29 - C36 Fraction	---	100	mg/kg	<100	---	---	---	---
^ C10 - C36 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---

### EP080/071: Total Recoverable Hydrocarbons - NEPM 2013

C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<b>117</b>	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<b>82</b>	---	---	---
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	---	---	---	---
>C16 - C34 Fraction	---	100	mg/kg	<100	---	---	---	---
>C34 - C40 Fraction	---	100	mg/kg	<100	---	---	---	---
^ >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	50	mg/kg	<50	---	---	---	---

### EP080: BTEXN



## Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)

Client sample ID

				<b>BV_SB01_0.5</b>	<b>TSC</b>	----	----	----
				11-NOV-2013 15:00	11-NOV-2013 15:00	----	----	----
<i>Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	<b>ES1324722-012</b>	<b>ES1324722-019</b>	----	----	----
<b>EP080: BTEXN - Continued</b>								
<b>Benzene</b>	71-43-2	0.2	mg/kg	<0.2	<b>0.7</b>	----	----	----
<b>Toluene</b>	108-88-3	0.5	mg/kg	<0.5	<b>18.1</b>	----	----	----
<b>Ethylbenzene</b>	100-41-4	0.5	mg/kg	<0.5	<b>2.1</b>	----	----	----
<b>meta- &amp; para-Xylene</b>	108-38-3 106-42-3	0.5	mg/kg	<0.5	<b>10.4</b>	----	----	----
<b>ortho-Xylene</b>	95-47-6	0.5	mg/kg	<0.5	<b>4.0</b>	----	----	----
<b>Sum of BTEX</b>	----	0.2	mg/kg	<0.2	<b>35.3</b>	----	----	----
<b>Total Xylenes</b>	1330-20-7	0.5	mg/kg	<0.5	<b>14.4</b>	----	----	----
<b>Naphthalene</b>	91-20-3	1	mg/kg	<1	<1	----	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>								
<b>Phenol-d6</b>	13127-88-3	0.1	%	<b>108</b>	----	----	----	----
<b>2-Chlorophenol-D4</b>	93951-73-6	0.1	%	<b>111</b>	----	----	----	----
<b>2,4,6-Tribromophenol</b>	118-79-6	0.1	%	<b>85.0</b>	----	----	----	----
<b>EP075(SIM)T: PAH Surrogates</b>								
<b>2-Fluorobiphenyl</b>	321-60-8	0.1	%	<b>101</b>	----	----	----	----
<b>Anthracene-d10</b>	1719-06-8	0.1	%	<b>100</b>	----	----	----	----
<b>4-Terphenyl-d14</b>	1718-51-0	0.1	%	<b>95.2</b>	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>								
<b>1,2-Dichloroethane-D4</b>	17060-07-0	0.1	%	<b>89.9</b>	<b>93.3</b>	----	----	----
<b>Toluene-D8</b>	2037-26-5	0.1	%	<b>93.9</b>	<b>104</b>	----	----	----
<b>4-Bromofluorobenzene</b>	460-00-4	0.1	%	<b>86.7</b>	<b>98.0</b>	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R20131111\_AM

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Client sampling date / time

11-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1324722-009	---	---	---	---
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### EG020F: Dissolved Metals by ICP-MS

Arsenic	7440-38-2	0.001	mg/L	<0.001	---	---	---	---
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	---	---	---	---
Chromium	7440-47-3	0.001	mg/L	<0.001	---	---	---	---
Copper	7440-50-8	0.001	mg/L	<0.001	---	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	---	---	---	---
Zinc	7440-66-6	0.005	mg/L	<0.005	---	---	---	---

### EG035F: Dissolved Mercury by FIMS

Mercury	7439-97-6	0.0001	mg/L	<0.0001	---	---	---	---
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### EP075(SIM)A: Phenolic Compounds

Phenol	108-95-2	1.0	µg/L	<1.0	---	---	---	---
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	---	---	---	---
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	---	---	---	---
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	---	---	---	---
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	---	---	---	---
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	---	---	---	---
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	---	---	---	---
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	---	---	---	---
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	---	---	---	---

### 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	---	---	---	---



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R20131111\_AM

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Client sampling date / time

11-NOV-2013 15:00

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Compound	CAS Number	LOR	Unit	ES1324722-009	---	---	---	---
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### EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued

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	---	---	---	---
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	---	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	---	---	---	---

### EP080/071: Total Petroleum Hydrocarbons

C6 - C9 Fraction	----	20	µg/L	<20	---	---	---	---
C10 - C14 Fraction	----	50	µg/L	<50	---	---	---	---
C15 - C28 Fraction	----	100	µg/L	<100	---	---	---	---
C29 - C36 Fraction	----	50	µg/L	<50	---	---	---	---
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	---	---	---	---

### EP080/071: Total Recoverable Hydrocarbons - NEPM 2013

C6 - C10 Fraction	C6_C10	20	µg/L	<20	---	---	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	---	---	---	---
>C10 - C16 Fraction	>C10_C16	100	µg/L	<100	---	---	---	---
>C16 - C34 Fraction	----	100	µg/L	<100	---	---	---	---
>C34 - C40 Fraction	----	100	µg/L	<100	---	---	---	---
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	---	---	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	---	---	---	---

### EP080: BTEXN

Benzene	71-43-2	1	µg/L	<1	---	---	---	---
Toluene	108-88-3	2	µg/L	<2	---	---	---	---
Ethylbenzene	100-41-4	2	µg/L	<2	---	---	---	---
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	---	---	---	---
ortho-Xylene	95-47-6	2	µg/L	<2	---	---	---	---
^ Total Xylenes	1330-20-7	2	µg/L	<2	---	---	---	---
^ Sum of BTEX	----	1	µg/L	<1	---	---	---	---
Naphthalene	91-20-3	5	µg/L	<5	---	---	---	---

### EP075(SIM)S: Phenolic Compound Surrogates



## Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Client sample ID

<b>R20131111_AM</b>	----	----	----	----
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Client sampling date / time

11-NOV-2013 15:00	----	----	----	----
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Compound	CAS Number	LOR	Unit	<b>ES1324722-009</b>	----	----	----	----
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### EP075(SIM)S: Phenolic Compound Surrogates - Continued

<b>Phenol-d6</b>	13127-88-3	0.1	%	<b>27.4</b>	----	----	----	----
<b>2-Chlorophenol-D4</b>	93951-73-6	0.1	%	<b>64.7</b>	----	----	----	----
<b>2.4.6-Tribromophenol</b>	118-79-6	0.1	%	<b>82.8</b>	----	----	----	----

### EP075(SIM)T: PAH Surrogates

<b>2-Fluorobiphenyl</b>	321-60-8	0.1	%	<b>83.4</b>	----	----	----	----
<b>Anthracene-d10</b>	1719-06-8	0.1	%	<b>85.5</b>	----	----	----	----
<b>4-Terphenyl-d14</b>	1718-51-0	0.1	%	<b>88.8</b>	----	----	----	----

### EP080S: TPH(V)/BTEX Surrogates

<b>1.2-Dichloroethane-D4</b>	17060-07-0	0.1	%	<b>82.0</b>	----	----	----	----
<b>Toluene-D8</b>	2037-26-5	0.1	%	<b>102</b>	----	----	----	----
<b>4-Bromofluorobenzene</b>	460-00-4	0.1	%	<b>112</b>	----	----	----	----

## Analytical Results

### Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>		
EA200: Description	BV_MW09_0.5 - 11-NOV-2013 15:00	Brown clay soil
EA200: Description	BV_MW02_0.1 - 11-NOV-2013 15:00	Dark brown clay soil with some vegetation
EA200: Description	BV_SB04_0.1 - 11-NOV-2013 15:00	Brown clay soil with some vegetation and small coal pieces
EA200: Description	BV_MW03_0.3 - 11-NOV-2013 15:00	Mid brown clay soil
EA200: Description	BV_MW05_0.2 - 11-NOV-2013 15:00	Brown clay soil with some vegetation and small coal pieces
EA200: Description	BV_MW06_0.5 - 11-NOV-2013 15:00	Brown clay soil with some vegetation and small coal pieces
EA200: Description	BV_MW04_0.5 - 11-NOV-2013 15:00	Brown clay soil with some vegetation and small coal pieces
EA200: Description	BV_SB01_0.5 - 11-NOV-2013 15:00	Brown clay soil with some vegetation and small coal pieces



## Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP066S: PCB Surrogate</b>			
Decachlorobiphenyl	2051-24-3	39	149
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1.2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10.0	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27.4	113
4-Terphenyl-d14	1718-51-0	32	112
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128



## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>ES1324722</b>	Page	: 1 of 16
<b>Client</b>	: <b>ENVIRO RESOURCES MANAGEMENT</b>	<b>Laboratory</b>	: Environmental Division Sydney
<b>Contact</b>	: MR JOSEPH FERRING	<b>Contact</b>	: Barbara Hanna
<b>Address</b>	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	<b>Address</b>	: 277-289 Woodpark Road Smithfield NSW Australia 2164
<b>E-mail</b>	: joseph.ferring@erm.com	<b>E-mail</b>	: Barbara.Hanna@alsglobal.com
<b>Telephone</b>	: +61 02 8584 8888	<b>Telephone</b>	: +61 2 8784 8555
<b>Facsimile</b>	: +61 02 8584 8800	<b>Facsimile</b>	: +61 2 8784 8555
<b>Project</b>	: PROJECT SYMPHONY	<b>QC Level</b>	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Site</b>	: ----	<b>Date Samples Received</b>	: 14-NOV-2013
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 21-NOV-2013
<b>Sampler</b>	: AM	<b>No. of samples received</b>	: 19
<b>Order number</b>	: 0224193	<b>No. of samples analysed</b>	: 13
<b>Quote number</b>	: SY/794/13		

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

This Quality Control Report contains the following information:

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



NATA Accredited  
Laboratory 825

Accredited for  
compliance with  
ISO/IEC 17025.

### Signatories

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

#### Signatories

Celine Conceicao  
Pabi Subba  
Peter Rennie

#### Position

Senior Spectroscopist  
Senior Organic Chemist  
Asbestos Identifier

#### Accreditation Category

Sydney Inorganics  
Sydney Organics  
Newcastle - Asbestos



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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.

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**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA055: Moisture Content (QC Lot: 3166252)</b>									
ES1324715-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	21.7	22.0	1.2	0% - 20%
ES1324722-005	BV_MW05_0.2	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	21.3	21.6	1.5	0% - 20%
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3165876)</b>									
EN1304177-018	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	7	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	7	19.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	14	11.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	16	10.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	43	46	7.0	No Limit
ES1324715-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	13	7.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	7	7	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	8	10	20.7	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	15	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	16	38	79.8	No Limit
<b>EG005T: Total Metals by ICP-AES (QC Lot: 3165878)</b>									
ES1324722-008	DUP201311 11_AM01	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	15	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	26	31	16.7	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	25	27	7.1	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	15	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	79	79	0.0	0% - 50%
ES1324732-004	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	49	42	16.5	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	21	18	15.1	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	7	22.4	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	29	30	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	9	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	30	26	14.1	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3165877)</b>									
EN1304177-018	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1324715-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	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 (%)
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3165879)</b>									
ES1324722-008	DUP201311 11_AM01	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1324732-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3166266)</b>									
ES1324722-002	BV_MW02_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1324729-008	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
<b>EP075(SIM)A: Phenolic Compounds (QC Lot: 3164399)</b>									
ES1324722-001	BV_MW09_0.5	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		ES1324723-002	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5
EP075(SIM): 2-Chlorophenol	95-57-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.4-Dichlorophenol	120-83-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.6-Dichlorophenol	87-65-0			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 3- & 4-Methylphenol	1319-77-3			1	mg/kg	<1	<1	0.0	No Limit
EP075(SIM): Pentachlorophenol	87-86-5			2	mg/kg	<2	<2	0.0	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3164399)</b>									
ES1324722-001	BV_MW09_0.5	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



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 (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3164399) - continued</b>									
ES1324722-001	BV_MW09_0.5	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1324723-002	Anonymous	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
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3164398)</b>									
ES1324722-001	BV_MW09_0.5	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
ES1324723-002	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
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3165691)</b>									
ES1324718-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1324722-005	BV_MW05_0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3164398)</b>									



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 (%)	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3164398) - continued</b>										
ES1324722-001	BV_MW09_0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
ES1324723-002	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	0.0	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3165691)</b>										
ES1324718-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1324722-005	BV_MW05_0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
<b>EP080: BTEXN (QC Lot: 3165691)</b>										
ES1324718-001	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	
ES1324722-005	BV_MW05_0.2	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
		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			
EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit			
<b>Sub-Matrix: WATER</b>										
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 (%)	
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 3162910)</b>										
ES1324645-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	0.0	No Limit	
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.0	No Limit	
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit	
ES1324742-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0010	<0.0010	0.0	No Limit	
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.010	<0.010	0.0	No Limit	
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.010	<0.010	0.0	No Limit	
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.010	<0.010	0.0	No Limit	
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	0.0	No Limit	
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.010	<0.010	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 (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 3162910) - continued</b>									
ES1324742-004	Anonymous	EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.074	0.063	17.1	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 3162909)</b>									
ES1324644-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3164249)</b>									
ES1324767-006	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES1324795-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3164249)</b>									
ES1324767-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES1324795-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
<b>EP080: BTEXN (QC Lot: 3164249)</b>									
ES1324767-006	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES1324795-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<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**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3165876)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	108	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	100	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	100	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	108	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	100	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	107	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	102	81	133	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3165878)</b>									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	115	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	110	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	110	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	114	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	112	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	117	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	118	81	133	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3165877)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	86.9	66	112	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3165879)</b>									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	86.5	66	112	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3166266)</b>									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	85.3	57.4	117	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3164399)</b>									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	109	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	112	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	111	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	101	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	84.8	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	105	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	97.1	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	102	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	96.6	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	84.0	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	84.3	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	26.2	3.9	57	





Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3164399)</b>									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	115	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	112	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	115	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	113	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	90.9	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	90.6	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	93.0	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	93.8	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	104	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	115	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	105	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	110	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	114	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	111	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	111	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	103	72.4	114	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3164398)</b>									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	97.2	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	95.8	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	84.5	64	128	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3165691)</b>									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	82.7	68.4	128	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3164398)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	97.9	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	91.5	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	68.6	63	131	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3165691)</b>									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	80.3	68.4	128	
<b>EP080: BTEXN (QCLot: 3165691)</b>									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	77.2	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	82.1	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	80.2	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	85.0	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	86.1	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	82.8	62	138	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 3162910)</b>									
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.9	80	118	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	82	112	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.8	81	111	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	80	112	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	110	83	111	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	88.5	81	113	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	108	80	116	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 3162909)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	108	78	114	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3161112)</b>									
EP075(SIM): Phenol	108-95-2	0.2	µg/L	----	5 µg/L	54.1	24.5	61.9	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L	----	5 µg/L	# 63.6	63.8	110	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L	----	5 µg/L	63.0	55.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	µg/L	----	10 µg/L	62.3	42.5	114	
		2	µg/L	<2.0	----	----	----	----	
EP075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L	----	5 µg/L	73.1	62.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.2	µg/L	----	5 µg/L	66.8	59.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.2	µg/L	----	5 µg/L	68.8	59.3	122	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.2	µg/L	----	5 µg/L	68.8	64.3	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L	----	5 µg/L	75.2	63	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.2	µg/L	----	5 µg/L	75.2	58.7	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.2	µg/L	----	5 µg/L	74.6	50	108	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L	----	10 µg/L	74.5	8.7	95	
		2	µg/L	<2.0	----	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3161112)</b>									
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	5 µg/L	64.9	58.6	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	5 µg/L	74.5	63.6	114	
		1	µg/L	<1.0	----	----	----	----	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3161112) - continued</b>									
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	5 µg/L	70.8	62.2	113	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	5 µg/L	72.4	63.9	115	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	5 µg/L	102	62.6	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	5 µg/L	94.3	64.3	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	5 µg/L	107	63.6	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	5 µg/L	108	63.1	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	5 µg/L	77.6	64.1	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	5 µg/L	78.1	62.5	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	5 µg/L	67.2	61.7	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	5 µg/L	77.3	61.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	5 µg/L	69.9	63.3	117	
		0.5	µg/L	<0.5	----	----	----	----	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	5 µg/L	64.0	59.9	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	----	5 µg/L	65.9	61.2	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	5 µg/L	67.9	59.1	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	1	µg/L	<1.0	----	----	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3161111)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	105	59	129	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	100	71	131	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	103	62	120	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3164249)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	89.0	75	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3161111)</b>									
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	101	58.9	131	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	97.3	73.9	138	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
		50	µg/L	----	1500 µg/L	106	67	127	



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3164249)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	89.8	75	127	
<b>EP080: BTEXN (QCLot: 3164249)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	82.2	70	124	
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	85.6	65	129	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	81.2	70	120	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	86.8	69	121	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	89.4	72	122	
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	103	70	124	

### 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**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%)	
				Low	High		
<b>EG005T: Total Metals by ICP-AES (QCLot: 3165876)</b>							
EN1304177-018	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.4	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	108	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	97.6	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	99.4	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	96.4	70	130
<b>EG005T: Total Metals by ICP-AES (QCLot: 3165878)</b>							
ES1324722-008	DUP201311 11_AM01	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	103	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	107	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	110	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	105	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	106	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	100	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3165877)</b>							
EN1304177-018	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	105	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3165879)</b>							
ES1324722-008	DUP201311 11_AM01	EG035T: Mercury	7439-97-6	5 mg/kg	102	70	130
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3166266)</b>							



Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report				
				Spike	SpikeRecovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3166266) - continued</b>								
ES1324722-002	BV_MW02_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	83.6	70	130	
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3164399)</b>								
ES1324722-001	BV_MW09_0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	94.5	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.4	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	78.3	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	78.6	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	44.4	20	130	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3164399)</b>								
ES1324722-001	BV_MW09_0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	92.0	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	94.8	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3164398)</b>								
ES1324722-001	BV_MW09_0.5	EP071: C10 - C14 Fraction	----	640 mg/kg	77.5	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	77.0	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	85.0	52	132	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3165691)</b>								
ES1324718-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	84.7	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3164398)</b>								
ES1324722-001	BV_MW09_0.5	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	94.1	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.7	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	64.9	52	132	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3165691)</b>								
ES1324718-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	81.3	70	130	
<b>EP080: BTEXN (QCLot: 3165691)</b>								
ES1324718-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	72.9	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	72.6	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	73.3	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	75.1	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	78.1	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	75.0	70	130		

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 3162910)</b>							
ES1324644-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	130	70	130
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	126	70	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report				
				Spike	Spike Recovery(%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 3162910) - continued</b>								
ES1324644-001	Anonymous	EG020A-F: Chromium	7440-47-3	0.2 mg/L	125	70	130	
		EG020A-F: Copper	7440-50-8	0.2 mg/L	125	70	130	
		EG020A-F: Lead	7439-92-1	0.2 mg/L	128	70	130	
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	126	70	130	
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	130	70	130	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 3162909)</b>								
ES1324644-003	Anonymous	EG035F: Mercury	7439-97-6	0.0100 mg/L	99.4	70	130	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3164249)</b>								
ES1324767-006	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	118	70	130	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3164249)</b>								
ES1324767-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	120	70	130	
<b>EP080: BTEXN (QCLot: 3164249)</b>								
ES1324767-006	Anonymous	EP080: Benzene	71-43-2	25 µg/L	105	70	130	
		EP080: Toluene	108-88-3	25 µg/L	108	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	111	70	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	109	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	109	70	130	
		EP080: Naphthalene	91-20-3	25 µg/L	93.3	70	130	

### Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3164398)</b>										
ES1324722-001	BV_MW09_0.5	EP071: C10 - C14 Fraction	----	640 mg/kg	77.5	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	77.0	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	85.0	----	52	132	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3164398)</b>										
ES1324722-001	BV_MW09_0.5	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	94.1	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.7	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	64.9	----	52	132	----	----
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3164399)</b>										
ES1324722-001	BV_MW09_0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	94.5	----	70	130	----	----



Sub-Matrix: SOIL					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
<b>EP075(SIM)A: Phenolic Compounds (QCLot: 3164399) - continued</b>											
ES1324722-001	BV_MW09_0.5	EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.4	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	78.3	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	78.6	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	44.4	----	20	130	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3164399)</b>											
ES1324722-001	BV_MW09_0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	92.0	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	94.8	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3165691)</b>											
ES1324718-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	84.7	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3165691)</b>											
ES1324718-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	81.3	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3165691)</b>											
ES1324718-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	72.9	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	72.6	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	73.3	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	75.1	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	78.1	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	75.0	----	70	130	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3165876)</b>											
EN1304177-018	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.4	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	103	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	108	----	70	130	----	----	
		EG005T: Lead	7439-92-1	125 mg/kg	97.6	----	70	130	----	----	
		EG005T: Nickel	7440-02-0	50 mg/kg	99.4	----	70	130	----	----	
		EG005T: Zinc	7440-66-6	125 mg/kg	96.4	----	70	130	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3165877)</b>											
EN1304177-018	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	105	----	70	130	----	----	
<b>EG005T: Total Metals by ICP-AES (QCLot: 3165878)</b>											
ES1324722-008	DUP201311 11_AM01	EG005T: Arsenic	7440-38-2	50 mg/kg	108	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	103	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	107	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	110	----	70	130	----	----	
		EG005T: Lead	7439-92-1	125 mg/kg	105	----	70	130	----	----	
		EG005T: Nickel	7440-02-0	50 mg/kg	106	----	70	130	----	----	
		EG005T: Zinc	7440-66-6	125 mg/kg	100	----	70	130	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3165879)</b>											



Sub-Matrix: SOIL					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 3165879) - continued</b>											
ES1324722-008	DUP201311 11_AM01	EG035T: Mercury	7439-97-6	5 mg/kg	102	----	70	130	----	----	
<b>EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3166266)</b>											
ES1324722-002	BV_MW02_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	83.6	----	70	130	----	----	

Sub-Matrix: WATER					Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number								
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 3162909)</b>											
ES1324644-003	Anonymous	EG035F: Mercury	7439-97-6	0.0100 mg/L	99.4	----	70	130	----	----	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 3162910)</b>											
ES1324644-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	130	----	70	130	----	----	
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	126	----	70	130	----	----	
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	125	----	70	130	----	----	
		EG020A-F: Copper	7440-50-8	0.2 mg/L	125	----	70	130	----	----	
		EG020A-F: Lead	7439-92-1	0.2 mg/L	128	----	70	130	----	----	
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	126	----	70	130	----	----	
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	130	----	70	130	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 3164249)</b>											
ES1324767-006	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	118	----	70	130	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3164249)</b>											
ES1324767-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	120	----	70	130	----	----	
<b>EP080: BTEXN (QCLot: 3164249)</b>											
ES1324767-006	Anonymous	EP080: Benzene	71-43-2	25 µg/L	105	----	70	130	----	----	
		EP080: Toluene	108-88-3	25 µg/L	108	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	25 µg/L	111	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	109	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	25 µg/L	109	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	25 µg/L	93.3	----	70	130	----	----	



## INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: <b>ES1324722</b>	Page	: 1 of 9
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR JOSEPH FERRING	Contact	: Barbara Hanna
Address	: GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: joseph.ferring@erm.com	E-mail	: Barbara.Hanna@alsglobal.com
Telephone	: +61 02 8584 8888	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 8584 8800	Facsimile	: +61 2 8784 8555
Project	: PROJECT SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 14-NOV-2013
C-O-C number	: ----	Issue Date	: 21-NOV-2013
Sampler	: AM	No. of samples received	: 19
Order number	: 0224193	No. of samples analysed	: 13
Quote number	: SY/794/13		

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

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



## Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with recommended holding times (USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA055: Moisture Content</b>								
<b>Soil Glass Jar - Unpreserved (EA055-103)</b> BV_MW09_0.5, BV_SB04_0.1, BV_MW05_0.2, BV_MW04_0.5, BV_SB01_0.5	BV_MW02_0.1, BV_MW03_0.3, BV_MW06_0.5, DUP201311 11_AM01,	11-NOV-2013	----	----	----	19-NOV-2013	25-NOV-2013	✓
<b>EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples</b>								
<b>Snap Lock Bag (EA200)</b> BV_MW09_0.5, BV_SB04_0.1, BV_MW05_0.2, BV_MW04_0.5	BV_MW02_0.1, BV_MW03_0.3, BV_MW06_0.5, BV_SB01_0.5	11-NOV-2013	---	10-MAY-2014	----	20-NOV-2013	19-MAY-2014	✓
<b>EG005T: Total Metals by ICP-AES</b>								
<b>Soil Glass Jar - Unpreserved (EG005T)</b> BV_MW09_0.5, BV_SB04_0.1, BV_MW05_0.2, BV_MW04_0.5, BV_SB01_0.5	BV_MW02_0.1, BV_MW03_0.3, BV_MW06_0.5, DUP201311 11_AM01,	11-NOV-2013	19-NOV-2013	10-MAY-2014	✓	19-NOV-2013	10-MAY-2014	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Soil Glass Jar - Unpreserved (EG035T)</b> BV_MW09_0.5, BV_SB04_0.1, BV_MW05_0.2, BV_MW04_0.5, BV_SB01_0.5	BV_MW02_0.1, BV_MW03_0.3, BV_MW06_0.5, DUP201311 11_AM01,	11-NOV-2013	19-NOV-2013	09-DEC-2013	✓	20-NOV-2013	09-DEC-2013	✓
<b>EP066: Polychlorinated Biphenyls (PCB)</b>								
<b>Soil Glass Jar - Unpreserved (EP066)</b> BV_MW02_0.1, BV_MW06_0.5	BV_MW05_0.2,	11-NOV-2013	19-NOV-2013	25-NOV-2013	✓	20-NOV-2013	29-DEC-2013	✓



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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP071)</b> BV_MW09_0.5, BV_SB04_0.1, BV_MW05_0.2, BV_MW04_0.5, BV_SB01_0.5	BV_MW02_0.1, BV_MW03_0.3, BV_MW06_0.5, DUP201311 11_AM01,	11-NOV-2013	20-NOV-2013	25-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BV_MW09_0.5, BV_SB04_0.1, BV_MW05_0.2, BV_MW04_0.5, BV_SB01_0.5	BV_MW02_0.1, BV_MW03_0.3, BV_MW06_0.5, DUP201311 11_AM01,	11-NOV-2013	20-NOV-2013	25-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP075(SIM))</b> BV_MW09_0.5, BV_SB04_0.1, BV_MW05_0.2, BV_MW04_0.5, BV_SB01_0.5	BV_MW02_0.1, BV_MW03_0.3, BV_MW06_0.5, DUP201311 11_AM01,	11-NOV-2013	20-NOV-2013	25-NOV-2013	✓	20-NOV-2013	30-DEC-2013	✓
<b>EP080: BTEXN</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BV_MW09_0.5, BV_SB04_0.1, BV_MW05_0.2, BV_MW04_0.5, TRIP SPIKE (TS6), BV_SB01_0.5	BV_MW02_0.1, BV_MW03_0.3, BV_MW06_0.5, DUP201311 11_AM01, TRIP BLANK, TSC	11-NOV-2013	19-NOV-2013	25-NOV-2013	✓	20-NOV-2013	25-NOV-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Soil Glass Jar - Unpreserved (EP080)</b> BV_MW09_0.5, BV_SB04_0.1, BV_MW05_0.2, BV_MW04_0.5, TRIP SPIKE (TS6), BV_SB01_0.5	BV_MW02_0.1, BV_MW03_0.3, BV_MW06_0.5, DUP201311 11_AM01, TRIP BLANK, TSC	11-NOV-2013	19-NOV-2013	25-NOV-2013	✓	20-NOV-2013	25-NOV-2013	✓

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation



Matrix: **WATER**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG020F: Dissolved Metals by ICP-MS</b>							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) R20131111_AM	11-NOV-2013	---	10-MAY-2014	----	18-NOV-2013	10-MAY-2014	✓
<b>EG035F: Dissolved Mercury by FIMS</b>							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) R20131111_AM	11-NOV-2013	---	09-DEC-2013	----	18-NOV-2013	09-DEC-2013	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
Amber Glass Bottle - Unpreserved (EP071) R20131111_AM	11-NOV-2013	15-NOV-2013	18-NOV-2013	✓	19-NOV-2013	29-DEC-2013	✓
<b>EP075(SIM)A: Phenolic Compounds</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R20131111_AM	11-NOV-2013	15-NOV-2013	18-NOV-2013	✓	19-NOV-2013	29-DEC-2013	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R20131111_AM	11-NOV-2013	15-NOV-2013	18-NOV-2013	✓	19-NOV-2013	29-DEC-2013	✓
<b>EP080: BTEXN</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R20131111_AM	11-NOV-2013	19-NOV-2013	25-NOV-2013	✓	19-NOV-2013	25-NOV-2013	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013</b>							
Amber VOC Vial - Sulfuric Acid (EP080) R20131111_AM	11-NOV-2013	19-NOV-2013	25-NOV-2013	✓	19-NOV-2013	25-NOV-2013	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Moisture Content	EA055-103	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	18	11.1	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	2	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	35	11.4	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	34	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	18	11.1	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Laboratory Control Samples (LCS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	35	5.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	34	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	35	5.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	34	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
PAH/Phenols (SIM)	EP075(SIM)	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	35	5.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	34	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Dissolved Mercury by FIMS	EG035F	1	3	33.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS)</b>							
Dissolved Mercury by FIMS	EG035F	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Method Blanks (MB)</b>							
Dissolved Mercury by FIMS	EG035F	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	7	14.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
<b>Matrix Spikes (MS)</b>							
Dissolved Mercury by FIMS	EG035F	1	3	33.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
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 (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
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 (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(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 <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
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 (2013) Schedule B(3) (Method 504)
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 (2013) 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 (2013) 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 (2013) Schedule B(3) (Method 501)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): Samples are 0.45 um filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45 um filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)



Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	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 (2013) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)
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 (2013) 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 A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na <sub>2</sub> SO <sub>4</sub> 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 <sub>2</sub> SO <sub>4</sub> 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.
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 100 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 (2013) 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
<b>Laboratory Control Spike (LCS) Recoveries</b>							
EP075(SIM)A: Phenolic Compounds	3771977-007	----	2-Chlorophenol	95-57-8	63.6 %	63.8-110%	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

- 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.



**CHAIN OF CUSTODY**  
ALS Laboratory  
Preston NSW

JAL04/05 21 Evans Road Preston NSW 1500  
Ph: 02 9359 6200 Fax: 02 9359 6201  
Web: www.als.com.au  
JAL05/06 25 Spence Street Sydney NSW 1571  
Ph: 02 9359 6200 Fax: 02 9359 6201  
JAL06/07 46 Collins Street Sydney NSW 2000  
Ph: 02 9359 6200 Fax: 02 9359 6201

JAL07/08 731 Newmarket Road Brisbane QLD 4178  
Ph: 07 5440 0170 Fax: 07 5440 0171  
JAL08/09 24 Waverley Road Sydney NSW 1511  
Ph: 02 9359 6200 Fax: 02 9359 6201  
JAL09/10 27 Sydney Road Sydney NSW 2000  
Ph: 02 9359 6200 Fax: 02 9359 6201

JAL09/10 115 Bond Street Sydney NSW 2000  
Ph: 02 9359 6200 Fax: 02 9359 6201  
JAL10/11 413 Conroy Street Sydney NSW 1511  
Ph: 02 9359 6200 Fax: 02 9359 6201  
JAL11/12 100 Bond Street Sydney NSW 2000  
Ph: 02 9359 6200 Fax: 02 9359 6201

JAL12/13 115 Bond Street Sydney NSW 2000  
Ph: 02 9359 6200 Fax: 02 9359 6201  
JAL13/14 413 Conroy Street Sydney NSW 1511  
Ph: 02 9359 6200 Fax: 02 9359 6201  
JAL14/15 100 Bond Street Sydney NSW 2000  
Ph: 02 9359 6200 Fax: 02 9359 6201

**Concise Courier**  
WONONS  
ES1324726  
Attach By PO / Internal Sheet

CLIENT: **ERM Sydney**  
PROJECT: **Sydney**  
ORDER NUMBER: **0224193**  
PROJECT MANAGER: **S-Fortney**  
SAMPLER: **A. Morris**  
COC emailed to ALS? **YES**  
Email Reports to (will default to PM if no other addresses are listed): **S. Ewing**  
Email Invoice to (will default to PM if no other addresses are listed):  
COMMENT/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNOVER REQUIREMENTS:  Standard TAT (last due date)  Non Standard or urgent TAT (last due date)  
ALS QUOTE NO.: **SYF9413**  
SITE: **BAYSWATER/LIDELL**  
CONTACT PH: **REINQUISHED BY: Stephen Mulligan**  
DATE/TIME: **12/11/13**  
COC SEQUENCE NUMBER (circle):  
1 2 3 4 5 6 7  
RECEIVED BY: **SM**  
DATE/TIME: **14/11/13 10:55**  
REINQUISHED BY: **SM**  
DATE/TIME: **14/11/13 7:00**  
RECEIVED BY: **Steven**  
DATE/TIME: **14/11/13 14:20**

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)	CONTAINER INFORMATION	ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price) where blank are required, specify Total (unfortified) or Dissolved (final filtered) suite required.	Additional Information														
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	(refer to)	TOTAL CONTAINERS	S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	S-24 TRH(C6-C40)/BTEXN, PAH, Phenols	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (EDC07)	PFOS/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)	Comments on likely contamination levels, odours, or samples requiring specific CO analysis etc.
	BC_MUD2-2.5	12-11-13	SOIL	EX Jar (250ml)		1	X	X	X									
	BC_MUD3-2.0					1	X	X	X									
	BC_MUD4-1.6					1	X	X	X									
	DUP2013112-AM01			1x Jar (125ml)		1												
	TRIP2013112-AM01			1x Jar (125ml)		1												
	BC_MW05-1.8			1x Jar (250ml)		1	X	X	X									
	BC_SB01-1.6					1	X	X	X									
	BC_SB02-1.5					1	X	X	X									
	BC_SB03-2.0					1	X	X	X									
	BC_SB04-1.5					1	X	X	X									

Environmental Division  
Sydney  
Work Order  
**ES1324726**  
Telephone: +61-2-8784 8555



Matrix Container Codes: P = Unpreserved Plastic; T = Nitric Preserved Plastic; OTC = Nitric Preserved Glass; SH = Sodium Hydroxide Preserved Plastic; AC = Amber Glass Unpreserved Plastic; V - VOA Via JCI Preserved Vial; VOA Via BODUM Sealed Air Preserved Vial; VS = VOA Via Sealed Air Preserved Vial; SG = Sulphur Preserved Amber Glass; H = HDI Preserved Plastic; HS = HDI Preserved Specimen bottle; SP = Sulphur Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Preserved Plastic; B = Boron Preserved Plastic; E = EDTA Preserved Bottle; ST = Stable Bottle; ABS = Plastic Bag for Acid Sulphate Solids; U = Unpreserved Bag.

**Subcon / Forward Lab / Split WO**  
**Lab / Analysis: Asbestos - kept @ EN**  
**Organised By / Date: PSD**  
**Reinquished By / Date:**



CHAIN OF CUSTODY

ALS Laboratory

LABORATORY 21 Durum Street, Perth WA 6005  
Ph: 08 9430 0800 E: als@als.com.au

LABORATORY 21 Durum Street, Perth WA 6005  
Ph: 08 9430 0800 E: als@als.com.au

LABORATORY 3 Kings Quay West, Perth WA 6005  
Ph: 08 9430 0800 E: als@als.com.au

LABORATORY 3 Kings Quay West, Perth WA 6005  
Ph: 08 9430 0800 E: als@als.com.au

CLIENT: **BRM**

OFFICE: **Sydney**

PROJECT: **Project Synthesis**

ORDER NUMBER: **0224193**

PROJECT MANAGER: **J. Ferring**

SAMPLER: **A. Morris**

COC emailed to ALS? (YES / NO)

Email Reports to (will default to PM if no other addresses are listed):

Comments/Special Handling/Storage or Disposal:

TURNAROUND REQUIREMENTS:

Standard TAT may be longer for some tests e.g. Ultra Trace Elements

ALS QUOTE NO.: **SY2004**

SITE: **BAYSWATER DOBBELL**

CONTACT PH: **04 34 184 914**

SAMPLER MOBILE: **04 34 184 914**

EDD FORMAT (or default): **S. Ferring**

Relinquished By: **Stephen Mulligan**

DATE/TIME: **12/11/13**

Standard TAT (last date date)

Non Standard or urgent TAT (last date date)

COC SEQUENCE NUMBER (Circle)

1 2 3 4 5 6 7

RECEIVED BY: **SN**

DATE/TIME: **14/10/13 10:55**

RELINQUISHED BY: **SN**

DATE/TIME: **14/11/13 12:00**

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact? Yes No N/A

Fresh Ice / frozen Ice blocks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt? Yes No N/A

Other comment:

RECEIVED BY:

DATE/TIME:

ALS USE	SAMPLE DETAILS		CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to effect suite price)										Additional Information	
	MATRIX: SOLID (S) WATER (W)	DATE / TIME	TYPE & PRESERVATIVE codes below	refer to	When Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).											
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TOTAL CONTAINERS	S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	S-24 TRH (C6-C40)/BTEXN, PAH, Phenols	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (ED007)	PFO/S/FOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)	Comments on their concentration levels, dilution, or samples requiring specific QC analysis etc.
11	B5-MW01-3.8	12-11-13	SOIL	1	X	X	X	X	X							HOLD
12	B5-MW02-3.0			1	X	X	X	X	X							HOLD
13	B4-MW02-4.0			1	X	X	X	X	X							HOLD
14	B4-MW02-6.3			1	X	X	X	X	X							HOLD

Water Containing Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; DGC = Nitric Preserved DGC; SR = Sodium Hydroxide Preserved Plastic; AS = Amber Glass Unpreserved Plastic; AP = Air-tight Unpreserved Plastic; V = VOA Vial ICI Preserved; VA = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulphur Preserved; AV = Air-tight ICI Preserved Vial; SG = Sulphur Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Specimen Bottle; SP = Sulphur Preserved Plastic; F = Formaldhyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Stickle Bottle; ASS = Plastic Bag for Acid Sulphate Soils; S = Unpreserved Soil



CHAIN OF CUSTODY  
ALS Laboratory  
Please fill in

LABORATORY: 3100  
ADDRESS: 3100  
CITY: 3100  
STATE: 3100  
COUNTRY: 3100

LABORATORY: 3100  
ADDRESS: 3100  
CITY: 3100  
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CITY: 3100  
STATE: 3100  
COUNTRY: 3100

LABORATORY: 3100  
ADDRESS: 3100  
CITY: 3100  
STATE: 3100  
COUNTRY: 3100

8  
1  
ACM + PSD kept EN

CLIENT: **ERM**  
OFFICE: **Sydney**  
PROJECT: **Project Sydney**  
ORDER NUMBER: **0224193**  
PROJECT MANAGER: **JOSEPH FERRING**  
SAMPLER: **STEPHEN MULLIGAN**  
COC emailed to ALS? ( YES / NO )

TURNAROUND REQUIREMENTS:  Standard TAT (last due date);  Non Standard or urgent TAT (last due date);  
ALS QUOTE NO.: **5796473**  
SITE: **GATSWATER / JUBELL**  
CONTACT PH: **02 8584 8888**  
SAMPLER MOBILE: **0418 088 758**  
RELINQUISHED BY: **Stephen Mulligan**  
DATE/TIME: **12/11/13**  
COC SEQUENCE NUMBER (circle):  
1 2 3 4 5 6 7  
RECEIVED BY: **SMS**  
DATE/TIME: **14/11/13 10:57**  
RELINQUISHED BY: **SMS**  
DATE/TIME: **14/11/13 07:00**

FOR LABORATORY USE ONLY (Client)  
Custody Seal Intact? Yes No N/A  
Pres bag / frozen can ticks present upon receipt? Yes No N/A  
Random Sample Temperature on Receipt? Yes No N/A  
Other comment:

ALS USE	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	TOTAL CONTAINERS	ANALYSIS REQUIRED (Where Metals are required, specify Total (unfiltered) bottle required) or Dissolved (filtered) bottle required)	Additional Information
	V5 BV-SB09_0-1	12/11/13	soil	1 Jar, 1 Bag	2	S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	
	V8 BT-MW01-0.5	12/11/13	S	1 Jar, 1 Bag	2	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Tl, Se)	
	V9 BT-MW02-0.2	12/11/13	S	1 Jar, 1 Bag	2	S-24 TRH (C6-C40)/STEXN, PAH, Phenols	
	V6 BT-MW02-1.5	12/11/13	S	1 Jar	1	VOC Target Scan	
	V4 BV-MW08-6.2	12/11/13	S	1 Jar, 1 Bag	2	PCB	
	V2 BV-MW10-0.1	12/11/13	S	1 Jar, 1 Bag	2	pH (7-5)	
	V3 BV-MW12-0.5	12/11/13	S	1 Jar, 2 Buds	3	Exchangeable cations (ED007)	
	V4 BV-MW13-0.1	12/11/13	S	1 Jar, 1 Bag	2	PFOS/PFOA	
	V8 BV-SB06-0.2	12/11/13	S	"	2	Asbestos (absence/presence)	
	V2 R01-12/113-SM	12/11/13	W	2ANOC, 1ASVOC, 1Xmetals	4	Particle Sizing to 75µm (Sieve)	
	V2 Trip Spike		S	1x Jar	1	Organic Matter plus Total Organic Carbon (EP004)	
	V2 Trip Blank		S	"	1	Asbestos (absence/presence)	
	TSC					Organic Matter plus Total Organic Carbon (EP004)	

TRH C6-C9 + STEX only  
TRH C6-C9 + BTEX only

Matrix Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; DGC = Nitric Preserved DGC; S = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AC = Amber Glass Unpreserved; AP = Air-tight Unpreserved Plastic; V = VOA Val HI Preserved; VA = VOA Val Sodium Bisulfate Preserved; VS = VOA Val Sulfur Preserved; AV = Air-tight Unpreserved Val; SC = Sealing Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; Sp = Sulphur Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Stable Bottle; ASS = Plastic Bin for Acid Samples; Sol = Solvent Preserved Bin; U = Unpreserved Bin.

## Wael Saleh

---

**From:** Barbara Hanna  
**Sent:** Wednesday, 20 November 2013 8:27 AM  
**To:** Wael Saleh  
**Subject:** FW: Amendments to ERM Symphony SRNs

Hi Wael,

Could you please take care of this.

Thanks  
Barbara

---

From: Kate Fox [Kate.Fox@erm.com]  
Sent: Tuesday, 19 November 2013 5:40 PM  
To: Barbara Hanna  
Cc: ERM Australia Project Symphony MacGen  
Subject: RE: Amendments to ERM Symphony SRNs

Hi Barbara,

Thanks for that. I have a few more requests!

- 1) Instead of analysing for Cations and Anions, we would now like to analyse for Electrical Conductivity. So far, I think it's only the following which have been analysed for Cations and Anions:
  - ES1324726-016
  - ES1324726-017
  - ES1324729-016
  - ES1324838-001If these could be analysed for Electrical Conductivity as well, that would be great. Going forward samples will only be analysed for Electrical Conductivity.
  
- 2) Please analyse ES1324729-007 for Electrical Conductivity.
  
- 3) Please add analysis of Metals(8), TRH, BTEX, PAH, Phenols to:
  - ES1324840-001
  - ES1324840-002
  - ES1324840-003
  - ES1324840-004
  - ES1324840-005
  - ES1324840-006
  
- 4) Please rename the following IDs:

<b>Lab Sample ID</b>	<b>Current ID</b>	<b>Correct ID</b>
ES1324729-017	TRIP SPIKE	TS_051113_SM
ES1324729-018	TRIP BLANK	TB_051113_SM
ES1324729-019	TSC	TSC_051113
ES1324729-020	R01_071113	R01_071113_SM

Many thanks,  
Please let me know if you have any questions.

Kate

---

From: Barbara Hanna [mailto:Barbara.Hanna@alsglobal.com]  
Sent: Tuesday, November 19, 2013 10:14 AM  
To: Wael Saleh  
Cc: ERM Australia Project Symphony MacGen; Kate Fox  
Subject: RE: Amendments to ERM Symphony SRNs

Hi Wael,

Could you please take care of this.

Thanks!!

Kind Regards

**Barbara Hanna**

**Client Services Manager**  
**ALS | Environmental Division**

277-289 Woodpark Road  
Smithfield NSW 2164 Australia

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*Please see our latest [EnviroMail 68 - Sampling and Analysis Implications of the new NEPM - July 2013](#)*

*[EnviroMail 69 - Testing Requirements of the new NEPM - July 2013](#)*

*[EnviroMail 70 - Variation of Naphthalene by SVOC and VOC Methods in Water - July 2013](#)*

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F +61 2 8784 8500



D +61 2 8784 8531



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**Winner of the inaugural CARE Award 2011 - Sustainable Technology & Innovation:**

Reduction in Sample Volumes - Improving quality, safety, efficiency and sustainability in environmental practices



Please consider the environment before printing this email.

---

From: Kate Fox [mailto:Kate.Fox@erm.com]  
Sent: Monday, 18 November 2013 6:20 PM  
To: Barbara Hanna

Cc: ERM Australia Project Symphony MacGen  
Subject: Amendments to ERM Symphony SRNs

Hi Barbara,

I'm just going through some SRNs for the Symphony Project. Could you please amend the Sample ID on the following:

Lab Sample ID	Current ID	Correct ID
ES1324840-011	TRIP SPIKE (TS4)	TS4_151113
ES1324840-012	BLANK	TB_151113
ES1324840-013	TSC 4	TSC4_151113
ES1324841-008	LI_MW8_0.5	LI_MW08_0.5

Many thanks,  
Kate



**Kate Fox**  
Environmental Resources Management  
Level 1, 60 Leichhardt Street  
Spring Hill, Brisbane, QLD, 4000

Switch: +61 7 3839 8393 | Direct : +61 7 3007 8439 | [www.erm.com](http://www.erm.com)

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## SAMPLE RECEIPT NOTIFICATION (SRN)

### Comprehensive Report

**Work Order : ES1324726**

<p><b>Client : ENVIRO RESOURCES MANAGEMENT</b></p> <p><b>Contact : MR JOE FERRING</b></p> <p><b>Address : GRND FLOOR, 33 SAUNDERS STREET PYRMONT NSW AUSTRALIA 2009</b></p>	<p><b>Laboratory : Environmental Division Sydney</b></p> <p><b>Contact : Barbara Hanna</b></p> <p><b>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</b></p>
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<p><b>E-mail : joseph.ferring@erm.com</b></p> <p><b>Telephone : +61 02 8584 8888</b></p> <p><b>Facsimile : +61 02 8584 8800</b></p>	<p><b>E-mail : Barbara.Hanna@alsglobal.com</b></p> <p><b>Telephone : +61 2 8784 8555</b></p> <p><b>Facsimile : +61 2 8784 8555</b></p>
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<p><b>Project : PROJECT SYMPHONY</b></p> <p><b>Order number : 02241093</b></p> <p><b>C-O-C number : ----</b></p> <p><b>Site : BAYSWATER</b></p> <p><b>Sampler : A.MORRIS</b></p>	<p><b>Page : 1 of 4</b></p> <p><b>Quote number : ES2013ENVRES0369 (SY/794/13)</b></p> <p><b>QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement</b></p>
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#### Dates

<p><b>Date Samples Received : 14-NOV-2013</b></p> <p><b>Client Requested Due Date : 25-NOV-2013</b></p>	<p><b>Issue Date : 21-NOV-2013 11:15</b></p> <p><b>Scheduled Reporting Date : <b>25-NOV-2013</b></b></p>
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#### Delivery Details

<p><b>Mode of Delivery : Carrier</b></p> <p><b>No. of coolers/boxes : 1 HARD</b></p> <p><b>Security Seal : Intact.</b></p>	<p><b>Temperature : 4.8°C SYD - Ice present</b></p> <p><b>No. of samples received : 27</b></p> <p><b>No. of samples analysed : 21</b></p>
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#### General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Asbestos and Particle Sizing analysis will be conducted by ALS Newcastle.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.





## Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exist.

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process 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.

If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA010 (solids): Electrical Conductivity (1:5) Electrical Conductivity (1:5)	SOIL - EA150* Particle Size Analysis by Sieving (Default sieves from ASBESTOS)	SOIL - EA200 Asbestos Identification in Soils	SOIL - ED007 CEC / Exchangeable Cations (ED007) -All	SOIL - EP066 (solids) Polychlorinated Biphenyls by GC/MS	SOIL - EP074 (solids) Volatile Organic Compounds
ES1324726-004	12-NOV-2013 15:00	DUP20131112_AM01	✓							
ES1324726-005	12-NOV-2013 15:00	TRIP20131112_AM01	✓							
ES1324726-011	12-NOV-2013 15:00	BG_MW01_3.8							✓	✓
ES1324726-012	12-NOV-2013 15:00	BG_MW02_3.0	✓							
ES1324726-013	12-NOV-2013 15:00	BG_MW02_4.0	✓							
ES1324726-014	12-NOV-2013 15:00	BG_MW02_6.3							✓	✓
ES1324726-015	12-NOV-2013 15:00	BV_SB09_0.1					✓		✓	✓
ES1324726-016	12-NOV-2013 15:00	BI_MW01_0.5		✓	✓		✓			
ES1324726-017	12-NOV-2013 15:00	BI_MW02_0.2		✓	✓		✓			
ES1324726-018	12-NOV-2013 15:00	BI_MW02_1.5	✓							
ES1324726-019	12-NOV-2013 15:00	BV_MW08_0.2					✓			
ES1324726-020	12-NOV-2013 15:00	BV_MW10_0.1					✓		✓	✓
ES1324726-021	12-NOV-2013 15:00	BV_MW12_0.5				✓	✓	✓		
ES1324726-022	12-NOV-2013 15:00	BV_MW13_0.1	✓							
ES1324726-023	12-NOV-2013 15:00	BV_SB06_0.2					✓			

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - NT-1S Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S Major Anions (Cl, SO4)	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-27 TRH/BTEXN/PAH/Phenols/ Metals
ES1324726-001	12-NOV-2013 15:00	BC_MW02_2.5				✓
ES1324726-002	12-NOV-2013 15:00	BC_MW03_2.0				✓
ES1324726-003	12-NOV-2013 15:00	BC_MW04_1.6				✓
ES1324726-006	12-NOV-2013 15:00	BC_MW05_1.8				✓
ES1324726-007	12-NOV-2013 15:00	BC_SB01_1.6				✓
ES1324726-008	12-NOV-2013 15:00	BC_SB02_1.5				✓
ES1324726-009	12-NOV-2013 15:00	BC_SB03_2.0				✓
ES1324726-010	12-NOV-2013 15:00	BC_SB04_1.5				✓
ES1324726-011	12-NOV-2013 15:00	BG_MW01_3.8				✓



			SOIL - NT-1S Major Cations (Ca, Mg, Na, K)	SOIL - NT-2S Major Anions (Cl, SO4)	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-27 TRH/BTEXN/PAH/Phenols/8Metals
ES1324726-014	12-NOV-2013 15:00	BG_MW02_6.3				✓
ES1324726-015	12-NOV-2013 15:00	BV_SB09_0.1				✓
ES1324726-016	12-NOV-2013 15:00	BI_MW01_0.5	✓	✓		✓
ES1324726-017	12-NOV-2013 15:00	BI_MW02_0.2	✓	✓		✓
ES1324726-019	12-NOV-2013 15:00	BV_MW08_0.2				✓
ES1324726-020	12-NOV-2013 15:00	BV_MW10_0.1				✓
ES1324726-021	12-NOV-2013 15:00	BV_MW12_0.5				✓
ES1324726-023	12-NOV-2013 15:00	BV_SB06_0.2				✓
ES1324726-025	12-NOV-2013 15:00	TRIP SPIKE			✓	
ES1324726-026	08-NOV-2013 15:00	TRIP BLANK			✓	
ES1324726-027	12-NOV-2013 15:00	TSC			✓	

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP066-PCB-WA Polychlorinated Biphenyls (PCB)	WATER - EP074 (water) Volatile Organic Compounds	WATER - W-27T TRH/BTEXN/PAH/Phenols/Total 8 Metals
ES1324726-024	12-NOV-2013 15:00	R01_121113_SM	✓	✓	✓

### Proactive Holding Time Report

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



## Requested Deliverables

### JOHN EWING

- *AU Certificate of Analysis - NATA ( COA )	Email	john.ewing@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	john.ewing@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	john.ewing@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	john.ewing@erm.com
- Attachment - Report ( SUBCO )	Email	john.ewing@erm.com
- Chain of Custody (CoC) ( COC )	Email	john.ewing@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	john.ewing@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	john.ewing@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	john.ewing@erm.com
- EDI Format - XTab ( XTAB )	Email	john.ewing@erm.com

### MR JOE FERRING

- *AU Certificate of Analysis - NATA ( COA )	Email	joseph.ferring@erm.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) ( QCI )	Email	joseph.ferring@erm.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA ( QC )	Email	joseph.ferring@erm.com
- A4 - AU Sample Receipt Notification - Environmental HT ( SRN )	Email	joseph.ferring@erm.com
- Attachment - Report ( SUBCO )	Email	joseph.ferring@erm.com
- Chain of Custody (CoC) ( COC )	Email	joseph.ferring@erm.com
- EDI Format - ENMRG ( ENMRG )	Email	joseph.ferring@erm.com
- EDI Format - EQUIS V5 ERM ( EQUIS_V5_ERM )	Email	joseph.ferring@erm.com
- EDI Format - ESDAT ( ESDAT )	Email	joseph.ferring@erm.com
- EDI Format - XTab ( XTAB )	Email	joseph.ferring@erm.com

### THE ACCOUNTS PAYABLE

- A4 - AU Tax Invoice ( INV )	Email	au.accounts@erm.com
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