



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
EP004: Organic Matter (QCLot: 3217922) - continued										
ES1327178-002	Anonymous	EP004: Organic Matter	----	0.49 %	97.8	----	----	----	----	----
		EP004: Total Organic Carbon	----	0.28 %	99.6	----	----	----	----	----
EP231: Perfluorinated Compounds (QCLot: 3220345)										
ES1327179-001	LJ_MW03_0.2	EP231: PFOS	1763-23-1	0.0025 mg/kg	74.5	----	54	146	----	----
		EP231: PFOA	335-67-1	0.0025 mg/kg	85.3	----	54	134	----	----
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	121	----	56	138	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3221527)										
ES1327148-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	101	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	106	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	108	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	108	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	100	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	108	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	111	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3221528)										
ES1327148-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	91.4	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327179	Page	: 1 of 9
Amendment	: 1		
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	: 0224186	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 16-DEC-2013
Sampler	: ----	Issue Date	: 27-DEC-2013
Order number	: ----		
Quote number	: SY/794/13	No. of samples received	: 4
		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 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
EA055: Moisture Content							
Snap Lock Bag (EA055-103) LJ_SB02_1.0	03-DEC-2013	----	----	----	17-DEC-2013	17-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5, 03-DEC-2013	----	----	----	17-DEC-2013	17-DEC-2013	✓
EG005T: Total Metals by ICP-AES							
Snap Lock Bag (EG005T) LJ_SB02_1.0	03-DEC-2013	19-DEC-2013	01-JUN-2014	✓	20-DEC-2013	01-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5, 03-DEC-2013	19-DEC-2013	01-JUN-2014	✓	20-DEC-2013	01-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Snap Lock Bag (EG035T) LJ_SB02_1.0	03-DEC-2013	19-DEC-2013	31-DEC-2013	✓	20-DEC-2013	31-DEC-2013	✓
Soil Glass Jar - Unpreserved (EG035T) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5, 03-DEC-2013	19-DEC-2013	31-DEC-2013	✓	20-DEC-2013	31-DEC-2013	✓
EP004: Organic Matter							
Snap Lock Bag (EP004) LJ_SB02_1.0	03-DEC-2013	20-DEC-2013	10-DEC-2013	*	20-DEC-2013	17-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP004) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5, 03-DEC-2013	20-DEC-2013	31-DEC-2013	✓	20-DEC-2013	31-DEC-2013	✓
EP080/071: Total Petroleum Hydrocarbons							
Snap Lock Bag (EP071) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	17-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5, 03-DEC-2013	17-DEC-2013	17-DEC-2013	✓	20-DEC-2013	28-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	
EP074D: Fumigants								
Snap Lock Bag (EP074) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖	
Soil Glass Jar - Unpreserved (EP074) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖
EP074E: Halogenated Aliphatic Compounds								
Snap Lock Bag (EP074) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖	
Soil Glass Jar - Unpreserved (EP074) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖
EP074F: Halogenated Aromatic Compounds								
Snap Lock Bag (EP074) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖	
Soil Glass Jar - Unpreserved (EP074) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖
EP074A: Monocyclic Aromatic Hydrocarbons								
Snap Lock Bag (EP074) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖	
Soil Glass Jar - Unpreserved (EP074) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖
EP074H: Naphthalene								
Snap Lock Bag (EP074) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖	
Soil Glass Jar - Unpreserved (EP074) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖
EP074B: Oxygenated Compounds								
Snap Lock Bag (EP074) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖	
Soil Glass Jar - Unpreserved (EP074) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖
EP074C: Sulfonated Compounds								
Snap Lock Bag (EP074) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-DEC-2013	10-DEC-2013	✖	
Soil Glass Jar - Unpreserved (EP074) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	10-DEC-2013	✖	17-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	
EP074G: Trihalomethanes								
Snap Lock Bag (EP074) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	10-DEC-2013	✘	17-DEC-2013	10-DEC-2013	✘	
Soil Glass Jar - Unpreserved (EP074) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	10-DEC-2013	✘	17-DEC-2013	10-DEC-2013	✘
EP075(SIM)A: Phenolic Compounds								
Snap Lock Bag (EP075(SIM)) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	17-DEC-2013	✔	20-DEC-2013	28-JAN-2014	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	17-DEC-2013	✔	20-DEC-2013	28-JAN-2014	✔
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Snap Lock Bag (EP075(SIM)) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	17-DEC-2013	✔	20-DEC-2013	28-JAN-2014	✔	
Soil Glass Jar - Unpreserved (EP075(SIM)) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	17-DEC-2013	✔	20-DEC-2013	28-JAN-2014	✔
EP080: BTEXN								
Snap Lock Bag (EP080) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-DEC-2013	✔	
Soil Glass Jar - Unpreserved (EP080) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-DEC-2013	✔
EP080/071: Total Petroleum Hydrocarbons								
Snap Lock Bag (EP080) LJ_SB02_1.0	03-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-DEC-2013	✔	
Soil Glass Jar - Unpreserved (EP080) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-DEC-2013	✔
EP231: Perfluorinated Compounds								
Snap Lock Bag (EP231) LJ_SB02_1.0	03-DEC-2013	19-DEC-2013	01-JUN-2014	✔	19-DEC-2013	28-JAN-2014	✔	
Soil Glass Jar - Unpreserved (EP231) LJ_MW03_0.2, LJ_SB04_0.5	LJ_MW03_0.5,	03-DEC-2013	19-DEC-2013	01-JUN-2014	✔	19-DEC-2013	28-JAN-2014	✔



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	
Analytical Methods							
Laboratory Duplicates (DUP)							
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)	1	4	25.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	4	25.0	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	1	5	20.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	7	14.3	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
Laboratory Control Samples (LCS)							
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	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-AES	EG005T	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	5	20.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	7	14.3	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
Method Blanks (MB)							
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	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-AES	EG005T	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	5	20.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	7	14.3	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 Spikes (MS)							
Organic Matter	EP004	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	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-AES	EG005T	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	5	20.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	7	14.3	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



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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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)
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
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

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Work Order : ES1327179 Amendment 1
Client : ENVIRO RESOURCES MANAGEMENT
Project : 0224186



<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
EP004: Organic Matter						
Snap Lock Bag LJ_SB02_1.0	20-DEC-2013	10-DEC-2013	10	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons						
Snap Lock Bag LJ_SB02_1.0	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
Soil Glass Jar - Unpreserved LJ_MW03_0.2, LJ_MW03_0.5, LJ_SB04_0.5	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
EP074B: Oxygenated Compounds						
Snap Lock Bag LJ_SB02_1.0	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
Soil Glass Jar - Unpreserved LJ_MW03_0.2, LJ_MW03_0.5, LJ_SB04_0.5	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
EP074C: Sulfonated Compounds						
Snap Lock Bag LJ_SB02_1.0	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
Soil Glass Jar - Unpreserved LJ_MW03_0.2, LJ_MW03_0.5, LJ_SB04_0.5	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
EP074D: Fumigants						



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
EP074D: Fumigants - Analysis Holding Time Compliance						
Snap Lock Bag LJ_SB02_1.0	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
Soil Glass Jar - Unpreserved LJ_MW03_0.2, LJ_SB04_0.5, LJ_MW03_0.5,	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
EP074E: Halogenated Aliphatic Compounds						
Snap Lock Bag LJ_SB02_1.0	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
Soil Glass Jar - Unpreserved LJ_MW03_0.2, LJ_SB04_0.5, LJ_MW03_0.5,	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
EP074F: Halogenated Aromatic Compounds						
Snap Lock Bag LJ_SB02_1.0	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
Soil Glass Jar - Unpreserved LJ_MW03_0.2, LJ_SB04_0.5, LJ_MW03_0.5,	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
EP074G: Trihalomethanes						
Snap Lock Bag LJ_SB02_1.0	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
Soil Glass Jar - Unpreserved LJ_MW03_0.2, LJ_SB04_0.5, LJ_MW03_0.5,	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
EP074H: Naphthalene						
Snap Lock Bag LJ_SB02_1.0	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-2013	7
Soil Glass Jar - Unpreserved LJ_MW03_0.2, LJ_SB04_0.5, LJ_MW03_0.5,	17-DEC-2013	10-DEC-2013	7	17-DEC-2013	10-DEC-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.



Monitoring_Zone	SampleCode	Field_ID	Sampled_Date-Time	LocCode	ANALYSE FOR
BA	ES1324729001	BA_MW01_0.1	7/4/2013 15:00	BA_MW01	TOC, PSD, pH, CEC
1 BH	ES1325842013	BH_SB07_0.2	26/11/2013 15:00	BH_SB07	TOC
2 BI	ES1325883001	BI_MW03_0.6	20/11/2013 15:00	BI_MW03	PSD, TOC
3 BN	ES1325842015	BP_MW01_0.25	26/11/2013 15:00	BP_MW01	TOC, PSD and pH
4 BV	ES1325842009	BV_SB07_0.25	25/11/2013 15:00	BV_SB07	TOC, pH
5 BE	ES1325842049	BE_MW09_0.9	26/11/2013 15:00	BE_MW09	TOC, PSD, pH, CEC
6 BK	ES1324839004	BK_SB06_0.6	14/11/2013 15:00	BK_SB06	TOC, PSD, pH, CEC
7 BL	ES1325842001	BL_SB01_0.25	26/11/2013 15:00	BL_SB01	TOC, PSD, pH, CEC
8 BX	ES1325842024	BX_MW02_0.5	26/11/2013 15:00	BX_MW02	TOC, PSD, pH, CEC
9 BM	ES1326999-001	BM_SB01_0.5	4/12/2013 15:00	BM_SB01	TOC, PSD, pH, CEC
10 LA	ES1325889001	LA_MW02_1.0	22/11/2013 15:00	LA_MW02	TOC, PSD, pH, CEC
11 LE	ES1325889002	LE_SB01_1.0	22/11/2013 15:00	LE_SB01	TOC, PSD, pH, CEC
12 LF	ES1325458005	LF_SB02_0.1	21/11/2013 15:00	LF_SB02	TOC, PSD, pH, CEC
13 LI	ES1324841008	LI_MW08_0.5	15/11/2013 15:00	LI_MW08	TOC, PSD, pH, CEC
14 LL	ES1325019012	LK_MW02_0.1	14/11/2013 15:00	LK_MW02	TOC, PSD, pH, CEC
15 LM	ES1326683003	LL_SB12_0.5	30/11/2013 15:00	LL_SB12	TOC, PSD, pH, CEC
16 LN	ES1324724003	LM_MW02_0.5	11/11/2013 15:00	LM_MW02	TOC, PSD, pH, CEC
17 LO	ES1324460008	LN_MW03_0.5	8/11/2013 15:00	LN_MW03	TOC, PSD, pH, CEC
18 LP	ES1324727011	LO_SB01_0.5	12/11/2013 15:00	LO_SB01	TOC, PSD, pH, CEC
19 LQ	ES1326686005	LP_MW06_1.0	21/2/2013 15:00	LP_MW06	TOC, PSD, pH, CEC
20 LR	ES1325885002	LQ_MW07_0.5	19/11/2013 15:00	LQ_MW07	TOC, PSD, pH, CEC
21 LS	ES1324724004	LR_MW04_0.5	11/11/2013 15:00	LR_MW04	TOC, PSD, pH, CEC
22 LG	ES1326686011	LS_MW01_0.5	21/2/2013 15:00	LS_MW01	TOC, PSD, pH, CEC
23 LD	ES1324840004	LT_MW04_0.1	16/4/2013 15:00	LT_MW04	TOC, PSD, pH, CEC
24 LU	ES1326685-009	LG_MW03_0.5	2/12/2013 0:00	LG_MW03	TOC, PSD, pH, CEC
	ES1325838-001	LD_MW05_2.0	25/11/2013 9:05	LD_MW05	TOC, PSD, pH, CEC
	ES1325838-001	LU_SB02_0.1	2/4/2013 0:00	LU_SB02	TOC, PSD, pH, CEC
	ES1326976-009	LJ_SB07_0.8	4/12/2013 16:10	LJ_SB07	TOC, PSD, pH, CEC

550-51
5217-219
5185
5217-214

only in 13/12/13

550-51
5217-219
5185
5217-214
5283
547
55-7
551-52
5282
5186
547
5282
571-72
5294-285
5211

400g
Subs / Forward Lab / Split WO
Lab / Analysis: PSD ALS New Castle
Organised By / Date: -----
Relinquished By / Date: -----
Connote / Courier: -----
WO No: -----
Attach By PO / Internal Sheet: -----

Rec: Steven
13/12/13 11:30

Fadi Soro

From: Joseph Ferring <Joseph.Ferring@erm.com>
Sent: Friday, 13 December 2013 10:50 AM
To: Fadi Soro
Cc: ERM Australia Project Symphony MacGen; Barbara Hanna
Subject: RE: pH, CEC, PSD, TOC

Hi Fadi, sorry for the confusion.

26 Sample LU_SB02_0.1 corresponds with lab ID ES1326685-005. 5244-285 *TOC, PSD, pH & EC as per original list*

cheers

Joe Ferring
Senior Environmental Scientist

ERM
Building C, 33 Saunders Street Pyrmont NSW 2009
Locked Bag 24, Broadway NSW 2007 AUSTRALIA

T: +61 (0)2 8584 8890 (Direct)
T: +61 (0)2 8584 8888 (Office)
F: +61 (0)2 8584 8800
M: +61 424970468
joseph.ferring@erm.com

www.erm.com

From: Fadi Soro [<mailto:fadi.soro@alsglobal.com>]
Sent: Friday, December 13, 2013 10:08 AM
To: Joseph Ferring
Cc: ERM Australia Project Symphony MacGen; Barbara Hanna
Subject: RE: pH, CEC, PSD, TOC

Hey Joe,

So just to clarify;

ES1324729-001 has insufficient sample volume therefore it will be cancelled from the list.
ES1325019-012 only 1 jar received and sent for Asbestos analysis therefore no volume remaining.
ES1324840-004 same as ES1325019-012

Sample ID LU_SB02_0.1 does not match sample code ES1325838-001 as listed on the table, can you give me the correct sample code please?

25 LT_MW04_0.5 will be added to the list.

Any questions please contact me on 8784 8568

Regards

Fadi

From: Joseph Ferring [mailto:Joseph.Ferring@erm.com]

Sent: Friday, 13 December 2013 9:58 AM

To: Fadi Soro

Cc: ERM Australia Project Symphony MacGen

Subject: FW: pH, CEC, PSD, TOC

Hi Fadi, we don't have suitable samples to replace two of the three samples where insufficient sample volume was available for pH, CEC, PSD, TOC.

Can you please schedule the following sample for pH, CEC, PSD and TOC:

25

Monitoring_Zone	SampleCode	Field_ID	Sampled_Date-Time	LocCode	ANALYSE FOR
LT	ES1324260009	LT_MW04_0.5	6/11/2013 0:00	LT_MW04	TOC,PSD, pH, CEC

Please let me know if you have any queries.

cheers

Joe Ferring

Senior Environmental Scientist

ERM

Building C, 33 Saunders Street Pyrmont NSW 2009
Locked Bag 24, Broadway NSW 2007 AUSTRALIA

T: +61 (0)2 8584 8890 (Direct)
T: +61 (0)2 8584 8888 (Office)
F: +61 (0)2 8584 8800
M: +61 424970468
joseph.ferring@erm.com

www.erm.com

From: Barbara Hanna [<mailto:Barbara.Hanna@alsglobal.com>]

Sent: Friday, December 13, 2013 8:48 AM

To: Joseph Ferring

Cc: John Ewing; Clea Henderson; ERM Australia Project Symphony MacGen

Subject: RE: pH, CEC, PSD, TOC

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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F +61 2 8784 8500

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Please consider the environment before printing this email.

From: Joseph Ferring [mailto:Joseph.Ferring@erm.com]

Sent: Thursday, 12 December 2013 8:24 PM

To: Barbara Hanna

Cc: John Ewing; Clea Henderson; ERM Australia Project Symphony MacGen

Subject: RE: pH, CEC, PSD, TOC

Thanks Barbara – that's fine. Please proceed with analysis.

cheers

Joe Ferring

Senior Environmental Scientist

ERM

Building C, 33 Saunders Street Pyrmont NSW 2009
Locked Bag 24, Broadway NSW 2007 AUSTRALIA

T: +61 (0)2 8584 8890 (Direct)

T: +61 (0)2 8584 8888 (Office)

F: +61 (0)2 8584 8800

M: +61 424970468

joseph.ferring@erm.com

www.erm.com

From: Barbara Hanna [<mailto:Barbara.Hanna@alsglobal.com>]
Sent: Thursday, December 12, 2013 5:36 PM
To: Joseph Ferring
Cc: John Ewing; Clea Henderson; ERM Australia Project Symphony MacGen
Subject: RE: pH, CEC, PSD, TOC

Hi Joe,

The best TAT we can offer for TOC, CEC and pH is 3 days. As for PSD the best they can offer is 7-10 working days!

In regards to the samples with the holding time issues we can't really comment on how results will be affected because it depends on the type of sample it is. But basically it will be a slight fluctuation in results either up or down.

Kind Regards

Barbara Hanna

Client Services Manager
ALS | Environmental Division

277-289 Woodpark Road
Smithfield NSW 2164 Australia

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From: Joseph Ferring [mailto:Joseph.Ferring@erm.com]
Sent: Thursday, 12 December 2013 5:09 PM
To: Barbara Hanna
Cc: John Ewing; Clea Henderson; ERM Australia Project Symphony MacGen
Subject: RE: pH, CEC, PSD, TOC

Hi Barbara, here are the additions we need for pH, CEC, PSD and TOC. We'll need to put them on the fastest TAT possible, but realise that PSD may not be able to be done in 24 hours. How about the rest?

The holding times for pH will be exceeded in the majority of samples and CEC and TOC will also be out for the yellow highlighted samples. How much difference to the results would this actually make?

Cheers,
Joe

Joe Ferring
Senior Environmental Scientist

ERM
Building C, 33 Saunders Street Pyrmont NSW 2009
Locked Bag 24, Broadway NSW 2007 AUSTRALIA

T: +61 (0)2 8584 8890 (Direct)
T: +61 (0)2 8584 8888 (Office)
F: +61 (0)2 8584 8800
M: +61 424970468
joseph.ferring@erm.com

www.erm.com

From: Barbara Hanna [<mailto:Barbara.Hanna@alsglobal.com>]
Sent: Thursday, December 12, 2013 12:45 PM
To: Joseph Ferring
Cc: John Ewing; Clea Henderson
Subject: RE: pH, CEC, PSD, TOC

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](#)

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♻️ Please consider the environment before printing this email.

From: Joseph Ferring [<mailto:Joseph.Ferring@erm.com>]
Sent: Thursday, 12 December 2013 12:21 PM
To: Barbara Hanna
Cc: John Ewing; Clea Henderson
Subject: RE: pH, CEC, PSD, TOC

Thanks Barbara – we'll put together list of what needs to be analysed and get back to you ASAP.

cheers

Joe Ferring
Senior Environmental Scientist

ERM
Building C, 33 Saunders Street Pyrmont NSW 2009
Locked Bag 24, Broadway NSW 2007 AUSTRALIA

T: +61 (0)2 8584 8890 (Direct)
T: +61 (0)2 8584 8888 (Office)
F: +61 (0)2 8584 8800
M: +61 424970468
joseph.ferring@erm.com

www.erm.com

From: Barbara Hanna [<mailto:Barbara.Hanna@alsglobal.com>]
Sent: Thursday, December 12, 2013 12:13 PM
To: Joseph Ferring
Cc: John Ewing; Clea Henderson
Subject: RE: pH, CEC, PSD, TOC

The holding times are as follows

pH: 7 days
CEC: 28 days
TOC: 28 days

PSD: 180 days

Kind Regards

Barbara Hanna

Client Services Manager
ALS | Environmental Division

277-289 Woodpark Road
Smithfield NSW 2164 Australia

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
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 Please consider the environment before printing this email.

From: Joseph Ferring [<mailto:Joseph.Ferring@erm.com>]

Sent: Thursday, 12 December 2013 12:08 PM

To: Barbara Hanna

Cc: John Ewing; Clea Henderson
Subject: pH, CEC, PSD, TOC
Importance: High

Hi Barbara, we have identified about 20 soil samples which we'll need to re-batch for pH, CEC, TOC and PSD. Could you please let us know what the holding times for these analyses are?

We would be looking to get these done on very fast TAT.

cheers

Joe Ferring
Senior Environmental Scientist

ERM

Building C, 33 Saunders Street Pyrmont NSW 2009
Locked Bag 24, Broadway NSW 2007 AUSTRALIA

T: +61 (0)2 8584 8890 (Direct)
T: +61 (0)2 8584 8888 (Office)
F: +61 (0)2 8584 8800
M: +61 424970468
joseph.ferring@erm.com

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SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : ES1327324

<p>Client : ENVIRO RESOURCES MANAGEMENT</p> <p>Contact : MR JOSEPH FERRING</p> <p>Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</p>	<p>Laboratory : Environmental Division Sydney</p> <p>Contact : Barbara Hanna</p> <p>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</p>
---	--

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

<p>Project : Project Symphony</p> <p>Order number : ----</p> <p>C-O-C number : ----</p> <p>Site : ----</p> <p>Sampler : ----</p>	<p>Page : 1 of 3</p> <p>Quote number : ES2013ENVRES0369 (SY/794/13)</p>
---	---

QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

<p>Date Samples Received : 13-DEC-2013</p> <p>Client Requested Due Date : 18-DEC-2013</p>	<p>Issue Date : 14-DEC-2013 10:53</p> <p>Scheduled Reporting Date : 18-DEC-2013</p>
---	---

Delivery Details

<p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : REBATCH</p> <p>Security Seal : Not intact.</p>	<p>Temperature : 19°C</p> <p>No. of samples received : 26</p> <p>No. of samples analysed : 26</p>
---	--

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.**
- **PSD analysis will be conducted by ALS Newcastle.**
- **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.**
- **ALL analysis will be reported on the scheduled due date 18/12/13, except for PSD analysis will be reported on 24/12/13.**
- **This is a rebatch of all Project Symphony work orders**
- 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 - ED007	CEC / Exchangeable Cations (ED007) -All	SOIL - EP004 (Carbon) Total Organic Carbon (Calc.)
ES1327324-001	26-NOV-2013 15:00	BH_SB07_0.2				✓
ES1327324-002	20-NOV-2013 15:00	BI_MW03_0.6		✓		✓
ES1327324-003	26-NOV-2013 15:00	BP_MW01_0.25	✓	✓		✓
ES1327324-004	25-NOV-2013 15:00	BV_SB07_0.25	✓			✓
ES1327324-005	26-NOV-2013 15:00	BE_MW09_0.9	✓	✓	✓	✓
ES1327324-006	14-NOV-2013 15:00	BK_SB06_0.6	✓	✓	✓	✓
ES1327324-007	25-NOV-2013 15:00	BL_SB01_0.25	✓	✓	✓	✓
ES1327324-008	26-NOV-2013 15:00	BX_MW02_0.5	✓	✓	✓	✓
ES1327324-009	04-DEC-2013 15:00	BM_SB01_0.5	✓	✓	✓	✓
ES1327324-010	22-NOV-2013 15:00	LA_MW02_1.0	✓	✓	✓	✓
ES1327324-011	22-NOV-2013 15:00	LE_SB01_1.0	✓	✓	✓	✓
ES1327324-012	21-NOV-2013 15:00	LF_SB02_0.1	✓	✓	✓	✓
ES1327324-013	15-NOV-2013 15:00	LI_MW08_0.5	✓	✓	✓	✓
ES1327324-014	30-NOV-2013 15:00	LL_SB12_0.5	✓	✓	✓	✓
ES1327324-015	11-NOV-2013 15:00	LM_MW02_0.5	✓	✓	✓	✓
ES1327324-016	08-NOV-2013 15:00	LN_MW03_0.5	✓	✓	✓	✓
ES1327324-017	12-NOV-2013 15:00	LO_SB01_0.5	✓	✓	✓	✓
ES1327324-018	02-DEC-2013 15:00	LP_MW06_1.0	✓	✓	✓	✓
ES1327324-019	19-NOV-2013 15:00	LQ_MW07_0.5	✓	✓	✓	✓
ES1327324-020	11-NOV-2013 15:00	LR_MW04_0.5	✓	✓	✓	✓
ES1327324-021	02-DEC-2013 15:00	LS_MW01_0.5	✓	✓	✓	✓
ES1327324-022	02-DEC-2013 15:00	LG_MW03_0.5	✓	✓	✓	✓
ES1327324-023	25-NOV-2013 15:00	LD_MW05_2.0	✓	✓	✓	✓
ES1327324-024	04-DEC-2013 15:00	LJ_SB07_0.8	✓	✓	✓	✓
ES1327324-025	06-DEC-2013 15:00	LT_MW04_0.5	✓	✓	✓	✓
ES1327324-026	02-DEC-2013 15:00	LU_SB02_0.1	✓	✓	✓	✓



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	
Client Sample ID(s)	Container			Date	Evaluation	Date	Evaluation
EA002: pH (1:5)							
BE_MW09_0.9	Soil Glass Jar - Unpreserved	03-DEC-2013	----	13-DEC-2013	*	----	----
BK_SB06_0.6	Soil Glass Jar - Unpreserved	21-NOV-2013	----	13-DEC-2013	*	----	----
BL_SB01_0.25	Soil Glass Jar - Unpreserved	02-DEC-2013	----	13-DEC-2013	*	----	----
BM_SB01_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	13-DEC-2013	*	----	----
BP_MW01_0.25	Soil Glass Jar - Unpreserved	03-DEC-2013	----	13-DEC-2013	*	----	----
BV_SB07_0.25	Soil Glass Jar - Unpreserved	02-DEC-2013	----	13-DEC-2013	*	----	----
BX_MW02_0.5	Soil Glass Jar - Unpreserved	03-DEC-2013	----	13-DEC-2013	*	----	----
LA_MW02_1.0	Soil Glass Jar - Unpreserved	29-NOV-2013	----	13-DEC-2013	*	----	----
LD_MW05_2.0	Soil Glass Jar - Unpreserved	02-DEC-2013	----	13-DEC-2013	*	----	----
LE_SB01_1.0	Soil Glass Jar - Unpreserved	29-NOV-2013	----	13-DEC-2013	*	----	----
LF_SB02_0.1	Soil Glass Jar - Unpreserved	28-NOV-2013	----	13-DEC-2013	*	----	----
LG_MW03_0.5	Soil Glass Jar - Unpreserved	09-DEC-2013	----	13-DEC-2013	*	----	----
LI_MW08_0.5	Soil Glass Jar - Unpreserved	22-NOV-2013	----	13-DEC-2013	*	----	----
LJ_SB07_0.8	Soil Glass Jar - Unpreserved	11-DEC-2013	----	13-DEC-2013	*	----	----
LL_SB12_0.5	Soil Glass Jar - Unpreserved	07-DEC-2013	----	13-DEC-2013	*	----	----
LM_MW02_0.5	Soil Glass Jar - Unpreserved	18-NOV-2013	----	13-DEC-2013	*	----	----
LN_MW03_0.5	Soil Glass Jar - Unpreserved	15-NOV-2013	----	13-DEC-2013	*	----	----
LO_SB01_0.5	Soil Glass Jar - Unpreserved	19-NOV-2013	----	13-DEC-2013	*	----	----
LP_MW06_1.0	Soil Glass Jar - Unpreserved	09-DEC-2013	----	13-DEC-2013	*	----	----
LQ_MW07_0.5	Soil Glass Jar - Unpreserved	26-NOV-2013	----	13-DEC-2013	*	----	----
LR_MW04_0.5	Soil Glass Jar - Unpreserved	18-NOV-2013	----	13-DEC-2013	*	----	----
LS_MW01_0.5	Soil Glass Jar - Unpreserved	09-DEC-2013	----	13-DEC-2013	*	----	----
LU_SB02_0.1	Soil Glass Jar - Unpreserved	09-DEC-2013	----	13-DEC-2013	*	----	----
ED007: Exchangeable Cations							
BK_SB06_0.6	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	----	----
LM_MW02_0.5	Soil Glass Jar - Unpreserved	09-DEC-2013	----	13-DEC-2013	*	----	----
LN_MW03_0.5	Soil Glass Jar - Unpreserved	06-DEC-2013	----	13-DEC-2013	*	----	----
LO_SB01_0.5	Soil Glass Jar - Unpreserved	10-DEC-2013	----	13-DEC-2013	*	----	----
LR_MW04_0.5	Soil Glass Jar - Unpreserved	09-DEC-2013	----	13-DEC-2013	*	----	----
EP004: Organic Matter							
BK_SB06_0.6	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	----	----
LM_MW02_0.5	Soil Glass Jar - Unpreserved	09-DEC-2013	----	13-DEC-2013	*	----	----
LN_MW03_0.5	Soil Glass Jar - Unpreserved	06-DEC-2013	----	13-DEC-2013	*	----	----
LO_SB01_0.5	Soil Glass Jar - Unpreserved	10-DEC-2013	----	13-DEC-2013	*	----	----
LR_MW04_0.5	Soil Glass Jar - Unpreserved	09-DEC-2013	----	13-DEC-2013	*	----	----

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 : ES1327324 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : Project Symphony Order number : ---- C-O-C number : ---- Sampler : ---- Site : ---- Quote number : SY/794/13	Page : 1 of 8 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 13-DEC-2013 Issue Date : 23-DEC-2013 No. of samples received : 26 No. of samples analysed : 26
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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



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
Di-An Dao		Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics



General Comments

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

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

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

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

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

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

LOR = Limit of reporting

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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BH_SB07_0.2	BI_MW03_0.6	BP_MW01_0.25	BV_SB07_0.25	BE_MW09_0.9
				26-NOV-2013 15:00	20-NOV-2013 15:00	26-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327324-001	ES1327324-002	ES1327324-003	ES1327324-004	ES1327324-005
EA150: Particle Sizing								
+75µm	----	1	%	----	14	78	----	3
+150µm	----	1	%	----	11	75	----	<1
+300µm	----	1	%	----	11	72	----	<1
+425µm	----	1	%	----	11	69	----	<1
+600µm	----	1	%	----	11	67	----	<1
+1180µm	----	1	%	----	10	62	----	<1
+2.36mm	----	1	%	----	10	56	----	<1
+4.75mm	----	1	%	----	7	44	----	<1
+9.5mm	----	1	%	----	5	31	----	<1
+19.0mm	----	1	%	----	<1	<1	----	<1
+37.5mm	----	1	%	----	<1	<1	----	<1
+75.0mm	----	1	%	----	<1	<1	----	<1
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	6.7	7.4	4.1
EA150: Soil Classification based on Particle Size								
Fines (<75 µm)	----	1	%	----	86	22	----	97
Sand (>75 µm)	----	1	%	----	4	21	----	3
Gravel (>2mm)	----	1	%	----	10	56	----	<1
Cobbles (>6cm)	----	1	%	----	<1	<1	----	<1
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	----	----	----	----	40.2
Exchangeable Magnesium	----	0.1	meq/100g	----	----	----	----	1.1
Exchangeable Potassium	----	0.1	meq/100g	----	----	----	----	0.2
Exchangeable Sodium	----	0.1	meq/100g	----	----	----	----	0.2
Cation Exchange Capacity	----	0.1	meq/100g	----	----	----	----	41.7
Exchangeable Aluminium	----	0.1	meq/100g	----	----	----	----	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	<0.5	<0.5	<0.5	<0.5	<0.5
Total Organic Carbon	----	0.5	%	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BK_SB06_0.6	BL_SB01_0.25	BX_MW02_0.5	BM_SB01_0.5	LA_MW02_1.0
				14-NOV-2013 15:00	25-NOV-2013 15:00	26-NOV-2013 15:00	04-DEC-2013 15:00	22-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327324-006	ES1327324-007	ES1327324-008	ES1327324-009	ES1327324-010
EA150: Particle Sizing								
+75µm	----	1	%	10	69	9	37	30
+150µm	----	1	%	2	66	2	31	24
+300µm	----	1	%	2	60	1	27	16
+425µm	----	1	%	1	55	<1	24	13
+600µm	----	1	%	1	50	<1	21	11
+1180µm	----	1	%	<1	40	<1	16	9
+2.36mm	----	1	%	<1	28	<1	9	7
+4.75mm	----	1	%	<1	11	<1	2	3
+9.5mm	----	1	%	<1	<1	<1	<1	2
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	5.4	9.8	5.2	7.8	5.8
EA150: Soil Classification based on Particle Size								
Fines (<75 µm)	----	1	%	90	31	91	63	70
Sand (>75 µm)	----	1	%	10	41	9	27	24
Gravel (>2mm)	----	1	%	<1	28	<1	9	7
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	2.9	39.6	1.3	18.9	1.7
Exchangeable Magnesium	----	0.1	meq/100g	5.2	0.5	4.5	3.2	7.3
Exchangeable Potassium	----	0.1	meq/100g	0.2	0.3	0.2	0.3	0.2
Exchangeable Sodium	----	0.1	meq/100g	0.8	0.1	0.5	0.2	1.0
Cation Exchange Capacity	----	0.1	meq/100g	9.0	40.5	6.5	22.6	10.2
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	<0.1	<0.1	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	<0.5	<0.5	0.7	1.7	0.5
Total Organic Carbon	----	0.5	%	<0.5	<0.5	<0.5	1.0	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LE_SB01_1.0	LF_SB02_0.1	LI_MW08_0.5	LL_SB12_0.5	LM_MW02_0.5
				22-NOV-2013 15:00	21-NOV-2013 15:00	15-NOV-2013 15:00	30-NOV-2013 15:00	11-NOV-2013 15:00
				ES1327324-011	ES1327324-012	ES1327324-013	ES1327324-014	ES1327324-015
Compound	CAS Number	LOR	Unit					
EA150: Particle Sizing								
+75µm	----	1	%	29	69	63	37	49
+150µm	----	1	%	22	63	59	33	44
+300µm	----	1	%	14	51	56	30	39
+425µm	----	1	%	10	42	54	28	37
+600µm	----	1	%	8	33	52	26	36
+1180µm	----	1	%	6	22	47	21	34
+2.36mm	----	1	%	3	15	39	17	32
+4.75mm	----	1	%	<1	9	27	12	24
+9.5mm	----	1	%	<1	2	7	4	8
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	6.2	8.2	5.1	6.8	4.6
EA150: Soil Classification based on Particle Size								
Fines (<75 µm)	----	1	%	71	31	37	63	51
Sand (>75 µm)	----	1	%	25	54	23	21	18
Gravel (>2mm)	----	1	%	3	15	39	17	32
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	1.7	25.0	9.6	4.3	5.5
Exchangeable Magnesium	----	0.1	meq/100g	5.0	1.9	3.8	7.0	8.1
Exchangeable Potassium	----	0.1	meq/100g	<0.1	0.3	0.2	0.2	0.3
Exchangeable Sodium	----	0.1	meq/100g	1.2	0.2	0.4	1.8	0.4
Cation Exchange Capacity	----	0.1	meq/100g	8.0	27.4	14.0	13.3	14.2
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	<0.1	<0.1	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	0.7	<0.5	3.4	0.5	0.8
Total Organic Carbon	----	0.5	%	<0.5	<0.5	2.0	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LN_MW03_0.5	LO_SB01_0.5	LP_MW06_1.0	LQ_MW07_0.5	LR_MW04_0.5
				08-NOV-2013 15:00	12-NOV-2013 15:00	02-DEC-2013 15:00	19-NOV-2013 15:00	11-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327324-016	ES1327324-017	ES1327324-018	ES1327324-019	ES1327324-020
EA150: Particle Sizing								
+75µm	----	1	%	4	85	11	58	32
+150µm	----	1	%	2	82	6	49	19
+300µm	----	1	%	1	78	6	41	15
+425µm	----	1	%	1	74	6	37	13
+600µm	----	1	%	<1	69	5	34	12
+1180µm	----	1	%	<1	60	4	28	10
+2.36mm	----	1	%	<1	52	3	24	7
+4.75mm	----	1	%	<1	40	1	16	4
+9.5mm	----	1	%	<1	14	<1	6	<1
+19.0mm	----	1	%	<1	<1	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	8.8	8.7	8.6	7.7	7.3
EA150: Soil Classification based on Particle Size								
Fines (<75 µm)	----	1	%	96	15	89	42	68
Sand (>75 µm)	----	1	%	4	33	9	34	25
Gravel (>2mm)	----	1	%	<1	52	3	24	7
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	7.2	8.6	18.9	21.1	2.1
Exchangeable Magnesium	----	0.1	meq/100g	7.0	4.0	10.8	1.0	6.6
Exchangeable Potassium	----	0.1	meq/100g	0.2	0.1	0.1	0.2	0.2
Exchangeable Sodium	----	0.1	meq/100g	1.1	0.1	2.1	<0.1	0.9
Cation Exchange Capacity	----	0.1	meq/100g	15.5	12.8	31.9	22.3	9.8
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	<0.1	<0.1	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	<0.5	<0.5	<0.5	0.5	<0.5
Total Organic Carbon	----	0.5	%	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LS_MW01_0.5	LG_MW03_0.5	LD_MW05_2.0	LJ_SB07_0.8	LT_MW04_0.5
				02-DEC-2013 15:00	02-DEC-2013 15:00	25-NOV-2013 15:00	04-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327324-021	ES1327324-022	ES1327324-023	ES1327324-024	ES1327324-025
EA150: Particle Sizing								
+75µm	----	1	%	3	76	12	13	28
+150µm	----	1	%	2	72	11	8	22
+300µm	----	1	%	1	59	11	5	18
+425µm	----	1	%	<1	44	11	4	16
+600µm	----	1	%	<1	36	11	4	15
+1180µm	----	1	%	<1	26	10	3	14
+2.36mm	----	1	%	<1	14	9	3	12
+4.75mm	----	1	%	<1	9	6	2	10
+9.5mm	----	1	%	<1	8	6	<1	<1
+19.0mm	----	1	%	<1	8	<1	<1	<1
+37.5mm	----	1	%	<1	<1	<1	<1	<1
+75.0mm	----	1	%	<1	<1	<1	<1	<1
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.2	7.6	7.8	8.8	4.8
EA150: Soil Classification based on Particle Size								
Fines (<75 µm)	----	1	%	97	24	88	87	72
Sand (>75 µm)	----	1	%	3	62	3	10	16
Gravel (>2mm)	----	1	%	<1	14	9	3	12
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	<1
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	5.6	13.0	2.1	5.0	2.7
Exchangeable Magnesium	----	0.1	meq/100g	17.4	1.0	6.6	8.2	5.7
Exchangeable Potassium	----	0.1	meq/100g	0.3	0.3	0.1	0.3	0.2
Exchangeable Sodium	----	0.1	meq/100g	3.0	<0.1	3.0	1.2	1.0
Cation Exchange Capacity	----	0.1	meq/100g	26.3	14.4	11.8	14.7	9.6
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	<0.1	<0.1	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	1.1	3.4	<0.5	0.5	<0.5
Total Organic Carbon	----	0.5	%	0.6	1.9	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

LU_SB02_0.1

Client sampling date / time

02-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327324-026	---	---	---	---
----------	------------	-----	------	---------------	-----	-----	-----	-----

EA150: Particle Sizing

+75µm	---	1	%	88	---	---	---	---
+150µm	---	1	%	85	---	---	---	---
+300µm	---	1	%	79	---	---	---	---
+425µm	---	1	%	72	---	---	---	---
+600µm	---	1	%	61	---	---	---	---
+1180µm	---	1	%	42	---	---	---	---
+2.36mm	---	1	%	26	---	---	---	---
+4.75mm	---	1	%	16	---	---	---	---
+9.5mm	---	1	%	12	---	---	---	---
+19.0mm	---	1	%	12	---	---	---	---
+37.5mm	---	1	%	<1	---	---	---	---
+75.0mm	---	1	%	<1	---	---	---	---

EA002 : pH (Soils)

pH Value	---	0.1	pH Unit	8.6	---	---	---	---
----------	-----	-----	---------	-----	-----	-----	-----	-----

EA150: Soil Classification based on Particle Size

Fines (<75 µm)	---	1	%	12	---	---	---	---
Sand (>75 µm)	---	1	%	62	---	---	---	---
Gravel (>2mm)	---	1	%	27	---	---	---	---
Cobbles (>6cm)	---	1	%	<1	---	---	---	---

ED007: Exchangeable Cations

Exchangeable Calcium	---	0.1	meq/100g	13.0	---	---	---	---
Exchangeable Magnesium	---	0.1	meq/100g	3.0	---	---	---	---
Exchangeable Potassium	---	0.1	meq/100g	0.4	---	---	---	---
Exchangeable Sodium	---	0.1	meq/100g	0.2	---	---	---	---
Cation Exchange Capacity	---	0.1	meq/100g	16.5	---	---	---	---
Exchangeable Aluminium	---	0.1	meq/100g	<0.1	---	---	---	---

EP004: Organic Matter

Organic Matter	---	0.5	%	<0.5	---	---	---	---
Total Organic Carbon	---	0.5	%	<0.5	---	---	---	---

Certificate of Analysis

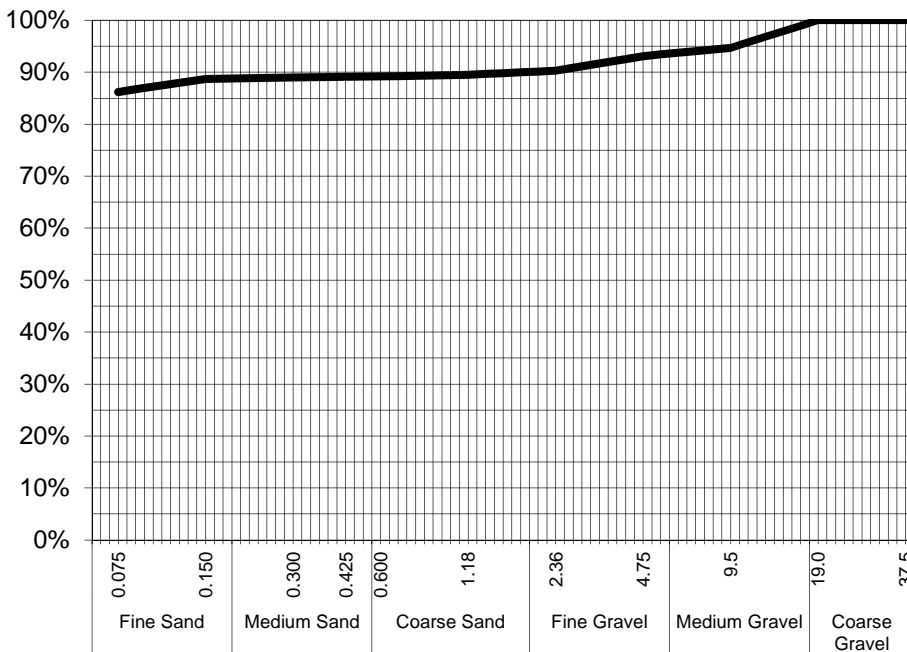
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 pH 02 4968 9433
 fax 02 4968 0349
 samples.newcastle@alsenviro.com

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COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-002 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** BI_MW03_0.6

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	95%
4.75	93%
2.36	90%
1.18	90%
0.600	89%
0.425	89%
0.300	89%
0.150	89%
0.075	86%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines and gravel

Test Method: AS1289.3.6.1

NATA Accreditation: 825 Site: Newcastle
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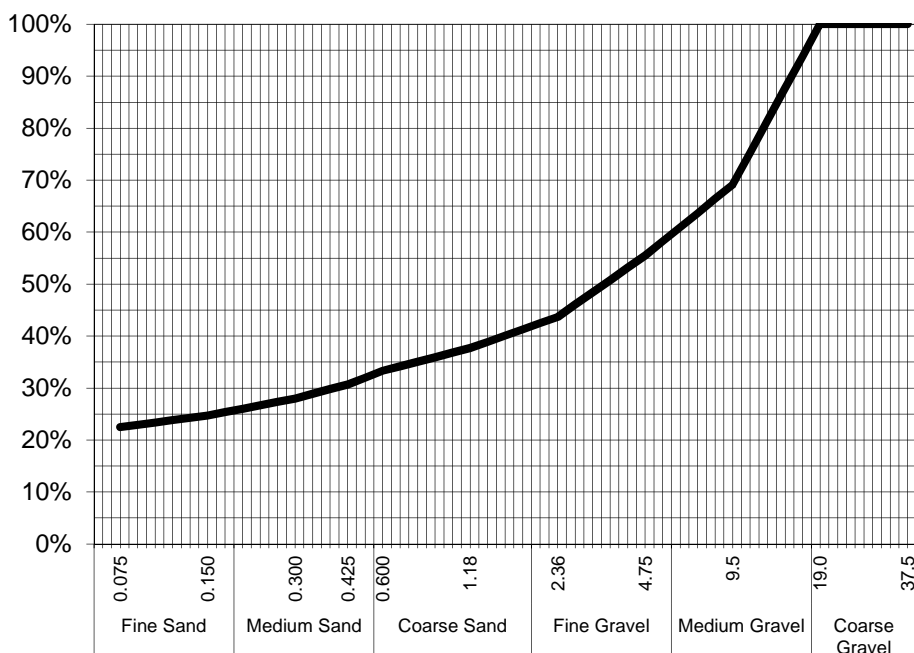
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CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-003 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** BP_MW01_0.25

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	69%
4.75	56%
2.36	44%
1.18	38%
0.600	33%
0.425	31%
0.300	28%
0.150	25%
0.075	23%

Samples analysed as received.

Sample Comments:

Loss on Pretreatment NA

Sample Description: Gravel, fines and sand

Test Method: AS1289.3.6.1

Analysed: 19-Dec-13

Limit of Reporting: 1%

NATA Accreditation: 825 Site: Newcastle
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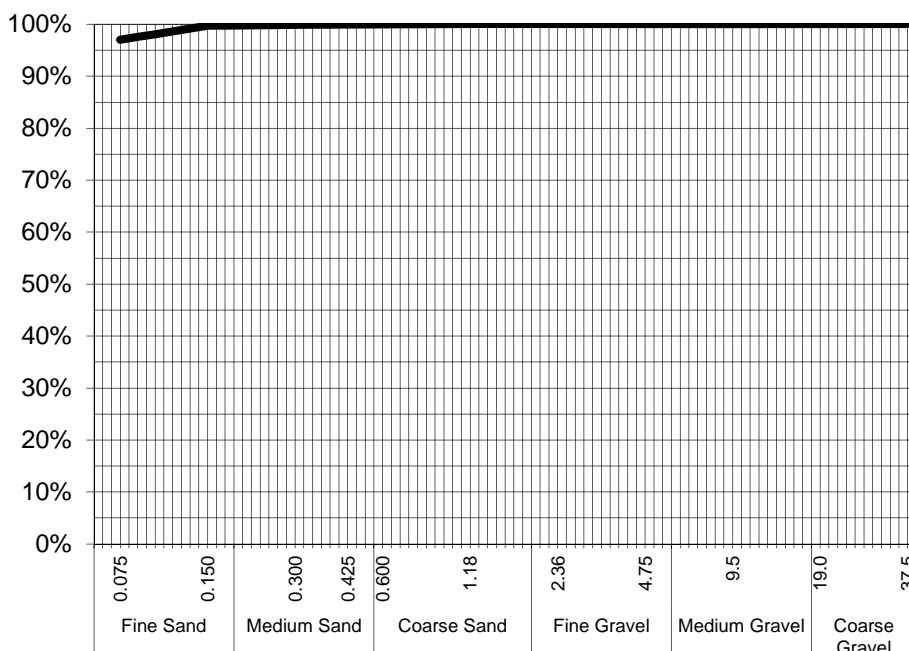
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CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-005 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** BE_MW09_0.9

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	100%
2.36	100%
1.18	100%
0.600	100%
0.425	100%
0.300	100%
0.150	100%
0.075	97%

Samples analysed as received.

Sample Comments:

Loss on Pretreatment NA

Sample Description: Fines

Test Method: AS1289.3.6.1

Analysed: 19-Dec-13

Limit of Reporting: 1%

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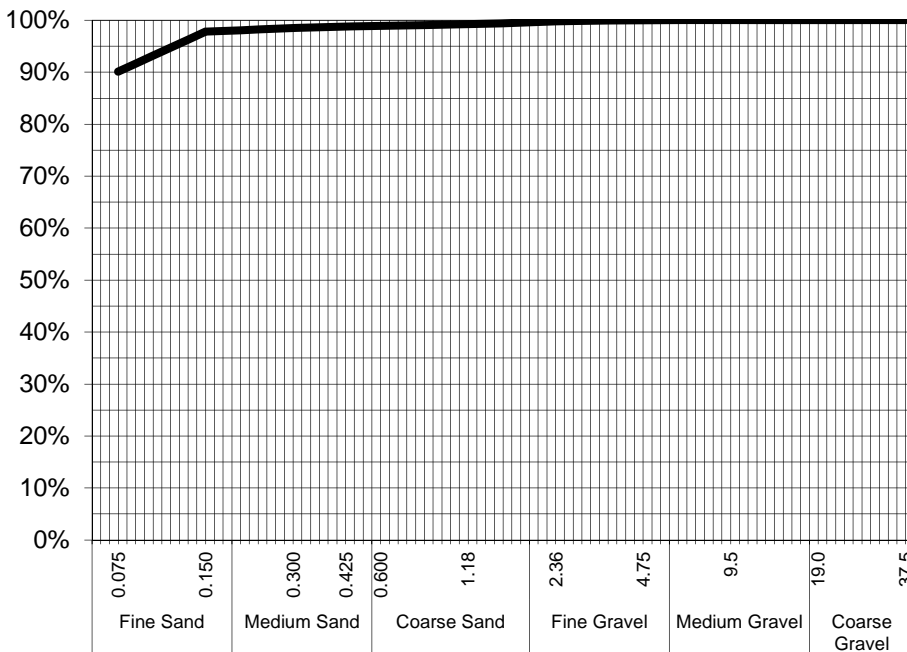
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COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-006 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** BK_SB06_0.6

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	100%
2.36	100%
1.18	99%
0.600	99%
0.425	99%
0.300	99%
0.150	98%
0.075	90%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines and sand

Test Method: AS1289.3.6.1

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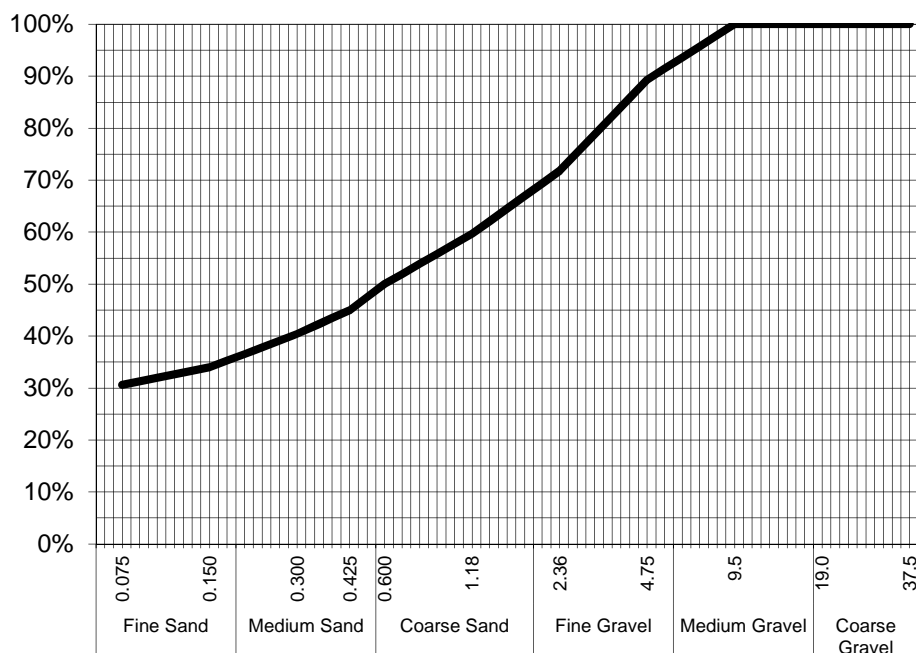
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CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-007 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** BL_SB01_0.25

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	89%
2.36	72%
1.18	60%
0.600	50%
0.425	45%
0.300	40%
0.150	34%
0.075	31%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Sand, fines and gravel

Test Method: AS1289.3.6.1

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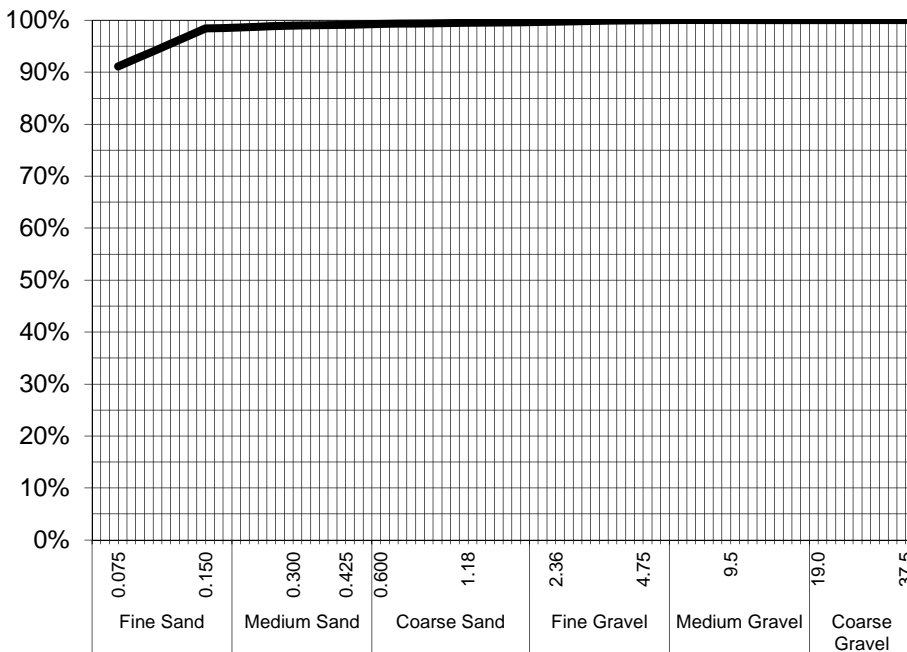
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<u>COMPANY:</u>	Enviro Resources Management	<u>DATE RECEIVED:</u>	13-Dec-2013
<u>ADDRESS:</u>	Ground Floor 33 Saunders Street, Pyrmont NSW 2009	<u>REPORT NO:</u>	ES1327324-008 / PSD
<u>PROJECT:</u>	Project Symphony	<u>SAMPLE ID:</u>	BX_MW02_0.5

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	100%
2.36	100%
1.18	100%
0.600	99%
0.425	99%
0.300	99%
0.150	98%
0.075	91%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment NA

Limit of Reporting: 1%

Sample Description: Fines

Test Method: AS1289.3.6.1

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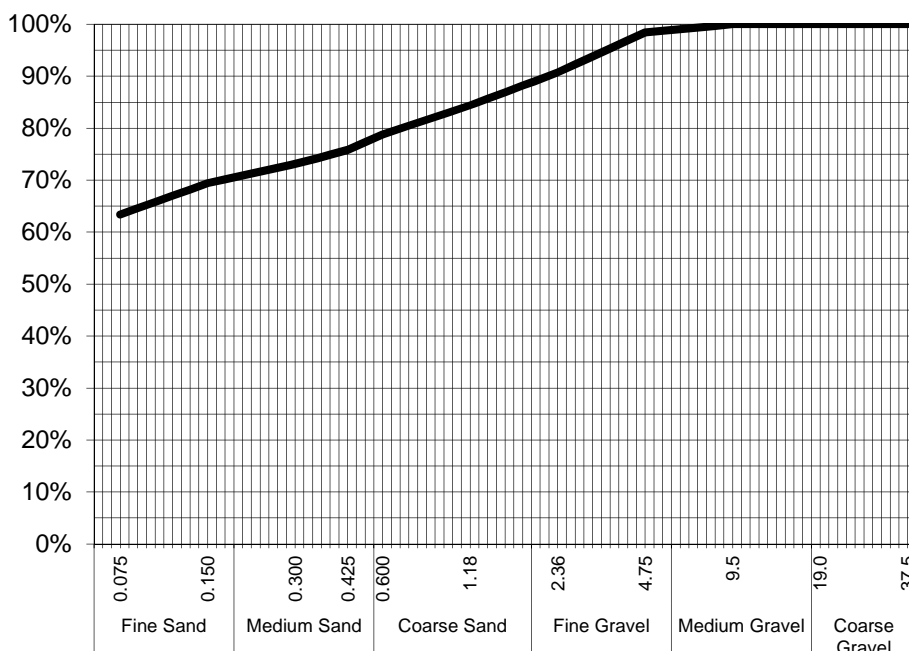
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COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-009 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** BM_SB01_0.5

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	98%
2.36	91%
1.18	84%
0.600	79%
0.425	76%
0.300	73%
0.150	69%
0.075	63%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines and sand

Test Method: AS1289.3.6.1

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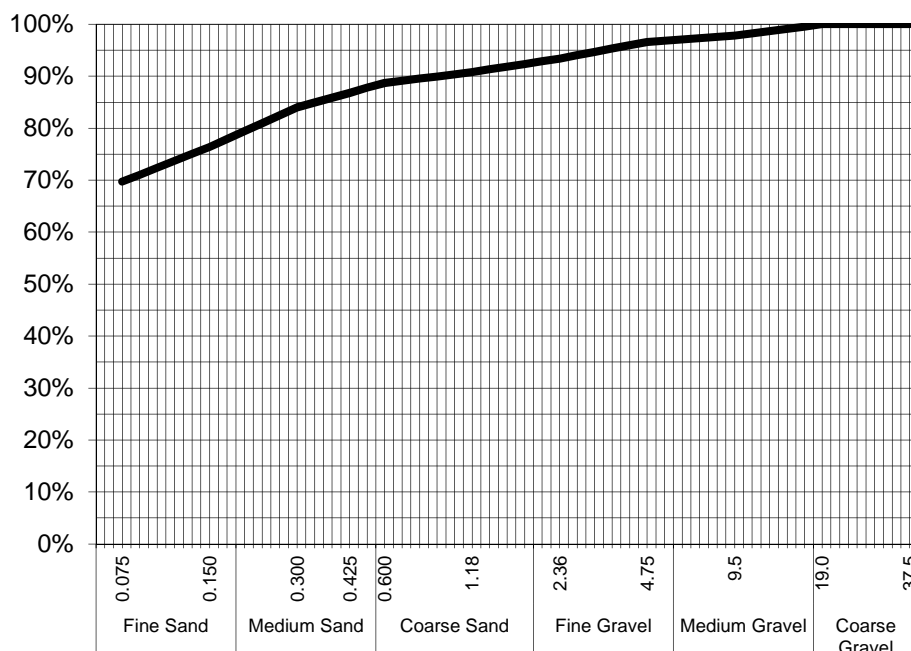
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COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-010 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LA_MW02_1.0

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	98%
4.75	97%
2.36	93%
1.18	91%
0.600	89%
0.425	87%
0.300	84%
0.150	76%
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: 19-Dec-13

Limit of Reporting: 1%

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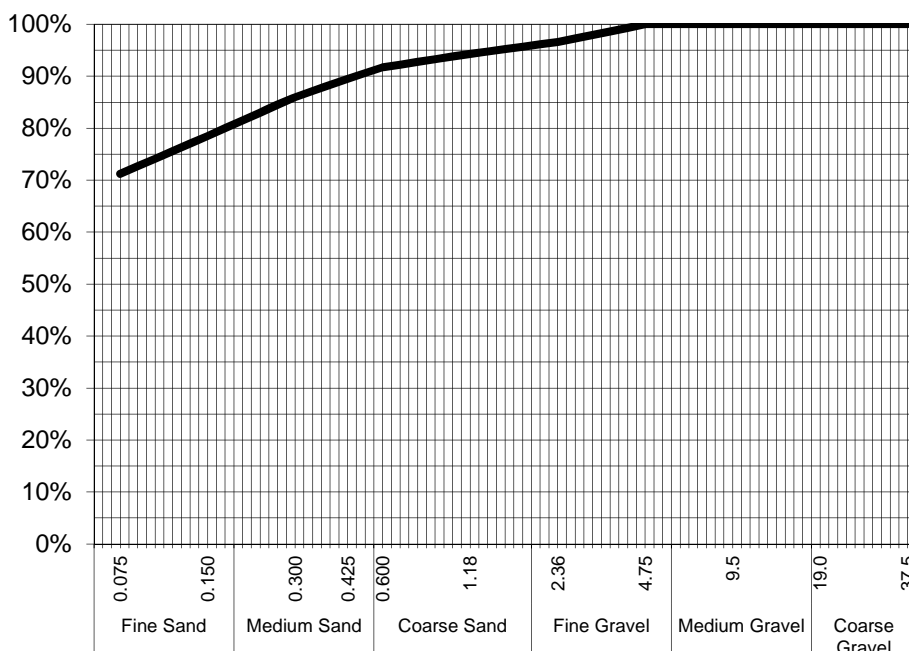
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COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-011 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LE_SB01_1.0

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	100%
2.36	97%
1.18	94%
0.600	92%
0.425	90%
0.300	86%
0.150	79%
0.075	71%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines and sand

Test Method: AS1289.3.6.1

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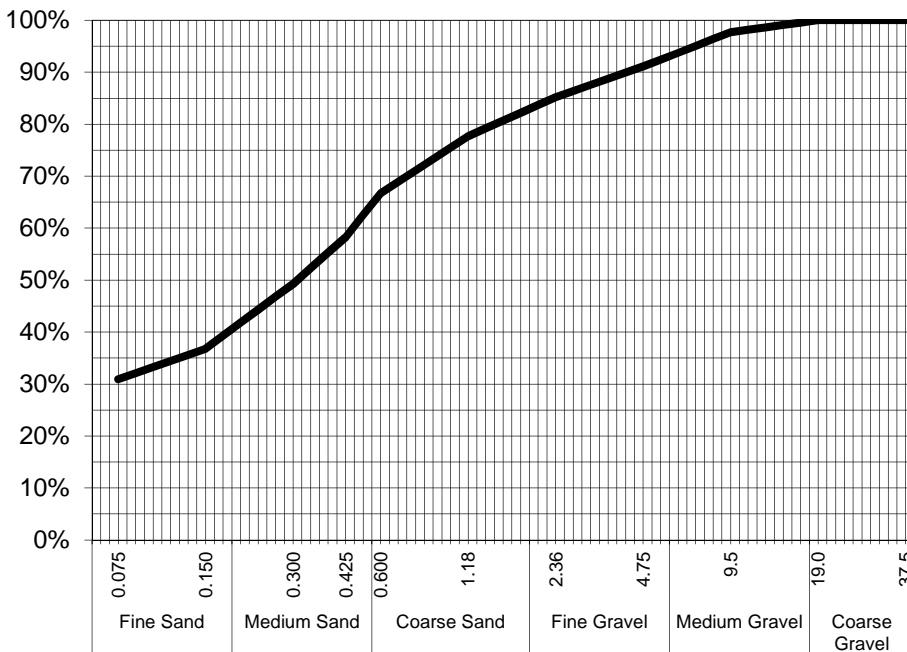
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CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-012 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LF_SB02_0.1

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	98%
4.75	91%
2.36	85%
1.18	78%
0.600	67%
0.425	58%
0.300	49%
0.150	37%
0.075	31%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Sand, fines and gravel

Test Method: AS1289.3.6.1

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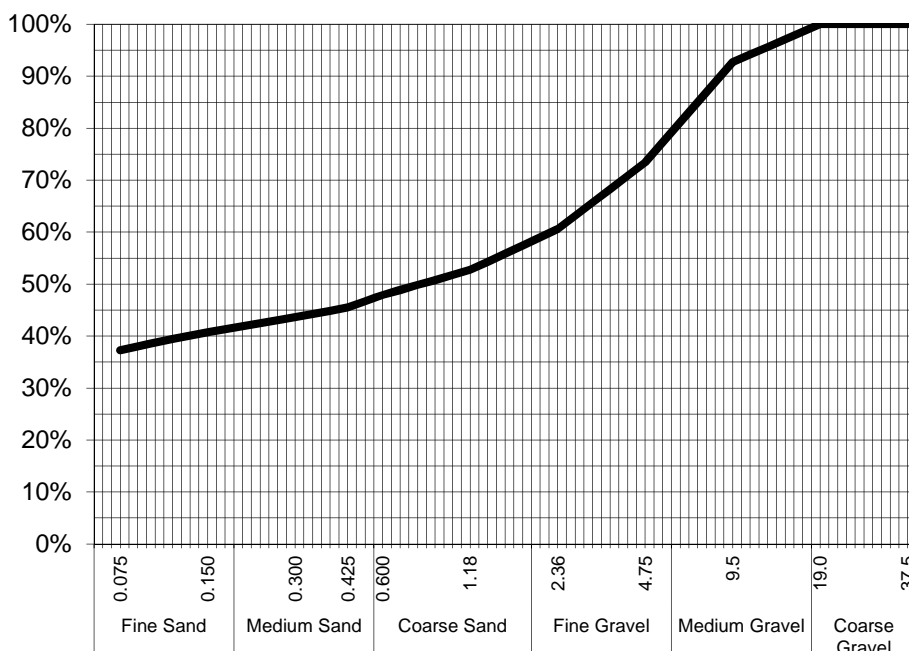
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CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-013 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LI_MW08_0.5

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	93%
4.75	73%
2.36	61%
1.18	53%
0.600	48%
0.425	46%
0.300	44%
0.150	41%
0.075	37%

Samples analysed as received.

Sample Comments:

Loss on Pretreatment NA

Sample Description: Gravel, fines and sand

Test Method: AS1289.3.6.1

Analysed: 19-Dec-13

Limit of Reporting: 1%

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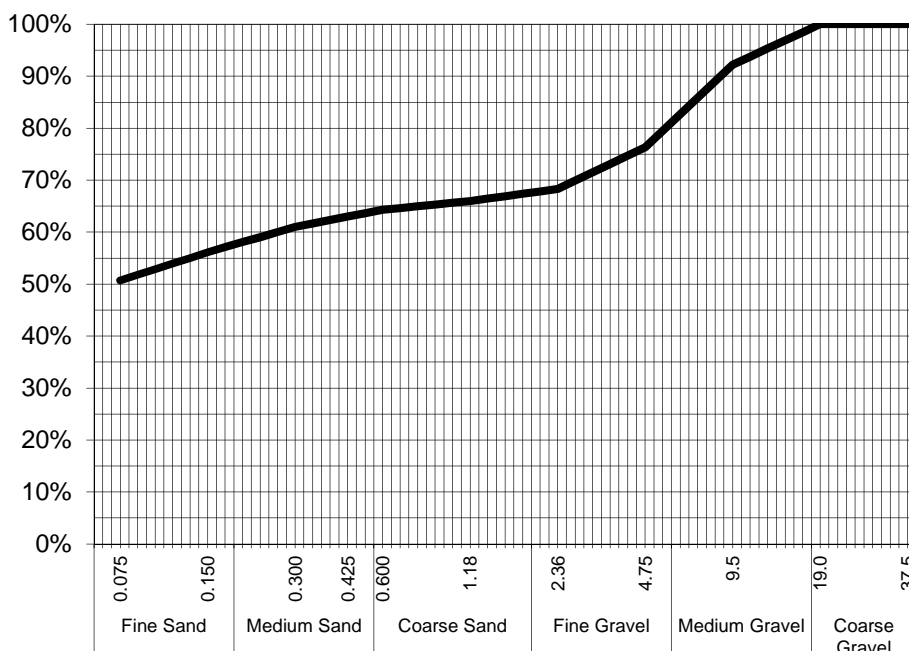
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COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-015 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LM_MW02_0.5

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	92%
4.75	76%
2.36	68%
1.18	66%
0.600	64%
0.425	63%
0.300	61%
0.150	56%
0.075	51%

Samples analysed as received.

Sample Comments:

Loss on Pretreatment NA

Sample Description: Fines, gravel and sand

Test Method: AS1289.3.6.1

Analysed: 19-Dec-13

Limit of Reporting: 1%

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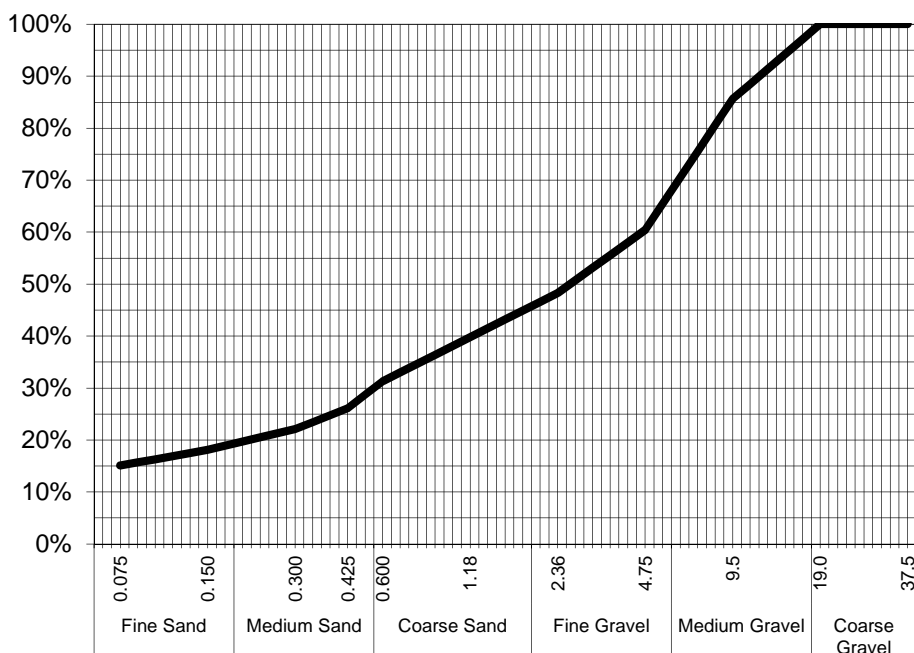
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CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-017 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LO_SB01_0.5

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	86%
4.75	60%
2.36	48%
1.18	40%
0.600	31%
0.425	26%
0.300	22%
0.150	18%
0.075	15%

Samples analysed as received.

Sample Comments:

Loss on Pretreatment NA

Sample Description: Gravel, sand and fines

Test Method: AS1289.3.6.1

Analysed: 19-Dec-13

Limit of Reporting: 1%

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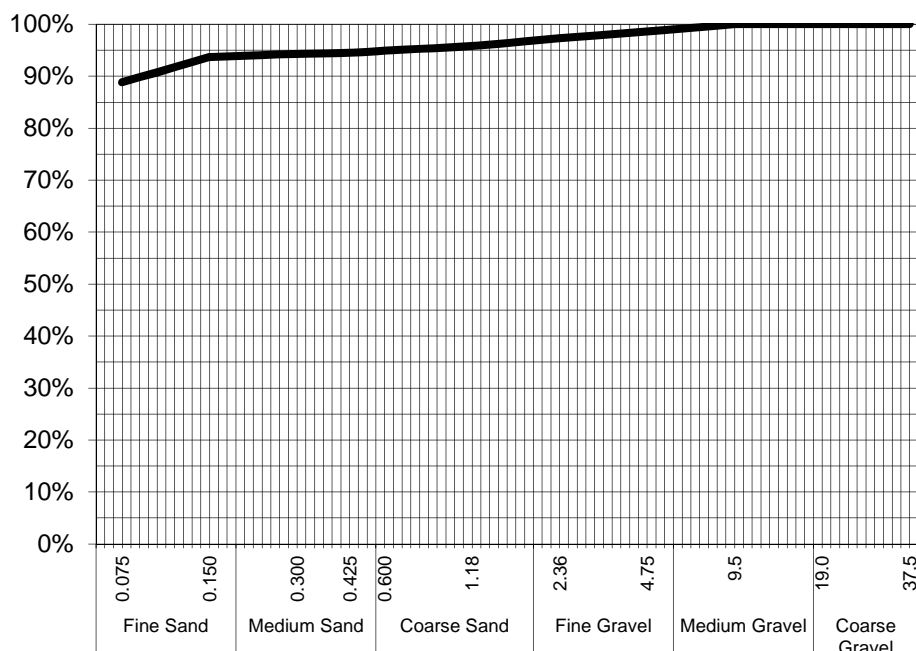
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CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-018 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LP_MW06_1.0

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	99%
2.36	97%
1.18	96%
0.600	95%
0.425	95%
0.300	94%
0.150	94%
0.075	89%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines

Test Method: AS1289.3.6.1

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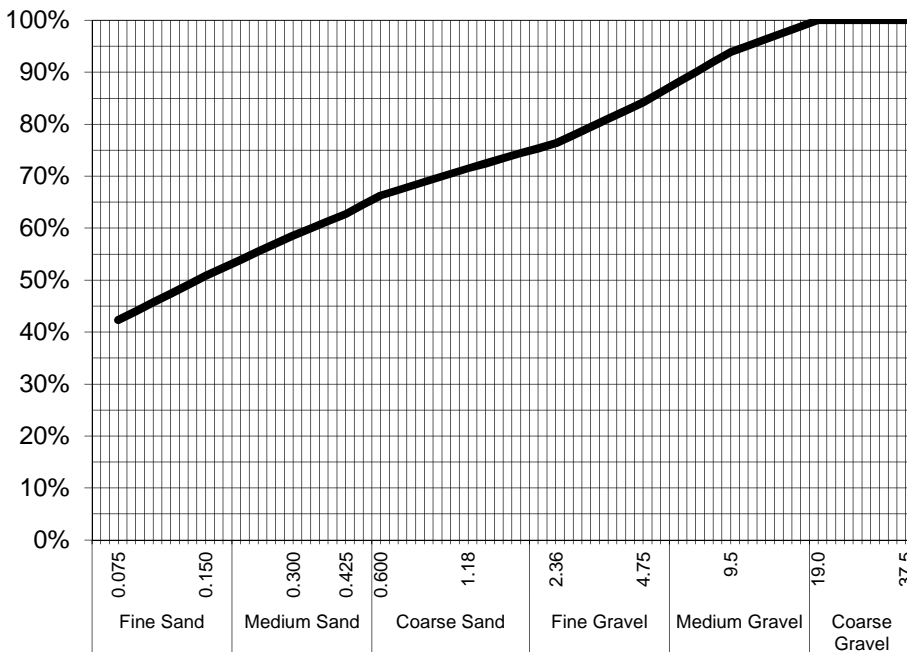
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CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-019 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LQ_MW07_0.5

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	94%
4.75	84%
2.36	76%
1.18	72%
0.600	66%
0.425	63%
0.300	59%
0.150	51%
0.075	42%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines, sand and gravel

Test Method: AS1289.3.6.1

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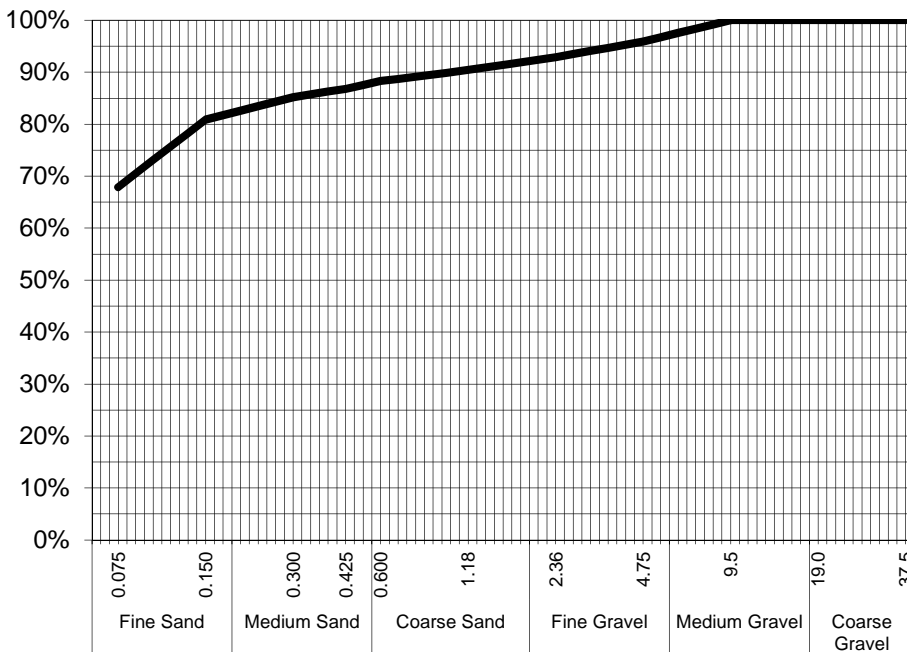
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COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-020 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LR_MW04_0.5

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	96%
2.36	93%
1.18	90%
0.600	88%
0.425	87%
0.300	85%
0.150	81%
0.075	68%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines and sand

Test Method: AS1289.3.6.1

NATA Accreditation: 825 Site: Newcastle
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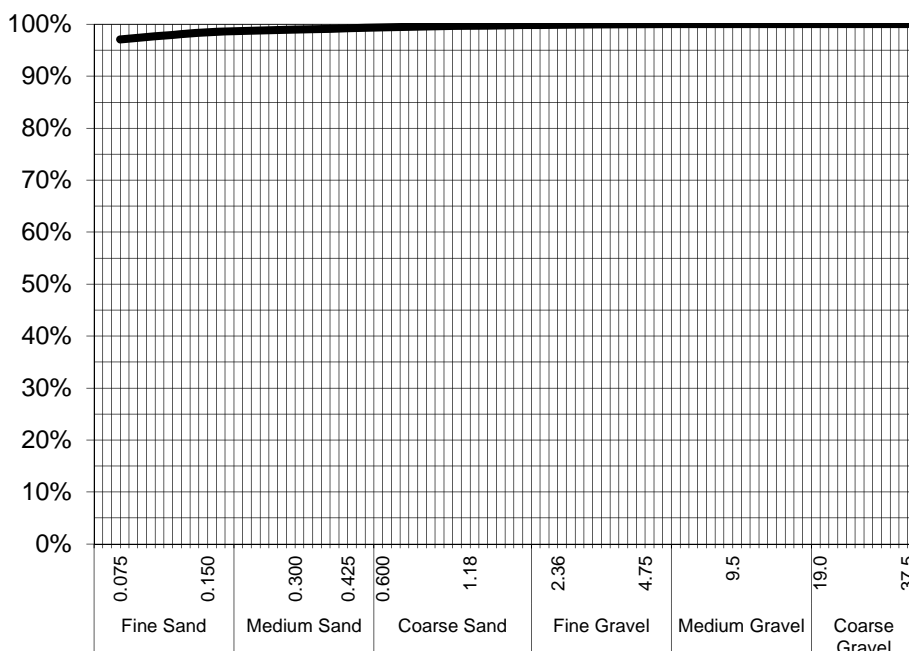
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CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-021 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LS_MW01_0.5

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	100%
2.36	100%
1.18	100%
0.600	99%
0.425	99%
0.300	99%
0.150	99%
0.075	97%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines

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

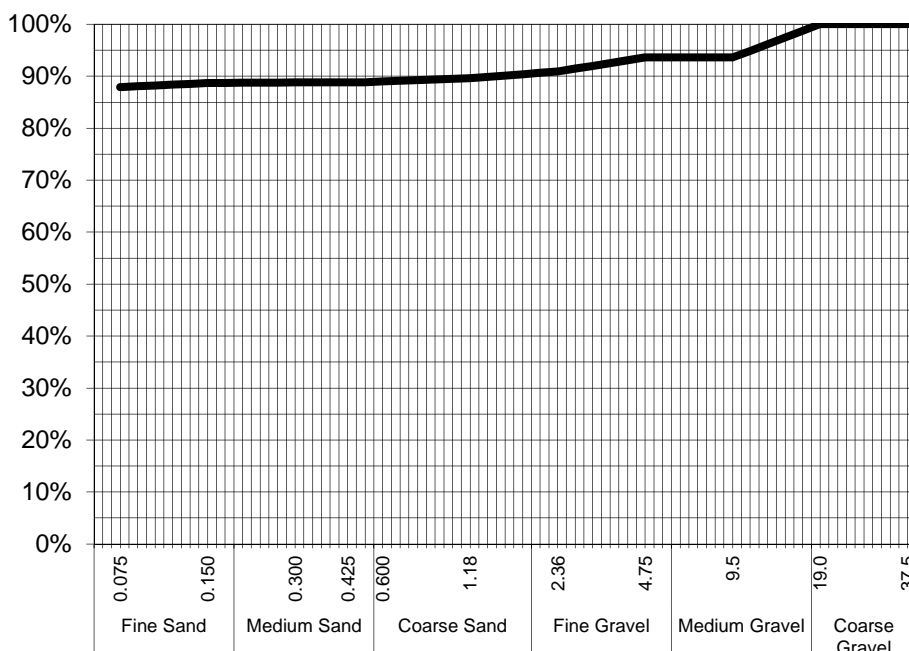
ALS Laboratory Group Pty Ltd
 5/585 Maitland Road
 Mayfield West, NSW 2304
 pH 02 4968 9433
 fax 02 4968 0349
 samples.newcastle@alsenviro.com

ALS Environmental
Newcastle, NSW



CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-023 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LD_MW05_2.0

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	94%
4.75	94%
2.36	91%
1.18	90%
0.600	89%
0.425	89%
0.300	89%
0.150	89%
0.075	88%

Samples analysed as received.

Sample Comments:

Loss on Pretreatment NA

Sample Description: Fines and gravel

Test Method: AS1289.3.6.1

Analysed: 19-Dec-13

Limit of Reporting: 1%

NATA Accreditation: 825 Site: Newcastle
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 Laboratory Supervisor, Newcastle
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Certificate of Analysis

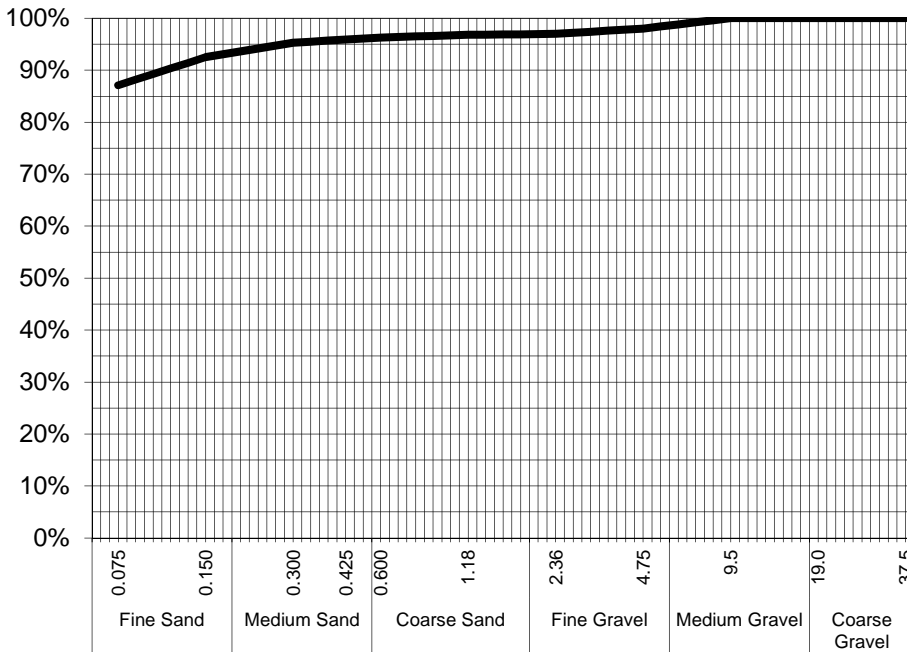
ALS Laboratory Group Pty Ltd
 5/585 Maitland Road
 Mayfield West, NSW 2304
 pH 02 4968 9433
 fax 02 4968 0349
 samples.newcastle@alsenviro.com

ALS Environmental
Newcastle, NSW



CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-024 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LJ_SB07_0.8

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	98%
2.36	97%
1.18	97%
0.600	96%
0.425	96%
0.300	95%
0.150	93%
0.075	87%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines and sand

Test Method: AS1289.3.6.1

NATA Accreditation: 825 Site: Newcastle
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 Laboratory Supervisor, Newcastle
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Certificate of Analysis

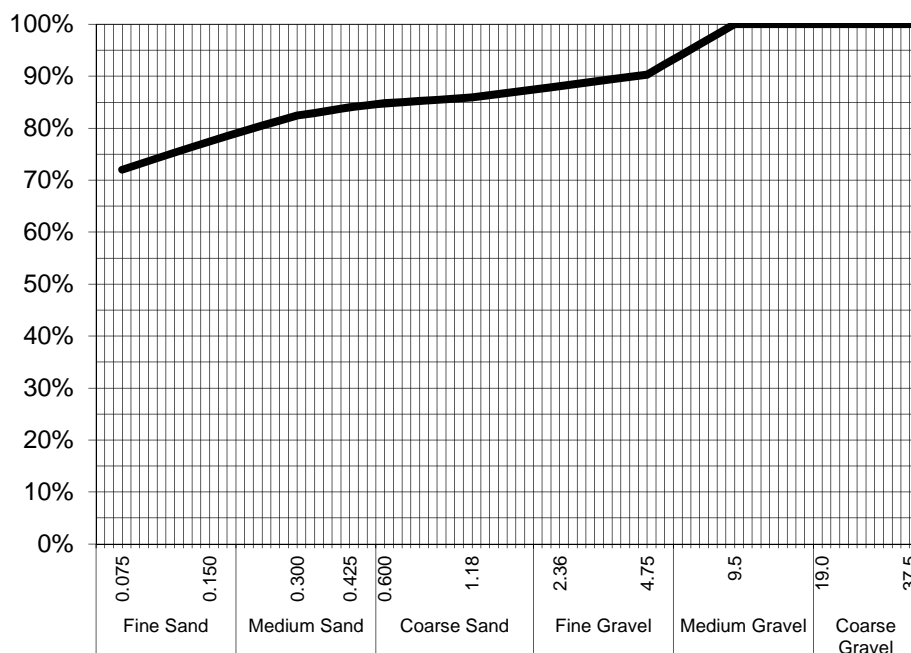
ALS Laboratory Group Pty Ltd
 5/585 Maitland Road
 Mayfield West, NSW 2304
 pH 02 4968 9433
 fax 02 4968 0349
 samples.newcastle@alsenviro.com

ALS Environmental
Newcastle, NSW



CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-025 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LT_MW04_0.5

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	90%
2.36	88%
1.18	86%
0.600	85%
0.425	84%
0.300	82%
0.150	78%
0.075	72%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

Sample Description: Fines, sand 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

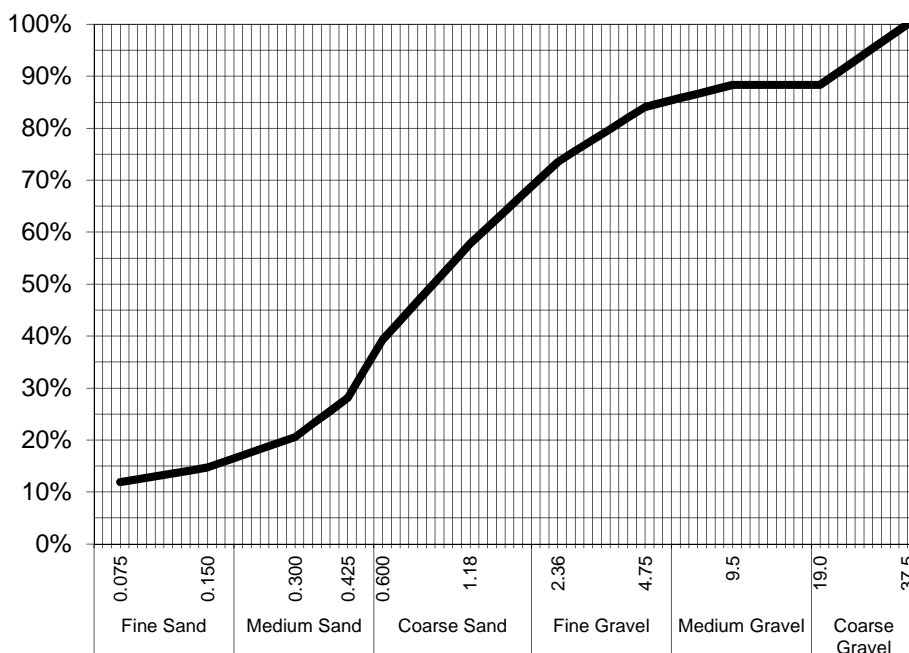
ALS Laboratory Group Pty Ltd
5/585 Maitland Road
Mayfield West, NSW 2304
pH 02 4968 9433
fax 02 4968 0349
samples.newcastle@alsenviro.com

ALS Environmental
Newcastle, NSW



CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327324-026 / PSD
33 Saunders Street, Pyrmont
NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LU_SB02_0.1

Particle Size Distribution



Particle Size (mm)	Percent Passing
37.5	100%
19.0	88%
9.5	88%
4.75	84%
2.36	74%
1.18	58%
0.600	39%
0.425	28%
0.300	21%
0.150	15%
0.075	12%

Samples analysed as received.

Sample Comments:

Loss on Pretreatment NA

Sample Description: Sand, gravel and fines

Test Method: AS1289.3.6.1

Analysed: 19-Dec-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	: ES1327324	Page	: 1 of 5
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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: ----	No. of samples received	: 26
Order number	: ----	No. of samples analysed	: 26
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



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
Di-An Dao		Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics



General Comments

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

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

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

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

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA002 : pH (Soils) (QC Lot: 3213542)									
ES1327147-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	9.8	9.8	0.0	0% - 20%
ES1327287-006	Anonymous	EA002: pH Value	----	0.1	pH Unit	4.2	4.1	0.0	0% - 20%
EA002 : pH (Soils) (QC Lot: 3213547)									
ES1327324-009	BM_SB01_0.5	EA002: pH Value	----	0.1	pH Unit	7.8	7.7	0.0	0% - 20%
ES1327324-019	LQ_MW07_0.5	EA002: pH Value	----	0.1	pH Unit	7.7	7.8	0.0	0% - 20%
ED007: Exchangeable Cations (QC Lot: 3215648)									
ES1327324-005	BE_MW09_0.9	ED007: Exchangeable Calcium	----	0.1	meq/100g	40.2	39.4	2.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	1.1	1.1	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	0.2	0.2	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	41.7	40.9	2.0	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1327324-014	LL_SB12_0.5	ED007: Exchangeable Calcium	----	0.1	meq/100g	4.3	4.5	5.7	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.0	7.6	8.9	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	1.8	2.0	9.1	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	13.3	14.3	7.8	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ED007: Exchangeable Cations (QC Lot: 3215649)									
ES1327324-025	LT_MW04_0.5	ED007: Exchangeable Calcium	----	0.1	meq/100g	2.7	2.8	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	5.7	5.8	2.9	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	1.0	1.0	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	9.6	9.8	2.6	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
EP004: Organic Matter (QC Lot: 3217920)									
ES1327324-001	BH_SB07_0.2	EP004: Organic Matter	----	0.5	%	<0.5	<0.5	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.0	No Limit
ES1327324-011	LE_SB01_1.0	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
EP004: Organic Matter (QC Lot: 3217921)									
ES1327324-021	LS_MW01_0.5	EP004: Organic Matter	----	0.5	%	1.1	<0.5	75.4	No Limit
		EP004: Total Organic Carbon	----	0.5	%	0.6	<0.5	24.7	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	
ED007: Exchangeable Cations (QCLot: 3215648)									
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	----	----	----	----	
ED007: Exchangeable Cations (QCLot: 3215649)									
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	----	----	----	----	
EP004: Organic Matter (QCLot: 3217920)									
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	93.8	85	105	
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	93.7	84	106	
EP004: Organic Matter (QCLot: 3217921)									
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	99.1	85	105	
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	98.9	84	106	

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
EP004: Organic Matter (QCLot: 3217920)							
ES1327324-002	BI_MW03_0.6	EP004: Organic Matter	----	0.48 %	79.2	----	----
		EP004: Total Organic Carbon	----	0.28 %	80.7	----	----
EP004: Organic Matter (QCLot: 3217921)							
ES1327324-026	LU_SB02_0.1	EP004: Organic Matter	----	0.48 %	105	----	----
		EP004: Total Organic Carbon	----	0.28 %	103	----	----



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
EP004: Organic Matter (QCLot: 3217920)										
ES1327324-002	BI_MW03_0.6	EP004: Organic Matter	----	0.48 %	79.2	----	----	----	----	----
		EP004: Total Organic Carbon	----	0.28 %	80.7	----	----	----	----	----
EP004: Organic Matter (QCLot: 3217921)										
ES1327324-026	LU_SB02_0.1	EP004: Organic Matter	----	0.48 %	105	----	----	----	----	----
		EP004: Total Organic Carbon	----	0.28 %	103	----	----	----	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327324	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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: ----	No. of samples received	: 26
Order number	: ----	No. of samples analysed	: 26
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	
EA002 : pH (Soils)								
Soil Glass Jar - Unpreserved (EA002) LP_MW06_1.0, LG_MW03_0.5,	LS_MW01_0.5, LU_SB02_0.1	02-DEC-2013	16-DEC-2013	09-DEC-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) BM_SB01_0.5,	LJ_SB07_0.8	04-DEC-2013	16-DEC-2013	11-DEC-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) LT_MW04_0.5		06-DEC-2013	16-DEC-2013	13-DEC-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) LN_MW03_0.5		08-NOV-2013	16-DEC-2013	15-NOV-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) LM_MW02_0.5,	LR_MW04_0.5	11-NOV-2013	16-DEC-2013	18-NOV-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) LO_SB01_0.5		12-NOV-2013	16-DEC-2013	19-NOV-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) BK_SB06_0.6		14-NOV-2013	16-DEC-2013	21-NOV-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) LI_MW08_0.5		15-NOV-2013	16-DEC-2013	22-NOV-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) LQ_MW07_0.5		19-NOV-2013	16-DEC-2013	26-NOV-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) LF_SB02_0.1		21-NOV-2013	16-DEC-2013	28-NOV-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) LA_MW02_1.0,	LE_SB01_1.0	22-NOV-2013	16-DEC-2013	29-NOV-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) BV_SB07_0.25, LD_MW05_2.0	BL_SB01_0.25,	25-NOV-2013	16-DEC-2013	02-DEC-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) BP_MW01_0.25, BX_MW02_0.5	BE_MW09_0.9,	26-NOV-2013	16-DEC-2013	03-DEC-2013	✘	16-DEC-2013	16-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA002) LL_SB12_0.5		30-NOV-2013	16-DEC-2013	07-DEC-2013	✘	16-DEC-2013	16-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
EA150: Particle Sizing							
Snap Lock Bag (EA150) LG_MW03_0.5, LU_SB02_0.1	02-DEC-2013	---	31-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LP_MW06_1.0, LS_MW01_0.5	02-DEC-2013	---	31-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BM_SB01_0.5, LJ_SB07_0.8	04-DEC-2013	---	02-JUN-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LT_MW04_0.5	06-DEC-2013	---	04-JUN-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LN_MW03_0.5	08-NOV-2013	---	07-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LM_MW02_0.5, LR_MW04_0.5	11-NOV-2013	---	10-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LO_SB01_0.5	12-NOV-2013	---	11-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BK_SB06_0.6	14-NOV-2013	---	13-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LI_MW08_0.5	15-NOV-2013	---	14-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LQ_MW07_0.5	19-NOV-2013	---	18-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BI_MW03_0.6	20-NOV-2013	---	19-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LF_SB02_0.1	21-NOV-2013	---	20-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LA_MW02_1.0, LE_SB01_1.0	22-NOV-2013	---	21-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BL_SB01_0.25, LD_MW05_2.0	25-NOV-2013	---	24-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BP_MW01_0.25, BE_MW09_0.9, BX_MW02_0.5	26-NOV-2013	---	25-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LL_SB12_0.5	30-NOV-2013	---	29-MAY-2014	----	23-DEC-2013	17-JUN-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
EA150: Soil Classification based on Particle Size							
Snap Lock Bag (EA150) LG_MW03_0.5, LU_SB02_0.1	02-DEC-2013	---	31-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LP_MW06_1.0, LS_MW01_0.5	02-DEC-2013	---	31-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BM_SB01_0.5, LJ_SB07_0.8	04-DEC-2013	---	02-JUN-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LT_MW04_0.5	06-DEC-2013	---	04-JUN-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LN_MW03_0.5	08-NOV-2013	---	07-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LM_MW02_0.5, LR_MW04_0.5	11-NOV-2013	---	10-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LO_SB01_0.5	12-NOV-2013	---	11-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BK_SB06_0.6	14-NOV-2013	---	13-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LI_MW08_0.5	15-NOV-2013	---	14-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LQ_MW07_0.5	19-NOV-2013	---	18-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BI_MW03_0.6	20-NOV-2013	---	19-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LF_SB02_0.1	21-NOV-2013	---	20-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LA_MW02_1.0, LE_SB01_1.0	22-NOV-2013	---	21-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BL_SB01_0.25, LD_MW05_2.0	25-NOV-2013	---	24-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) BP_MW01_0.25, BE_MW09_0.9, BX_MW02_0.5	26-NOV-2013	---	25-MAY-2014	----	23-DEC-2013	17-JUN-2014	✓
Soil Glass Jar - Unpreserved (EA150) LL_SB12_0.5	30-NOV-2013	---	29-MAY-2014	----	23-DEC-2013	17-JUN-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	
ED007: Exchangeable Cations								
Soil Glass Jar - Unpreserved (ED007) LP_MW06_1.0, LG_MW03_0.5,	LS_MW01_0.5, LU_SB02_0.1	02-DEC-2013	17-DEC-2013	30-DEC-2013	✓	18-DEC-2013	30-DEC-2013	✓
Soil Glass Jar - Unpreserved (ED007) BM_SB01_0.5,	LJ_SB07_0.8	04-DEC-2013	17-DEC-2013	01-JAN-2014	✓	18-DEC-2013	01-JAN-2014	✓
Soil Glass Jar - Unpreserved (ED007) LT_MW04_0.5		06-DEC-2013	17-DEC-2013	03-JAN-2014	✓	18-DEC-2013	03-JAN-2014	✓
Soil Glass Jar - Unpreserved (ED007) LN_MW03_0.5		08-NOV-2013	17-DEC-2013	06-DEC-2013	*	18-DEC-2013	06-DEC-2013	*
Soil Glass Jar - Unpreserved (ED007) LM_MW02_0.5,	LR_MW04_0.5	11-NOV-2013	17-DEC-2013	09-DEC-2013	*	18-DEC-2013	09-DEC-2013	*
Soil Glass Jar - Unpreserved (ED007) LO_SB01_0.5		12-NOV-2013	17-DEC-2013	10-DEC-2013	*	18-DEC-2013	10-DEC-2013	*
Soil Glass Jar - Unpreserved (ED007) BK_SB06_0.6		14-NOV-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
Soil Glass Jar - Unpreserved (ED007) LI_MW08_0.5		15-NOV-2013	17-DEC-2013	13-DEC-2013	*	18-DEC-2013	13-DEC-2013	*
Soil Glass Jar - Unpreserved (ED007) LQ_MW07_0.5		19-NOV-2013	17-DEC-2013	17-DEC-2013	✓	18-DEC-2013	17-DEC-2013	*
Soil Glass Jar - Unpreserved (ED007) LF_SB02_0.1		21-NOV-2013	17-DEC-2013	19-DEC-2013	✓	18-DEC-2013	19-DEC-2013	✓
Soil Glass Jar - Unpreserved (ED007) LA_MW02_1.0,	LE_SB01_1.0	22-NOV-2013	17-DEC-2013	20-DEC-2013	✓	18-DEC-2013	20-DEC-2013	✓
Soil Glass Jar - Unpreserved (ED007) BL_SB01_0.25,	LD_MW05_2.0	25-NOV-2013	17-DEC-2013	23-DEC-2013	✓	18-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (ED007) BE_MW09_0.9,	BX_MW02_0.5	26-NOV-2013	17-DEC-2013	24-DEC-2013	✓	18-DEC-2013	24-DEC-2013	✓
Soil Glass Jar - Unpreserved (ED007) LL_SB12_0.5		30-NOV-2013	17-DEC-2013	28-DEC-2013	✓	18-DEC-2013	28-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	
EP004: Organic Matter								
Soil Glass Jar - Unpreserved (EP004) LP_MW06_1.0, LG_MW03_0.5,	LS_MW01_0.5, LU_SB02_0.1	02-DEC-2013	18-DEC-2013	30-DEC-2013	✔	18-DEC-2013	30-DEC-2013	✔
Soil Glass Jar - Unpreserved (EP004) BM_SB01_0.5,	LJ_SB07_0.8	04-DEC-2013	18-DEC-2013	01-JAN-2014	✔	18-DEC-2013	01-JAN-2014	✔
Soil Glass Jar - Unpreserved (EP004) LT_MW04_0.5		06-DEC-2013	18-DEC-2013	03-JAN-2014	✔	18-DEC-2013	03-JAN-2014	✔
Soil Glass Jar - Unpreserved (EP004) LN_MW03_0.5		08-NOV-2013	18-DEC-2013	06-DEC-2013	✘	18-DEC-2013	06-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP004) LM_MW02_0.5,	LR_MW04_0.5	11-NOV-2013	18-DEC-2013	09-DEC-2013	✘	18-DEC-2013	09-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP004) LO_SB01_0.5		12-NOV-2013	18-DEC-2013	10-DEC-2013	✘	18-DEC-2013	10-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP004) BK_SB06_0.6		14-NOV-2013	18-DEC-2013	12-DEC-2013	✘	18-DEC-2013	12-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP004) LI_MW08_0.5		15-NOV-2013	18-DEC-2013	13-DEC-2013	✘	18-DEC-2013	13-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP004) LQ_MW07_0.5		19-NOV-2013	18-DEC-2013	17-DEC-2013	✘	18-DEC-2013	17-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP004) BI_MW03_0.6		20-NOV-2013	18-DEC-2013	18-DEC-2013	✔	18-DEC-2013	18-DEC-2013	✔
Soil Glass Jar - Unpreserved (EP004) LF_SB02_0.1		21-NOV-2013	18-DEC-2013	19-DEC-2013	✔	18-DEC-2013	19-DEC-2013	✔
Soil Glass Jar - Unpreserved (EP004) LA_MW02_1.0,	LE_SB01_1.0	22-NOV-2013	18-DEC-2013	20-DEC-2013	✔	18-DEC-2013	20-DEC-2013	✔
Soil Glass Jar - Unpreserved (EP004) BV_SB07_0.25, LD_MW05_2.0	BL_SB01_0.25,	25-NOV-2013	18-DEC-2013	23-DEC-2013	✔	18-DEC-2013	23-DEC-2013	✔
Soil Glass Jar - Unpreserved (EP004) BH_SB07_0.2, BE_MW09_0.9,	BP_MW01_0.25, BX_MW02_0.5	26-NOV-2013	18-DEC-2013	24-DEC-2013	✔	18-DEC-2013	24-DEC-2013	✔
Soil Glass Jar - Unpreserved (EP004) LL_SB12_0.5		30-NOV-2013	18-DEC-2013	28-DEC-2013	✔	18-DEC-2013	28-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	Regular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
Exchangeable Cations	ED007	3	26	11.5	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	3	29	10.3	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	4	39	10.3	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Exchangeable Cations	ED007	2	26	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	2	29	6.9	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Exchangeable Cations	ED007	2	26	7.7	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	2	29	6.9	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Organic Matter	EP004	2	29	6.9	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.

<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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)
Particle Size Analysis (Sieving)	EA150	SOIL	Particle Size Analysis by Sieving according to AS1289.3.6.1 - 2009
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)
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)
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Exchangeable Cations Preparation Method	ED007PR	SOIL	Rayment & Higginson (1992) method 15A1. A 1M NH ₄ 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.
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)



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
EA002 : pH (Soils)						
Soil Glass Jar - Unpreserved LP_MW06_1.0, LS_MW01_0.5, LG_MW03_0.5, LU_SB02_0.1	16-DEC-2013	09-DEC-2013	7	----	----	----
Soil Glass Jar - Unpreserved BM_SB01_0.5, LJ_SB07_0.8	16-DEC-2013	11-DEC-2013	5	----	----	----
Soil Glass Jar - Unpreserved LT_MW04_0.5	16-DEC-2013	13-DEC-2013	3	----	----	----
Soil Glass Jar - Unpreserved LN_MW03_0.5	16-DEC-2013	15-NOV-2013	31	----	----	----
Soil Glass Jar - Unpreserved LM_MW02_0.5, LR_MW04_0.5	16-DEC-2013	18-NOV-2013	28	----	----	----
Soil Glass Jar - Unpreserved LO_SB01_0.5	16-DEC-2013	19-NOV-2013	27	----	----	----
Soil Glass Jar - Unpreserved BK_SB06_0.6	16-DEC-2013	21-NOV-2013	25	----	----	----
Soil Glass Jar - Unpreserved LI_MW08_0.5	16-DEC-2013	22-NOV-2013	24	----	----	----
Soil Glass Jar - Unpreserved LQ_MW07_0.5	16-DEC-2013	26-NOV-2013	20	----	----	----
Soil Glass Jar - Unpreserved LF_SB02_0.1	16-DEC-2013	28-NOV-2013	18	----	----	----



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
EA002 : pH (Soils) - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved LA_MW02_1.0, LE_SB01_1.0	16-DEC-2013	29-NOV-2013	17	----	----	----
Soil Glass Jar - Unpreserved BV_SB07_0.25, LD_MW05_2.0, BL_SB01_0.25,	16-DEC-2013	02-DEC-2013	14	----	----	----
Soil Glass Jar - Unpreserved BP_MW01_0.25, BX_MW02_0.5, BE_MW09_0.9,	16-DEC-2013	03-DEC-2013	13	----	----	----
Soil Glass Jar - Unpreserved LL_SB12_0.5	16-DEC-2013	07-DEC-2013	9	----	----	----
ED007: Exchangeable Cations						
Soil Glass Jar - Unpreserved LN_MW03_0.5	17-DEC-2013	06-DEC-2013	11	18-DEC-2013	06-DEC-2013	12
Soil Glass Jar - Unpreserved LM_MW02_0.5, LR_MW04_0.5	17-DEC-2013	09-DEC-2013	8	18-DEC-2013	09-DEC-2013	9
Soil Glass Jar - Unpreserved LO_SB01_0.5	17-DEC-2013	10-DEC-2013	7	18-DEC-2013	10-DEC-2013	8
Soil Glass Jar - Unpreserved BK_SB06_0.6	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved LI_MW08_0.5	17-DEC-2013	13-DEC-2013	4	18-DEC-2013	13-DEC-2013	5
Soil Glass Jar - Unpreserved LQ_MW07_0.5	----	----	----	18-DEC-2013	17-DEC-2013	1
EP004: Organic Matter						
Soil Glass Jar - Unpreserved LN_MW03_0.5	18-DEC-2013	06-DEC-2013	12	18-DEC-2013	06-DEC-2013	12
Soil Glass Jar - Unpreserved LM_MW02_0.5, LR_MW04_0.5	18-DEC-2013	09-DEC-2013	9	18-DEC-2013	09-DEC-2013	9
Soil Glass Jar - Unpreserved LO_SB01_0.5	18-DEC-2013	10-DEC-2013	8	18-DEC-2013	10-DEC-2013	8
Soil Glass Jar - Unpreserved BK_SB06_0.6	18-DEC-2013	12-DEC-2013	6	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved LI_MW08_0.5	18-DEC-2013	13-DEC-2013	5	18-DEC-2013	13-DEC-2013	5
Soil Glass Jar - Unpreserved LQ_MW07_0.5	18-DEC-2013	17-DEC-2013	1	18-DEC-2013	17-DEC-2013	1

Outliers : Frequency of Quality Control Samples

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

- No Quality Control Sample Frequency Outliers exist.

CHAIN OF CUSTODY
ALS Laboratory
please tick ✓

CLIENT: EAM
OFFICE: Sydney
PROJECT: Project Symphony
ORDER NUMBER: 022498
PROJECT MANAGER: J. Baring
SAMPLER: T. ARMANI
COC unaltered to ALS (YES / NO)
Email Reports to (with default to FM if no other addresses are listed): Symphony.Management.com
Email Invoice to (will default to FM if no other addresses are listed):

TURNAROUND REQUIREMENTS:
Standard TAT (with due date):
Non Standard or urgent TAT (List due date): **3 days TAT**

COX SEQUENCE NUMBER (Circle)
COX: 1 2 3 4 5 6 7
OP: 1 2 3 4 5 6 7

RECEIVED BY: T. ARMANI
DATE/TIME: 13/12/13 16:45

FOR LABORATORY USE ONLY (Circle)
Clearly Sealed (Initials)?
Free ice / frozen ice bricks present upon receipt? Yes No
Function Sample Temperature on Receipt? Yes No
Other comments: C

RECEIVED BY: Row
DATE/TIME: 13/12 19:00

RECEIVED BY: T. ARMANI
DATE/TIME: 13/12/13 16:45

RECEIVED BY: T. ARMANI
DATE/TIME: 13/12/13 16:45

RECEIVED BY: T. ARMANI
DATE/TIME: 13/12/13 16:45

RECEIVED BY: T. ARMANI
DATE/TIME: 13/12/13 16:45

RECEIVED BY: T. ARMANI
DATE/TIME: 13/12/13 16:45

RECEIVED BY: T. ARMANI
DATE/TIME: 13/12/13 16:45

RECEIVED BY: T. ARMANI
DATE/TIME: 13/12/13 16:45

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ANALYSIS REQUIRED INCLUDING SUITES (NO. Suite Codes must be listed to adjunct suite price)
Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

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CHAIN OF CUSTODY

ALS Laboratory
Please tick →

John King
John King Supply Agency
13/12/13

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

FOR LABORATORY USE ONLY (Circle)

CLIENT: ERM
OFFICE: Sydney
PROJECT: Project Sydney
ORDER NUMBER: 022489
PROJECT MANAGER: Jeff King
SAMPLER: John King
COC enabled to ALS? (YES / NO)
Email Reports to (will default to PM if no other addresses are listed): John King, Sydney Agency
Email Invoices to (will default to PM if no other addresses are listed):
TURNAROUND REQUIREMENTS:
Standard TAT (Last due date):
Non Standard or urgent TAT (Last due date):
COC SEQUENCE NUMBER (Circle)
COC: 1 2 3 4 5 6 7
RF: 1 2 3 4 5 6 7
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:
RECEIVED BY: K.W.
DATE/TIME: 13/12/13 16:00
RELINQUISHED BY: John King
DATE/TIME: 13/12/13 19:00

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	CONTAINER INFORMATION		ANALYSIS REQUIRED INCLUDING SUITES (NB. Suite Codes must be listed to adjust suite price. Where Matrix is required, specify Total (unfiltered) or Dissolved (filtered) suite price).											Additional Information			
				TYPE & PRESERVATIVE (codes below)	refer to TOTAL CONTAINERS	S-2 Metals (As, Ba, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	S-24 TRH(Cr, Cd, Pb, V, Zn, Ni, Mo, Ti, Se)	Phenols (C40)/BTXEM, PAH	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (E0007)	PFOs/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (E904)				
13	LJ-SB09-1.0	6/2/13	SOIL			X	X	X	X	X	X	X	X	X	X					
14	LJ-SB10-1.0					X	X	X	X	X	X	X	X	X	X					
15	LJ-SB11-3.0					X	X	X	X	X	X	X	X	X	X					
16	LJ-SB12-1.2					X	X	X	X	X	X	X	X	X	X					
17	LG-M402-1.0					X	X	X	X	X	X	X	X	X	X					
18	LG-M401-1.5					X	X	X	X	X	X	X	X	X	X					
19	LO-M412-3.0					X	X	X	X	X	X	X	X	X	X					
20	LU-M42-3.0/22					X	X	X	X	X	X	X	X	X	X					
21	RO1-61213-DH					X	X	X	X	X	X	X	X	X	X					
22	Trip Blank																			Blank, TRM
23	Trip Spike																			TRH C6-C9, BTEX
24	TSC 9																			TRH C6-C9, BTEX

Water container Codes: P = Unpreserved Plastic; N = Nine Preserved Plastic; GRC = Nine Preserved GRC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = VOA-Vol HCl Preserved; VB = VOA Vol Sodium Bicarbonate Preserved; VS = VOA Vol Sulfate Preserved; AV = Air/soil Unpreserved; Vial S3 = Sulfate Preserved Amber Glass; H = HCl preservative; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sample Bottle; ASS = Plastic Bag for Acid Sulfate Soils; B = Unpreserved Bag.

Environmental Division
Sydney
Work Order
ES1327373



Telephone : + 61-2-8784 8585

Extra
Extra LJ-SB02-0.2

ES1327373

Fadi Soro

From: Tamatoa Armani <Tamatoa.Armani@erm.com>
Sent: Tuesday, 17 December 2013 11:05 AM
To: Fadi Soro; Joseph Ferring
Cc: ERM Australia Project Symphony MacGen
Subject: RE: ERM Sample LH_MW02_1.6

Hi Fadi,

It seems that there might have been a bit of confusion for those analysis as I was told that PSD and TOC could be performed from the same bag sample – unfortunately I wasn't aware that twice the amount was required. Anyway let's proceed as follows:

- Could you please proceed with PSD only for sample LH_MW02_1.6 #S
- Add CEC to sample LH_MW03_3.0 #Y

Is there any other LH samples from this COC that we could proceed with TOC analysis (maybe LH_MW03_0.1) #S

Let me know how you go.

Thanks, Tama

Best Regards,
Tamatoa Armani | Environmental Scientist – CSM
Environmental Resources Management Australia Pty Ltd
53 Bonville Avenue | Thornton NSW 2322
P: (02) 4964 2150 | F: (02) 4964 2151 | M: 04 0840 6395 | W: www.erm.com

Also delete PSD for sample #10
Fadi 17/12/13

Environmental Division
Sydney
Work Order
ES1327373



Telephone : +61-2-8784 8555

One Planet. One Company. ERM.
Creating the World's Leading Sustainability Consultancy



From: Fadi Soro [<mailto:fadi.soro@alsglobal.com>]
Sent: Tuesday, December 17, 2013 10:52 AM
To: Joseph Ferring
Cc: ERM Australia Project Symphony MacGen; Tamatoo Armani
Subject: RE: ERM Sample LH_MW02_1.6

Hi all,

As you can see from the attached COC only 1 bag was supplied for sample ID LH_MW02_1.6.

Analysis required is PSD & TOC, unfortunately we cannot do both.

Please let me know how you would like us to proceed.

Regards

Fadi

From: Joseph Ferring [<mailto:Joseph.Ferring@erm.com>]
Sent: Tuesday, 17 December 2013 10:40 AM
To: Fadi Soro
Cc: ERM Australia Project Symphony MacGen; Tamatoo Armani
Subject: ERM Sample LH_MW02_1.6

Hi Fadi, can you please reply to all and attach send the COC for this sample? Tamatoo Armani (the sampler) will check into what is required and will issue you instructions.
cheers

Joe Ferring
Senior Environmental Scientist

ERM
Building C, 33 Saunders Street Pyrmont NSW 2009
Locked Bag 24, Broadway NSW 2007 AUSTRALIA

T: +61 (0)2 8584 8890 (Direct)

T: +61 (0)2 8584 8888 (Office)
F: +61 (0)2 8584 8800
M: +61 424970468
joseph.ferring@erm.com

www.erm.com

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Please visit ERM's web site: <http://www.erm.com>

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: ES1327373		
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact Address	: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Contact Address	: Barbara Hanna 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	Page	: 1 of 4
Order number	: 0224198	Quote number	: ES2013ENVRES0369 (SY/794/13)
C-O-C number	: ----	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
Sampler	: TA		

Dates

Date Samples Received	: 13-DEC-2013	Issue Date	: 17-DEC-2013 10:36
Client Requested Due Date	: 19-DEC-2013	Scheduled Reporting Date	: 19-DEC-2013

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.4°C SYD - Ice present
No. of coolers/boxes	: 1 hard	No. of samples received	: 25
Security Seal	: Intact.	No. of samples analysed	: 24

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.
- All analysis will be reported on the scheduled due date of 19/12/2013, except for Particle Sizing analysis which will be reported on 23/12/2013.
- Sample LI_SB02_0.2 was received extra and placed on hold.
- Asbestos analysis will be subcontracted to ASET.
- **Samples received in appropriately pretreated and preserved containers.**
- **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 - ASB-SOL (Subcontracted)	Asbestos - Count (Solid)	SOIL - EA002 pH (1:5)	SOIL - EA010 (solids): Electrical Conductivity (1:5)	SOIL - EA150* Particle Size Analysis by Sieving	SOIL - ED007 CEC / Exchangeable Cations (ED007)	SOIL - EP004 (Carbon)	Total Organic Carbon (Calc.)	SOIL - EP066 (solids)	Polychlorinated Biphenyls by GCMS
ES1327373-004	05-DEC-2013 15:00	LH_MW03_3.0					✓	✓		✓				
ES1327373-005	05-DEC-2013 15:00	LH_MW02_1.6							✓					
ES1327373-006	05-DEC-2013 15:00	LJ_MW01_0.1			✓									✓
ES1327373-007	05-DEC-2013 15:00	LJ_SB10_0.1			✓									✓
ES1327373-008	05-DEC-2013 15:00	LH_MW03_0.1			✓						✓			
ES1327373-009	05-DEC-2013 15:00	LG_MW02_0.1			✓									
ES1327373-010	05-DEC-2013 15:00	LO_MW02_0.1			✓									✓
ES1327373-011	05-DEC-2013 15:00	LU_MW01_0.5			✓									
ES1327373-012	05-DEC-2013 15:00	D01_051213_JK												✓
ES1327373-013	06-DEC-2013 15:00	LJ_SB09_1.0									✓			✓
ES1327373-014	06-DEC-2013 15:00	LJ_SB10_1.0												✓
ES1327373-015	06-DEC-2013 15:00	LJ_SB11_3.0												✓
ES1327373-016	06-DEC-2013 15:00	LJ_SB12_1.2												✓
ES1327373-019	06-DEC-2013 15:00	LO_MW12_3.0												✓
ES1327373-026	05-DEC-2013 15:00	LJ_SB02_0.2	✓											

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EP074 (solids)	Volatile Organic Compounds	SOIL - EP231	Perfluorocivl Acids and Sulfonates	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
ES1327373-001	05-DEC-2013 15:00	LH_SB01_2.0					✓			✓	
ES1327373-002	05-DEC-2013 15:00	LH_MW01_1.0					✓			✓	
ES1327373-003	05-DEC-2013 15:00	LH_MW02_1.87					✓			✓	
ES1327373-004	05-DEC-2013 15:00	LH_MW03_3.0					✓			✓	
ES1327373-006	05-DEC-2013 15:00	LJ_MW01_0.1	✓				✓			✓	
ES1327373-007	05-DEC-2013 15:00	LJ_SB10_0.1	✓				✓			✓	
ES1327373-008	05-DEC-2013 15:00	LH_MW03_0.1					✓			✓	
ES1327373-009	05-DEC-2013 15:00	LG_MW02_0.1					✓			✓	
ES1327373-010	05-DEC-2013 15:00	LO_MW02_0.1	✓	✓			✓			✓	



			SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231 PerfluorocVl Acids and Sulfonates	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
ES1327373-011	05-DEC-2013 15:00	LU_MW01_0.5			✓		✓	
ES1327373-012	05-DEC-2013 15:00	D01_051213_JK	✓		✓		✓	
ES1327373-013	06-DEC-2013 15:00	LJ_SB09_1.0	✓		✓		✓	
ES1327373-014	06-DEC-2013 15:00	LJ_SB10_1.0	✓		✓		✓	
ES1327373-015	06-DEC-2013 15:00	LJ_SB11_3.0	✓		✓		✓	
ES1327373-016	06-DEC-2013 15:00	LJ_SB12_1.2	✓		✓		✓	
ES1327373-017	06-DEC-2013 15:00	LG_MW02_1.0			✓		✓	
ES1327373-018	06-DEC-2013 15:00	LG_MW01_1.5			✓		✓	
ES1327373-019	06-DEC-2013 15:00	LO_MW12_3.0	✓	✓	✓		✓	
ES1327373-020	06-DEC-2013 15:00	LU_MW1_3.0/3.3			✓		✓	
ES1327373-022	06-DEC-2013 15:00	TRIP BLANK				✓		
ES1327373-023	06-DEC-2013 15:00	TRIP SPIKE				✓		
ES1327373-024	06-DEC-2013 15:00	TSC 9				✓		

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-04 TRH/BTEXN
ES1327373-021	06-DEC-2013 15:00	R01_06/13/13_JK	✓



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	
Client Sample ID(s)	Container			Date	Evaluation	Date	Evaluation
EA002: pH (1:5)							
LH_MW03_3.0	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*
EA010: Electrical Conductivity (1:5)							
LH_MW03_3.0	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*
EP074: Volatile Organic Compounds							
D01_051213_JK	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*
LJ_MW01_0.1	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*
LJ_SB10_0.1	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*
LO_MW02_0.1	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*

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

SYMPHONY ERARING

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

THE ACCOUNTS PAYABLE

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

Work Order	: ES1327373	Page	: 1 of 24
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
Order number	: 0224198		
C-O-C number	: ----	Date Samples Received	: 13-DEC-2013
Sampler	: TA	Issue Date	: 23-DEC-2013
Site	: ----		
Quote number	: SY/794/13	No. of samples received	: 25
		No. of samples analysed	: 24

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.**
- **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
Di-An Dao		Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - 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

				LH_SB01_2.0	LH_MW01_1.0	LH_MW02_1.87	LH_MW03_3.0	LH_MW02_1.6
				05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-001	ES1327373-002	ES1327373-003	ES1327373-004	ES1327373-005
EA150: Particle Sizing								
+75µm	----	1	%	----	----	----	----	37
+150µm	----	1	%	----	----	----	----	25
+300µm	----	1	%	----	----	----	----	20
+425µm	----	1	%	----	----	----	----	18
+600µm	----	1	%	----	----	----	----	17
+1180µm	----	1	%	----	----	----	----	16
+2.36mm	----	1	%	----	----	----	----	14
+4.75mm	----	1	%	----	----	----	----	12
+9.5mm	----	1	%	----	----	----	----	10
+19.0mm	----	1	%	----	----	----	----	10
+37.5mm	----	1	%	----	----	----	----	<1
+75.0mm	----	1	%	----	----	----	----	<1
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	5.2	----
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	----	82	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	10.6	8.4	15.2	14.2	----
EA150: Soil Classification based on Particle Size								
Fines (<75 µm)	----	1	%	----	----	----	----	63
Sand (>75 µm)	----	1	%	----	----	----	----	23
Gravel (>2mm)	----	1	%	----	----	----	----	14
Cobbles (>6cm)	----	1	%	----	----	----	----	<1
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	----	----	----	0.2	----
Exchangeable Magnesium	----	0.1	meq/100g	----	----	----	2.9	----
Exchangeable Potassium	----	0.1	meq/100g	----	----	----	0.2	----
Exchangeable Sodium	----	0.1	meq/100g	----	----	----	<0.1	----
Cation Exchange Capacity	----	0.1	meq/100g	----	----	----	3.4	----
Exchangeable Aluminium	----	0.1	meq/100g	----	----	----	<0.1	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	23	11	<5	----
Cadmium	7440-43-9	1	mg/kg	<1	1	<1	<1	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LH_SB01_2.0	LH_MW01_1.0	LH_MW02_1.87	LH_MW03_3.0	LH_MW02_1.6
				05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-001	ES1327373-002	ES1327373-003	ES1327373-004	ES1327373-005
EG005T: Total Metals by ICP-AES - Continued								
Chromium	7440-47-3	2	mg/kg	10	18	12	2	----
Copper	7440-50-8	5	mg/kg	7	18	6	<5	----
Lead	7439-92-1	5	mg/kg	8	22	17	8	----
Nickel	7440-02-0	2	mg/kg	4	39	5	<2	----
Zinc	7440-66-6	5	mg/kg	20	187	27	<5	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP075(SIM)A: Phenolic Compounds								
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	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<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	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LH_SB01_2.0	LH_MW01_1.0	LH_MW02_1.87	LH_MW03_3.0	LH_MW02_1.6
				05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-001	ES1327373-002	ES1327373-003	ES1327373-004	ES1327373-005
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
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	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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	----
EP080: BTEXN								
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	----

EP075(SIM)S: Phenolic Compound Surrogates



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LH_SB01_2.0	LH_MW01_1.0	LH_MW02_1.87	LH_MW03_3.0	LH_MW02_1.6
				05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-001	ES1327373-002	ES1327373-003	ES1327373-004	ES1327373-005
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
Phenol-d6	13127-88-3	0.1	%	87.5	88.5	85.8	87.6	----
2-Chlorophenol-D4	93951-73-6	0.1	%	88.3	92.1	90.1	89.4	----
2,4,6-Tribromophenol	118-79-6	0.1	%	39.9	40.1	43.8	40.4	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	84.9	91.2	89.1	91.9	----
Anthracene-d10	1719-06-8	0.1	%	81.5	86.0	82.9	89.1	----
4-Terphenyl-d14	1718-51-0	0.1	%	80.2	84.5	81.4	85.8	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	107	101	96.1	104	----
Toluene-D8	2037-26-5	0.1	%	107	106	97.2	106	----
4-Bromofluorobenzene	460-00-4	0.1	%	100	101	92.7	98.4	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LJ_MW01_0.1	LJ_SB10_0.1	LH_MW03_0.1	LG_MW02_0.1	LO_MW02_0.1
				05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-006	ES1327373-007	ES1327373-008	ES1327373-009	ES1327373-010
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	14.4	15.5	18.4	21.0	14.6
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	10	14	13	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	15	19	24	14	16
Copper	7440-50-8	5	mg/kg	16	20	22	12	17
Lead	7439-92-1	5	mg/kg	8	12	19	10	5
Nickel	7440-02-0	2	mg/kg	34	28	30	16	26
Zinc	7440-66-6	5	mg/kg	50	62	64	38	84
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	----	----	<0.5	----	----
Total Organic Carbon	----	0.5	%	----	----	<0.5	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
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
EP074B: Oxygenated Compounds								
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
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<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	LJ_MW01_0.1	LJ_SB10_0.1	LH_MW03_0.1	LG_MW02_0.1	LO_MW02_0.1
				05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00
				ES1327373-006	ES1327373-007	ES1327373-008	ES1327373-009	ES1327373-010
EP074D: Fumigants								
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
EP074E: Halogenated Aliphatic Compounds								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LJ_MW01_0.1	LJ_SB10_0.1	LH_MW03_0.1	LG_MW02_0.1	LO_MW02_0.1
				05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-006	ES1327373-007	ES1327373-008	ES1327373-009	ES1327373-010
EP074E: Halogenated Aliphatic Compounds - Continued								
EP074F: Halogenated Aromatic Compounds								
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
EP074G: Trihalomethanes								
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
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	----	----	<5
EP075(SIM)A: Phenolic Compounds								
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								
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

				LJ_MW01_0.1	LJ_SB10_0.1	LH_MW03_0.1	LG_MW02_0.1	LO_MW02_0.1
				05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-006	ES1327373-007	ES1327373-008	ES1327373-009	ES1327373-010
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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

				LJ_MW01_0.1	LJ_SB10_0.1	LH_MW03_0.1	LG_MW02_0.1	LO_MW02_0.1
				05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-006	ES1327373-007	ES1327373-008	ES1327373-009	ES1327373-010
EP080: BTEXN								
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
EP231: Perfluorinated Compounds								
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
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	86.0	97.0	----	----	107
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	95.2	115	----	----	115
Toluene-D8	2037-26-5	0.1	%	89.5	108	----	----	108
4-Bromofluorobenzene	460-00-4	0.1	%	86.5	101	----	----	98.4
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	86.4	93.1	89.4	86.2	83.9
2-Chlorophenol-D4	93951-73-6	0.1	%	90.0	91.4	91.7	87.6	57.7
2,4,6-Tribromophenol	118-79-6	0.1	%	41.7	51.9	43.0	42.2	43.9
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	89.9	94.9	92.6	90.6	93.1
Anthracene-d10	1719-06-8	0.1	%	84.4	91.9	86.2	88.2	88.1
4-Terphenyl-d14	1718-51-0	0.1	%	81.6	88.7	84.8	86.1	85.3
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	94.7	115	99.6	102	114
Toluene-D8	2037-26-5	0.1	%	79.1	95.4	101	102	95.4
4-Bromofluorobenzene	460-00-4	0.1	%	80.6	94.5	92.2	94.7	91.9



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LU_MW01_0.5	D01_051213_JK	LJ_SB09_1.0	LJ_SB10_1.0	LJ_SB11_3.0
				05-DEC-2013 15:00	05-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-011	ES1327373-012	ES1327373-013	ES1327373-014	ES1327373-015
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	18.5	18.2	21.0	20.2	23.7
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	10	9	<5	8	12
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	17	16	15	8	28
Copper	7440-50-8	5	mg/kg	7	19	14	17	18
Lead	7439-92-1	5	mg/kg	11	8	8	13	14
Nickel	7440-02-0	2	mg/kg	12	26	29	16	30
Zinc	7440-66-6	5	mg/kg	29	49	58	78	44
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	----	----	<0.5	----	----
Total Organic Carbon	----	0.5	%	----	----	<0.5	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
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
EP074B: Oxygenated Compounds								
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
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	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

Compound	CAS Number	LOR	Unit	LU_MW01_0.5	D01_051213_JK	LJ_SB09_1.0	LJ_SB10_1.0	LJ_SB11_3.0
				05-DEC-2013 15:00	05-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
				ES1327373-011	ES1327373-012	ES1327373-013	ES1327373-014	ES1327373-015
EP074D: Fumigants								
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
EP074E: Halogenated Aliphatic Compounds								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LU_MW01_0.5	D01_051213_JK	LJ_SB09_1.0	LJ_SB10_1.0	LJ_SB11_3.0
				05-DEC-2013 15:00	05-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-011	ES1327373-012	ES1327373-013	ES1327373-014	ES1327373-015
EP074E: Halogenated Aliphatic Compounds - Continued								
EP074F: Halogenated Aromatic Compounds								
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
EP074G: Trihalomethanes								
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
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	----	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds								
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								
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

				LU_MW01_0.5	D01_051213_JK	LJ_SB09_1.0	LJ_SB10_1.0	LJ_SB11_3.0
				05-DEC-2013 15:00	05-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-011	ES1327373-012	ES1327373-013	ES1327373-014	ES1327373-015
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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

				LU_MW01_0.5	D01_051213_JK	LJ_SB09_1.0	LJ_SB10_1.0	LJ_SB11_3.0
				05-DEC-2013 15:00	05-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-011	ES1327373-012	ES1327373-013	ES1327373-014	ES1327373-015
EP080: BTEXN								
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
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	110	120	118	112
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	119	107	103	92.2
Toluene-D8	2037-26-5	0.1	%	----	114	114	109	103
4-Bromofluorobenzene	460-00-4	0.1	%	----	102	100	94.4	88.7
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	90.2	88.2	89.2	87.8	90.0
2-Chlorophenol-D4	93951-73-6	0.1	%	93.2	86.9	90.2	89.4	91.0
2,4,6-Tribromophenol	118-79-6	0.1	%	47.2	70.7	65.2	44.5	43.3
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	97.1	95.1	95.2	95.6	96.1
Anthracene-d10	1719-06-8	0.1	%	93.2	90.9	90.0	91.6	91.7
4-Terphenyl-d14	1718-51-0	0.1	%	91.2	88.9	87.5	89.1	90.4
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	98.6	118	115	112	98.8
Toluene-D8	2037-26-5	0.1	%	99.5	100	123	119	111
4-Bromofluorobenzene	460-00-4	0.1	%	89.6	96.1	106	100	93.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LJ_SB12_1.2	LG_MW02_1.0	LG_MW01_1.5	LO_MW12_3.0	LU_MW1_3.0/3.3
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
				ES1327373-016	ES1327373-017	ES1327373-018	ES1327373-019	ES1327373-020
Compound	CAS Number	LOR	Unit					
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	19.6	20.1	19.6	23.3	16.0
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	13	12	13	8	9
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	12	10	10	15	7
Copper	7440-50-8	5	mg/kg	17	15	15	17	<5
Lead	7439-92-1	5	mg/kg	15	14	17	12	8
Nickel	7440-02-0	2	mg/kg	44	22	34	8	5
Zinc	7440-66-6	5	mg/kg	87	70	64	33	11
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	<0.1	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----
EP074B: Oxygenated Compounds								
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	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	----	<0.5	----
EP074D: Fumigants								
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

				LJ_SB12_1.2	LG_MW02_1.0	LG_MW01_1.5	LO_MW12_3.0	LU_MW1_3.0/3.3
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-016	ES1327373-017	ES1327373-018	ES1327373-019	ES1327373-020
EP074D: Fumigants - Continued								
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	----
EP074E: Halogenated Aliphatic Compounds								
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	----
EP074F: Halogenated Aromatic Compounds								
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

				LJ_SB12_1.2	LG_MW02_1.0	LG_MW01_1.5	LO_MW12_3.0	LU_MW1_3.0/3.3
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-016	ES1327373-017	ES1327373-018	ES1327373-019	ES1327373-020
EP074F: Halogenated Aromatic Compounds - Continued								
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	----
EP074G: Trihalomethanes								
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	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	----	----	<5	----
EP075(SIM)A: Phenolic Compounds								
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								
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

				LJ_SB12_1.2	LG_MW02_1.0	LG_MW01_1.5	LO_MW12_3.0	LU_MW1_3.0/3.3
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-016	ES1327373-017	ES1327373-018	ES1327373-019	ES1327373-020
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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
EP080: BTEXN								
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

				LJ_SB12_1.2	LG_MW02_1.0	LG_MW01_1.5	LO_MW12_3.0	LU_MW1_3.0/3.3
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327373-016	ES1327373-017	ES1327373-018	ES1327373-019	ES1327373-020
EP080: BTEXN - Continued								
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
EP231: Perfluorinated Compounds								
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	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	120	----	----	76.0	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	86.3	----	----	85.1	----
Toluene-D8	2037-26-5	0.1	%	86.2	----	----	95.1	----
4-Bromofluorobenzene	460-00-4	0.1	%	81.2	----	----	88.1	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	92.0	83.1	86.9	87.4	90.1
2-Chlorophenol-D4	93951-73-6	0.1	%	96.3	86.3	90.4	91.1	92.7
2,4,6-Tribromophenol	118-79-6	0.1	%	41.2	37.5	50.6	50.8	43.4
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	96.3	90.1	95.5	94.0	96.0
Anthracene-d10	1719-06-8	0.1	%	93.9	84.5	91.4	89.4	93.7
4-Terphenyl-d14	1718-51-0	0.1	%	91.1	82.4	89.8	88.1	90.5
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	93.6	94.0	95.8	91.5	94.6
Toluene-D8	2037-26-5	0.1	%	93.1	94.9	97.6	103	91.0
4-Bromofluorobenzene	460-00-4	0.1	%	86.2	91.3	94.0	96.2	89.2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TRIP BLANK	TRIP SPIKE	TSC 9	----	----
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	----	----
				ES1327373-022	ES1327373-023	ES1327373-024	----	----
Compound	CAS Number	LOR	Unit					
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	49	62	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	56	70	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	22	30	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	0.7	0.8	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	17.8	21.2	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.0	2.3	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	9.9	11.4	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	3.9	4.5	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	34.3	40.2	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	13.8	15.9	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	100	92.8	98.8	----	----
Toluene-D8	2037-26-5	0.1	%	97.5	87.3	89.4	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	85.1	89.3	88.0	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_06/13/13_JK

Client sampling date / time

06-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327373-021	---	---	---	---
----------	------------	-----	------	---------------	-----	-----	-----	-----

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	----	----	----	----

EP080S: TPH(V)/BTEX Surrogates

1,2-Dichloroethane-D4	17060-07-0	0.1	%	104	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	103	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	96.2	----	----	----	----



Surrogate Control Limits

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

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

Certificate of Analysis

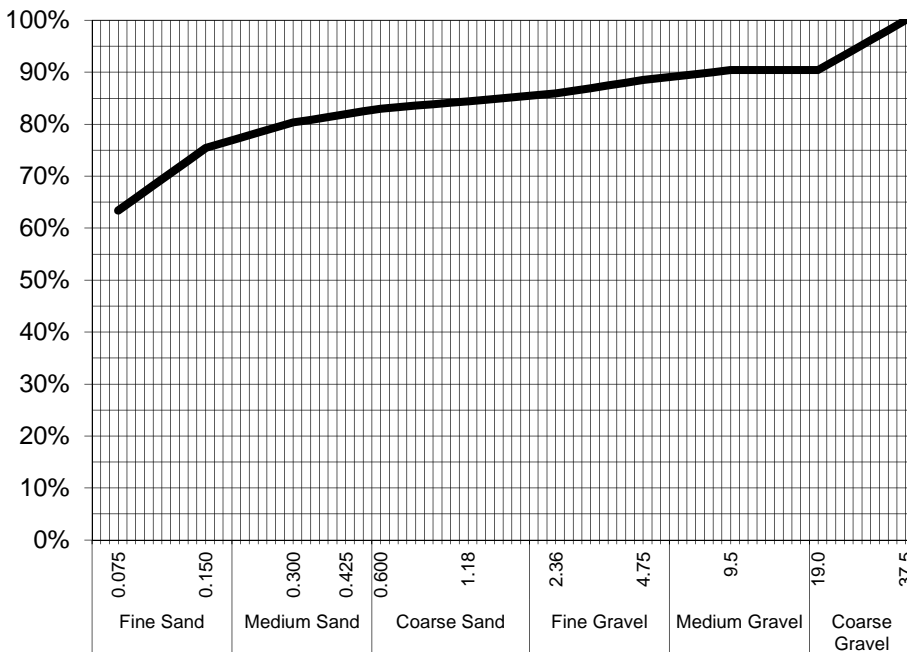
ALS Laboratory Group Pty Ltd
 5/585 Maitland Road
 Mayfield West, NSW 2304
 pH 02 4968 9433
 fax 02 4968 0349
 samples.newcastle@alsenviro.com

ALS Environmental
Newcastle, NSW



CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327373-005 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LH_MW02_1.6

Particle Size Distribution



Particle Size (mm)	Percent Passing
37.5	100%
19.0	90%
9.5	90%
4.75	89%
2.36	86%
1.18	84%
0.600	83%
0.425	82%
0.300	80%
0.150	75%
0.075	63%

Samples analysed as received.

Sample Comments:

Analysed: 19-Dec-13

Loss on Pretreatment: NA

Limit of Reporting: 1%

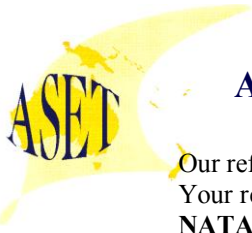
Sample Description: Fines, sand and gravel

Test Method: AS1289.3.6.1

NATA Accreditation: 825 Site: Newcastle
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 reproduced, except in full.



Hamish Murray
 Laboratory Supervisor, Newcastle
Authorised Signatory



Our ref : ASET36617/ 39797 / 1 - 6

Your ref : ES1327373

NATA Accreditation No: 14484

22 December 2013

Australian Laboratory Services Pty Ltd
277, Woodpark Road
Smithfield
NSW 2164

Attn: Ms Nanthini Coilparampil

Dear Nanthini

Asbestos Identification

This report presents the results of six samples, forwarded by Australian Laboratory Services Pty Ltd on 17 December 2013, for analysis for asbestos.

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

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

3. Results : **Sample No. 1. ASET36617/ 39797 / 1. ES1327373 - 006 - LS - MW01 - 0.1.**
Approx dimensions 8.0 cm x 10.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 2. ASET36617/ 39797 / 2. 3ES1327373 - 007 - LS - SB10 - 0.1.
Approx dimensions 10.0 cm x 8.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 3. ASET36617/ 39797 / 3. ES1327373 - 008 - LM - MW03 - 0.1.
Approx dimensions 10.0 cm x 8.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 4. ASET36617/ 39797 / 4. ES1327373 - 009 - LS - MW02 - 0.1.
Approx dimensions 10.0 cm x 8.0 cm x 5.25 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster and brick like material.
No asbestos detected.

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635

PHONE: (02) 99872183 FAX: (02) 99872151 EMAIL: aset@bigpond.net.au WEBSITE: www.Ausset.com.au

The logo for ASET (Asbestos Sampling and Testing) features the letters 'ASET' in a bold, blue, sans-serif font. The letters are set against a yellow background that is shaped like a stylized leaf or a drop with a jagged edge on the right side.

Sample No. 5. ASET36617 / 39797 / 5. ES1327373 - 010 - LO - MW02 - 0.1.

Approx dimensions 10.0 cm x 8.0 cm x 5.5 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.

Sample No. 6. ASET36617 / 39797 / 6. ES1327373 - 011 - LU - MW01 - 0.5.

Approx dimensions 10.0 cm x 8.0 cm x 5.0 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.

Analysed and reported by,

A handwritten signature in black ink, appearing to read 'Mahen De Silva', is written over a white background.

**Mahen De Silva. BSc, MSc, Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Identifier.
Approved Signatory**



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

QUALITY CONTROL REPORT

Work Order	: ES1327373	Page	: 1 of 22
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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: TA	No. of samples received	: 25
Order number	: 0224198	No. of samples analysed	: 24
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
Hamish Murray	Supervisor - Soils	Newcastle - 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 (%)
EA002 : pH (Soils) (QC Lot: 3215969)									
ES1327147-004	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.3	5.3	0.0	0% - 20%
ES1327432-021	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.9	5.9	0.0	0% - 20%
EA010: Conductivity (QC Lot: 3215972)									
ES1327373-004	LH_MW03_3.0	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	82	88	6.5	0% - 20%
EA055: Moisture Content (QC Lot: 3218280)									
ES1327312-012	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	19.9	21.8	8.8	0% - 20%
ES1327373-006	LJ_MW01_0.1	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.4	14.4	0.0	0% - 50%
EA055: Moisture Content (QC Lot: 3218281)									
ES1327373-015	LJ_SB11_3.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	23.7	23.2	1.8	0% - 20%
ES1327428-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	27.6	23.4	16.7	0% - 20%
ED007: Exchangeable Cations (QC Lot: 3218904)									
ES1327287-001	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	0.2	0.2	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	0.5	0.5	0.0	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ES1327373-004	LH_MW03_3.0	ED007: Exchangeable Calcium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	2.9	2.8	4.6	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	3.4	3.2	4.7	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 3218264)									
ES1327014-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	61	60	0.0	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	42	42	0.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	30	30	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	20	5.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	185	193	4.3	0% - 20%
ES1327373-008	LH_MW03_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	20	15.2	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	30	24	22.8	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	14	12	17.3	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 3218264) - continued									
ES1327373-008	LH_MW03_0.1	EG005T: Copper	7440-50-8	5	mg/kg	22	22	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	23	18.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	64	59	7.9	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 3218962)									
ES1327097-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	11	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	7	4	45.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	13	15	16.4	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	17	12	29.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	60	41	37.0	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	77	71	9.1	0% - 50%
ES1327373-016	LJ_SB12_1.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	13	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	44	42	5.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	13	14	9.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	17	18	8.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	17	8.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	87	86	0.0	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3218265)									
ES1327014-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327373-008	LH_MW03_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3218963)									
ES1327097-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327373-016	LJ_SB12_1.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP004: Organic Matter (QC Lot: 3217922)									
ES1327178-001	Anonymous	EP004: Organic Matter	----	0.5	%	<0.5	<0.5	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3216122)									
ES1327373-006	LJ_MW01_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327373-019	LO_MW12_3.0	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3215837)									
ES1327373-006	LJ_MW01_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



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 (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3215837) - continued									
ES1327373-006	LJ_MW01_0.1	EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 3215837)									
ES1327373-006	LJ_MW01_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
EP074C: Sulfonated Compounds (QC Lot: 3215837)									
ES1327373-006	LJ_MW01_0.1	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074D: Fumigants (QC Lot: 3215837)									
ES1327373-006	LJ_MW01_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
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215837)									
ES1327373-006	LJ_MW01_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



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215837) - continued									
ES1327373-006	LJ_MW01_0.1	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
EP074F: Halogenated Aromatic Compounds (QC Lot: 3215837)									
ES1327373-006	LJ_MW01_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		
EP074G: Trihalomethanes (QC Lot: 3215837)									
ES1327373-006	LJ_MW01_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
EP074H: Naphthalene (QC Lot: 3215837)									
ES1327373-006	LJ_MW01_0.1	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3215999)									
ES1327373-001	LH_SB01_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
ES1327373-012	D01_051213_JK	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 (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 3215999) - continued									
ES1327373-012	D01_051213_JK	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3215999)									
ES1327373-001	LH_SB01_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): 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		
ES1327373-012	D01_051213_JK	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 (%)	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3215999) - continued										
ES1327373-012	D01_051213_JK	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	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3215836)										
ES1327373-006	LJ_MW01_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
ES1327373-012	D01_051213_JK	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3215998)										
ES1327373-001	LH_SB01_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	
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit	
ES1327373-012	D01_051213_JK	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit	
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216012)										
ES1327422-025	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
ES1327521-016	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215836)										
ES1327373-006	LJ_MW01_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1327373-012	D01_051213_JK	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215998)										
ES1327373-001	LH_SB01_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	
ES1327373-012	D01_051213_JK	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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216012)										
ES1327422-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1327521-016	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080: BTEXN (QC Lot: 3215836)										
ES1327373-006	LJ_MW01_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	
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
ES1327373-012	D01_051213_JK	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 (%)
EP080: BTEXN (QC Lot: 3215836) - continued									
ES1327373-012	D01_051213_JK	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
EP080: BTEXN (QC Lot: 3216012)									
ES1327422-025	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
ES1327521-016	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
EP231: Perfluorinated Compounds (QC Lot: 3215779)									
ES1327373-010	LO_MW02_0.1	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 (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216150)									
ES1327289-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES1327438-003	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216649)									
ES1327434-001	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216150)									
ES1327289-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES1327438-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216649)									
ES1327434-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	<100	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 (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216649) - continued									
ES1327434-001	Anonymous	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
EP080: BTEXN (QC Lot: 3216150)									
ES1327289-002	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
ES1327438-003	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 (%) LCS	Recovery Limits (%) Low High	
EA010: Conductivity (QCLot: 3215972)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	100	70	130
ED007: Exchangeable Cations (QCLot: 3218904)								
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	----	----	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3218264)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	122	87	129
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	118	80	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	113	71	133
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	117	86	128
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	110	81	123
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	128	84	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	117	81	133
EG005T: Total Metals by ICP-AES (QCLot: 3218962)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	111	87	129
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	108	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	110	86	128
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	105	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	115	81	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218265)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	86.2	66	112
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218963)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	102	66	112
EP004: Organic Matter (QCLot: 3217922)								
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	95.2	85	105
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	95.1	84	106
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.0	57.4	117



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	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3215837)									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	91.5	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	98.2	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	98.2	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	101	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	102	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	101	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	98.1	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	101	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	104	61	131	
EP074B: Oxygenated Compounds (QCLot: 3215837)									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	88.7	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	81.2	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	83.2	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	89.2	54	136	
		5	mg/kg	<5	----	----	----	----	
EP074C: Sulfonated Compounds (QCLot: 3215837)									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	82.3	54	126	
EP074D: Fumigants (QCLot: 3215837)									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	94.8	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	94.8	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	76.9	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	72.2	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	91.2	66	126	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215837)									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	65.4	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	72.7	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	114	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	80.1	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	88.9	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	98.5	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	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215837) - continued									
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	89.1	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	90.1	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	92.0	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	97.2	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	91.2	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	97.7	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	95.1	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	99.1	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	98.5	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	94.6	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	95.8	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	97.6	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	94.9	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	83.9	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	83.3	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	92.6	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	95.1	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	95.9	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	89.8	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	119	48	136	
EP074F: Halogenated Aromatic Compounds (QCLot: 3215837)									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	96.2	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	94.2	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	102	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	99.8	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	101	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	98.6	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	97.0	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	108	60	132	
EP074G: Trihalomethanes (QCLot: 3215837)									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	97.9	62	120	
EP074: Dibromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	95.0	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	92.6	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	94.8	60	126	
EP074H: Naphthalene (QCLot: 3215837)									



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	
EP074H: Naphthalene (QCLot: 3215837) - continued									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	99.2	63	133	
		5	mg/kg	<5	----	----	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3215999)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	90.9	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	85.2	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	83.3	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	84.6	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	75.1	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	80.6	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	93.8	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	82.0	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	80.7	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	80.8	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	44.5	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3215999)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	87.5	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	86.4	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	88.4	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	88.5	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	91.9	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	91.2	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	90.6	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	90.4	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	89.1	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	97.0	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	88.4	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	85.3	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	83.7	76	122	
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	82.2	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	85.6	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	81.6	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215836)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	79.1	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215998)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	99.5	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	93.7	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	80.8	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	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.4	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215836)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	79.7	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215998)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	94.7	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	88.6	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	80.7	63	131	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	81.4	68.4	128	
EP080: BTEXN (QCLot: 3215836)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	85.3	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.7	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	99.8	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	95.3	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	104	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	102	62	138	
EP080: BTEXN (QCLot: 3216012)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	81.3	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.8	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	92.4	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	87.2	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	91.0	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	90.6	62	138	
EP231: Perfluorinated Compounds (QCLot: 3215779)									
EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	72.8	54	146	
EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	78.0	54	134	
EP231: 6:2 Fluorotelomer Sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	0.0125 mg/kg	72.6	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	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216150)									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	98.5	75	127	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216649)									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	103	59	129	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	94.9	71	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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216649) - continued								
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	97.5	62	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216150)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	99.9	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216649)								
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	92.9	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	102	67	127
EP080: BTEXN (QCLot: 3216150)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.6	70	124
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	99.3	65	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	97.2	70	120
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	96.0	69	121
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	96.1	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	88.0	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
EG005T: Total Metals by ICP-AES (QCLot: 3218264)							
ES1327014-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	111	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	117	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	108	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	118	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	108	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	122	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	123	70	130
EG005T: Total Metals by ICP-AES (QCLot: 3218962)							
ES1327097-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	100	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	108	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	106	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	89.8	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
EG005T: Total Metals by ICP-AES (QCLot: 3218962) - continued							
ES1327097-001	Anonymous	EG005T: Nickel	7440-02-0	50 mg/kg	105	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	97.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218265)							
ES1327014-002	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.1	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218963)							
ES1327097-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	92.0	70	130
EP004: Organic Matter (QCLot: 3217922)							
ES1327178-002	Anonymous	EP004: Organic Matter	----	0.49 %	97.8	----	----
		EP004: Total Organic Carbon	----	0.28 %	99.6	----	----
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)							
ES1327373-006	LJ_MW01_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215837)							
ES1327373-006	LJ_MW01_0.1	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	71.1	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	78.6	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3215837)							
ES1327373-006	LJ_MW01_0.1	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	88.6	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3215999)							
ES1327373-001	LH_SB01_2.0	EP075(SIM): Phenol	108-95-2	10 mg/kg	82.1	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	80.1	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	75.6	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	75.9	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	43.0	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3215999)							
ES1327373-001	LH_SB01_2.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	81.4	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	83.9	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215836)							
ES1327373-006	LJ_MW01_0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.6	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215998)							
ES1327373-001	LH_SB01_2.0	EP071: C10 - C14 Fraction	----	640 mg/kg	75.1	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	86.4	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	83.8	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)							
ES1327422-025	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215836)							
ES1327373-006	LJ_MW01_0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	85.7	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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215998)								
ES1327373-001	LH_SB01_2.0	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	104	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.6	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	60.1	52	132	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)								
ES1327422-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	82.6	70	130	
EP080: BTEXN (QCLot: 3215836)								
ES1327373-006	LJ_MW01_0.1	EP080: Benzene	71-43-2	2.5 mg/kg	89.2	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	91.2	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	95.2	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	88.0	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	96.7	70	130	
EP080: Naphthalene	91-20-3	2.5 mg/kg	85.0	70	130			
EP080: BTEXN (QCLot: 3216012)								
ES1327422-025	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.5	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.2	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.0	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.9	70	130	
EP080: Naphthalene	91-20-3	2.5 mg/kg	83.2	70	130			
EP231: Perfluorinated Compounds (QCLot: 3215779)								
ES1327373-010	LO_MW02_0.1	EP231: PFOS	1763-23-1	0.0025 mg/kg	80.4	54	146	
		EP231: PFOA	335-67-1	0.0025 mg/kg	102	54	134	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	101	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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216150)							
ES1327289-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	126	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216649)							
ES1327434-002	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	88.1	74	150
		EP071: C15 - C28 Fraction	----	300 µg/L	102	77	153
		EP071: C29 - C36 Fraction	----	200 µg/L	102	67	153
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216150)							
ES1327289-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	125	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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216649)								
ES1327434-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	250 µg/L	84.7	74	150	
		EP071: >C16 - C34 Fraction	----	350 µg/L	103	77	153	
		EP071: >C34 - C40 Fraction	----	150 µg/L	102	67	153	
EP080: BTEXN (QCLot: 3216150)								
ES1327289-002	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	109	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	111	70	130	
	EP080: Naphthalene	91-20-3	25 µg/L	104	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	
EP231: Perfluorinated Compounds (QCLot: 3215779)											
ES1327373-010	LO_MW02_0.1	EP231: PFOS	1763-23-1	0.0025 mg/kg	80.4	----	54	146	----	----	
		EP231: PFOA	335-67-1	0.0025 mg/kg	102	----	54	134	----	----	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	101	----	56	138	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215836)											
ES1327373-006	LJ_MW01_0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.6	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215836)											
ES1327373-006	LJ_MW01_0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	85.7	----	70	130	----	----	
EP080: BTEXN (QCLot: 3215836)											
ES1327373-006	LJ_MW01_0.1	EP080: Benzene	71-43-2	2.5 mg/kg	89.2	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	91.2	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	95.2	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	88.0	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	96.7	----	70	130	----	----	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	85.0	----	70	130	----	----		
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215837)											
ES1327373-006	LJ_MW01_0.1	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	71.1	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	78.6	----	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
EP074F: Halogenated Aromatic Compounds (QCLot: 3215837)										
ES1327373-006	LJ_MW01_0.1	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	88.6	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215998)										
ES1327373-001	LH_SB01_2.0	EP071: C10 - C14 Fraction	----	640 mg/kg	75.1	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	86.4	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	83.8	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215998)										
ES1327373-001	LH_SB01_2.0	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	104	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.6	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	60.1	----	52	132	----	----
EP075(SIM)A: Phenolic Compounds (QCLot: 3215999)										
ES1327373-001	LH_SB01_2.0	EP075(SIM): Phenol	108-95-2	10 mg/kg	82.1	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	80.1	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	75.6	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	75.9	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	43.0	----	20	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3215999)										
ES1327373-001	LH_SB01_2.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	81.4	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	83.9	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)										
ES1327422-025	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)										
ES1327422-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	82.6	----	70	130	----	----
EP080: BTEXN (QCLot: 3216012)										
ES1327422-025	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.5	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.2	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.0	----	70	130	----	----
		EP080: ortho-Xylene	106-42-3	2.5 mg/kg	91.9	----	70	130	----	----
		EP080: Naphthalene	95-47-6	2.5 mg/kg	83.2	----	70	130	----	----
91-20-3	2.5 mg/kg	83.2	----	70	130	----	----	----		
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)										
ES1327373-006	LJ_MW01_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	----	70	130	----	----
EP004: Organic Matter (QCLot: 3217922)										
ES1327178-002	Anonymous	EP004: Organic Matter	----	0.49 %	97.8	----	----	----	----	----
		EP004: Total Organic Carbon	----	0.28 %	99.6	----	----	----	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3218264)										
ES1327014-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	111	----	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
EG005T: Total Metals by ICP-AES (QCLot: 3218264) - continued										
ES1327014-002	Anonymous	EG005T: Cadmium	7440-43-9	50 mg/kg	117	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	108	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	118	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	108	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	122	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	123	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218265)										
ES1327014-002	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.1	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3218962)										
ES1327097-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	100	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	108	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	106	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	89.8	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	105	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	97.2	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218963)										
ES1327097-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	92.0	----	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	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216150)											
ES1327289-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	126	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216150)											
ES1327289-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	125	----	70	130	----	----	
EP080: BTEXN (QCLot: 3216150)											
ES1327289-002	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	109	----	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	111	----	70	130	----	----	
	EP080: Naphthalene	91-20-3		25 µg/L	104	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216649)											
ES1327434-002	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	88.1	----	74	150	----	----	
		EP071: C15 - C28 Fraction	----	300 µg/L	102	----	77	153	----	----	
		EP071: C29 - C36 Fraction	----	200 µg/L	102	----	67	153	----	----	



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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216649)										
ES1327434-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	250 µg/L	84.7	----	74	150	----	----
		EP071: >C16 - C34 Fraction	----	350 µg/L	103	----	77	153	----	----
		EP071: >C34 - C40 Fraction	----	150 µg/L	102	----	67	153	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327373	Page	: 1 of 14
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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: TA	No. of samples received	: 25
Order number	: 0224198	No. of samples analysed	: 24
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
EA002 : pH (Soils)							
Soil Glass Jar - Unpreserved (EA002) LH_MW03_3.0	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	17-DEC-2013	17-DEC-2013	✔
EA010: Conductivity							
Soil Glass Jar - Unpreserved (EA010) LH_MW03_3.0	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	17-DEC-2013	14-JAN-2014	✔
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103) LH_SB01_2.0, LH_MW01_1.0, LH_MW02_1.87, LH_MW03_3.0, LJ_MW01_0.1, LJ_SB10_0.1, LH_MW03_0.1, LG_MW02_0.1, LO_MW02_0.1, LU_MW01_0.5, D01_051213_JK	05-DEC-2013	----	----	----	18-DEC-2013	19-DEC-2013	✔
Soil Glass Jar - Unpreserved (EA055-103) LJ_SB09_1.0, LJ_SB10_1.0, LJ_SB11_3.0, LJ_SB12_1.2, LG_MW02_1.0, LG_MW01_1.5, LO_MW12_3.0, LU_MW1_3.0/3.3	06-DEC-2013	----	----	----	18-DEC-2013	20-DEC-2013	✔
EA150: Particle Sizing							
Snap Lock Bag (EA150) LH_MW02_1.6	05-DEC-2013	---	03-JUN-2014	----	23-DEC-2013	17-JUN-2014	✔
EA150: Soil Classification based on Particle Size							
Snap Lock Bag (EA150) LH_MW02_1.6	05-DEC-2013	---	03-JUN-2014	----	23-DEC-2013	17-JUN-2014	✔
ED007: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED007) LH_MW03_3.0	05-DEC-2013	19-DEC-2013	02-JAN-2014	✔	19-DEC-2013	02-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
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) LH_SB01_2.0, LH_MW02_1.87, LJ_MW01_0.1, LH_MW03_0.1, LO_MW02_0.1, D01_051213_JK LH_MW01_1.0, LH_MW03_3.0, LJ_SB10_0.1, LG_MW02_0.1, LU_MW01_0.5,	05-DEC-2013	18-DEC-2013	03-JUN-2014	✓	18-DEC-2013	03-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) LJ_SB09_1.0, LJ_SB11_3.0, LG_MW02_1.0, LO_MW12_3.0, LJ_SB10_1.0, LJ_SB12_1.2, LG_MW01_1.5, LU_MW1_3.0/3.3	06-DEC-2013	18-DEC-2013	04-JUN-2014	✓	19-DEC-2013	04-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) LH_SB01_2.0, LH_MW02_1.87, LJ_MW01_0.1, LH_MW03_0.1, LO_MW02_0.1, D01_051213_JK LH_MW01_1.0, LH_MW03_3.0, LJ_SB10_0.1, LG_MW02_0.1, LU_MW01_0.5,	05-DEC-2013	18-DEC-2013	02-JAN-2014	✓	19-DEC-2013	02-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T) LJ_SB09_1.0, LJ_SB11_3.0, LG_MW02_1.0, LO_MW12_3.0, LJ_SB10_1.0, LJ_SB12_1.2, LG_MW01_1.5, LU_MW1_3.0/3.3	06-DEC-2013	18-DEC-2013	03-JAN-2014	✓	19-DEC-2013	03-JAN-2014	✓
EP004: Organic Matter							
Soil Glass Jar - Unpreserved (EP004) LH_MW03_0.1	05-DEC-2013	20-DEC-2013	02-JAN-2014	✓	20-DEC-2013	02-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP004) LJ_SB09_1.0	06-DEC-2013	20-DEC-2013	03-JAN-2014	✓	20-DEC-2013	03-JAN-2014	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) LJ_MW01_0.1, LO_MW02_0.1, LJ_SB10_0.1, D01_051213_JK	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP066) LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0 LJ_SB10_1.0, LJ_SB12_1.2,	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	18-DEC-2013	26-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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Soil Glass Jar - Unpreserved (EP071)								
LH_SB01_2.0, LH_MW02_1.87, LJ_MW01_0.1, LH_MW03_0.1, LO_MW02_0.1, D01_051213_JK	LH_MW01_1.0, LH_MW03_3.0, LJ_SB10_0.1, LG_MW02_0.1, LU_MW01_0.5,	05-DEC-2013	18-DEC-2013	19-DEC-2013	✔	18-DEC-2013	27-JAN-2014	✔
Soil Glass Jar - Unpreserved (EP071)								
LJ_SB09_1.0, LJ_SB11_3.0, LG_MW02_1.0, LO_MW12_3.0,	LJ_SB10_1.0, LJ_SB12_1.2, LG_MW01_1.5, LU_MW1_3.0/3.3	06-DEC-2013	18-DEC-2013	20-DEC-2013	✔	18-DEC-2013	27-JAN-2014	✔
EP074D: Fumigants								
Soil Glass Jar - Unpreserved (EP074)								
LJ_MW01_0.1, LO_MW02_0.1,	LJ_SB10_0.1, D01_051213_JK	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖
Soil Glass Jar - Unpreserved (EP074)								
LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0	LJ_SB10_1.0, LJ_SB12_1.2,	06-DEC-2013	17-DEC-2013	13-DEC-2013	✖	18-DEC-2013	13-DEC-2013	✖
EP074E: Halogenated Aliphatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
LJ_MW01_0.1, LO_MW02_0.1,	LJ_SB10_0.1, D01_051213_JK	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖
Soil Glass Jar - Unpreserved (EP074)								
LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0	LJ_SB10_1.0, LJ_SB12_1.2,	06-DEC-2013	17-DEC-2013	13-DEC-2013	✖	18-DEC-2013	13-DEC-2013	✖
EP074F: Halogenated Aromatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
LJ_MW01_0.1, LO_MW02_0.1,	LJ_SB10_0.1, D01_051213_JK	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖
Soil Glass Jar - Unpreserved (EP074)								
LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0	LJ_SB10_1.0, LJ_SB12_1.2,	06-DEC-2013	17-DEC-2013	13-DEC-2013	✖	18-DEC-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	
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.1, LO_MW02_0.1,	LJ_SB10_0.1, D01_051213_JK	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖
Soil Glass Jar - Unpreserved (EP074) LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0	LJ_SB10_1.0, LJ_SB12_1.2,	06-DEC-2013	17-DEC-2013	13-DEC-2013	✖	18-DEC-2013	13-DEC-2013	✖
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.1, LO_MW02_0.1,	LJ_SB10_0.1, D01_051213_JK	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖
Soil Glass Jar - Unpreserved (EP074) LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0	LJ_SB10_1.0, LJ_SB12_1.2,	06-DEC-2013	17-DEC-2013	13-DEC-2013	✖	18-DEC-2013	13-DEC-2013	✖
EP074B: Oxygenated Compounds								
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.1, LO_MW02_0.1,	LJ_SB10_0.1, D01_051213_JK	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖
Soil Glass Jar - Unpreserved (EP074) LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0	LJ_SB10_1.0, LJ_SB12_1.2,	06-DEC-2013	17-DEC-2013	13-DEC-2013	✖	18-DEC-2013	13-DEC-2013	✖
EP074C: Sulfonated Compounds								
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.1, LO_MW02_0.1,	LJ_SB10_0.1, D01_051213_JK	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖
Soil Glass Jar - Unpreserved (EP074) LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0	LJ_SB10_1.0, LJ_SB12_1.2,	06-DEC-2013	17-DEC-2013	13-DEC-2013	✖	18-DEC-2013	13-DEC-2013	✖
EP074G: Trihalomethanes								
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.1, LO_MW02_0.1,	LJ_SB10_0.1, D01_051213_JK	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖
Soil Glass Jar - Unpreserved (EP074) LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0	LJ_SB10_1.0, LJ_SB12_1.2,	06-DEC-2013	17-DEC-2013	13-DEC-2013	✖	18-DEC-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	
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM)) LH_SB01_2.0, LH_MW02_1.87, LJ_MW01_0.1, LH_MW03_0.1, LO_MW02_0.1, D01_051213_JK LH_MW01_1.0, LH_MW03_3.0, LJ_SB10_0.1, LG_MW02_0.1, LU_MW01_0.5,	05-DEC-2013	18-DEC-2013	19-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓	
Soil Glass Jar - Unpreserved (EP075(SIM)) LJ_SB09_1.0, LJ_SB11_3.0, LG_MW02_1.0, LO_MW12_3.0, LJ_SB10_1.0, LJ_SB12_1.2, LG_MW01_1.5, LU_MW1_3.0/3.3	06-DEC-2013	18-DEC-2013	20-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) LH_SB01_2.0, LH_MW02_1.87, LJ_MW01_0.1, LH_MW03_0.1, LO_MW02_0.1, D01_051213_JK LH_MW01_1.0, LH_MW03_3.0, LJ_SB10_0.1, LG_MW02_0.1, LU_MW01_0.5,	05-DEC-2013	18-DEC-2013	19-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓	
Soil Glass Jar - Unpreserved (EP075(SIM)) LJ_SB09_1.0, LJ_SB11_3.0, LG_MW02_1.0, LO_MW12_3.0, LJ_SB10_1.0, LJ_SB12_1.2, LG_MW01_1.5, LU_MW1_3.0/3.3	06-DEC-2013	18-DEC-2013	20-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓	
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) LH_SB01_2.0, LH_MW02_1.87, LJ_MW01_0.1, LH_MW03_0.1, LO_MW02_0.1, D01_051213_JK LH_MW01_1.0, LH_MW03_3.0, LJ_SB10_0.1, LG_MW02_0.1, LU_MW01_0.5,	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	18-DEC-2013	19-DEC-2013	✓	
Soil Glass Jar - Unpreserved (EP080) TRIP SPIKE,	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	17-DEC-2013	20-DEC-2013	✓	
Soil Glass Jar - Unpreserved (EP080) LJ_SB09_1.0, LJ_SB11_3.0, LG_MW02_1.0, LO_MW12_3.0, TRIP BLANK LJ_SB10_1.0, LJ_SB12_1.2, LG_MW01_1.5, LU_MW1_3.0/3.3,	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	18-DEC-2013	20-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	
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080) LH_SB01_2.0, LH_MW02_1.87, LJ_MW01_0.1, LH_MW03_0.1, LO_MW02_0.1, D01_051213_JK	LH_MW01_1.0, LH_MW03_3.0, LJ_SB10_0.1, LG_MW02_0.1, LU_MW01_0.5	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	18-DEC-2013	19-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) TRIP SPIKE,	TSC 9	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	17-DEC-2013	20-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LJ_SB09_1.0, LJ_SB11_3.0, LG_MW02_1.0, LO_MW12_3.0, TRIP BLANK	LJ_SB10_1.0, LJ_SB12_1.2, LG_MW01_1.5, LU_MW1_3.0/3.3	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	18-DEC-2013	20-DEC-2013	✓
EP231: Perfluorinated Compounds								
Soil Glass Jar - Unpreserved (EP231) LO_MW02_0.1		05-DEC-2013	17-DEC-2013	03-JUN-2014	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP231) LO_MW12_3.0		06-DEC-2013	17-DEC-2013	04-JUN-2014	✓	17-DEC-2013	26-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	
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071) R01_06/13/13_JK		06-DEC-2013	18-DEC-2013	13-DEC-2013	*	18-DEC-2013	27-JAN-2014	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080) R01_06/13/13_JK		06-DEC-2013	18-DEC-2013	20-DEC-2013	✓	18-DEC-2013	20-DEC-2013	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Amber VOC Vial - Sulfuric Acid (EP080) R01_06/13/13_JK		06-DEC-2013	18-DEC-2013	20-DEC-2013	✓	18-DEC-2013	20-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	
Analytical Methods							
Laboratory Duplicates (DUP)							
Electrical Conductivity (1:5)	EA010	1	10	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	2	10	20.0	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
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	10	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	15	13.3	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	4	35	11.4	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	19	10.5	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	1	9	11.1	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Electrical Conductivity (1:5)	EA010	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	10	10.0	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	2	35	5.7	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	19	5.3	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	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Electrical Conductivity (1:5)	EA010	1	10	10.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Exchangeable Cations	ED007	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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	10	10.0	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	2	35	5.7	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	19	5.3	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



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>							
Method Blanks (MB) - Continued							
Volatile Organic Compounds	EP074	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
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
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	10	10.0	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	2	35	5.7	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	19	5.3	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	9	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	Regular	Actual	Expected	Evaluation	
<i>Analytical Methods</i>							
Laboratory Duplicates (DUP)							
TPH - Semivolatile Fraction	EP071	1	8	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
Laboratory Control Samples (LCS)							
TPH - Semivolatile Fraction	EP071	1	8	12.5	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
Method Blanks (MB)							
TPH - Semivolatile Fraction	EP071	1	8	12.5	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 Spikes (MS)							
TPH - Semivolatile Fraction	EP071	1	8	12.5	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)
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
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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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)
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.
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)
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.
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, 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.
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
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	ES1327373-010	LO_MW02_0.1	2-Chlorophenol-D4	93951-73-6	57.7 %	66-122 %	Recovery less than lower data quality objective
EP075(SIM)S: Phenolic Compound Surrogates	ES1327373-001	LH_SB01_2.0	2.4.6-Tribromophenol	118-79-6	39.9 %	40-138 %	Recovery less than lower data quality objective
EP075(SIM)S: Phenolic Compound Surrogates	ES1327373-017	LG_MW02_1.0	2.4.6-Tribromophenol	118-79-6	37.5 %	40-138 %	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
EA002 : pH (Soils)							
Soil Glass Jar - Unpreserved							
LH_MW03_3.0		17-DEC-2013	12-DEC-2013	5	----	----	----
EA010: Conductivity							
Soil Glass Jar - Unpreserved							
LH_MW03_3.0		17-DEC-2013	12-DEC-2013	5	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved							
LJ_MW01_0.1, LO_MW02_0.1,	LJ_SB10_0.1, D01_051213_JK	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved							
LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0	LJ_SB10_1.0, LJ_SB12_1.2,	17-DEC-2013	13-DEC-2013	4	18-DEC-2013	13-DEC-2013	5



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
EP074B: Oxygenated Compounds						
Soil Glass Jar - Unpreserved LJ_MW01_0.1, LJ_SB10_0.1, LO_MW02_0.1, D01_051213_JK	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0 LJ_SB10_1.0, LJ_SB12_1.2,	17-DEC-2013	13-DEC-2013	4	18-DEC-2013	13-DEC-2013	5
EP074C: Sulfonated Compounds						
Soil Glass Jar - Unpreserved LJ_MW01_0.1, LJ_SB10_0.1, LO_MW02_0.1, D01_051213_JK	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0 LJ_SB10_1.0, LJ_SB12_1.2,	17-DEC-2013	13-DEC-2013	4	18-DEC-2013	13-DEC-2013	5
EP074D: Fumigants						
Soil Glass Jar - Unpreserved LJ_MW01_0.1, LJ_SB10_0.1, LO_MW02_0.1, D01_051213_JK	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0 LJ_SB10_1.0, LJ_SB12_1.2,	17-DEC-2013	13-DEC-2013	4	18-DEC-2013	13-DEC-2013	5
EP074E: Halogenated Aliphatic Compounds						
Soil Glass Jar - Unpreserved LJ_MW01_0.1, LJ_SB10_0.1, LO_MW02_0.1, D01_051213_JK	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0 LJ_SB10_1.0, LJ_SB12_1.2,	17-DEC-2013	13-DEC-2013	4	18-DEC-2013	13-DEC-2013	5
EP074F: Halogenated Aromatic Compounds						
Soil Glass Jar - Unpreserved LJ_MW01_0.1, LJ_SB10_0.1, LO_MW02_0.1, D01_051213_JK	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved LJ_SB09_1.0, LJ_SB11_3.0, LO_MW12_3.0 LJ_SB10_1.0, LJ_SB12_1.2,	17-DEC-2013	13-DEC-2013	4	18-DEC-2013	13-DEC-2013	5
EP074G: Trihalomethanes						



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
EP074G: Trihalomethanes - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved LJ_MW01_0.1, LJ_SB10_0.1, LO_MW02_0.1, D01_051213_JK	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved LJ_SB09_1.0, LJ_SB11_3.0, LJ_SB12_1.2, LO_MW12_3.0	17-DEC-2013	13-DEC-2013	4	18-DEC-2013	13-DEC-2013	5
EP074H: Naphthalene						
Soil Glass Jar - Unpreserved LJ_MW01_0.1, LJ_SB10_0.1, LO_MW02_0.1, D01_051213_JK	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
Soil Glass Jar - Unpreserved LJ_SB09_1.0, LJ_SB11_3.0, LJ_SB12_1.2, LO_MW12_3.0	17-DEC-2013	13-DEC-2013	4	18-DEC-2013	13-DEC-2013	5

Matrix: **WATER**

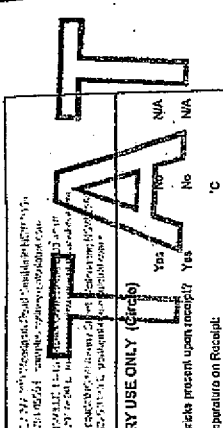
Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP080/071: Total Petroleum Hydrocarbons						
Amber Glass Bottle - Unpreserved R01_06/13/13_JK	18-DEC-2013	13-DEC-2013	5	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013						
Amber Glass Bottle - Unpreserved R01_06/13/13_JK	18-DEC-2013	13-DEC-2013	5	----	----	----

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.

Need Rainiers 12/12
 ACS sig 19/20
 19/2/23



CHAIN OF CUSTODY
 ALS Laboratory
 1001 W. 21st Street, Vancouver, BC V6L 1A1
 TEL: 604-271-1000 FAX: 604-271-1001
 1001 W. 21st Street, Vancouver, BC V6L 1A1
 TEL: 604-271-1000 FAX: 604-271-1001

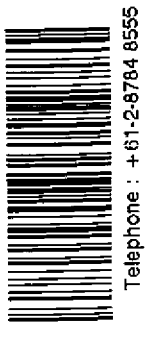
CLIENT: MACGEN
OFFICE: SYDNEY
PROJECT: Project Symphony
ORDER NUMBER: 0224198
PROJECT MANAGER: JF
CONTACT PH:
SAMPLER MOBILE:
EDD FORMAT (or default):
COC emailed to ALS? (YES / NO):
 Email Reports to (will default to PM if no other addresses are listed):
 Email Invoice to (will default to PM if no other addresses are listed):

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

ALS QUOTE NO.: SY79473
SITE: BAYSWATER (CIDDELL)
RECEIVED BY: HANSA C
DATE/TIME: 13/12/17 17:00
RELINQUISHED BY: [Signature]
DATE/TIME: 13/12/17 17:00

FOR LABORATORY USE ONLY (Circle)
 Curb-side Soil Inlet? Yes No N/A
 Free Ice / Acetone Ice present upon receipt? Yes No N/A
 Random Sample Temperature on Receipt: °C
 Other comment:

Environmental Division Sydney
Work Order ES1327422
 Telephone: +61-2-8784 8555



ALS USE	LAB ID	SAMPLE DETAILS		CONTAINER INFORMATION		ANALYSES REQUIRED INCLUDING SUITES (N3, Suite Codes must be listed to reflect suite price)																
		MATRIX: SOLID (S) WATER (W)	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below	refer to CONTAINERS TOTAL	Where Metals are required, specify Total (undiluted unless required) or Dissolved (acid filtered unless required)															
	LV-MW07-0.05	SOIL	12-12-14	SOIL	1 x J, 2 x BAGS	3	S-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, Ti, Se)	X	S-24 TRHCs (C40) BTEXN, PAH, Phenols	X	VOC Target Scan	PCB	PH (15)	Exchangeable Cations (ED00)	PROSPFOA	Asbestos (presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EPO4)	COMM DISBUR DOC ON	
	LV-MW07-0.8		12-12-14		1 x J	1	S-2 Metals	X														HOLD
	LI-8601-0.0		"		1 x B	1	S-2 Metals	X														HOLD
	LI-8601-0.1		"		2 x J	2	S-2 Metals	X														
	LI-8601-0.4		"		1 x J	1	S-2 Metals	X														
	LI-8602-0.0		"		1 x B	1	S-2 Metals	X														
	LI-8602-0.2		"		2 x J	2	S-2 Metals	X														
	Imp Sample		4		1 x J	1	S-2 Metals	X														BTEX / TRH C6-C9
	Imp Blank		6		1 x J	1	S-2 Metals	X														BTEX / TRH C6-C9
	RON-12-13-HI		10		W 4 bottles		S-2 Metals	X														BTEX / TRH C6-C9
	TSC		11				S-2 Metals	X														BTEX / TRH C6-C9

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; QUC = Nitric Preserved QUC; SP = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; UV = Ultraviolet Unpreserved Plastic
 V = VOA Vol HCl Preserved; VB = VOA Vol Sodium Bisulfate Preserved; VS = VOA Vol Sulfuric Preserved; AV = Air Tight Unpreserved Vol; SG = Silicate Preserved Amber Glass; H+HCl Preserved Plastic; H+HCl Preserved Plastic; H+HCl Preserved Plastic
 Z = Zinc Acetate Preserved Bulb; E = EDTA Preserved Bulb; ST = Single Bottle; ASB = Plastic Bag for ASB Bulb; SSB = Plastic Bag for SSB Bulb
Relinquished By / Date:
Revised By / Date:
Comments:
WO No.:
Attach By PO / Internal Sheet:

1 2 3 4 5 6 7 8 9 10 11

TAT



CHAIN OF CUSTODY

ALS Laboratory
 10000 15th Street, Suite 100
 Denver, CO 80231
 Phone: 303.440.2600
 Fax: 303.440.2601
 Email: info@als.com

ALS Laboratory
 10000 15th Street, 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: 020419
PROJECT MANAGER: J. Ferras
SAMPLER: T. ARMANI
COC emailed to ALS? (YES / NO)
 Email Reports to (with default to PM if no other addresses are listed): Symphony Design@erm.com
 Email Invoice to (with default to PM if no other addresses are listed):

TURNAROUND REQUIREMENTS:
 Standard TAT (List due date)
 Non Standard or urgent TAT (List due date): 48 hr TAT

ALS QUOTE NO.: SY79413
SITE: BAYSWATER ROCK
CONTACT PH:
SAMPLER MOBILE:
EDD FORMAT (or default): TARTANI
DATE/TIME: 12.13/1800

FOR LABORATORY USE ONLY (Circle)
 Classify Seal Intact? Yes No NY
 Free Ice/Absorbents present upon receipt? NY
 Random Sample Temperature on Receipt: 12
 Other comment:

RELINQUISHED BY: Er
DATE/TIME: 13/12/3 1703

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)	CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NG, SW, etc. must be listed to submit suite price) (When Metals are required, specify Total (unfiltered) bottles, filtered or Dispersed (filtered bottles required))	Additional Information
		MATRIX	TYPE & PRESERVATIVE (codes below)		
LAB ID	SAMPLE ID	DATE / TIME	TOTAL CONTAINERS (refer to)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	Comments on likely equipment, levels, dilutions, or samples requiring specific CC analysis etc.
12	VV-MW06-0-8	11.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
13	VV-MW01-0-45	11.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
14	VV-MW01-0-0.5	10.12.13	2	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
15	VB-MW02-0-1	10.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
16	VB-MW12-3-0	12.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
17	TOL-121213-TA	12.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
18	VB-MW02-2-0	10.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
19	VV-MW05-0.5	11.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
20	VV-MW05-0-1	11.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
21	VV-MW04-0-1	11.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
22	VV-MW05-0.5	11.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
23	VB-MW11-3-0	11.12.13	2	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	
24	VB-MW10-1-6	11.12.13	1	5-24 TRHICs Chlorole VOC Target Scan PCB PH (1:5) Exchangeable PROSPROA Asbestos (absence/presence) Particle Sizing to 75um (Stave) Organic Matter plus Carbon (EPO4)	

WATER CONTAINER CODES: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AC = Amber Glass Preserved Plastic; AU = Autoclave Preserved Plastic
V = VOA Vol Preserved: V = VOA Vol Sodium Bisulfate Preserved; VS = VOA Vol Sulfuric Preserved; AV = Autoclave Unpreserved Vol; SQ = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; GP = Sulfuric Preserved Plastic; F = Formic Acid Preserved Glass
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Box.

Received 20.11.2014-0.5

19

CHAIN OF CUSTODY
ALS Laboratory
ALS Laboratory
ALS Laboratory

CLIENT: ERM
OFFICE: Sydney
PROJECT: Project Sydney
ORDER NUMBER: 022418
PROJECT MANAGER: Joe Farney
SAMPLER: P. Okavi and J. EDD
COC emailed to ALS? (YES / NO) YES
Email Reports to (will default to PM if no other addresses are listed): Sydney, Macquarie
Email Invoices to (will default to PM if no other addresses are listed): Sydney, Macquarie

TURNAROUND REQUIREMENTS:
Standard TAT (List due date):
Non Standard or urgent TAT (List due date):
ALS QUOTE NO.: SY79413
SITE: BAYSWATER TOWER

RECEIVED BY: Joe Farney
DATE/TIME: 13/12/13 1400

RELINQUISHED BY: P. Okavi
DATE/TIME: 11.12.13

FOR LABORATORY USE ONLY (Circle):
Custody Seal Intact? Yes No
Free Ice (Ice packs/bags present upon receipt)? Yes No
Random Sample Temperature on Receipt: 12 °C
Other comment:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: PSD + Asbestos bags @ EN excluding LS-MW02-2.0 (no split provided)

ALS USE	LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below	TOTAL CONTAINERS (refer to)	ANALYSIS REQUIRED INCLUDING SUITES (NLS, Suite Codes must be added to attract suite price) Where Metals are required, specify Total (multiplexed suite required) or Dissolved (field filtered suite required)													Additional Information			
							S-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, V, Zn, B)	S-24 TRH (Cr, C6, Phenols)	VOC Target Scan	PCB	pH (1:5)	Exchangeable Cations (ED07)	PFOS/PFOA	Asbestos (absence/presence)	Particle Size to 75um (Sieve)	Organic Matter plus Carbon (F004)	Comments on likely common level, diluent, or samples requiring specific GC analysis etc.					
	25	LD-MW01-1.1		SOIL		1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	26	LO-MW13-0.6		-M-		1 bag	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	27	LJ-SB08-1.0		-I-		1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	28	PO1-11123-R0		WAK		2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	29	PO1-11123-R0		WAK		1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	30	PO1-11123-R0		WAK		1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
	29	BLANK		S		1																	
	30	TSPIKE		S		1																	
	31	TSC 3		S		1																	

WATER CONTAINER CODES: P = Unpreserved Plastic; N = Nitric Preserved Plastic; DNE = Nitric Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HQ Preserved; VS = VOA Vial Sodium Hydroxide Preserved; VG = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial; SG = Sulfuric Preserved Amber Glass; H = VCI preservative Plastic; HD = HD preservative Plastic; F = EDTA Preserved Plastic; BT = Boron Buffer; AS2 = Plastic Bin for Acid Sulphate; AS3 = Unpreserved Bin

Environmental Division Sydney Work Order
ES10213003

ALS
CHAIN OF CUSTODY
 ALS Laboratory
 please tick ✓

CLIENT: BKM
OFFICE: Sydney
PROJECT: Project Symphony
ORDER NUMBER: 022198
PROJECT MANAGER: Joe Ferris
SAMPLER: Riza O'Connell
CONTACT PI: 042990468
SAMPLER MOBILE: 042821694
EDD FORMAT (or default): Raw Data
TURNAROUND REQUIREMENTS: Standard TAT (List due date); Rush TAT (List due date)
STANDARD TAT (List due date): 13/12/13 16:00
RUSH TAT (List due date): 13/12/13 17:00
ALS QUOTE NO.: SY70413
SITE: BAYSWATER / LIDELL
RECEIVED BY: Riza O'Connell
DATE/TIME: 13/12/13 16:55
RECEIVED BY: Riza O'Connell
DATE/TIME: 13/12/13 17:00
FOR LABORATORY USE ONLY (Circle):
 Custody Seal Intact? Yes No NA
 Friction / Ice on Ice blocks present upon receipt? Yes No NA
 Random Sample Temperature on Receipt: °C
 Other comment:

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE CODES (below)	TOTAL CONTAINERS	ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to match suite price) Where Metals also required, specify Total (unfiltered) or Dissolved (filtered) (where required).													Additional Information
						S2 Metals (As, Ba, Pb, Zn, Hg)	17 Metals (As, Ba, Mn, Ni, Pb, V, Zn, Cu, Cd)	S-24 TR (Cr, Cd, Pb, TE, XN, PAH, Phenols)	VOC Target Scan	PCB	PH (1:5)	Exchangeable Cations (E0007)	PFOS/PFOA	Asbestos (absent/presence)	Particle Size to 75µm (sieve)	Organic Matter plus Total Organic Carbon (E004)	Comments on likely contaminants, leachates, or samples requiring specific GC analysis, etc.		
32	LO-SB04-2.0	09.12.13	SOIL		14/14	X	X	X	X	X	X	X	X	X	X	X	X		
33	LO-SB03-3.0	-1-	-1-		11	X	X	X	X	X	X	X	X	X	X	X	X		
34	LO-MW02-1.0	-1-	-1-		11	X	X	X	X	X	X	X	X	X	X	X	X		
35	LO-MW10-1.2	-1-	-1-		11	X	X	X	X	X	X	X	X	X	X	X	X		
36	LO-MW11-1.2	-1-	-1-		11	X	X	X	X	X	X	X	X	X	X	X	X		
37	LO-SB05-1.7	-1-	-1-		11	X	X	X	X	X	X	X	X	X	X	X	X		
38	R01-091213-00																		VOC
39	R01-091213-00																		SOURCE
40	R01-091213-00																		MEALS

COMMENT/SPECIAL HANDLING/STORAGE OR DISPOSAL:

Water Contaminant Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; OHG = Nitric Preserved Glass; SW = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; AUP = Aqueous Unpreserved Plastic
 V = VOA Vol Acid Preserved; VD = VOA Vol Sodium Sulfate Preserved; VS = VOA Vol Sulfate Preserved; AV = Aqueous Unpreserved Vol; SG = Sulfate Preserved Amber Glass; H = HCl Preserved Plastic; HF = HCl Preserved Plastic; SP = Sulfate Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc Nitrate Preserved Plastic; E = EDTA Preserved Plastic; ST = Starch Preserved Plastic; AS = Ascorbic Acid Preserved Plastic; U = Unpreserved Plastic

Handwritten signature: *Guirra*

Large handwritten text: **TAT**

Handwritten numbers: 32, 33, 34, 35, 36, 37, 38, 39, 40

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: ES1327422		
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact Address	: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Contact Address	: Barbara Hanna 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	Page	: 1 of 4
Order number	: 0224198	Quote number	: ES2013ENVRES0369 (SY/794/13)
C-O-C number	: ----	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: LIDDELL		
Sampler	: HC/TC/JG		

Dates

Date Samples Received	: 13-DEC-2013	Issue Date	: 18-DEC-2013 14:33
Client Requested Due Date	: 18-DEC-2013	Scheduled Reporting Date	: 18-DEC-2013

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.4°C - Ice present
No. of coolers/boxes	: 1 HARD	No. of samples received	: 38
Security Seal	: Intact.	No. of samples analysed	: 33

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.**
- **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.**
- **All analysis will be reported on the scheduled due date 18/12/13, except for PSD analysis will be reported on 24/12/13.**
- **Sample T01_121213_TA send to Envirolab**
- **Samples #39 was received extra, placed on hold.**
- **Sample 40-42 conducted asbestos analysis by ALS Newcastle**
- 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 - ASB-SOL (Subcontracted)	Asbestos - Count (Solid)	SOIL - EA002	pH (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.)
ES1327422-001	12-DEC-2013 15:00	LV_MW07_0.05			✓		✓						✓					✓
ES1327422-002	12-DEC-2013 15:00	LV_MW07_0.8	✓															
ES1327422-003	12-DEC-2013 15:00	LI_SB01_0.0			✓													
ES1327422-004	12-DEC-2013 15:00	LI_SB01_0.1	✓															
ES1327422-006	12-DEC-2013 15:00	LI_SB01_0.0			✓													
ES1327422-007	12-DEC-2013 15:00	LI_SB01_0.2					✓						✓					✓
ES1327422-014	11-DEC-2013 15:00	LV_MW01_0.05			✓													
ES1327422-016	12-DEC-2013 15:00	LB_MW12_3.0													✓			
ES1327422-018	12-DEC-2013 15:00	LS_MW02_2.0					✓						✓					✓
ES1327422-023	12-DEC-2013 15:00	LB_MW11_3.0							✓				✓		✓			✓
ES1327422-024	12-DEC-2013 15:00	LB_MW10_1.6													✓			
ES1327422-039	09-DEC-2013 15:00	LO_MW08_0.1	✓															
ES1327422-040	10-DEC-2013 15:00	LB_MW02_0.1									✓							
ES1327422-041	12-DEC-2013 15:00	LV_MW05_0.1									✓							
ES1327422-042	12-DEC-2013 15:00	LV_MW04_0.1									✓							

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EP066 (solids)	Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids)	Volatile Organic Compounds	SOIL - EP231	Perfluorocetyl Acids and Sulfonates by LC/MS/MS	SOIL - S-02	8 Metals (incl. Digestion)	SOIL - S-03	15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-18 (NO MOIST)	TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-24	TRH/BTEXN/PAH + Pterols
ES1327422-001	12-DEC-2013 15:00	LV_MW07_0.05							✓							✓
ES1327422-005	12-DEC-2013 15:00	LI_SB01_0.4							✓							✓
ES1327422-007	12-DEC-2013 15:00	LI_SB01_0.2							✓							✓
ES1327422-008	12-DEC-2013 15:00	TRIP SPIKE											✓			
ES1327422-009	12-DEC-2013 15:00	TRIP BLANK											✓			
ES1327422-011	12-DEC-2013 15:00	TSC											✓			
ES1327422-012	11-DEC-2013 15:00	LV_MW06_0.8							✓							✓
ES1327422-013	11-DEC-2013 15:00	LV_MW01_0.45							✓							✓
ES1327422-014	11-DEC-2013 15:00	LV_MW01_0.05							✓							✓



			SOIL - EP066 (solids) Polychlorinated Biphenyls by GC/MS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231 Perfluorooctyl Acids and Sulfonates by LC/MS/MS	SOIL - S-02 8 Metals (incl. Digestion)	SOIL - S-03 15 Metals (MEPM 2013 Suite -incl. Digestion)	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-24 TRH/BTEXN/PAH + Phenols
ES1327422-016	12-DEC-2013 15:00	LB_MW12_3.0					✓		✓
ES1327422-019	12-DEC-2013 15:00	LV_MW04_0.5				✓			✓
ES1327422-022	12-DEC-2013 15:00	LV_MW05_0.5				✓			✓
ES1327422-023	12-DEC-2013 15:00	LB_MW11_3.0					✓		✓
ES1327422-024	12-DEC-2013 15:00	LB_MW10_1.6					✓		✓
ES1327422-025	11-DEC-2013 15:00	LO_MW01_1.1		✓	✓	✓			✓
ES1327422-026	11-DEC-2013 15:00	LO_MW13_0.6		✓	✓	✓			✓
ES1327422-027	11-DEC-2013 15:00	LJ_SB08_1.0	✓	✓		✓			✓
ES1327422-029	11-DEC-2013 15:00	TB						✓	
ES1327422-030	11-DEC-2013 15:00	TS						✓	
ES1327422-031	11-DEC-2013 15:00	TSC						✓	
ES1327422-032	09-DEC-2013 15:00	LO_SB04_2.0		✓	✓	✓			✓
ES1327422-033	09-DEC-2013 15:00	LO_SB03_3.0		✓	✓	✓			✓
ES1327422-034	09-DEC-2013 15:00	LO_MW02_1.5		✓	✓	✓			✓
ES1327422-035	09-DEC-2013 15:00	LO_MW10_1.2		✓	✓	✓			✓
ES1327422-036	09-DEC-2013 15:00	LO_MW11_1.2		✓	✓	✓			✓
ES1327422-037	09-DEC-2013 15:00	LO_SB05_1.7		✓	✓	✓			✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-02T 8 metals (Total)	WATER - W-23 SVOC/VOC	WATER - W-24 TRH/BTEXN/PAH/Phenols
ES1327422-010	12-DEC-2013 15:00	R01_121213	✓		✓
ES1327422-028	11-DEC-2013 15:00	R01_111213_RO	✓	✓	
ES1327422-038	09-DEC-2013 15:00	R01_091213_RO	✓	✓	

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

SYMPHONY ERARING

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

THE ACCOUNTS PAYABLE

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

Work Order	: ES1327422	Page	: 1 of 38
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
Order number	: 0224198	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 24-DEC-2013
Sampler	: HC/TC/JG	No. of samples received	: 38
Site	: LIDDELL	No. of samples analysed	: 33
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 was obtained for Ba on sample ES1327422 #013. Results have been confirmed by re-extraction and reanalysis.**
- **EP075: 'Sum of PAH' is the sum of the USEPA 16 priority PAHs**
- **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.**
- **EP231: PFOA & PFOS results are reported as an aggregate of linear and branched isomers.**



NATA Accredited Laboratory 825

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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
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Di-An Dao		Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
		Sydney Organics
Phalak Inthaksone	Laboratory Manager - Organics	Sydney Organics



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LV_MW07_0.05	LI_SB01_0.4	LI_SB01_0.2	TRIP SPIKE	TRIP BLANK
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-001	ES1327422-005	ES1327422-007	ES1327422-008	ES1327422-009
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	7.7	----	7.1	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	16.6	15.3	29.0	----	----
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	9.0	----	8.3	----	----
Exchangeable Magnesium	----	0.1	meq/100g	4.5	----	7.3	----	----
Exchangeable Potassium	----	0.1	meq/100g	0.3	----	0.3	----	----
Exchangeable Sodium	----	0.1	meq/100g	0.1	----	0.3	----	----
Cation Exchange Capacity	----	0.1	meq/100g	13.9	----	16.2	----	----
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	<0.1	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	28	<5	12	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	14	<2	12	----	----
Copper	7440-50-8	5	mg/kg	7	<5	20	----	----
Lead	7439-92-1	5	mg/kg	17	<5	16	----	----
Nickel	7440-02-0	2	mg/kg	15	<2	18	----	----
Zinc	7440-66-6	5	mg/kg	56	<5	87	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP004: Organic Matter								
Organic Matter	----	0.5	%	6.8	----	3.4	----	----
Total Organic Carbon	----	0.5	%	3.9	----	2.0	----	----
EP075(SIM)A: Phenolic Compounds								
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	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LV_MW07_0.05	LI_SB01_0.4	LI_SB01_0.2	TRIP SPIKE	TRIP BLANK
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-001	ES1327422-005	ES1327422-007	ES1327422-008	ES1327422-009
EP075(SIM)A: Phenolic Compounds - Continued								
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	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.8	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	0.6	1.7	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	1.1	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.7	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.8	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.6	----	----
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	0.6	5.7	----	----
^ 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	0.6	0.6	0.7	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	51	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	510	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	230	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	740	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	58	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	35	<10



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LV_MW07_0.05	LI_SB01_0.4	LI_SB01_0.2	TRIP SPIKE	TRIP BLANK
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-001	ES1327422-005	ES1327422-007	ES1327422-008	ES1327422-009
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
>C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	<50	80	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	630	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	130	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	840	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	80	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	0.4	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	11.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	1.4	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	7.0	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	3.0	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	23.3	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	10.0	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	71.9	70.3	75.4	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	89.9	89.3	94.1	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	86.4	94.2	94.9	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	103	99.5	101	----	----
Anthracene-d10	1719-06-8	0.1	%	91.0	87.0	83.5	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	102	99.3	98.9	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	87.3	86.0	121	90.3	93.4
Toluene-D8	2037-26-5	0.1	%	101	97.0	104	98.5	101
4-Bromofluorobenzene	460-00-4	0.1	%	98.5	99.3	100	101	98.2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TSC	LV_MW06_0.8	LV_MW01_0.45	LV_MW01_0.05	LB_MW12_3.0
				12-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-011	ES1327422-012	ES1327422-013	ES1327422-014	ES1327422-016
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	----	20.9	13.4	26.8	14.0
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	----	----	----	7
Barium	7440-39-3	10	mg/kg	----	----	----	----	50
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	----	----	----	----	17
Cobalt	7440-48-4	2	mg/kg	----	----	----	----	10
Copper	7440-50-8	5	mg/kg	----	----	----	----	9
Lead	7439-92-1	5	mg/kg	----	----	----	----	12
Manganese	7439-96-5	5	mg/kg	----	----	----	----	320
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	----	----	----	----	27
Zinc	7440-66-6	5	mg/kg	----	----	----	----	40
Thallium	7440-28-0	5	mg/kg	----	----	----	----	<5
Arsenic	7440-38-2	5	mg/kg	----	<5	7	7	----
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	----	10	14	8	----
Copper	7440-50-8	5	mg/kg	----	<5	<5	6	----
Lead	7439-92-1	5	mg/kg	----	7	13	12	----
Nickel	7440-02-0	2	mg/kg	----	<2	3	6	----
Zinc	7440-66-6	5	mg/kg	----	6	21	33	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
EP075(SIM)A: Phenolic Compounds								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TSC	LV_MW06_0.8	LV_MW01_0.45	LV_MW01_0.05	LB_MW12_3.0
				12-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-011	ES1327422-012	ES1327422-013	ES1327422-014	ES1327422-016
EP075(SIM)A: Phenolic Compounds - Continued								
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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	<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	----	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	69	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	----	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	----	<100	<100	160	<100
C29 - C36 Fraction	----	100	mg/kg	----	<100	<100	130	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	<50	<50	290	<50



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TSC	LV_MW06_0.8	LV_MW01_0.45	LV_MW01_0.05	LB_MW12_3.0
				12-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-011	ES1327422-012	ES1327422-013	ES1327422-014	ES1327422-016
EP080/071: Total Petroleum Hydrocarbons - Continued								
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	78	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	49	<10	<10	<10	<10
>C10 - C16 Fraction	>C10_C16	50	mg/kg	----	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	----	<100	<100	230	<100
>C34 - C40 Fraction	----	100	mg/kg	----	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	<50	<50	230	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	0.5	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	14.7	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	1.8	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	8.6	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	3.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	29.1	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	12.1	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	----	71.0	65.5	69.4	70.0
2-Chlorophenol-D4	93951-73-6	0.1	%	----	87.8	81.8	86.9	89.7
2,4,6-Tribromophenol	118-79-6	0.1	%	----	92.2	92.7	116	88.4
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	100	97.2	96.9	93.9
Anthracene-d10	1719-06-8	0.1	%	----	91.3	88.4	86.2	84.6
4-Terphenyl-d14	1718-51-0	0.1	%	----	102	101	98.5	95.4
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	92.6	99.2	80.4	110	96.2
Toluene-D8	2037-26-5	0.1	%	105	106	101	100	99.8
4-Bromofluorobenzene	460-00-4	0.1	%	104	110	99.0	94.7	98.4



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LS_MW02_2.0	LV_MW04_0.5	LV_MW05_0.5	LB_MW11_3.0	LB_MW10_1.6
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
				ES1327422-018	ES1327422-019	ES1327422-022	ES1327422-023	ES1327422-024
Compound	CAS Number	LOR	Unit					
EA150: Particle Sizing								
+75µm	----	1	%	----	----	----	34	----
+150µm	----	1	%	----	----	----	22	----
+300µm	----	1	%	----	----	----	15	----
+425µm	----	1	%	----	----	----	12	----
+600µm	----	1	%	----	----	----	10	----
+1180µm	----	1	%	----	----	----	7	----
+2.36mm	----	1	%	----	----	----	5	----
+4.75mm	----	1	%	----	----	----	2	----
+9.5mm	----	1	%	----	----	----	<1	----
+19.0mm	----	1	%	----	----	----	<1	----
+37.5mm	----	1	%	----	----	----	<1	----
+75.0mm	----	1	%	----	----	----	<1	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	4.7	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	----	23.8	14.6	18.8	12.4
EA150: Soil Classification based on Particle Size								
Fines (<75 µm)	----	1	%	----	----	----	66	----
Sand (>75 µm)	----	1	%	----	----	----	30	----
Gravel (>2mm)	----	1	%	----	----	----	5	----
Cobbles (>6cm)	----	1	%	----	----	----	<1	----
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	2.5	----	----	15.0	----
Exchangeable Magnesium	----	0.1	meq/100g	7.3	----	----	0.7	----
Exchangeable Potassium	----	0.1	meq/100g	0.4	----	----	<0.1	----
Exchangeable Sodium	----	0.1	meq/100g	3.0	----	----	0.1	----
Cation Exchange Capacity	----	0.1	meq/100g	13.3	----	----	15.8	----
Exchangeable Aluminium	----	0.1	meq/100g	<0.1	----	----	<0.1	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	----	----	7	12
Barium	7440-39-3	10	mg/kg	----	----	----	90	110
Beryllium	7440-41-7	1	mg/kg	----	----	----	<1	<1
Boron	7440-42-8	50	mg/kg	----	----	----	<50	<50



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LS_MW02_2.0	LV_MW04_0.5	LV_MW05_0.5	LB_MW11_3.0	LB_MW10_1.6
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-018	ES1327422-019	ES1327422-022	ES1327422-023	ES1327422-024
EG005T: Total Metals by ICP-AES - Continued								
Cadmium	7440-43-9	1	mg/kg	----	----	----	<1	<1
Chromium	7440-47-3	2	mg/kg	----	----	----	16	15
Cobalt	7440-48-4	2	mg/kg	----	----	----	7	<2
Copper	7440-50-8	5	mg/kg	----	----	----	8	5
Lead	7439-92-1	5	mg/kg	----	----	----	12	11
Manganese	7439-96-5	5	mg/kg	----	----	----	240	7
Molybdenum	7439-98-7	2	mg/kg	----	----	----	<2	<2
Nickel	7440-02-0	2	mg/kg	----	----	----	12	2
Selenium	7782-49-2	5	mg/kg	----	----	----	<5	<5
Vanadium	7440-62-2	5	mg/kg	----	----	----	27	41
Zinc	7440-66-6	5	mg/kg	----	----	----	40	18
Thallium	7440-28-0	5	mg/kg	----	----	----	<5	<5
Arsenic	7440-38-2	5	mg/kg	----	17	11	----	----
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	----	40	20	----	----
Copper	7440-50-8	5	mg/kg	----	29	14	----	----
Lead	7439-92-1	5	mg/kg	----	24	15	----	----
Nickel	7440-02-0	2	mg/kg	----	45	19	----	----
Zinc	7440-66-6	5	mg/kg	----	60	32	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	0.9	----	----	<0.5	----
Total Organic Carbon	----	0.5	%	0.5	----	----	<0.5	----
EP075(SIM)A: Phenolic Compounds								
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

				LS_MW02_2.0	LV_MW04_0.5	LV_MW05_0.5	LB_MW11_3.0	LB_MW10_1.6
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-018	ES1327422-019	ES1327422-022	ES1327422-023	ES1327422-024
EP075(SIM)A: Phenolic Compounds - Continued								
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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	<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	----	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	----	<50	<50	<50	<50
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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

				LS_MW02_2.0	LV_MW04_0.5	LV_MW05_0.5	LB_MW11_3.0	LB_MW10_1.6
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-018	ES1327422-019	ES1327422-022	ES1327422-023	ES1327422-024
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
^ 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
EP080: BTEXN								
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
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	----	66.6	70.7	112	72.8
2-Chlorophenol-D4	93951-73-6	0.1	%	----	86.3	90.5	105	96.2
2,4,6-Tribromophenol	118-79-6	0.1	%	----	88.2	82.8	73.9	89.8
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	96.2	98.6	106	100
Anthracene-d10	1719-06-8	0.1	%	----	85.9	89.2	88.6	90.6
4-Terphenyl-d14	1718-51-0	0.1	%	----	98.4	101	81.6	103
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	90.4	76.4	122	117
Toluene-D8	2037-26-5	0.1	%	----	105	93.9	119	99.8
4-Bromofluorobenzene	460-00-4	0.1	%	----	104	92.8	118	96.7



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LO_MW01_1.1	LO_MW13_0.6	LJ_SB08_1.0	TB	TS
				11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00
				ES1327422-025	ES1327422-026	ES1327422-027	ES1327422-029	ES1327422-030
Compound	CAS Number	LOR	Unit					
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	8.9	8.5	9.7	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	14	12	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	15	12	16	----	----
Copper	7440-50-8	5	mg/kg	16	15	24	----	----
Lead	7439-92-1	5	mg/kg	12	10	15	----	----
Nickel	7440-02-0	2	mg/kg	22	12	28	----	----
Zinc	7440-66-6	5	mg/kg	64	60	62	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----	----
EP074B: Oxygenated Compounds								
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	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EP074D: Fumigants								
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	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW01_1.1	LO_MW13_0.6	LJ_SB08_1.0	TB	TS
				11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-025	ES1327422-026	ES1327422-027	ES1327422-029	ES1327422-030
EP074D: Fumigants - Continued								
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	----	----
EP074E: Halogenated Aliphatic Compounds								
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	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW01_1.1	LO_MW13_0.6	LJ_SB08_1.0	TB	TS
				11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-025	ES1327422-026	ES1327422-027	ES1327422-029	ES1327422-030
EP074F: Halogenated Aromatic Compounds - Continued								
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	----	----
EP074G: Trihalomethanes								
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	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	----	----
EP075(SIM)A: Phenolic Compounds								
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	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW01_1.1	LO_MW13_0.6	LJ_SB08_1.0	TB	TS
				11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-025	ES1327422-026	ES1327422-027	ES1327422-029	ES1327422-030
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	70
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	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	80
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	49
>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	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	0.6



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW01_1.1	LO_MW13_0.6	LJ_SB08_1.0	TB	TS
				11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-025	ES1327422-026	ES1327422-027	ES1327422-029	ES1327422-030
EP080: BTEXN - Continued								
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	15.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	1.8
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	9.1
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	3.8
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	30.8
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	12.9
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP231: Perfluorinated Compounds								
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	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	95.0	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	102	94.8	106	----	----
Toluene-D8	2037-26-5	0.1	%	109	92.5	108	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	101	90.3	98.2	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	79.9	76.7	83.2	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	97.7	94.9	104	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	77.6	69.6	72.9	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	98.8	93.2	97.5	----	----
Anthracene-d10	1719-06-8	0.1	%	93.6	88.7	91.0	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	98.7	93.3	98.9	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	102	94.9	106	102	91.6
Toluene-D8	2037-26-5	0.1	%	96.0	81.5	95.8	105	102
4-Bromofluorobenzene	460-00-4	0.1	%	93.9	84.9	92.5	98.4	101



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TSC	LO_SB04_2.0	LO_SB03_3.0	LO_MW02_1.5	LO_MW10_1.2
				11-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-031	ES1327422-032	ES1327422-033	ES1327422-034	ES1327422-035
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	----	19.9	11.7	18.4	11.4
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	20	15	10	<5
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	2	<1
Chromium	7440-47-3	2	mg/kg	----	14	7	6	3
Copper	7440-50-8	5	mg/kg	----	<5	<5	88	<5
Lead	7439-92-1	5	mg/kg	----	8	8	19	6
Nickel	7440-02-0	2	mg/kg	----	<2	<2	55	<2
Zinc	7440-66-6	5	mg/kg	----	10	<5	50	6
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
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
EP074B: Oxygenated Compounds								
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
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	TSC	LO_SB04_2.0	LO_SB03_3.0	LO_MW02_1.5	LO_MW10_1.2
				11-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
				ES1327422-031	ES1327422-032	ES1327422-033	ES1327422-034	ES1327422-035
EP074D: Fumigants - Continued								
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
EP074E: Halogenated Aliphatic Compounds								
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
EP074F: Halogenated Aromatic Compounds								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TSC	LO_SB04_2.0	LO_SB03_3.0	LO_MW02_1.5	LO_MW10_1.2
				11-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-031	ES1327422-032	ES1327422-033	ES1327422-034	ES1327422-035
EP074F: Halogenated Aromatic Compounds - Continued								
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
EP074G: Trihalomethanes								
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
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	----	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds								
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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	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

				TSC	LO_SB04_2.0	LO_SB03_3.0	LO_MW02_1.5	LO_MW10_1.2
				11-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-031	ES1327422-032	ES1327422-033	ES1327422-034	ES1327422-035
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	----	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	72	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	81	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	50	<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
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	0.6	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	15.7	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	1.8	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				TSC	LO_SB04_2.0	LO_SB03_3.0	LO_MW02_1.5	LO_MW10_1.2
				11-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-031	ES1327422-032	ES1327422-033	ES1327422-034	ES1327422-035
EP080: BTEXN - Continued								
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	9.0	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	3.6	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	30.7	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	12.6	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP231: Perfluorinated Compounds								
PFOS	1763-23-1	0.0005	mg/kg	----	<0.0005	<0.0005	<0.0005	<0.0005
PFOA	335-67-1	0.0005	mg/kg	----	<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
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	97.8	99.5	104	101
Toluene-D8	2037-26-5	0.1	%	----	111	109	115	108
4-Bromofluorobenzene	460-00-4	0.1	%	----	107	105	108	102
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	----	93.4	89.1	98.9	89.4
2-Chlorophenol-D4	93951-73-6	0.1	%	----	92.8	92.2	100	91.4
2,4,6-Tribromophenol	118-79-6	0.1	%	----	58.1	54.7	61.0	53.8
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	96.0	94.2	101	94.3
Anthracene-d10	1719-06-8	0.1	%	----	89.5	88.0	97.4	89.2
4-Terphenyl-d14	1718-51-0	0.1	%	----	92.2	92.4	97.7	88.5
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	127	96.6	98.9	104	101
Toluene-D8	2037-26-5	0.1	%	99.5	98.3	96.5	101	95.5
4-Bromofluorobenzene	460-00-4	0.1	%	96.1	107	104	106	98.0



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW11_1.2	LO_SB05_1.7	LB_MW02_0.1	LV_MW05_0.1	LV_MW04_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	10-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-036	ES1327422-037	ES1327422-040	ES1327422-041	ES1327422-042
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	8.0	12.5	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	No	No	No
Asbestos Type	1332-21-4	-	--	----	----	-	-	-
Sample weight (dry)	----	0.01	g	----	----	419	417	544
APPROVED IDENTIFIER:	----	-	--	----	----	C.OWLER	C.OWLER	C.OWLER
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	16	5	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	11	9	----	----	----
Copper	7440-50-8	5	mg/kg	16	<5	----	----	----
Lead	7439-92-1	5	mg/kg	14	9	----	----	----
Nickel	7440-02-0	2	mg/kg	62	2	----	----	----
Zinc	7440-66-6	5	mg/kg	155	14	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----	----	----
EP074B: Oxygenated Compounds								
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	----	----	----
EP074C: Sulfonated Compounds								
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

				LO_MW11_1.2	LO_SB05_1.7	LB_MW02_0.1	LV_MW05_0.1	LV_MW04_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	10-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-036	ES1327422-037	ES1327422-040	ES1327422-041	ES1327422-042
EP074D: Fumigants								
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	----	----	----
EP074E: Halogenated Aliphatic Compounds								
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

				LO_MW11_1.2	LO_SB05_1.7	LB_MW02_0.1	LV_MW05_0.1	LV_MW04_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	10-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-036	ES1327422-037	ES1327422-040	ES1327422-041	ES1327422-042
EP074E: Halogenated Aliphatic Compounds - Continued								
EP074F: Halogenated Aromatic Compounds								
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	----	----	----
EP074G: Trihalomethanes								
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	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	----	----	----
EP075(SIM)A: Phenolic Compounds								
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	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW11_1.2	LO_SB05_1.7	LB_MW02_0.1	LV_MW05_0.1	LV_MW04_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	10-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-036	ES1327422-037	ES1327422-040	ES1327422-041	ES1327422-042
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
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	----	----	----
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	<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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW11_1.2	LO_SB05_1.7	LB_MW02_0.1	LV_MW05_0.1	LV_MW04_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	10-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327422-036	ES1327422-037	ES1327422-040	ES1327422-041	ES1327422-042
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	----	----	----
EP231: Perfluorinated Compounds								
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	----	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	101	106	----	----	----
Toluene-D8	2037-26-5	0.1	%	111	113	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	104	109	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	89.2	93.3	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	87.8	95.0	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	53.0	49.4	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	90.9	92.8	----	----	----
Anthracene-d10	1719-06-8	0.1	%	87.7	87.9	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	87.0	88.0	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	101	106	----	----	----
Toluene-D8	2037-26-5	0.1	%	98.9	99.1	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	103	106	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

Client sampling date / time

				R01_121213	R01_111213_RO	R01_091213_RO	----	----
				12-DEC-2013 15:00	11-DEC-2013 15:00	09-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	ES1327422-010	ES1327422-028	ES1327422-038	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----	----
Styrene	100-42-5	5	µg/L	----	<5	<5	----	----
ortho-Xylene	95-47-6	2	µg/L	----	<2	<2	----	----
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	----	----
EP074B: Oxygenated Compounds								
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	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	----	<5	<5	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	----	<5	<5	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_121213	R01_111213_RO	R01_091213_RO	---	---
				12-DEC-2013 15:00	11-DEC-2013 15:00	09-DEC-2013 15:00	---	---
				ES1327422-010	ES1327422-028	ES1327422-038	---	---
Client sampling date / time	Compound	CAS Number	LOR	Unit				
EP074D: Fumigants - Continued								
	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	---
	1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	---	<5	<5	---
EP074E: Halogenated Aliphatic Compounds								
	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	---
EP074F: Halogenated Aromatic Compounds								
	Chlorobenzene	108-90-7	5	µg/L	---	<5	<5	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_121213	R01_111213_RO	R01_091213_RO	----	----
Client sampling date / time				12-DEC-2013 15:00	11-DEC-2013 15:00	09-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	ES1327422-010	ES1327422-028	ES1327422-038	----	----

EP074F: Halogenated Aromatic Compounds - Continued

Bromobenzene	108-86-1	5	µg/L	----	<5	<5	----	----
2-Chlorotoluene	95-49-8	5	µg/L	----	<5	<5	----	----
4-Chlorotoluene	106-43-4	5	µg/L	----	<5	<5	----	----
1,2,3-Trichlorobenzene	87-61-6	5	µg/L	----	<5	<5	----	----

EP074G: Trihalomethanes

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	----	----

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

Client sampling date / time

				R01_121213	R01_111213_RO	R01_091213_RO	----	----
				12-DEC-2013 15:00	11-DEC-2013 15:00	09-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	ES1327422-010	ES1327422-028	ES1327422-038	----	----
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	----	----	----	----
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	----	<2	<2	----	----
2-Chlorophenol	95-57-8	2	µg/L	----	<2	<2	----	----
2-Methylphenol	95-48-7	2	µg/L	----	<2	<2	----	----
3- & 4-Methylphenol	1319-77-3	4	µg/L	----	<4	<4	----	----
2-Nitrophenol	88-75-5	2	µg/L	----	<2	<2	----	----
2.4-Dimethylphenol	105-67-9	2	µg/L	----	<2	<2	----	----
2.4-Dichlorophenol	120-83-2	2	µg/L	----	<2	<2	----	----
2.6-Dichlorophenol	87-65-0	2	µg/L	----	<2	<2	----	----
4-Chloro-3-methylphenol	59-50-7	2	µg/L	----	<2	<2	----	----
2.4.6-Trichlorophenol	88-06-2	2	µg/L	----	<2	<2	----	----
2.4.5-Trichlorophenol	95-95-4	2	µg/L	----	<2	<2	----	----
Pentachlorophenol	87-86-5	4	µg/L	----	<4	<4	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	----	<2	<2	----	----
2-Methylnaphthalene	91-57-6	2	µg/L	----	<2	<2	----	----
2-Chloronaphthalene	91-58-7	2	µg/L	----	<2	<2	----	----
Acenaphthylene	208-96-8	2	µg/L	----	<2	<2	----	----
Acenaphthene	83-32-9	2	µg/L	----	<2	<2	----	----
Fluorene	86-73-7	2	µg/L	----	<2	<2	----	----
Phenanthrene	85-01-8	2	µg/L	----	<2	<2	----	----
Anthracene	120-12-7	2	µg/L	----	<2	<2	----	----
Fluoranthene	206-44-0	2	µg/L	----	<2	<2	----	----
Pyrene	129-00-0	2	µg/L	----	<2	<2	----	----
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	----	<2	<2	----	----
Benz(a)anthracene	56-55-3	2	µg/L	----	<2	<2	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

Client sampling date / time

				R01_121213	R01_111213_RO	R01_091213_RO	----	----
				12-DEC-2013 15:00	11-DEC-2013 15:00	09-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	ES1327422-010	ES1327422-028	ES1327422-038	----	----
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Chrysene	218-01-9	2	µg/L	----	<2	<2	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	----	<4	<4	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	----	<2	<2	----	----
Benzo(a)pyrene	50-32-8	2	µg/L	----	<2	<2	----	----
3-Methylcholanthrene	56-49-5	2	µg/L	----	<2	<2	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	----	<2	<2	----	----
Dibenz(a,h)anthracene	53-70-3	2	µg/L	----	<2	<2	----	----
Benzo(g,h,i)perylene	191-24-2	2	µg/L	----	<2	<2	----	----
^ Sum of PAHs	----	2	µg/L	----	<2	<2	----	----
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	----	<2	<2	----	----
EP075C: Phthalate Esters								
Dimethyl phthalate	131-11-3	2	µg/L	----	<2	<2	----	----
Diethyl phthalate	84-66-2	2	µg/L	----	<2	<2	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	----	<2	<2	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	----	<2	<2	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	----	<10	<10	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	----	<2	<2	----	----
EP075D: Nitrosamines								
N-Nitrosomethylethylamine	10595-95-6	2	µg/L	----	<2	<2	----	----
N-Nitrosodiethylamine	55-18-5	2	µg/L	----	<2	<2	----	----
N-Nitrosopyrrolidine	930-55-2	4	µg/L	----	<4	<4	----	----
N-Nitrosomorpholine	59-89-2	2	µg/L	----	<2	<2	----	----
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	----	<2	<2	----	----
N-Nitrosopiperidine	100-75-4	2	µg/L	----	<2	<2	----	----
N-Nitrosodibutylamine	924-16-3	2	µg/L	----	<2	<2	----	----
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	----	<4	<4	----	----
Methapyrilene	91-80-5	2	µg/L	----	<2	<2	----	----
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	----	<2	<2	----	----
Acetophenone	98-86-2	2	µg/L	----	<2	<2	----	----
Nitrobenzene	98-95-3	2	µg/L	----	<2	<2	----	----
Isophorone	78-59-1	2	µg/L	----	<2	<2	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_121213	R01_111213_RO	R01_091213_RO	----	----
				12-DEC-2013 15:00	11-DEC-2013 15:00	09-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	ES1327422-010	ES1327422-028	ES1327422-038	----	----
EP075E: Nitroaromatics and Ketones - Continued								
2,6-Dinitrotoluene	606-20-2	4	µg/L	----	<4	<4	----	----
2,4-Dinitrotoluene	121-14-2	4	µg/L	----	<4	<4	----	----
1-Naphthylamine	134-32-7	2	µg/L	----	<2	<2	----	----
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	----	<2	<2	----	----
5-Nitro-o-toluidine	99-55-8	2	µg/L	----	<2	<2	----	----
Azobenzene	103-33-3	2	µg/L	----	<2	<2	----	----
1,3,5-Trinitrobenzene	99-35-4	2	µg/L	----	<2	<2	----	----
Phenacetin	62-44-2	2	µg/L	----	<2	<2	----	----
4-Aminobiphenyl	92-67-1	2	µg/L	----	<2	<2	----	----
Pentachloronitrobenzene	82-68-8	2	µg/L	----	<2	<2	----	----
Pronamide	23950-58-5	2	µg/L	----	<2	<2	----	----
Dimethylaminoazobenzene	60-11-7	2	µg/L	----	<2	<2	----	----
Chlorobenzilate	510-15-6	2	µg/L	----	<2	<2	----	----
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	----	<2	<2	----	----
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	----	<2	<2	----	----
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	----	<2	<2	----	----
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	----	<2	<2	----	----
EP075G: Chlorinated Hydrocarbons								
1,3-Dichlorobenzene	541-73-1	2	µg/L	----	<2	<2	----	----
1,4-Dichlorobenzene	106-46-7	2	µg/L	----	<2	<2	----	----
1,2-Dichlorobenzene	95-50-1	2	µg/L	----	<2	<2	----	----
Hexachloroethane	67-72-1	2	µg/L	----	<2	<2	----	----
1,2,4-Trichlorobenzene	120-82-1	2	µg/L	----	<2	<2	----	----
Hexachloropropylene	1888-71-7	2	µg/L	----	<2	<2	----	----
Hexachlorobutadiene	87-68-3	2	µg/L	----	<2	<2	----	----
Hexachlorocyclopentadiene	77-47-4	10	µg/L	----	<10	<10	----	----
Pentachlorobenzene	608-93-5	2	µg/L	----	<2	<2	----	----
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	----	<4	<4	----	----
EP075H: Anilines and Benzidines								
Aniline	62-53-3	2	µg/L	----	<2	<2	----	----
4-Chloroaniline	106-47-8	2	µg/L	----	<2	<2	----	----
2-Nitroaniline	88-74-4	4	µg/L	----	<4	<4	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_121213	R01_111213_RO	R01_091213_RO	---	---
				12-DEC-2013 15:00	11-DEC-2013 15:00	09-DEC-2013 15:00	---	---
Compound	CAS Number	LOR	Unit	ES1327422-010	ES1327422-028	ES1327422-038	---	---
EP075H: Anilines and Benzidines - Continued								
3-Nitroaniline	99-09-2	4	µg/L	---	<4	<4	---	---
Dibenzofuran	132-64-9	2	µg/L	---	<2	<2	---	---
4-Nitroaniline	100-01-6	2	µg/L	---	<2	<2	---	---
Carbazole	86-74-8	2	µg/L	---	<2	<2	---	---
3,3'-Dichlorobenzidine	91-94-1	2	µg/L	---	<2	<2	---	---
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	2	µg/L	---	<2	<2	---	---
beta-BHC	319-85-7	2	µg/L	---	<2	<2	---	---
gamma-BHC	58-89-9	2	µg/L	---	<2	<2	---	---
delta-BHC	319-86-8	2	µg/L	---	<2	<2	---	---
Heptachlor	76-44-8	2	µg/L	---	<2	<2	---	---
Aldrin	309-00-2	2	µg/L	---	<2	<2	---	---
Heptachlor epoxide	1024-57-3	2	µg/L	---	<2	<2	---	---
alpha-Endosulfan	959-98-8	2	µg/L	---	<2	<2	---	---
4,4'-DDE	72-55-9	2	µg/L	---	<2	<2	---	---
Dieldrin	60-57-1	2	µg/L	---	<2	<2	---	---
Endrin	72-20-8	2	µg/L	---	<2	<2	---	---
beta-Endosulfan	33213-65-9	2	µg/L	---	<2	<2	---	---
4,4'-DDD	72-54-8	2	µg/L	---	<2	<2	---	---
Endosulfan sulfate	1031-07-8	2	µg/L	---	<2	<2	---	---
4,4'-DDT	50-29-3	4	µg/L	---	<4	<4	---	---
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	---	<4	<4	---	---
^ Sum of DDD + DDE + DDT	---	4	µg/L	---	<4	<4	---	---
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	---	<2	<2	---	---
Dimethoate	60-51-5	2	µg/L	---	<2	<2	---	---
Diazinon	333-41-5	2	µg/L	---	<2	<2	---	---
Chlorpyrifos-methyl	5598-13-0	2	µg/L	---	<2	<2	---	---
Malathion	121-75-5	2	µg/L	---	<2	<2	---	---
Fenthion	55-38-9	2	µg/L	---	<2	<2	---	---
Chlorpyrifos	2921-88-2	2	µg/L	---	<2	<2	---	---
Pirimphos-ethyl	23505-41-1	2	µg/L	---	<2	<2	---	---
Chlorfenvinphos	470-90-6	2	µg/L	---	<2	<2	---	---
Prothiofos	34643-46-4	2	µg/L	---	<2	<2	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_121213	R01_111213_RO	R01_091213_RO	----	----
				12-DEC-2013 15:00	11-DEC-2013 15:00	09-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	ES1327422-010	ES1327422-028	ES1327422-038	----	----
EP075J: Organophosphorus Pesticides - Continued								
Ethion	563-12-2	2	µg/L	----	<2	<2	----	----
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	----	----	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	124	108	----	----
Toluene-D8	2037-26-5	0.1	%	----	115	101	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	109	96.1	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	32.3	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	77.9	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	81.6	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

				R01_121213	R01_111213_RO	R01_091213_RO	----	----
				12-DEC-2013 15:00	11-DEC-2013 15:00	09-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	ES1327422-010	ES1327422-028	ES1327422-038	----	----
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	85.0	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	70.9	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	63.7	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	0.1	%	----	48.2	29.3	----	----
Phenol-d6	13127-88-3	0.1	%	----	32.1	18.1	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	----	69.6	42.1	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	----	49.4	29.0	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	0.1	%	----	67.3	43.5	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.1	%	----	45.9	23.0	----	----
2-Fluorobiphenyl	321-60-8	0.1	%	----	73.6	34.2	----	----
Anthracene-d10	1719-06-8	0.1	%	----	85.7	51.8	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	95.6	58.2	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	106	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	95.7	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	92.1	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: SOIL

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	LB_MW02_0.1 - 10-DEC-2013 15:00	Mid grey soil with plenty of coal and slag grains plus a trace of vegetation
EA200: Description	LV_MW05_0.1 - 12-DEC-2013 15:00	Mid orange-brown clay soil with some brown rocks plus a trace of vegetation
EA200: Description	LV_MW04_0.1 - 12-DEC-2013 15:00	Dark grey soil with plenty of coal and coke grains plus a trace of vegetation



Surrogate Control Limits

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

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP074S: VOC Surrogates			
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
EP075(SIM)S: Phenolic Compound Surrogates			
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
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27.4	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10.0	116.6
Phenol-d6	13127-88-3	10.0	69.0
2-Chlorophenol-D4	93951-73-6	20.9	129.7
2,4,6-Tribromophenol	118-79-6	10.0	150.7
EP075T: Base/Neutral Extractable Surrogates			



Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075T: Base/Neutral Extractable Surrogates - Continued			
Nitrobenzene-D5	4165-60-0	29.4	141.7
1,2-Dichlorobenzene-D4	2199-69-1	23.6	120.7
2-Fluorobiphenyl	321-60-8	27.2	134.9
Anthracene-d10	1719-06-8	26.6	113
4-Terphenyl-d14	1718-51-0	21.4	123
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

Certificate of Analysis

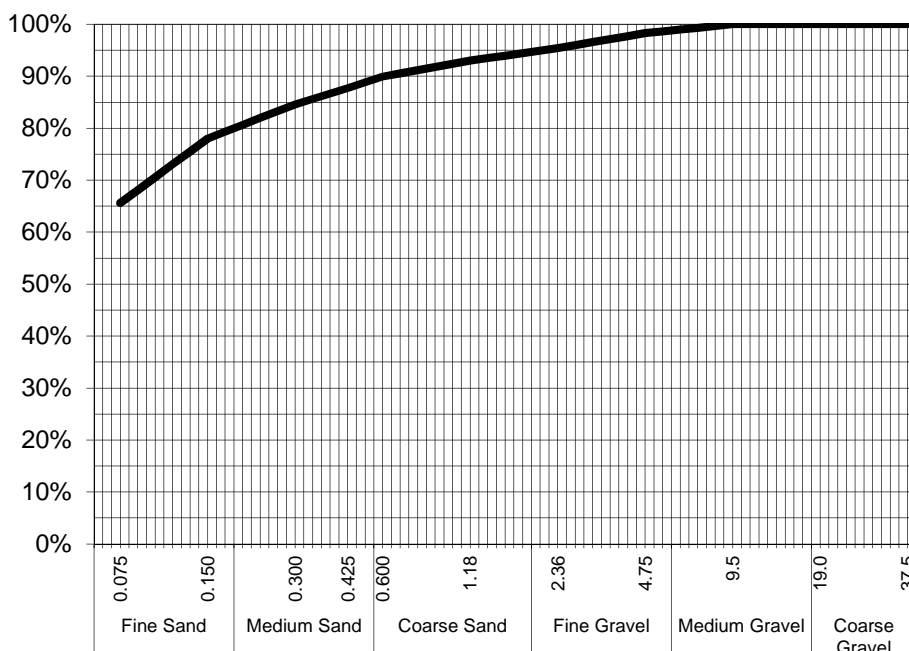
ALS Laboratory Group Pty Ltd
 5/585 Maitland Road
 Mayfield West, NSW 2304
 pH 02 4968 9433
 fax 02 4968 0349
 samples.newcastle@alsenviro.com

ALS Environmental
Newcastle, NSW



CLIENT: Joseph Ferring **DATE REPORTED:** 23-Dec-2013
COMPANY: Enviro Resources Management **DATE RECEIVED:** 13-Dec-2013
ADDRESS: Ground Floor **REPORT NO:** ES1327422-023 / PSD
 33 Saunders Street, Pyrmont
 NSW 2009
PROJECT: Project Symphony **SAMPLE ID:** LB_MW11_3.0

Particle Size Distribution



Particle Size (mm)	Percent Passing
19.0	100%
9.5	100%
4.75	98%
2.36	95%
1.18	93%
0.600	90%
0.425	88%
0.300	85%
0.150	78%
0.075	66%

Samples analysed as received.

Sample Comments:

Loss on Pretreatment NA

Sample Description: Fines and sand

Test Method: AS1289.3.6.1

Analysed: 19-Dec-13

Limit of Reporting: 1%

NATA Accreditation: 825 Site: Newcastle
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 reproduced, except in full.



Hamish Murray
 Laboratory Supervisor, Newcastle
Authorised Signatory



AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET36614/ 39794 / 1 - 4

Your ref : ES1327422

NATA Accreditation No: 14484

19 December 2013

Australian Laboratory Services Pty Ltd
277 – 284 Woodpark Road
Smithfield NSW 2164

Attn: Ms Nanthini Coilparampil

Dear Nanthini

Asbestos Identification

This report presents the results of four samples, forwarded by Australian Laboratory Services Pty Ltd on 17 December 2013, for analysis for asbestos.

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

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

3. Results : **Sample No. 1. ASET36614 / 39794 / 1. ES1327422 - 001 - LV - MW07 - 0.05.**

Approx dimensions 5.4 cm x 5.3 cm x 4.3 cm

The sample consisted of a mixture of clayish soil, stones and plant matter.

No asbestos detected.

Sample No. 2. ASET36614 / 39794 / 2. ES1327422 - 003 - LI - SB01 - 0.0.

Approx dimensions 6.7 cm x 6.5 cm x 6.4 cm

The sample consisted of a mixture of soil, stones and plant matter.

No asbestos detected.

Sample No. 3. ASET36614 / 39794 / 3. ES1327422 - 008 - LI - SB02 - 0.0.

Approx dimensions 7.6 cm x 7.2 cm x 6.1 cm

The sample consisted of a mixture of soil, stones, plant matter and fragments of shale.

No asbestos detected.

Sample No. 4. ASET36614 / 39794 / 4. ES1327422 - 014 - LV - MW01 - 0.05.

Approx dimensions 4.5 cm x 3.7 cm x 3.5 cm

The sample consisted of a mixture of clayish soil, stones and plant matter.

No asbestos detected.

Analysed and reported by,

Laxman Dias. BSc
Analyst / Approved Identifier
Approved Signatory



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

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635

PHONE: (02) 99872183 FAX: (02)99872151 EMAIL: aset@bigpond.net.au WEBSITE: www.Ausset.com.au

QUALITY CONTROL REPORT

Work Order	: ES1327422	Page	: 1 of 52
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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ---	Issue Date	: 24-DEC-2013
Sampler	: HC/TC/JG	No. of samples received	: 38
Order number	: 0224198	No. of samples analysed	: 33
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
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos
Di-An Dao		Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - Inorganics
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
		Sydney Organics
Phalak Inthaksone	Laboratory Manager - Organics	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 (%)
EA002 : pH (Soils) (QC Lot: 3215969)									
ES1327147-004	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.3	5.3	0.0	0% - 20%
ES1327432-021	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.9	5.9	0.0	0% - 20%
EA055: Moisture Content (QC Lot: 3215021)									
ES1327422-034	LO_MW02_1.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	18.4	17.5	4.8	0% - 50%
ES1327503-003	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.0	14.3	9.5	0% - 50%
EA055: Moisture Content (QC Lot: 3216838)									
ES1327340-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	20.8	19.4	7.2	0% - 20%
ES1327422-024	LB_MW10_1.6	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.4	15.4	21.0	0% - 50%
EA055: Moisture Content (QC Lot: 3223613)									
ES1327802-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.1	8.4	16.9	No Limit
ED007: Exchangeable Cations (QC Lot: 3215649)									
ES1327324-025	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	2.7	2.8	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	5.7	5.8	2.9	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.2	0.2	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	1.0	1.0	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	9.6	9.8	2.6	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
ED007: Exchangeable Cations (QC Lot: 3223615)									
ES1327894-006	Anonymous	ED007: Exchangeable Calcium	----	0.1	meq/100g	7.0	7.5	6.9	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	14.3	14.0	2.2	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.1	0.1	0.0	0% - 20%
		ED007: Exchangeable Sodium	----	0.1	meq/100g	1.5	1.4	0.0	0% - 20%
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	22.9	23.0	0.0	0% - 20%
		ED007: Exchangeable Aluminium	----	0.1	meq/100g	<0.1	<0.1	0.0	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 3216118)									
ES1326950-005	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	40	40	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	12	12.1	No Limit
		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	6	8	18.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	23	18	25.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	54	46	16.6	0% - 50%



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 3216118) - continued									
ES1326950-005	Anonymous	EG005T: Manganese	7439-96-5	5	mg/kg	104	112	7.7	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	18	18	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	65	62	4.5	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
ES1327422-013	LV_MW01_0.45	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	200	120	# 52.6	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	14	13	8.6	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	3	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	12	13.6	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	12	12	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	24	25	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	21	20	4.8	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
EG005T: Total Metals by ICP-AES (QC Lot: 3216120)									
ES1327422-032	LO_SB04_2.0	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	10	33.3	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	20	9	79.6	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	9	14.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	10	6	37.5	No Limit
ES1327430-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	26	6.8	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	13	14	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	21	20	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	18	20	9.8	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	44	44	0.0	No Limit		
EG005T: Total Metals by ICP-AES (QC Lot: 3223469)									
ES1327422-023	LB_MW11_3.0	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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 3223469) - continued									
ES1327422-023	LB_MW11_3.0	EG005T: Barium	7440-39-3	10	mg/kg	90	100	16.1	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	16	17	7.4	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	7	11	43.7	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	12	16	26.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	8	9	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	12	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	240	267	10.6	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	27	28	4.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	40	36	10.6	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
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216119)									
ES1326950-005	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327422-013	LV_MW01_0.45	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216121)									
ES1327422-032	LO_SB04_2.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327430-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3223470)									
ES1327422-023	LB_MW11_3.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP004: Organic Matter (QC Lot: 3217921)									
ES1327324-021	Anonymous	EP004: Organic Matter	----	0.5	%	1.1	<0.5	75.4	No Limit
		EP004: Total Organic Carbon	----	0.5	%	0.6	<0.5	24.7	No Limit
EP004: Organic Matter (QC Lot: 3223793)									
ES1327741-011	Anonymous	EP004: Organic Matter	----	0.5	%	<0.5	<0.5	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3216122)									
ES1327373-006	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327373-019	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3214947)									
ES1327422-032	LO_SB04_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



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 (%)		
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3214947) - continued											
ES1327422-032	LO_SB04_2.0	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		
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3216013)											
ES1327422-025	LO_MW01_1.1	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		
ES1327521-016	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		
ES1327422-032	LO_SB04_2.0	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: 3214947)									
		EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.0	No Limit		
ES1327422-032	LO_SB04_2.0	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		
EP074B: Oxygenated Compounds (QC Lot: 3216013)											
ES1327422-025	LO_MW01_1.1	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		
ES1327521-016	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		
EP074C: Sulfonated Compounds (QC Lot: 3214947)											
ES1327422-032	LO_SB04_2.0	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
EP074C: Sulfonated Compounds (QC Lot: 3216013)											
ES1327422-025	LO_MW01_1.1	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 (%)
EP074C: Sulfonated Compounds (QC Lot: 3216013) - continued									
ES1327521-016	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074D: Fumigants (QC Lot: 3214947)									
ES1327422-032	LO_SB04_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
EP074D: Fumigants (QC Lot: 3216013)									
ES1327422-025	LO_MW01_1.1	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
ES1327521-016	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
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3214947)									
ES1327422-032	LO_SB04_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
		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		



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3214947) - continued									
ES1327422-032	LO_SB04_2.0	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
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3216013)									
ES1327422-025	LO_MW01_1.1	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
ES1327521-016	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



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3216013) - continued									
ES1327521-016	Anonymous	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		
EP074F: Halogenated Aromatic Compounds (QC Lot: 3214947)									
ES1327422-032	LO_SB04_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
EP074F: Halogenated Aromatic Compounds (QC Lot: 3216013)									
ES1327422-025	LO_MW01_1.1	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



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 (%)
EP074F: Halogenated Aromatic Compounds (QC Lot: 3216013) - continued									
ES1327422-025	LO_MW01_1.1	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
ES1327521-016	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
EP074G: Trihalomethanes (QC Lot: 3214947)									
ES1327422-032	LO_SB04_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
EP074G: Trihalomethanes (QC Lot: 3216013)									
ES1327422-025	LO_MW01_1.1	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
ES1327521-016	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
EP074H: Naphthalene (QC Lot: 3214947)									
ES1327422-032	LO_SB04_2.0	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
EP074H: Naphthalene (QC Lot: 3216013)									
ES1327422-025	LO_MW01_1.1	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
ES1327521-016	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3213773)									
ES1327422-001	LV_MW07_0.05	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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EP075(SIM)A: Phenolic Compounds (QC Lot: 3213773) - continued											
ES1327422-001	LV_MW07_0.05	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		
ES1327422-024	LB_MW10_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		
		EP075(SIM)A: Phenolic Compounds (QC Lot: 3216003)									
		ES1327422-025	LO_MW01_1.1	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		
ES1327422-036	LO_MW11_1.2			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		



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 3216003) - continued									
ES1327422-036	LO_MW11_1.2	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213773)									
ES1327422-001	LV_MW07_0.05	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		
ES1327422-024	LB_MW10_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
		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 (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213773) - continued									
ES1327422-024	LB_MW10_1.6	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3216003)									
ES1327422-025	LO_MW01_1.1	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		
ES1327422-036	LO_MW11_1.2	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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3216003) - continued									
ES1327422-036	LO_MW11_1.2	EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213772)									
ES1327422-001	LV_MW07_0.05	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
ES1327422-024	LB_MW10_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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3214946)									
ES1327422-032	LO_SB04_2.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3215144)									
ES1327422-001	LV_MW07_0.05	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327422-019	LV_MW04_0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216002)									
ES1327422-025	LO_MW01_1.1	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
ES1327422-036	LO_MW11_1.2	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216012)									
ES1327422-025	LO_MW01_1.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327521-016	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213772)									
ES1327422-001	LV_MW07_0.05	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
ES1327422-024	LB_MW10_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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3214946)									
ES1327422-032	LO_SB04_2.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215144)									
ES1327422-001	LV_MW07_0.05	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1327422-019	LV_MW04_0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216002)									
ES1327422-025	LO_MW01_1.1	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 (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216002) - continued									
ES1327422-036	LO_MW11_1.2	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216012)									
ES1327422-025	LO_MW01_1.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1327521-016	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 3214946)									
ES1327422-032	LO_SB04_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
		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
EP080: BTEXN (QC Lot: 3215144)									
ES1327422-001	LV_MW07_0.05	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
ES1327422-019	LV_MW04_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	108-38-3 106-42-3	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
EP080: BTEXN (QC Lot: 3216012)									
ES1327422-025	LO_MW01_1.1	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	108-38-3 106-42-3	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
ES1327521-016	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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3216012) - continued									
ES1327521-016	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
EP231: Perfluorinated Compounds (QC Lot: 3215778)									
ES1326974-013	Anonymous	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
ES1327422-036	LO_MW11_1.2	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									
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 (%)
EG020T: Total Metals by ICP-MS (QC Lot: 3215707)									
ES1326945-002	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	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.065	0.065	0.0	0% - 20%
		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	0.013	0.013	0.0	No Limit
ES1327207-003	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	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.073	0.070	5.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.052	0.046	10.2	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3214176)									
ES1327422-010	R01_121213	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3215864)									
ES1327422-028	R01_111213_RO	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3216106)									
ES1327444-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	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 (%)	
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3216106) - continued										
ES1327444-001	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	
ES1327444-013	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit	
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit	
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit	
		EP074: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit	
			106-42-3							
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit	
		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	
EP074B: Oxygenated Compounds (QC Lot: 3216106)										
ES1327444-001	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	
ES1327444-013	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	
EP074C: Sulfonated Compounds (QC Lot: 3216106)										
ES1327444-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit	
ES1327444-013	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit	
EP074D: Fumigants (QC Lot: 3216106)										
ES1327444-001	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	



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 (%)
EP074D: Fumigants (QC Lot: 3216106) - continued									
ES1327444-001	Anonymous	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
ES1327444-013	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
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3216106)									
ES1327444-001	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: 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		
ES1327444-013	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



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3216106) - continued									
ES1327444-013	Anonymous	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: 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		
EP074F: Halogenated Aromatic Compounds (QC Lot: 3216106)									
ES1327444-001	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: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES1327444-013	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: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 3216106)									
ES1327444-001	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
ES1327444-013	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 (%)
EP074G: Trihalomethanes (QC Lot: 3216106) - continued									
ES1327444-013	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
EP075(SIM)A: Phenolic Compounds (QC Lot: 3213981)									
ES1327427-001	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
ES1327284-001	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213981)									
ES1327427-001	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



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213981) - continued									
ES1327427-001	Anonymous	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
ES1327284-001	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213980)									
ES1327427-001	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
ES1327284-001	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3214570)									
ES1327000-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES1327000-009	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213980)									
ES1327427-001	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
ES1327284-001	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3214570)									
ES1327000-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES1327000-009	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	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 (%)
EP080: BTEXN (QC Lot: 3214570)									
ES1327000-001	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
ES1327000-009	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	
ED007: Exchangeable Cations (QCLot: 3215649)									
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	----	----	----	----	
ED007: Exchangeable Cations (QCLot: 3223615)									
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	----	----	----	----	
EG005T: Total Metals by ICP-AES (QCLot: 3216118)									
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	106	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	106	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	108	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	103	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	111	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	109	75	131	
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	111	95	129	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	109	81	133	
EG005T: Thallium	7440-28-0	5	mg/kg	<5	5.96 mg/kg	87.3	70	130	
EG005T: Total Metals by ICP-AES (QCLot: 3216120)									
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	105	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	105	71	133	



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
EG005T: Total Metals by ICP-AES (QCLot: 3216120) - continued								
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	111	86	128
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	103	81	123
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	112	84	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133
EG005T: Total Metals by ICP-AES (QCLot: 3223469)								
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	104	83	129
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	112	88	130
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	105	80	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	104	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	107	86	128
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	105	81	123
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	112	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	116	84	130
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	116	75	131
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	113	95	129
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	123	81	133
EG005T: Thallium	7440-28-0	5	mg/kg	<5	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216119)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	97.3	66	112
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	93.8	66	112
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3223470)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	101	66	112
EP004: Organic Matter (QCLot: 3217921)								
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	99.1	85	105
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	98.9	84	106
EP004: Organic Matter (QCLot: 3223793)								
EP004: Organic Matter	----	0.5	%	<0.5	4.58 %	93.0	85	105
EP004: Total Organic Carbon	----	0.5	%	<0.5	2.66 %	92.9	84	106
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.0	57.4	117
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3214947)								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	94.9	64	126
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	97.7	66	128



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	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3214947) - continued									
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	94.7	63	129	
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	93.3	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	93.3	64	130	
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	94.3	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	96.5	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	93.8	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	89.2	61	131	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3216013)									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	91.7	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	90.9	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	89.8	63	129	
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	87.8	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	90.2	64	130	
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	88.7	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	90.6	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	88.2	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	85.2	61	131	
EP074B: Oxygenated Compounds (QCLot: 3214947)									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	# 29.4	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	126	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	99.6	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	95.0	54	136	
		5	mg/kg	<5	----	----	----	----	
EP074B: Oxygenated Compounds (QCLot: 3216013)									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	30.1	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	113	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	95.2	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	91.1	54	136	
		5	mg/kg	<5	----	----	----	----	
EP074C: Sulfonated Compounds (QCLot: 3214947)									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	85.1	54	126	
EP074C: Sulfonated Compounds (QCLot: 3216013)									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	87.2	54	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	
EP074D: Fumigants (QCLot: 3214947)									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	91.4	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	93.1	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	76.4	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	77.0	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	94.3	66	126	
EP074D: Fumigants (QCLot: 3216013)									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	86.5	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	90.7	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	71.7	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	71.0	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	94.9	66	126	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3214947)									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	99.0	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	98.7	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	89.8	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	98.8	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	97.3	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	97.1	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	83.9	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	100	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	95.6	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	96.7	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	104	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	82.3	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	98.8	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	97.3	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	99.6	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	98.4	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	82.8	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	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3214947) - continued									
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	96.8	54	128	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	87.1	55	129	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	99.5	56	132	
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	101	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	86.8	19.8	134	
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	81.3	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	84.7	48	136	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216013)									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	135	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	118	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	144	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	109	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	116	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	113	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	102	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	80.1	43	129	
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	94.0	62	130	
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	98.6	66	132	
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	94.4	66	132	
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	94.4	62	126	
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	95.2	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	79.3	59	125	
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	97.8	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	94.4	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	96.9	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	97.1	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	96.2	67	143	
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	78.7	62	122	
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	80.1	54	128	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	78.4	55	129	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	96.1	56	132	
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	91.5	65	135	



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
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216013) - continued									
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	85.2	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	92.2	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	80.8	48	136	
EP074F: Halogenated Aromatic Compounds (QCLot: 3214947)									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	98.6	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	97.2	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	99.0	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	95.1	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	96.2	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	96.4	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	95.4	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	87.1	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	90.6	60	132	
EP074F: Halogenated Aromatic Compounds (QCLot: 3216013)									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	95.8	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	93.5	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	94.6	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	91.1	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	87.6	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	85.2	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	91.4	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	78.2	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	86.3	60	132	
EP074G: Trihalomethanes (QCLot: 3214947)									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	99.4	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	77.3	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	95.3	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	103	60	126	
EP074G: Trihalomethanes (QCLot: 3216013)									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	99.0	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	71.1	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	83.8	60	126	
EP074H: Naphthalene (QCLot: 3214947)									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	101	63	133	
		5	mg/kg	<5	----	----	----	----	
EP074H: Naphthalene (QCLot: 3216013)									



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	
EP074H: Naphthalene (QCLot: 3216013) - continued									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	117	63	133	
		5	mg/kg	<5	----	----	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3213773)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	82.2	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	82.4	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	81.0	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	80.8	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	91.9	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	78.2	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	97.4	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	86.6	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	80.6	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	91.3	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	21.0	3.9	57	
EP075(SIM)A: Phenolic Compounds (QCLot: 3216003)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	89.9	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	95.6	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	90.0	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	88.9	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	92.8	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	77.1	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	90.1	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	90.9	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	89.3	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	81.0	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	78.8	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	43.2	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213773)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	94.8	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	96.4	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	91.7	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	93.9	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	94.3	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	93.6	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	95.0	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	95.1	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	95.2	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	96.7	81	123	



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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213773) - continued									
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	89.2	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	91.6	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	85.2	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	# 70.7	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	72.7	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	73.5	72.4	114	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216003)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	93.8	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	99.7	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	96.3	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	96.6	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	97.3	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	98.1	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	96.8	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	98.0	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	97.0	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	96.2	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	92.0	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	89.1	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	86.5	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	90.9	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213772)									
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	105	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	89.3	64	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214946)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	73.0	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215144)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	73.4	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216002)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	96.4	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	97.1	64	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.4	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213772)									



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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213772) - continued								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	104	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	71.3	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214946)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	74.1	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215144)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	74.3	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216002)								
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	97.3	70	130
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	102	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
		50	mg/kg	----	150 mg/kg	84.9	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	81.4	68.4	128
EP080: BTEXN (QCLot: 3214946)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	83.5	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	82.2	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	85.8	58	118
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	82.1	60	120
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	85.8	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	91.4	62	138
EP080: BTEXN (QCLot: 3215144)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	72.5	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.0	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	85.2	58	118
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	85.9	60	120
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	92.9	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	86.6	62	138
EP080: BTEXN (QCLot: 3216012)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	81.3	62	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.8	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	92.4	58	118
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	87.2	60	120
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	91.0	60	120



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	
EP080: BTEXN (QCLot: 3216012) - continued									
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	90.6	62	138	
EP231: Perfluorinated Compounds (QCLot: 3215778)									
EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	85.3	54	146	
EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	92.4	54	134	
EP231: 6:2 Fluorotelomer Sulfonate (6:2 Fts)	27619-97-2	0.005	mg/kg	<0.005	0.0125 mg/kg	129	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	
EG020T: Total Metals by ICP-MS (QCLot: 3215707)									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	79	121	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	106	82	114	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	108	83	115	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	111	83	117	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	85	115	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	115	83	117	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	110	76	118	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3214176)									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	98.0	77	115	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3215864)									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	103	77	115	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3216106)									
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	98.2	78	116	
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.4	68	128	
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	92.6	74	118	
EP074: meta- & para-Xylene	108-38-3	2	µg/L	<2	20 µg/L	89.7	74	122	
	106-42-3								
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	87.6	74	118	
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	96.3	77	121	
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	92.5	75	121	
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	93.8	67	123	
EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	90.4	70	122	
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	95.1	69	123	
EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	95.6	71	121	
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	93.8	70	122	
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	90.1	67	123	
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	92.2	62	126	
EP074B: Oxygenated Compounds (QCLot: 3216106)									
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	93.8	61.4	134	



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	
EP074B: Oxygenated Compounds (QCLot: 3216106) - continued									
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	99.6	73.6	130	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	95.6	61	139	
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	98.0	65	137	
EP074C: Sulfonated Compounds (QCLot: 3216106)									
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	83.8	72.8	127	
EP074D: Fumigants (QCLot: 3216106)									
EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	89.6	61	119	
EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	97.3	76	120	
EP074: cis-1,3-Dichloropropylene	10061-01-5	10	µg/L	<10	10 µg/L	79.0	62	120	
EP074: trans-1,3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	83.0	61	119	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	93.4	69	117	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216106)									
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	92.9	60.6	138	
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	103	67.4	130	
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	111	69.4	129	
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	106	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	103	65	131	
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	96.2	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	94.6	71	119	
EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	98.1	75	119	
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	97.6	77	117	
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	89.7	61	119	
EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	94.0	73	119	
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	82.2	63	121	
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	99.1	78	122	
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	99.6	74	120	
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	90.9	74	118	
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	106	75	123	
EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	104	79	121	
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	91.5	72	124	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	80.6	66	114	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	94.0	60	120	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	93.7	70.6	128	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	93.8	70	124	
EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	100	74	128	
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	73.3	71.8	126	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	79.4	66.4	136	



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
EP074F: Halogenated Aromatic Compounds (QCLot: 3216106)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	98.9	80	118
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	91.1	76	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	96.7	71	121
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	95.2	71	121
EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	97.8	67	125
EP074G: Trihalomethanes (QCLot: 3216106)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	98.8	76	118
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	81.8	64	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	85.7	65	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	86.9	73.5	126
EP075(SIM)A: Phenolic Compounds (QCLot: 3213981)								
EP075(SIM): Phenol	108-95-2	0.2	µg/L	----	20 µg/L	37.4	24.5	61.9
			1	µg/L	<1.0	----	----	----
EP075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L	----	20 µg/L	83.7	63.8	110
			1	µg/L	<1.0	----	----	----
EP075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L	----	20 µg/L	82.5	55.9	112
			1	µg/L	<1.0	----	----	----
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	µg/L	----	40 µg/L	73.0	42.5	114
			2	µg/L	<2.0	----	----	----
EP075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L	----	20 µg/L	98.4	62.7	117
			1	µg/L	<1.0	----	----	----
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.2	µg/L	----	20 µg/L	90.4	59.9	112
			1	µg/L	<1.0	----	----	----
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.2	µg/L	----	20 µg/L	96.4	59.3	122
			1	µg/L	<1.0	----	----	----
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.2	µg/L	----	20 µg/L	99.4	64.3	118
			1	µg/L	<1.0	----	----	----
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L	----	20 µg/L	90.8	63	119
			1	µg/L	<1.0	----	----	----
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.2	µg/L	----	20 µg/L	96.3	58.7	118
			1	µg/L	<1.0	----	----	----
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.2	µg/L	----	20 µg/L	87.4	50	108
			1	µg/L	<1.0	----	----	----
EP075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L	----	40 µg/L	40.3	8.7	95
			2	µg/L	<2.0	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213981)								
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	20 µg/L	92.9	58.6	119
			1	µg/L	<1.0	----	----	----
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	20 µg/L	102	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213981) - continued								
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	20 µg/L	100	62.2	113
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	20 µg/L	98.0	63.9	115
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	20 µg/L	94.1	62.6	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	20 µg/L	90.6	64.3	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	20 µg/L	95.9	63.6	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	20 µg/L	97.6	63.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	20 µg/L	89.8	64.1	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	20 µg/L	95.5	62.5	116
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	20 µg/L	90.8	61.7	119
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	20 µg/L	100	61.7	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	20 µg/L	91.0	63.3	117
		0.5	µg/L	<0.5	----	----	----	----
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	20 µg/L	96.4	59.9	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	----	20 µg/L	103	61.2	117
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	20 µg/L	82.8	59.1	118
		1	µg/L	<1.0	----	----	----	----
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	1	µg/L	<1.0	----	----	----	----
EP075A: Phenolic Compounds (QCLot: 3215967)								
EP075: Phenol	108-95-2	2	µg/L	<2	5 µg/L	57.5	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	5 µg/L	93.0	63.1	105
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	5 µg/L	94.5	55.6	98.4
EP075: 3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	10 µg/L	90.5	45	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	5 µg/L	105	55.4	110
EP075: 2,4-Dimethylphenol	105-67-9	2	µg/L	<2	5 µg/L	104	61.7	110
EP075: 2,4-Dichlorophenol	120-83-2	2	µg/L	<2	5 µg/L	101	61.9	109
EP075: 2,6-Dichlorophenol	87-65-0	2	µg/L	<2	5 µg/L	98.0	61.5	108
EP075: 4-Chloro-3-Methylphenol	59-50-7	2	µg/L	<2	5 µg/L	104	61.4	107
EP075: 2,4,6-Trichlorophenol	88-06-2	2	µg/L	<2	5 µg/L	97.6	57.6	112



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
EP075A: Phenolic Compounds (QCLot: 3215967) - continued								
EP075: 2,4,5-Trichlorophenol	95-95-4	2	µg/L	<2	5 µg/L	99.6	58	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	10 µg/L	26.0	10	110
EP075A: Phenolic Compounds (QCLot: 3216650)								
EP075: Phenol	108-95-2	2	µg/L	<2	5 µg/L	41.2	25.5	64.1
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	5 µg/L	80.4	63.1	105
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	5 µg/L	70.9	55.6	98.4
EP075: 3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	10 µg/L	61.9	45	96.2
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	5 µg/L	83.1	55.4	110
EP075: 2,4-Dimethylphenol	105-67-9	2	µg/L	<2	5 µg/L	92.7	61.7	110
EP075: 2,4-Dichlorophenol	120-83-2	2	µg/L	<2	5 µg/L	97.3	61.9	109
EP075: 2,6-Dichlorophenol	87-65-0	2	µg/L	<2	5 µg/L	79.6	61.5	108
EP075: 4-Chloro-3-Methylphenol	59-50-7	2	µg/L	<2	5 µg/L	70.4	61.4	107
EP075: 2,4,6-Trichlorophenol	88-06-2	2	µg/L	<2	5 µg/L	81.0	57.6	112
EP075: 2,4,5-Trichlorophenol	95-95-4	2	µg/L	<2	5 µg/L	81.9	58	110
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	10 µg/L	41.5	10	110
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3215967)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	5 µg/L	82.4	61	108
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	5 µg/L	86.2	59	108
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	5 µg/L	93.1	60.6	106
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	5 µg/L	102	64	108
EP075: Acenaphthene	83-32-9	2	µg/L	<2	5 µg/L	81.8	65	108
EP075: Fluorene	86-73-7	2	µg/L	<2	5 µg/L	84.2	65.2	107
EP075: Phenanthrene	85-01-8	2	µg/L	<2	5 µg/L	100	66.7	108
EP075: Anthracene	120-12-7	2	µg/L	<2	5 µg/L	101	65.8	108
EP075: Fluoranthene	206-44-0	2	µg/L	<2	5 µg/L	102	64.9	109
EP075: Pyrene	129-00-0	2	µg/L	<2	5 µg/L	102	60.1	111
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	5 µg/L	91.2	59.7	110
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	5 µg/L	101	62.2	112
EP075: Chrysene	218-01-9	2	µg/L	<2	5 µg/L	100	59.3	114
EP075: Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	10 µg/L	104	60.1	111
EP075: 7,12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	5 µg/L	106	49.8	107
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	5 µg/L	105	59.2	112
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	5 µg/L	# 115	60.1	110
EP075: Indeno(1,2,3-cd)pyrene	193-39-5	2	µg/L	<2	5 µg/L	107	59.6	110
EP075: Dibenz(a,h)anthracene	53-70-3	2	µg/L	<2	5 µg/L	109	57.2	109
EP075: Benzo(g,h,i)perylene	191-24-2	2	µg/L	<2	5 µg/L	104	60.6	110
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216650)								
EP075: Naphthalene	91-20-3	2	µg/L	<2	5 µg/L	77.6	61	108



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	
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216650) - continued									
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	5 µg/L	80.5	59	108	
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	5 µg/L	82.4	60.6	106	
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	5 µg/L	85.9	64	108	
EP075: Acenaphthene	83-32-9	2	µg/L	<2	5 µg/L	80.4	65	108	
EP075: Fluorene	86-73-7	2	µg/L	<2	5 µg/L	81.3	65.2	107	
EP075: Phenanthrene	85-01-8	2	µg/L	<2	5 µg/L	87.3	66.7	108	
EP075: Anthracene	120-12-7	2	µg/L	<2	5 µg/L	87.0	65.8	108	
EP075: Fluoranthene	206-44-0	2	µg/L	<2	5 µg/L	87.8	64.9	109	
EP075: Pyrene	129-00-0	2	µg/L	<2	5 µg/L	88.0	60.1	111	
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	5 µg/L	60.6	59.7	110	
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	5 µg/L	84.5	62.2	112	
EP075: Chrysene	218-01-9	2	µg/L	<2	5 µg/L	85.3	59.3	114	
EP075: Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	10 µg/L	87.9	60.1	111	
EP075: 7,12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	5 µg/L	89.4	49.8	107	
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	5 µg/L	86.8	59.2	112	
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	5 µg/L	88.0	60.1	110	
EP075: Indeno(1,2,3-cd)pyrene	193-39-5	2	µg/L	<2	5 µg/L	81.3	59.6	110	
EP075: Dibenz(a,h)anthracene	53-70-3	2	µg/L	<2	5 µg/L	83.7	57.2	109	
EP075: Benzo(g,h,i)perylene	191-24-2	2	µg/L	<2	5 µg/L	79.5	60.6	110	
EP075C: Phthalate Esters (QCLot: 3215967)									
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	5 µg/L	# 117	64.3	112	
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	5 µg/L	95.0	67.3	111	
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	5 µg/L	120	68.4	122	
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	5 µg/L	99.4	61.2	114	
EP075: bis(2-ethylhexyl) phthalate	117-81-7	20	µg/L	<20	5 µg/L	106	72.8	135	
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	5 µg/L	106	62.1	115	
EP075C: Phthalate Esters (QCLot: 3216650)									
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	5 µg/L	84.4	64.3	112	
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	5 µg/L	93.9	67.3	111	
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	5 µg/L	111	68.4	122	
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	5 µg/L	72.6	61.2	114	
EP075: bis(2-ethylhexyl) phthalate	117-81-7	20	µg/L	<20	5 µg/L	124	72.8	135	
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	5 µg/L	83.8	62.1	115	
EP075D: Nitrosamines (QCLot: 3215967)									
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	5 µg/L	# 101	39.5	95.9	
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	5 µg/L	100	60.6	113	
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	5 µg/L	# 99.2	35	99	
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	5 µg/L	93.0	40	106	



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	
EP075D: Nitrosamines (QCLot: 3215967) - continued									
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	5 µg/L	106	63.5	108	
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	5 µg/L	# 109	61.7	107	
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	5 µg/L	107	62.5	108	
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	10 µg/L	90.8	64.6	112	
EP075: Methapyrilene	91-80-5	2	µg/L	<2	5 µg/L	76.7	4.21	94	
EP075D: Nitrosamines (QCLot: 3216650)									
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	5 µg/L	# 99.5	39.5	95.9	
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	5 µg/L	88.0	60.6	113	
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	5 µg/L	63.9	35	99	
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	5 µg/L	66.3	40	106	
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	5 µg/L	99.8	63.5	108	
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	5 µg/L	93.9	61.7	107	
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	5 µg/L	87.7	62.5	108	
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	10 µg/L	84.4	64.6	112	
EP075: Methapyrilene	91-80-5	2	µg/L	<2	5 µg/L	84.3	4.21	94	
EP075E: Nitroaromatics and Ketones (QCLot: 3215967)									
EP075: 2-Picoline	109-06-8	2	µg/L	<2	5 µg/L	41.4	11.4	100	
EP075: Acetophenone	98-86-2	2	µg/L	<2	5 µg/L	103	68.3	112	
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	5 µg/L	97.9	68.3	112	
EP075: Isophorone	78-59-1	2	µg/L	<2	5 µg/L	107	67.6	111	
EP075: 2,6-Dinitrotoluene	606-20-2	4	µg/L	<4	5 µg/L	99.8	64.4	113	
EP075: 2,4-Dinitrotoluene	121-14-2	4	µg/L	<4	5 µg/L	91.0	59.5	109	
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	5 µg/L	70.4	46.8	102	
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	5 µg/L	60.8	8.93	98.7	
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	5 µg/L	87.6	58.3	106	
EP075: Azobenzene	103-33-3	2	µg/L	<2	5 µg/L	86.8	66	112	
EP075: 1,3,5-Trinitrobenzene	99-35-4	2	µg/L	<2	5 µg/L	42.8	39	105	
EP075: Phenacetin	62-44-2	2	µg/L	<2	5 µg/L	94.3	57.8	101	
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	5 µg/L	61.4	60.1	112	
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	5 µg/L	87.0	59	109	
EP075: Pronamide	23950-58-5	2	µg/L	<2	5 µg/L	101	62.7	109	
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	5 µg/L	105	59.4	108	
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	5 µg/L	101	57.7	110	
EP075E: Nitroaromatics and Ketones (QCLot: 3216650)									
EP075: 2-Picoline	109-06-8	2	µg/L	<2	5 µg/L	24.4	11.4	100	
EP075: Acetophenone	98-86-2	2	µg/L	<2	5 µg/L	99.4	68.3	112	
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	5 µg/L	100	68.3	112	



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	
EP075E: Nitroaromatics and Ketones (QCLot: 3216650) - continued									
EP075: Isophorone	78-59-1	2	µg/L	<2	5 µg/L	102	67.6	111	
EP075: 2,6-Dinitrotoluene	606-20-2	4	µg/L	<4	5 µg/L	98.8	64.4	113	
EP075: 2,4-Dinitrotoluene	121-14-2	4	µg/L	<4	5 µg/L	80.0	59.5	109	
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	5 µg/L	# 19.6	46.8	102	
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	5 µg/L	30.9	8.93	98.7	
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	5 µg/L	75.7	58.3	106	
EP075: Azobenzene	103-33-3	2	µg/L	<2	5 µg/L	83.0	66	112	
EP075: 1,3,5-Trinitrobenzene	99-35-4	2	µg/L	<2	5 µg/L	82.6	39	105	
EP075: Phenacetin	62-44-2	2	µg/L	<2	5 µg/L	68.7	57.8	101	
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	5 µg/L	# 25.3	60.1	112	
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	5 µg/L	84.5	59	109	
EP075: Pronamide	23950-58-5	2	µg/L	<2	5 µg/L	84.3	62.7	109	
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	5 µg/L	65.2	59.4	108	
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	5 µg/L	87.9	57.7	110	
EP075F: Haloethers (QCLot: 3215967)									
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	5 µg/L	91.2	69.1	112	
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	5 µg/L	105	66.2	111	
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	5 µg/L	84.8	64.7	109	
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	5 µg/L	91.1	61.6	108	
EP075F: Haloethers (QCLot: 3216650)									
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	5 µg/L	# 117	69.1	112	
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	5 µg/L	96.1	66.2	111	
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	5 µg/L	82.7	64.7	109	
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	5 µg/L	83.7	61.6	108	
EP075G: Chlorinated Hydrocarbons (QCLot: 3215967)									
EP075: 1,4-Dichlorobenzene	106-46-7	2	µg/L	<2	5 µg/L	72.1	42	114	
EP075: 1,3-Dichlorobenzene	541-73-1	2	µg/L	<2	5 µg/L	72.1	37	109	
EP075: 1,2-Dichlorobenzene	95-50-1	2	µg/L	<2	5 µg/L	76.2	37	109	
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	5 µg/L	70.6	30	112	
EP075: 1,2,4-Trichlorobenzene	120-82-1	2	µg/L	<2	5 µg/L	82.3	42.9	115	
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	5 µg/L	64.0	23.8	111	
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	5 µg/L	74.7	37.4	116	
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	5 µg/L	26.6	23.5	107	
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	5 µg/L	81.5	64.5	107	
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	5 µg/L	92.2	65.7	110	
EP075G: Chlorinated Hydrocarbons (QCLot: 3216650)									
EP075: 1,4-Dichlorobenzene	106-46-7	2	µg/L	<2	5 µg/L	89.0	42	114	
EP075: 1,3-Dichlorobenzene	541-73-1	2	µg/L	<2	5 µg/L	85.4	37	109	



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	
EP075G: Chlorinated Hydrocarbons (QCLot: 3216650) - continued									
EP075: 1,2-Dichlorobenzene	95-50-1	2	µg/L	<2	5 µg/L	88.8	37	109	
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	5 µg/L	89.0	30	112	
EP075: 1,2,4-Trichlorobenzene	120-82-1	2	µg/L	<2	5 µg/L	101	42.9	115	
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	5 µg/L	74.7	23.8	111	
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	5 µg/L	74.6	37.4	116	
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	5 µg/L	54.9	23.5	107	
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	5 µg/L	81.0	64.5	107	
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	5 µg/L	87.8	65.7	110	
EP075H: Anilines and Benzidines (QCLot: 3215967)									
EP075: Aniline	62-53-3	2	µg/L	<2	5 µg/L	69.3	10.9	89.7	
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	5 µg/L	64.3	44.4	106	
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	5 µg/L	# 113	60.9	110	
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	5 µg/L	82.2	51.5	96.9	
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	5 µg/L	83.8	65.3	108	
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	5 µg/L	83.6	48.9	99.5	
EP075: Carbazole	86-74-8	2	µg/L	<2	5 µg/L	96.0	64.3	107	
EP075: 3,3'-Dichlorobenzidine	91-94-1	2	µg/L	<2	5 µg/L	110	60.3	119	
EP075H: Anilines and Benzidines (QCLot: 3216650)									
EP075: Aniline	62-53-3	2	µg/L	<2	5 µg/L	57.3	10.9	89.7	
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	5 µg/L	82.6	44.4	106	
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	5 µg/L	71.8	60.9	110	
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	5 µg/L	# 44.0	51.5	96.9	
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	5 µg/L	82.8	65.3	108	
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	5 µg/L	71.2	48.9	99.5	
EP075: Carbazole	86-74-8	2	µg/L	<2	5 µg/L	72.4	64.3	107	
EP075: 3,3'-Dichlorobenzidine	91-94-1	2	µg/L	<2	5 µg/L	# 39.8	60.3	119	
EP075I: Organochlorine Pesticides (QCLot: 3215967)									
EP075: alpha-BHC	319-84-6	2	µg/L	<2	5 µg/L	85.1	64.3	110	
EP075: beta-BHC	319-85-7	2	µg/L	<2	5 µg/L	85.2	59	110	
EP075: gamma-BHC	58-89-9	2	µg/L	<2	5 µg/L	84.5	63.7	112	
EP075: delta-BHC	319-86-8	2	µg/L	<2	5 µg/L	63.1	57	115	
EP075: Heptachlor	76-44-8	2	µg/L	<2	5 µg/L	99.6	57.9	108	
EP075: Aldrin	309-00-2	2	µg/L	<2	5 µg/L	102	56	114	
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	5 µg/L	111	60.3	112	
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	5 µg/L	99.3	52.5	115	
EP075: 4,4'-DDE	72-55-9	2	µg/L	<2	5 µg/L	108	64.1	111	
EP075: Dieldrin	60-57-1	2	µg/L	<2	5 µg/L	104	65	113	
EP075: Endrin	72-20-8	2	µg/L	<2	5 µg/L	106	52	118	
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	5 µg/L	105	60.4	111	



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	
EP075I: Organochlorine Pesticides (QCLot: 3215967) - continued									
EP075: 4.4'-DDD	72-54-8	2	µg/L	<2	5 µg/L	99.0	59.8	115	
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	5 µg/L	67.1	52.8	114	
EP075: 4.4'-DDT	50-29-3	4	µg/L	<4	5 µg/L	73.8	44	116	
EP075I: Organochlorine Pesticides (QCLot: 3216650)									
EP075: alpha-BHC	319-84-6	2	µg/L	<2	5 µg/L	83.6	64.3	110	
EP075: beta-BHC	319-85-7	2	µg/L	<2	5 µg/L	86.0	59	110	
EP075: gamma-BHC	58-89-9	2	µg/L	<2	5 µg/L	77.3	63.7	112	
EP075: delta-BHC	319-86-8	2	µg/L	<2	5 µg/L	73.0	57	115	
EP075: Heptachlor	76-44-8	2	µg/L	<2	5 µg/L	89.2	57.9	108	
EP075: Aldrin	309-00-2	2	µg/L	<2	5 µg/L	91.0	56	114	
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	5 µg/L	94.6	60.3	112	
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	5 µg/L	85.0	52.5	115	
EP075: 4.4'-DDE	72-55-9	2	µg/L	<2	5 µg/L	94.5	64.1	111	
EP075: Dieldrin	60-57-1	2	µg/L	<2	5 µg/L	87.9	65	113	
EP075: Endrin	72-20-8	2	µg/L	<2	5 µg/L	76.0	52	118	
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	5 µg/L	92.8	60.4	111	
EP075: 4.4'-DDD	72-54-8	2	µg/L	<2	5 µg/L	81.6	59.8	115	
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	5 µg/L	73.0	52.8	114	
EP075: 4.4'-DDT	50-29-3	4	µg/L	<4	5 µg/L	81.4	44	116	
EP075J: Organophosphorus Pesticides (QCLot: 3215967)									
EP075: Dichlorvos	62-73-7	2	µg/L	<2	5 µg/L	108	51	113	
EP075: Dimethoate	60-51-5	2	µg/L	<2	5 µg/L	73.3	45	119	
EP075: Diazinon	333-41-5	2	µg/L	<2	5 µg/L	99.8	54	116	
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	5 µg/L	93.8	54.1	116	
EP075: Malathion	121-75-5	2	µg/L	<2	5 µg/L	104	57.6	118	
EP075: Fenthion	55-38-9	2	µg/L	<2	5 µg/L	97.6	57	115	
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	5 µg/L	101	57	115	
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	5 µg/L	102	54	116	
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	5 µg/L	92.4	57	111	
EP075: Prothiofos	34643-46-4	2	µg/L	<2	5 µg/L	98.6	54	118	
EP075: Ethion	563-12-2	2	µg/L	<2	5 µg/L	100	54	120	
EP075J: Organophosphorus Pesticides (QCLot: 3216650)									
EP075: Dichlorvos	62-73-7	2	µg/L	<2	5 µg/L	73.8	51	113	
EP075: Dimethoate	60-51-5	2	µg/L	<2	5 µg/L	59.6	45	119	
EP075: Diazinon	333-41-5	2	µg/L	<2	5 µg/L	88.0	54	116	
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	5 µg/L	82.3	54.1	116	
EP075: Malathion	121-75-5	2	µg/L	<2	5 µg/L	67.5	57.6	118	
EP075: Fenthion	55-38-9	2	µg/L	<2	5 µg/L	83.8	57	115	
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	5 µg/L	86.6	57	115	



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
EP075J: Organophosphorus Pesticides (QCLot: 3216650) - continued								
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	5 µg/L	86.1	54	116
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	5 µg/L	81.6	57	111
EP075: Prothiofos	34643-46-4	2	µg/L	<2	5 µg/L	86.6	54	118
EP075: Ethion	563-12-2	2	µg/L	<2	5 µg/L	84.2	54	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213980)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	107	59	129
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	117	71	131
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	85.8	62	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214570)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	101	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213980)								
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	115	58.9	131
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	109	73.9	138
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
		50	µg/L	----	1500 µg/L	79.2	67	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214570)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	104	75	127
EP080: BTEXN (QCLot: 3214570)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	114	70	124
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	116	65	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	110	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	112	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	117	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	91.6	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	
EG005T: Total Metals by ICP-AES (QCLot: 3216118)						
ES1326950-005	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	109	70 130
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	70 130
		EG005T: Chromium	7440-47-3	50 mg/kg	108	70 130
		EG005T: Copper	7440-50-8	125 mg/kg	104	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
EG005T: Total Metals by ICP-AES (QCLot: 3216118) - continued							
ES1326950-005	Anonymous	EG005T: Lead	7439-92-1	125 mg/kg	99.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	106	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	101	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	103	70	130
EG005T: Total Metals by ICP-AES (QCLot: 3216120)							
ES1327422-032	LO_SB04_2.0	EG005T: Arsenic	7440-38-2	50 mg/kg	109	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	111	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	111	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	109	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	108	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	108	70	130
EG005T: Total Metals by ICP-AES (QCLot: 3223469)							
ES1327422-023	LB_MW11_3.0	EG005T: Arsenic	7440-38-2	50 mg/kg	103	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	103	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	102	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	100	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: Selenium	7782-49-2	50 mg/kg	103	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	101	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216119)							
ES1326950-005	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	95.6	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)							
ES1327422-032	LO_SB04_2.0	EG035T: Mercury	7439-97-6	5 mg/kg	96.6	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3223470)							
ES1327422-023	LB_MW11_3.0	EG035T: Mercury	7439-97-6	5 mg/kg	102	70	130
EP004: Organic Matter (QCLot: 3217921)							
ES1327324-026	Anonymous	EP004: Organic Matter	----	0.48 %	105	----	----
		EP004: Total Organic Carbon	----	0.28 %	103	----	----
EP004: Organic Matter (QCLot: 3223793)							
ES1327741-011	Anonymous	EP004: Organic Matter	----	0.48 %	93.1	----	----
		EP004: Total Organic Carbon	----	0.28 %	89.3	----	----
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)							
ES1327373-006	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3214947)							



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
EP074E: Halogenated Aliphatic Compounds (QCLot: 3214947) - continued							
ES1327422-032	LO_SB04_2.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	121	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	110	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216013)							
ES1327422-025	LO_MW01_1.1	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	80.3	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	87.7	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3214947)							
ES1327422-032	LO_SB04_2.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	109	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3216013)							
ES1327422-025	LO_MW01_1.1	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	96.1	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3213773)							
ES1327422-001	LV_MW07_0.05	EP075(SIM): Phenol	108-95-2	10 mg/kg	82.6	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.7	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	84.6	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	88.8	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	21.4	20	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3216003)							
ES1327422-025	LO_MW01_1.1	EP075(SIM): Phenol	108-95-2	10 mg/kg	83.6	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.0	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	75.0	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	89.8	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	38.2	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213773)							
ES1327422-001	LV_MW07_0.05	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.6	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.4	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216003)							
ES1327422-025	LO_MW01_1.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.4	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.2	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213772)							
ES1327422-001	LV_MW07_0.05	EP071: C10 - C14 Fraction	----	640 mg/kg	83.6	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	79.7	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	64.8	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214946)							
ES1327422-032	LO_SB04_2.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	77.8	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215144)							
ES1327422-001	LV_MW07_0.05	EP080: C6 - C9 Fraction	----	32.5 mg/kg	79.5	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	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216002)								
ES1327422-025	LO_MW01_1.1	EP071: C10 - C14 Fraction	----	640 mg/kg	78.3	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.6	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	74.6	52	132	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)								
ES1327422-025	LO_MW01_1.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213772)								
ES1327422-001	LV_MW07_0.05	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	104	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.0	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	53.2	52	132	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214946)								
ES1327422-032	LO_SB04_2.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	79.4	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215144)								
ES1327422-001	LV_MW07_0.05	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	78.0	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216002)								
ES1327422-025	LO_MW01_1.1	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	102	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.5	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	61.9	52	132	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)								
ES1327422-025	LO_MW01_1.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	82.6	70	130	
EP080: BTEXN (QCLot: 3214946)								
ES1327422-032	LO_SB04_2.0	EP080: Benzene	71-43-2	2.5 mg/kg	73.6	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	77.2	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	81.8	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	77.4	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	81.6	70	130	
EP080: Naphthalene	91-20-3	2.5 mg/kg	81.2	70	130			
EP080: BTEXN (QCLot: 3215144)								
ES1327422-001	LV_MW07_0.05	EP080: Benzene	71-43-2	2.5 mg/kg	85.4	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	72.6	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	74.8	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	75.8	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.1	70	130	
EP080: Naphthalene	91-20-3	2.5 mg/kg	72.5	70	130			
EP080: BTEXN (QCLot: 3216012)								



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	
EP080: BTEXN (QCLot: 3216012) - continued								
ES1327422-025	LO_MW01_1.1	EP080: Benzene	71-43-2	2.5 mg/kg	90.5	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.2	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.0	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.9	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	83.2	70	130		
EP231: Perfluorinated Compounds (QCLot: 3215778)								
ES1326974-013	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	79.7	54	146	
		EP231: PFOA	335-67-1	0.0025 mg/kg	86.7	54	134	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	78.4	56	138	

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 3215707)							
ES1326945-003	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	110	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	114	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	109	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	110	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	110	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3214176)							
ES1327433-028	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	89.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3215864)							
ES1327422-038	R01_091213_RO	EG035T: Mercury	7439-97-6	0.010 mg/L	97.3	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3216106)							
ES1327444-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	125	70	130
		EP074: Toluene	108-88-3	25 µg/L	127	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216106)							
ES1327444-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	125	70	130
		EP074: Trichloroethene	79-01-6	25 µg/L	121	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3216106)							
ES1327444-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	128	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3213981)							
ES1327427-002	Anonymous	EP075(SIM): Phenol	108-95-2	200 µg/L	31.8	20	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	
EP075(SIM)A: Phenolic Compounds (QCLot: 3213981) - continued								
ES1327427-002	Anonymous	EP075(SIM): 2-Chlorophenol	95-57-8	200 µg/L	79.1	60	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	200 µg/L	106	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	200 µg/L	95.5	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	200 µg/L	83.4	20	130	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213981)								
ES1327427-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	200 µg/L	87.6	70	130	
		EP075(SIM): Pyrene	129-00-0	200 µg/L	79.7	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213980)								
ES1327427-002	Anonymous	EP071: C10 - C14 Fraction	----	2000 µg/L	109	74	150	
		EP071: C15 - C28 Fraction	----	3000 µg/L	125	77	153	
		EP071: C29 - C36 Fraction	----	2000 µg/L	96.0	67	153	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214570)								
ES1327000-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	112	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213980)								
ES1327427-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	2500 µg/L	109	74	150	
		EP071: >C16 - C34 Fraction	----	3500 µg/L	113	77	153	
		EP071: >C34 - C40 Fraction	----	1500 µg/L	69.9	67	153	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214570)								
ES1327000-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	70	130	
EP080: BTEXN (QCLot: 3214570)								
ES1327000-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	94.5	70	130	
		EP080: Toluene	108-88-3	25 µg/L	97.4	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	98.7	70	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	99.6	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.2	70	130	
EP080: Naphthalene	91-20-3	25 µg/L	109	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	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213772)											
ES1327422-001	LV_MW07_0.05	EP071: C10 - C14 Fraction	----	640 mg/kg	83.6	----	73	137	----	----	



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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213772) - continued										
ES1327422-001	LV_MW07_0.05	EP071: C15 - C28 Fraction	----	3140 mg/kg	79.7	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	64.8	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213772)										
ES1327422-001	LV_MW07_0.05	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	104	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.0	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	53.2	----	52	132	----	----
EP075(SIM)A: Phenolic Compounds (QCLot: 3213773)										
ES1327422-001	LV_MW07_0.05	EP075(SIM): Phenol	108-95-2	10 mg/kg	82.6	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.7	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	84.6	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	88.8	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	21.4	----	20	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213773)										
ES1327422-001	LV_MW07_0.05	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.6	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.4	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214946)										
ES1327422-032	LO_SB04_2.0	EP080: C6 - C9 Fraction	----	32.5 mg/kg	77.8	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214946)										
ES1327422-032	LO_SB04_2.0	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	79.4	----	70	130	----	----
EP080: BTEXN (QCLot: 3214946)										
ES1327422-032	LO_SB04_2.0	EP080: Benzene	71-43-2	2.5 mg/kg	73.6	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	77.2	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	81.8	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	77.4	----	70	130	----	----
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	81.6	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	81.2	----	70	130	----	----
EP074E: Halogenated Aliphatic Compounds (QCLot: 3214947)										
ES1327422-032	LO_SB04_2.0	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	121	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	110	----	70	130	----	----
EP074F: Halogenated Aromatic Compounds (QCLot: 3214947)										
ES1327422-032	LO_SB04_2.0	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	109	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215144)										
ES1327422-001	LV_MW07_0.05	EP080: C6 - C9 Fraction	----	32.5 mg/kg	79.5	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215144)										
ES1327422-001	LV_MW07_0.05	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	78.0	----	70	130	----	----
EP080: BTEXN (QCLot: 3215144)										



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
EP080: BTEXN (QCLot: 3215144) - continued										
ES1327422-001	LV_MW07_0.05	EP080: Benzene	71-43-2	2.5 mg/kg	85.4	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	72.6	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	74.8	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	75.8	----	70	130	----	----
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.1	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	72.5	----	70	130	----	----
EP231: Perfluorinated Compounds (QCLot: 3215778)										
ES1326974-013	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	79.7	----	54	146	----	----
		EP231: PFOA	335-67-1	0.0025 mg/kg	86.7	----	54	134	----	----
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	78.4	----	56	138	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216002)										
ES1327422-025	LO_MW01_1.1	EP071: C10 - C14 Fraction	----	640 mg/kg	78.3	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.6	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	74.6	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216002)										
ES1327422-025	LO_MW01_1.1	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	102	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.5	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	61.9	----	52	132	----	----
EP075(SIM)A: Phenolic Compounds (QCLot: 3216003)										
ES1327422-025	LO_MW01_1.1	EP075(SIM): Phenol	108-95-2	10 mg/kg	83.6	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.0	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	75.0	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	89.8	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	38.2	----	20	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216003)										
ES1327422-025	LO_MW01_1.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.4	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.2	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)										
ES1327422-025	LO_MW01_1.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)										
ES1327422-025	LO_MW01_1.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	82.6	----	70	130	----	----
EP080: BTEXN (QCLot: 3216012)										
ES1327422-025	LO_MW01_1.1	EP080: Benzene	71-43-2	2.5 mg/kg	90.5	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.2	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	86.0	----	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								
EP080: BTEXN (QCLot: 3216012) - continued											
ES1327422-025	LO_MW01_1.1	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.9	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	83.2	----	70	130	----	----	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216013)											
ES1327422-025	LO_MW01_1.1	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	80.3	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	87.7	----	70	130	----	----	
EP074F: Halogenated Aromatic Compounds (QCLot: 3216013)											
ES1327422-025	LO_MW01_1.1	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	96.1	----	70	130	----	----	
EG005T: Total Metals by ICP-AES (QCLot: 3216118)											
ES1326950-005	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	109	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	108	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	104	----	70	130	----	----	
		EG005T: Lead	7439-92-1	125 mg/kg	99.4	----	70	130	----	----	
		EG005T: Nickel	7440-02-0	50 mg/kg	106	----	70	130	----	----	
		EG005T: Selenium	7782-49-2	50 mg/kg	101	----	70	130	----	----	
		EG005T: Zinc	7440-66-6	125 mg/kg	103	----	70	130	----	----	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216119)											
ES1326950-005	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	95.6	----	70	130	----	----	
EG005T: Total Metals by ICP-AES (QCLot: 3216120)											
ES1327422-032	LO_SB04_2.0	EG005T: Arsenic	7440-38-2	50 mg/kg	109	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	111	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	111	----	70	130	----	----	
		EG005T: Lead	7439-92-1	125 mg/kg	109	----	70	130	----	----	
		EG005T: Nickel	7440-02-0	50 mg/kg	108	----	70	130	----	----	
		EG005T: Zinc	7440-66-6	125 mg/kg	108	----	70	130	----	----	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)											
ES1327422-032	LO_SB04_2.0	EG035T: Mercury	7439-97-6	5 mg/kg	96.6	----	70	130	----	----	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)											
ES1327373-006	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	----	70	130	----	----	
EP004: Organic Matter (QCLot: 3217921)											
ES1327324-026	Anonymous	EP004: Organic Matter	----	0.48 %	105	----	----	----	----	----	
		EP004: Total Organic Carbon	----	0.28 %	103	----	----	----	----	----	
EG005T: Total Metals by ICP-AES (QCLot: 3223469)											
ES1327422-023	LB_MW11_3.0	EG005T: Arsenic	7440-38-2	50 mg/kg	103	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	103	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	102	----	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								
EG005T: Total Metals by ICP-AES (QCLot: 3223469) - continued											
ES1327422-023	LB_MW11_3.0	EG005T: Copper	7440-50-8	125 mg/kg	100	----	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: Selenium	7782-49-2	50 mg/kg	103	----	70	130	----	----	
		EG005T: Zinc	7440-66-6	125 mg/kg	101	----	70	130	----	----	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3223470)											
ES1327422-023	LB_MW11_3.0	EG035T: Mercury	7439-97-6	5 mg/kg	102	----	70	130	----	----	
EP004: Organic Matter (QCLot: 3223793)											
ES1327741-011	Anonymous	EP004: Organic Matter	----	0.48 %	93.1	----	----	----	----	----	
		EP004: Total Organic Carbon	----	0.28 %	89.3	----	----	----	----	----	

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								
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213980)											
ES1327427-002	Anonymous	EP071: C10 - C14 Fraction	----	2000 µg/L	109	----	74	150	----	----	
		EP071: C15 - C28 Fraction	----	3000 µg/L	125	----	77	153	----	----	
		EP071: C29 - C36 Fraction	----	2000 µg/L	96.0	----	67	153	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213980)											
ES1327427-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	2500 µg/L	109	----	74	150	----	----	
		EP071: >C16 - C34 Fraction	----	3500 µg/L	113	----	77	153	----	----	
		EP071: >C34 - C40 Fraction	----	1500 µg/L	69.9	----	67	153	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3213981)											
ES1327427-002	Anonymous	EP075(SIM): Phenol	108-95-2	200 µg/L	31.8	----	20	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	200 µg/L	79.1	----	60	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	200 µg/L	106	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	200 µg/L	95.5	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	200 µg/L	83.4	----	20	130	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213981)											
ES1327427-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	200 µg/L	87.6	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	200 µg/L	79.7	----	70	130	----	----	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3214176)											
ES1327433-028	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	89.2	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214570)											
ES1327000-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	112	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214570)											
ES1327000-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	----	70	130	----	----	
EP080: BTEXN (QCLot: 3214570)											



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
EP080: BTEXN (QCLot: 3214570) - continued										
ES1327000-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	94.5	----	70	130	----	----
		EP080: Toluene	108-88-3	25 µg/L	97.4	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	25 µg/L	98.7	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	99.6	----	70	130	----	----
		EP080: ortho-Xylene	106-42-3	25 µg/L	95.2	----	70	130	----	----
		EP080: Naphthalene	95-47-6	25 µg/L	109	----	70	130	----	----
EG020T: Total Metals by ICP-MS (QCLot: 3215707)										
ES1326945-003	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	----	70	130	----	----
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	----	70	130	----	----
		EG020A-T: Chromium	7440-47-3	1 mg/L	110	----	70	130	----	----
		EG020A-T: Copper	7440-50-8	1 mg/L	114	----	70	130	----	----
		EG020A-T: Lead	7439-92-1	1 mg/L	109	----	70	130	----	----
		EG020A-T: Nickel	7440-02-0	1 mg/L	110	----	70	130	----	----
		EG020A-T: Zinc	7440-66-6	1 mg/L	110	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3215864)										
ES1327422-038	R01_091213_RO	EG035T: Mercury	7439-97-6	0.010 mg/L	97.3	----	70	130	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3216106)										
ES1327444-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	125	----	70	130	----	----
		EP074: Toluene	108-88-3	25 µg/L	127	----	70	130	----	----
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216106)										
ES1327444-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	125	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	25 µg/L	121	----	70	130	----	----
EP074F: Halogenated Aromatic Compounds (QCLot: 3216106)										
ES1327444-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	128	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327422	Page	: 1 of 18
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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 24-DEC-2013
Sampler	: HC/TC/JG	No. of samples received	: 38
Order number	: 0224198	No. of samples analysed	: 33
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	
EA002 : pH (Soils)								
Soil Glass Jar - Unpreserved (EA002) LV_MW07_0.05, LS_MW02_2.0	LI_SB01_0.2,	12-DEC-2013	17-DEC-2013	19-DEC-2013	✓	17-DEC-2013	17-DEC-2013	✓
EA055: Moisture Content								
Soil Glass Jar - Unpreserved (EA055-103) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	----	----	----	16-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103) LV_MW06_0.8, LV_MW01_0.05, LO_MW13_0.6,	LV_MW01_0.45, LO_MW01_1.1, LJ_SB08_1.0	11-DEC-2013	----	----	----	17-DEC-2013	25-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103) LV_MW07_0.05, LI_SB01_0.2, LV_MW04_0.5, LB_MW10_1.6	LI_SB01_0.4, LB_MW12_3.0, LV_MW05_0.5,	12-DEC-2013	----	----	----	17-DEC-2013	26-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103) LB_MW11_3.0		12-DEC-2013	----	----	----	20-DEC-2013	26-DEC-2013	✓
EA150: Particle Sizing								
Soil Glass Jar - Unpreserved (EA150) LB_MW11_3.0		12-DEC-2013	---	10-JUN-2014	----	23-DEC-2013	17-JUN-2014	✓
EA150: Soil Classification based on Particle Size								
Soil Glass Jar - Unpreserved (EA150) LB_MW11_3.0		12-DEC-2013	---	10-JUN-2014	----	23-DEC-2013	17-JUN-2014	✓
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Snap Lock Bag (EA200) LB_MW02_0.1		10-DEC-2013	---	08-JUN-2014	----	20-DEC-2013	18-JUN-2014	✓
Snap Lock Bag (EA200) LV_MW05_0.1,	LV_MW04_0.1	12-DEC-2013	---	10-JUN-2014	----	20-DEC-2013	18-JUN-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
ED007: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED007) LV_MW07_0.05, LS_MW02_2.0, LI_SB01_0.2, LB_MW11_3.0	12-DEC-2013	17-DEC-2013	09-JAN-2014	✓	18-DEC-2013	09-JAN-2014	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2, LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	17-DEC-2013	07-JUN-2014	✓	17-DEC-2013	07-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) LV_MW06_0.8, LV_MW01_0.05, LO_MW13_0.6, LV_MW01_0.45, LO_MW01_1.1, LJ_SB08_1.0	11-DEC-2013	17-DEC-2013	09-JUN-2014	✓	17-DEC-2013	09-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) LV_MW07_0.05, LI_SB01_0.2, LV_MW04_0.5, LB_MW10_1.6, LI_SB01_0.4, LB_MW12_3.0, LV_MW05_0.5	12-DEC-2013	17-DEC-2013	10-JUN-2014	✓	17-DEC-2013	10-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) LB_MW11_3.0	12-DEC-2013	20-DEC-2013	10-JUN-2014	✓	20-DEC-2013	10-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2, LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	17-DEC-2013	06-JAN-2014	✓	18-DEC-2013	06-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T) LV_MW06_0.8, LV_MW01_0.05, LO_MW13_0.6, LV_MW01_0.45, LO_MW01_1.1, LJ_SB08_1.0	11-DEC-2013	17-DEC-2013	08-JAN-2014	✓	18-DEC-2013	08-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T) LV_MW07_0.05, LI_SB01_0.2, LV_MW04_0.5, LB_MW10_1.6, LI_SB01_0.4, LB_MW12_3.0, LV_MW05_0.5	12-DEC-2013	17-DEC-2013	09-JAN-2014	✓	18-DEC-2013	09-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T) LB_MW11_3.0	12-DEC-2013	20-DEC-2013	09-JAN-2014	✓	20-DEC-2013	09-JAN-2014	✓
EP004: Organic Matter							
Soil Glass Jar - Unpreserved (EP004) LV_MW07_0.05, LS_MW02_2.0, LI_SB01_0.2, LB_MW11_3.0	12-DEC-2013	18-DEC-2013	09-JAN-2014	✓	18-DEC-2013	09-JAN-2014	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) LJ_SB08_1.0	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	18-DEC-2013	26-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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Soil Glass Jar - Unpreserved (EP071) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) LV_MW06_0.8, LV_MW01_0.05	LV_MW01_0.45,	11-DEC-2013	16-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) LO_MW01_1.1, LJ_SB08_1.0	LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) LV_MW07_0.05, LJ_SB01_0.2, LV_MW04_0.5, LB_MW11_3.0,	LI_SB01_0.4, LB_MW12_3.0, LV_MW05_0.5, LB_MW10_1.6	12-DEC-2013	16-DEC-2013	26-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP074D: Fumigants								
Soil Glass Jar - Unpreserved (EP074) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP074) LO_MW01_1.1, LJ_SB08_1.0	LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	17-DEC-2013	18-DEC-2013	✓
EP074E: Halogenated Aliphatic Compounds								
Soil Glass Jar - Unpreserved (EP074) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP074) LO_MW01_1.1, LJ_SB08_1.0	LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	17-DEC-2013	18-DEC-2013	✓
EP074F: Halogenated Aromatic Compounds								
Soil Glass Jar - Unpreserved (EP074) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP074) LO_MW01_1.1, LJ_SB08_1.0	LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	17-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	
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP074) LO_MW01_1.1, LJ_SB08_1.0	LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	17-DEC-2013	18-DEC-2013	✓
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP074) LO_MW01_1.1, LJ_SB08_1.0	LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	17-DEC-2013	18-DEC-2013	✓
EP074B: Oxygenated Compounds								
Soil Glass Jar - Unpreserved (EP074) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP074) LO_MW01_1.1, LJ_SB08_1.0	LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	17-DEC-2013	18-DEC-2013	✓
EP074C: Sulfonated Compounds								
Soil Glass Jar - Unpreserved (EP074) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP074) LO_MW01_1.1, LJ_SB08_1.0	LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	17-DEC-2013	18-DEC-2013	✓
EP074G: Trihalomethanes								
Soil Glass Jar - Unpreserved (EP074) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2,	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP074) LO_MW01_1.1, LJ_SB08_1.0	LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	17-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
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM)) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2, LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LV_MW06_0.8, LV_MW01_0.05 LV_MW01_0.45,	11-DEC-2013	16-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LO_MW01_1.1, LJ_SB08_1.0 LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LV_MW07_0.05, LJ_SB01_0.2, LV_MW04_0.5, LB_MW11_3.0, LI_SB01_0.4, LB_MW12_3.0, LV_MW05_0.5, LB_MW10_1.6	12-DEC-2013	16-DEC-2013	26-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2, LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LV_MW06_0.8, LV_MW01_0.05 LV_MW01_0.45,	11-DEC-2013	16-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LO_MW01_1.1, LJ_SB08_1.0 LO_MW13_0.6,	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LV_MW07_0.05, LJ_SB01_0.2, LV_MW04_0.5, LB_MW11_3.0, LI_SB01_0.4, LB_MW12_3.0, LV_MW05_0.5, LB_MW10_1.6	12-DEC-2013	16-DEC-2013	26-DEC-2013	✓	17-DEC-2013	25-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
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2, LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	23-DEC-2013	✓	16-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LV_MW06_0.8, LV_MW01_0.05, TS, LV_MW01_0.45, TB, TSC	11-DEC-2013	16-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LO_MW01_1.1, LJ_SB08_1.0, LO_MW13_0.6	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LV_MW07_0.05, LI_SB01_0.2, TRIP BLANK, LB_MW12_3.0, LV_MW05_0.5, LI_SB01_0.4, TRIP SPIKE, TSC, LV_MW04_0.5, LB_MW10_1.6	12-DEC-2013	16-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LB_MW11_3.0	12-DEC-2013	19-DEC-2013	26-DEC-2013	✓	20-DEC-2013	26-DEC-2013	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2, LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	16-DEC-2013	23-DEC-2013	✓	16-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LV_MW06_0.8, LV_MW01_0.05, TS, LV_MW01_0.45, TB, TSC	11-DEC-2013	16-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LO_MW01_1.1, LJ_SB08_1.0, LO_MW13_0.6	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LV_MW07_0.05, LI_SB01_0.2, TRIP BLANK, LB_MW12_3.0, LV_MW05_0.5, LI_SB01_0.4, TRIP SPIKE, TSC, LV_MW04_0.5, LB_MW10_1.6	12-DEC-2013	16-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LB_MW11_3.0	12-DEC-2013	19-DEC-2013	26-DEC-2013	✓	20-DEC-2013	26-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	
EP231: Perfluorinated Compounds								
Soil Glass Jar - Unpreserved (EP231) LO_SB04_2.0, LO_MW02_1.5, LO_MW11_1.2	LO_SB03_3.0, LO_MW10_1.2, LO_SB05_1.7	09-DEC-2013	17-DEC-2013	07-JUN-2014	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP231) LO_MW01_1.1,	LO_MW13_0.6	11-DEC-2013	17-DEC-2013	09-JUN-2014	✓	17-DEC-2013	26-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	
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) R01_091213_RO		09-DEC-2013	17-DEC-2013	07-JUN-2014	✓	17-DEC-2013	07-JUN-2014	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) R01_111213_RO		11-DEC-2013	17-DEC-2013	09-JUN-2014	✓	17-DEC-2013	09-JUN-2014	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) R01_121213		12-DEC-2013	17-DEC-2013	10-JUN-2014	✓	17-DEC-2013	10-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) R01_091213_RO		09-DEC-2013	----	----	----	17-DEC-2013	06-JAN-2014	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) R01_111213_RO		11-DEC-2013	----	----	----	17-DEC-2013	08-JAN-2014	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) R01_121213		12-DEC-2013	----	----	----	16-DEC-2013	09-JAN-2014	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071) R01_121213		12-DEC-2013	17-DEC-2013	19-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
EP074D: Fumigants								
Amber VOC Vial - Sulfuric Acid (EP074) R01_091213_RO		09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_111213_RO		11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
EP074E: Halogenated Aliphatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074) R01_091213_RO		09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_111213_RO		11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
EP074F: Halogenated Aromatic Compounds								
Amber VOC Vial - Sulfuric Acid (EP074) R01_091213_RO		09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_111213_RO		11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-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
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) R01_091213_RO	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_111213_RO	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) R01_091213_RO	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_111213_RO	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) R01_091213_RO	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_111213_RO	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) R01_091213_RO	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
Amber VOC Vial - Sulfuric Acid (EP074) R01_111213_RO	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_121213	12-DEC-2013	17-DEC-2013	19-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) R01_121213	12-DEC-2013	17-DEC-2013	19-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-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
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) R01_091213_RO	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
Amber Glass Bottle - Unpreserved (EP075) R01_111213_RO	11-DEC-2013	17-DEC-2013	18-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) R01_121213	12-DEC-2013	17-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-DEC-2013	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP080) R01_121213	12-DEC-2013	17-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-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		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Exchangeable Cations	ED007	2	10	20.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	5	46	10.9	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	2	15	13.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	15	13.3	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	5	40	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	5	39	12.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	5	49	10.2	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	3	24	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Exchangeable Cations	ED007	2	10	20.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	2	15	13.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	19	5.3	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	3	40	7.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	3	39	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	49	6.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	24	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Exchangeable Cations	ED007	2	10	20.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Organic Matter	EP004	2	15	13.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	19	5.3	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	3	40	7.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	3	39	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	49	6.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	24	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Organic Matter	EP004	2	15	13.3	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	
Analytical Methods							
Matrix Spikes (MS) - Continued							
PAH/Phenols (SIM)	EP075(SIM)	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	19	5.3	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	3	40	7.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	3	39	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	49	6.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	2	24	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	Regular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	14	14.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	5	40.0	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 - Semivolatile Fraction	EP071	2	14	14.3	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
Volatile Organic Compounds	EP074	2	18	11.1	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Semivolatile Organic Compounds	EP075	2	2	100.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	5	40.0	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	14	7.1	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	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Semivolatile Organic Compounds	EP075	2	2	100.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	5	40.0	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	14	7.1	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	18	5.6	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	5	40.0	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	14	7.1	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	Regular	Actual	Expected	Evaluation	
<i>Analytical Methods</i>							
Matrix Spikes (MS) - Continued							
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	18	5.6	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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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.



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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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)
Semivolatile Organic Compounds	EP075	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)
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 ₄ 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.
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 ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	ES1327422-013	LV_MW01_0.45	Barium	7440-39-3	52.6 %	0-20%	RPD exceeds LOR based limits
Laboratory Control Spike (LCS) Recoveries							
EP074B: Oxygenated Compounds	3837698-007	----	Vinyl Acetate	108-05-4	29.4 %	29.6-156%	Recovery less than lower control limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	3836291-007	----	Indeno(1.2.3.cd)pyrene	193-39-5	70.7 %	71-113%	Recovery less than lower control limit

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075B: Polynuclear Aromatic Hydrocarbons	3839016-002	----	3-Methylcholanthrene	56-49-5	115 %	60.1-110%	Recovery greater than upper control limit
EP075C: Phthalate Esters	3839016-002	----	Dimethyl phthalate	131-11-3	117 %	64.3-112%	Recovery greater than upper control limit
EP075D: Nitrosamines	3839761-007	----	N-Nitrosomethylethylamine	10595-95-6	99.5 %	39.5-95.9%	Recovery greater than upper control limit
EP075D: Nitrosamines	3839016-002	----	N-Nitrosomethylethylamine	10595-95-6	101 %	39.5-95.9%	Recovery greater than upper control limit
EP075D: Nitrosamines	3839016-002	----	N-Nitrosopyrrolidine	930-55-2	99.2 %	35-99%	Recovery greater than upper control limit
EP075D: Nitrosamines	3839016-002	----	N-Nitrosopiperidine	100-75-4	109 %	61.7-107%	Recovery greater than upper control limit
EP075E: Nitroaromatics and Ketones	3839761-007	----	1-Naphthylamine	134-32-7	19.6 %	46.8-102%	Recovery less than lower control limit
EP075E: Nitroaromatics and Ketones	3839761-007	----	4-Aminobiphenyl	92-67-1	25.3 %	60.1-112%	Recovery less than lower control limit
EP075F: Haloethers	3839761-007	----	Bis(2-chloroethyl) ether	111-44-4	117 %	69.1-112%	Recovery greater than upper control limit
EP075H: Anilines and Benzidines	3839016-002	----	2-Nitroaniline	88-74-4	113 %	60.9-110%	Recovery greater than upper control limit
EP075H: Anilines and Benzidines	3839761-007	----	3-Nitroaniline	99-09-2	44.0 %	51.5-96.9%	Recovery less than lower control limit
EP075H: Anilines and Benzidines	3839761-007	----	3,3'-Dichlorobenzidine	91-94-1	39.8 %	60.3-119%	Recovery less than lower control limit

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

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
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Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075T: Base/Neutral Extractable Surrogates	ES1327422-038	R01_091213_RO	1,2-Dichlorobenzene-D4	2199-69-1	23.0 %	23.6-120.7 %	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.

- **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.**

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : ES1327430

<p>Client : ENVIRO RESOURCES MANAGEMENT</p> <p>Contact : MR JOSEPH FERRING</p> <p>Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</p>	<p>Laboratory : Environmental Division Sydney</p> <p>Contact : Barbara Hanna</p> <p>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</p>
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<p>E-mail : joseph.ferring@erm.com</p> <p>Telephone : +61 02 8584 8888</p> <p>Facsimile : +61 02 8584 8800</p>	<p>E-mail : Barbara.Hanna@alsglobal.com</p> <p>Telephone : +61 2 8784 8555</p> <p>Facsimile : +61 2 8784 8555</p>
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<p>Project : Project Symphony</p> <p>Order number : 0224198</p> <p>C-O-C number : ----</p> <p>Site : BAYSWATER</p> <p>Sampler : JG</p>	<p>Page : 1 of 2</p> <p>Quote number : ES2013ENVRES0369 (SY/794/13)</p> <p>QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement</p>
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Dates

<p>Date Samples Received : 13-DEC-2013</p> <p>Client Requested Due Date : 18-DEC-2013</p>	<p>Issue Date : 14-DEC-2013 11:40</p> <p>Scheduled Reporting Date : 18-DEC-2013</p>
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Delivery Details

<p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 1 HARD</p> <p>Security Seal : Intact.</p>	<p>Temperature : 6.8°C SYD - Ice present</p> <p>No. of samples received : 8</p> <p>No. of samples analysed : 5</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.**
- **T01 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	(On Hold) SOIL	No analysis requested	SOIL - EG005T (solids)	Total Metals by ICP-AES	SOIL - S-02	8 Metals (incl. Digestion)	SOIL - S-24	TRH/BTEX/PAH + Phenols
ES1327430-001	10-DEC-2013 15:00	LB_MW06_0.1	✓							
ES1327430-002	10-DEC-2013 15:00	LB_MW06_0.5			✓	✓	✓	✓		
ES1327430-003	10-DEC-2013 15:00	LB_MW07_0.1			✓	✓	✓	✓		
ES1327430-004	10-DEC-2013 15:00	LB_MW08_0.1			✓	✓	✓	✓		
ES1327430-005	10-DEC-2013 15:00	LB_MW10_0.1	✓							
ES1327430-006	10-DEC-2013 15:00	LB_MW10_0.5			✓	✓	✓	✓		
ES1327430-007	10-DEC-2013 15:00	LB_MW12_0.1	✓							
ES1327430-008	10-DEC-2013 15:00	LB_MW12_0.5			✓	✓	✓	✓		

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

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 : ES1327430 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : Project Symphony Order number : 0224198 C-O-C number : ---- Sampler : JG Site : BAYSWATER Quote number : SY/794/13	Page : 1 of 6 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 13-DEC-2013 Issue Date : 18-DEC-2013 No. of samples received : 8 No. of samples analysed : 5
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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
Pabi Subba	Senior Organic Chemist	Sydney Organics
Phalak Inthaksone	Laboratory Manager - Organics	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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LB_MW06_0.5	LB_MW07_0.1	LB_MW08_0.1	LB_MW10_0.5	LB_MW12_0.5
				10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327430-002	ES1327430-003	ES1327430-004	ES1327430-006	ES1327430-008
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	16.6	13.2	12.7	12.6	12.5
EG005T: Total Metals by ICP-AES								
Barium	7440-39-3	10	mg/kg	80	40	60	100	130
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cobalt	7440-48-4	2	mg/kg	12	12	6	5	9
Manganese	7439-96-5	5	mg/kg	67	244	282	138	262
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	56	22	20	34	33
Thallium	7440-28-0	5	mg/kg	<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	21	<5	10	10	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	24	10	9	15	19
Copper	7440-50-8	5	mg/kg	<5	27	11	10	11
Lead	7439-92-1	5	mg/kg	18	9	12	14	13
Nickel	7440-02-0	2	mg/kg	13	45	15	17	19
Zinc	7440-66-6	5	mg/kg	44	61	46	40	45
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)A: Phenolic Compounds								
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

				LB_MW06_0.5	LB_MW07_0.1	LB_MW08_0.1	LB_MW10_0.5	LB_MW12_0.5
				10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327430-002	ES1327430-003	ES1327430-004	ES1327430-006	ES1327430-008
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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

				LB_MW06_0.5	LB_MW07_0.1	LB_MW08_0.1	LB_MW10_0.5	LB_MW12_0.5
				10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327430-002	ES1327430-003	ES1327430-004	ES1327430-006	ES1327430-008
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
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
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	69.4	71.4	72.1	69.8	77.1
2-Chlorophenol-D4	93951-73-6	0.1	%	87.7	90.4	94.1	90.6	93.7
2,4,6-Tribromophenol	118-79-6	0.1	%	78.4	69.0	79.5	78.7	82.7
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	99.8	96.4	98.7	102	105
Anthracene-d10	1719-06-8	0.1	%	90.1	67.7	87.7	93.1	94.2
4-Terphenyl-d14	1718-51-0	0.1	%	103	84.7	100	107	108
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	90.4	99.9	88.3	92.7	99.6
Toluene-D8	2037-26-5	0.1	%	83.7	90.6	82.2	84.7	91.0
4-Bromofluorobenzene	460-00-4	0.1	%	108	106	107	109	116



Surrogate Control Limits

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

QUALITY CONTROL REPORT

Work Order	: ES1327430	Page	: 1 of 11
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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 18-DEC-2013
Sampler	: JG	No. of samples received	: 8
Order number	: 0224198	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



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
Phalak Inthaksone

Position

Senior Spectroscopist
Senior Organic Chemist
Laboratory Manager - Organics

Accreditation Category

Sydney Inorganics
Sydney Organics
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.

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 (%)
EA055: Moisture Content (QC Lot: 3214377)									
ES1327301-026	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.0	7.7	43.6	0% - 50%
ES1327397-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.5	13.6	0.8	0% - 50%
EA055: Moisture Content (QC Lot: 3214378)									
ES1327430-006	LB_MW10_0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.6	13.0	3.3	0% - 50%
ES1327433-022	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	18.5	17.8	4.2	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 3216120)									
ES1327422-032	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	70	90	25.4	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	10	33.3	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	20	9	79.6	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	9	14.1	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	57	64	11.6	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	10	6	37.5	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		
ES1327430-002	LB_MW06_0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	80	100	24.3	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	26	6.8	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	12	17	32.3	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	13	14	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	21	20	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	18	20	9.8	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	67	84	22.4	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	56	57	2.1	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	44	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		



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 (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216121)									
ES1327422-032	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327430-002	LB_MW06_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3213773)									
ES1327422-001	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
ES1327422-024	Anonymous	EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		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		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213773)									
ES1327422-001	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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213773) - continued									
ES1327422-001	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
ES1327422-024	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213532)									
ES1327368-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327430-008	LB_MW12_0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213772)									
ES1327422-001	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
ES1327422-024	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213532)									
ES1327368-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1327430-008	LB_MW12_0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213772)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213772) - continued										
ES1327422-001	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	
ES1327422-024	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	
EP080: BTEXN (QC Lot: 3213532)										
ES1327368-001	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	
ES1327430-008	LB_MW12_0.5	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			



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	
EG005T: Total Metals by ICP-AES (QCLot: 3216120)									
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	104	83	129	
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	105	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	105	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	104	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	111	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	112	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	106	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	109	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	108	81	133	
EG005T: Thallium	7440-28-0	5	mg/kg	<5	5.96 mg/kg	87.3	70	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	93.8	66	112	
EP075(SIM)A: Phenolic Compounds (QCLot: 3213773)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	82.2	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	82.4	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	81.0	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	80.8	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	91.9	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	78.2	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	97.4	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	86.6	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	80.6	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	91.3	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	21.0	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213773)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	94.8	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	96.4	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	91.7	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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213773) - continued									
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	93.9	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	94.3	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	93.6	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	95.0	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	95.1	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	95.2	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	96.7	81	123	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	89.2	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	91.6	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	85.2	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	# 70.7	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	72.7	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	73.5	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213532)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	98.0	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213772)									
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	105	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	89.3	64	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213532)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	100	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213772)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	104	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	71.3	63	131	
EP080: BTEXN (QCLot: 3213532)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	87.6	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	98.0	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	98.2	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	95.1	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	100	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	88.6	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			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 3216120)							
ES1327422-032	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	109	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	111	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	111	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	109	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	108	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	110	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	108	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)							
ES1327422-032	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	96.6	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3213773)							
ES1327422-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	82.6	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.7	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	84.6	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	88.8	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	21.4	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213773)							
ES1327422-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.6	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.4	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213532)							
ES1327368-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	102	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213772)							
ES1327422-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	83.6	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	79.7	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	64.8	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213532)							
ES1327368-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	102	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213772)							
ES1327422-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	104	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.0	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	53.2	52	132
EP080: BTEXN (QCLot: 3213532)							
ES1327368-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	82.5	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	87.5	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	92.4	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	91.1	70	130
				106-42-3			



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
EP080: BTEXN (QCLot: 3213532) - continued							
ES1327368-001	Anonymous	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.7	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	82.3	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 Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213532)											
ES1327368-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	102	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213532)											
ES1327368-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	102	----	70	130	----	----	
EP080: BTEXN (QCLot: 3213532)											
ES1327368-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	82.5	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	87.5	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	92.4	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	91.1	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.7	----	70	130	----	----	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	82.3	----	70	130	----	----		
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213772)											
ES1327422-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	83.6	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	79.7	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	64.8	----	52	132	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213772)											
ES1327422-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	104	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.0	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	53.2	----	52	132	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3213773)											
ES1327422-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	82.6	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.7	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	84.6	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	88.8	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	21.4	----	20	130	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213773)											
ES1327422-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.6	----	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213773) - continued										
ES1327422-001	Anonymous	EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.4	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3216120)										
ES1327422-032	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	109	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	111	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	111	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	109	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	108	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	110	----	70	130	----	----
EG005T: Zinc	7440-66-6	125 mg/kg	108	----	70	130	----	----		
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)										
ES1327422-032	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	96.6	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327430	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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 18-DEC-2013
Sampler	: JG	No. of samples received	: 8
Order number	: 0224198	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	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved (EA055-103) LB_MW06_0.5, LB_MW08_0.1, LB_MW12_0.5	LB_MW07_0.1, LB_MW10_0.5	10-DEC-2013	----	----	----	16-DEC-2013	24-DEC-2013	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) LB_MW06_0.5, LB_MW08_0.1, LB_MW12_0.5	LB_MW07_0.1, LB_MW10_0.5	10-DEC-2013	17-DEC-2013	08-JUN-2014	✓	17-DEC-2013	08-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) LB_MW06_0.5, LB_MW08_0.1, LB_MW12_0.5	LB_MW07_0.1, LB_MW10_0.5	10-DEC-2013	17-DEC-2013	07-JAN-2014	✓	18-DEC-2013	07-JAN-2014	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Soil Glass Jar - Unpreserved (EP071) LB_MW06_0.5, LB_MW08_0.1, LB_MW12_0.5	LB_MW07_0.1, LB_MW10_0.5	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM)) LB_MW06_0.5, LB_MW08_0.1, LB_MW12_0.5	LB_MW07_0.1, LB_MW10_0.5	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) LB_MW06_0.5, LB_MW08_0.1, LB_MW12_0.5	LB_MW07_0.1, LB_MW10_0.5	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	17-DEC-2013	25-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	
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) LB_MW06_0.5, LB_MW08_0.1, LB_MW12_0.5	LB_MW07_0.1, LB_MW10_0.5	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	16-DEC-2013	24-DEC-2013	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Soil Glass Jar - Unpreserved (EP080) LB_MW06_0.5, LB_MW08_0.1, LB_MW12_0.5	LB_MW07_0.1, LB_MW10_0.5	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	16-DEC-2013	24-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	
Analytical Methods							
Laboratory Duplicates (DUP)							
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
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	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
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	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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
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	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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
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	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	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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	3836291-007	----	Indeno(1.2.3.cd)pyrene	193-39-5	70.7 %	71-113%	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

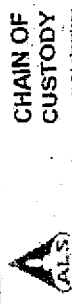
This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- 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
Please tick →

CLIENT: ERM
OFFICE: Sydney
PROJECT: Project Sydney
ORDER NUMBER: 0284198
PROJECT MANAGER: J. Ferling
SAMPLER: T. Armon
COC emailed to ALS? (YES / NO)
Email Reports to (with default to PM if no other addresses are listed):
Email Invoice to (with default to PM if no other addresses are listed):

TURNAROUND REQUIREMENTS:
 Standard TAT (List due date):
 Non Standard or urgent TAT (List due date): **48hrs TAT**

FOR LABORATORY USE ONLY (Circle):
COC SEQUENCE NUMBER (Circle)
COC: 1, 2, 3, 4, 5, 6, 7
DATE/TIME: 13/12/13 1645

RECEIVED BY: T. ARMANI
DATE/TIME: 11-12-13/0750

RECEIVED BY: [Signature]
DATE/TIME: 13/12/13 1700

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE ID	DATE / TIME	MATRIX	CONTAINER INFORMATION		ANALYSIS REQUIRED (including SUITES (N0). Scan Codes must be listed to extract suite price) Where Mandate is required, specify Total (additional tests required) or Observed (add if listed below)	Additional Information
				TYPE & PRESERVATIVE (codes below)	TOTAL CONTAINERS		
	10-MW1 0.1	9/12/13	SOIL		1	17 Metals (As, Ba, Cd, Cr, Cu, Ni, Pb, Zn, Hg), 10-TRHICs, PAH, 9-C4/8TRHIC, Phenols, VOC Target Scan, PCB, pH (1:5), Exchangeable Cations (ED07), PFOs/PFOA, Asbestos (Absence/Presence), Particle Sizing to 75um (Sieve), Organic Matter plus Carbon (EPO4)	
	20-MW11 0.1					X	
	20-SB05-0.1					X	
	20-MW05 0.1					X	
	16-MW09-0.1					X	
	20-MW17-0.1					X	
	16-MW15 0.1					X	
	16-MW11-0.1					X	
	16-MW14 0.1					X	
	16-MW13 0.1					X	
	16-MW11-0.1					X	
	20-MW13-0.1					X	

Water Contaminants: P = Unpreserved Plastic; N = Nitric Preserved Plastic; CHC = Nitric Preserved Choc; SH = Sodium Hydroxide Preserved; M = Mercury Preserved Plastic; AC = Amber Glass Unpreserved; AP = Amber Glass Preserved Plastic; V = VOA Volatile Organics; VB = VOA Volatile Organics Preserved; VS = VOA Volatile Organics Preserved; AV = Airtight Unpreserved; AVP = Airtight Preserved; H = HCl preserved Plastic; H5 = HCl preserved Specimen bottle; S0 = Soluble Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Stamp Bottle; ASS = Focusing Dish for Acid Sulphate Soil.

Subcontracted Lab / Split Work: Ashbaker's / H&E
Organised By / Date: [Signature] / [Date]
Relinquished By / Date: [Signature] / [Date]
Common Courier: [Signature] / [Date]
WONC PO / Internal Sheet: [Signature] / [Date]

Environmental Division
Sydney
Work Order
ES1327433

Barcode: [Barcode]
Telephone: +61-2-8784 8555



CHAIN OF CUSTODY
ALS Laboratory
please link →

4850 S. Broadway, Suite 100
Denver, CO 80202
Phone: (303) 752-1177
Fax: (303) 752-1178
Email: info@als.com
www.als.com

Turnaround Requirements:
Standard TAT may not apply for some tests e.g. Ultra Trace Metals
ALS Quote No.: SY18413

CLIENT:
OFFICE:
PROJECT: Project Symphony
ORDER NUMBER:
PROJECT MANAGER:
SAMPLER:
CONTACT PH:
SAMPLER MOBILE:
EDD FORMAT (for default):
COG emailed to ALS? (YES / NO):
Email Reports to (with default to PM if no other addresses are listed):
Email Invoices to (with default to PM if no other addresses are listed):

TURNAROUND REQUIREMENTS:
 Standard TAT (List due date)
 Non Standard or urgent TAT (List due date): 48 hr TAT

custody Seal Intact: N/A
Free ice / frozen ice packs present upon receipt? Yes
Random Sample Temperature on Receipt: °C

COG SEQUENCE NUMBER (Circle)
COC: 1 2 3 4 5 6 7
RCS: 1 2 3 4 5 6 7

RECEIVED BY:
DATE/TIME: 13/12/13 17:03

SITE: DAYSWATER / LIDDELL
RECEIVED BY:
DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (as per below)	CONTAINER INFORMATION	ANALYSIS REQUIRED (including SUITE) (N/A. Suit Codes must be listed to attract suits etc.) <i>(When Metals are required, specify Total (unfiltered) (acid filtered) or Dissolved (acid filtered) (boiled) required.)</i>	Additional Information
13	LO-MW10-0.5	9.18.13	SOIL		TOTAL	As, Cd, Cr, Cu, Ni, Pb, Zn, Hg) 17 Metals (As, Ba, Be, Cd, Co, Cr, Cu, Mn, Ni, Pb, V, Zn, B, Mo, Tl, Se) 5-24 TRHCs-PAHs C40/BTEXN, PAHs Phenols VOC Target Scan PCB OH (1-5) Exchangeable Cations (ED07) PFOS/PFOA Asbestos (absence/presence) Particle Sizing to 75µm (Sieve) Organic Matter plus Carbon (EPO4)	Comments on likely contaminant levels, dilutions, or samples requiring special OC analysis etc.
14	LO-MW11-0.5						
15	LO-SE05-0.5						
16	LO-MW08-0.5						
17	LB-MW09-0.5						
18	LO-MW17-0.5						
19	LB-MW15-0.5						
20	LB-MW01-1.0						
21	LB-MW14-0.5						
22	LB-MW13-0.5						
23	LB-MW11-0.5						

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; CHG = Nitric Preserved HDPE; ST = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; J = Amber Glass Unpreserved Plastic
 V = VOA Vol HCl Preserved; VD = VOA Vol Selenium Displacement Preserved; VS = VOA Vol Sulfide Preserved; AV = Atrazine Unpreserved Vol SG = Sulfide Preserved; Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Plastic; SP = Sulfide Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc; A = Ammonia Preserved Bottle; EDTA Preserved Bottle; ST = Standard Bottle; ASS = Plastic Can Be Used For All Containers; U = Unpreserved Glass



CHAIN OF CUSTODY

ALS Laboratory
please tick ☐

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

FOR LABORATORY USE ONLY (tick)
Custody Seal Intact? Yes No
Free lid / frozen lid bricks present upon receipt? Yes No
Random Sample Temperature on Receipt: _____
Other comment: _____

CLIENT: _____
OFFICE: _____
PROJECT: Project Symphony
ORDER NUMBER: _____
PROJECT MANAGER: _____
SAMPLER: _____
CONTACT PH: _____
SAMPLER MOBILE: _____
EDD FORMAT (or default): _____
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): _____

COC SEQUENCE NUMBER (Circle)

COG: 1 2 3 4 5 6 7
 REC: 1 2 3 4 5 6 7

RECEIVED BY: *BY*
 DATE/TIME: *13/12/13 16:05*

RELINQUISHED BY: *KZ*
 DATE/TIME: *13/12/13 17:20*

RECEIVED BY: _____
 DATE/TIME: _____

RELINQUISHED BY: _____
 DATE/TIME: _____

ALS USE	SAMPLE ID	DATE / TIME	MATRIX	CONTAINER INFORMATION		ANALYSIS REQUIRED including SUTCS (N3. Data Codes must be listed to attract attention) Where Metals are required, specify Total (unfiltered) or Dissolved (field filtered) unless specified.	Additional Information
				TYPE & PRESERVATIVE (specify below)	TOTAL		
	IB-MW02-0.1	10.12.13	SOIL		1		
	IB-MW03-0.1				1		
	IB-MW04-1.8				4		
	IB-MW04-0.1				1		
	ROL-101813 TA				1		
	T/B BLANK				1		
	TZ SPIKE				1		
	TZ				1		
	Received Extra Sample						
	L B MW04-0.5 10-12-13				1		

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ANALYSIS REQUIRED including SUTCS (N3. Data Codes must be listed to attract attention)
 Where Metals are required, specify Total (unfiltered) or Dissolved (field filtered) unless specified.

Additional Information:
 Comments on likely contaminants, elements, or samples requiring specific GC analysis etc.
TRM/BTEX/Metals
TRM/BTEX
TRM/BTEX

Water Container Codes: U = Unpreserved Plastic; N = Nitric Preserved Plastic; DIC = Nitric Preserved DIC; ST = Selenium Preserved Plastic; S = Selenium Preserved Plastic; AL = Amber Glass Unpreserved; AV = Amalgam Unpreserved Plastic; V = VOA Vol HCl Preserved; VB = VOA Vol Selenium Preserved; VS = VOA Vol Selenium Preserved; NS = VOA Vol Selenium Preserved; NS-SS = Sulfide Preserved Amber Glass; H = HCl Preserved Plastic; H5 = HCl Preserved Plastic; SP = Sulfide Preserved Plastic; F = Ferric Chloride Preserved Glass; E = EDTA Preserved Plastic; E-1 = Unpreserved Glass

NIR

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : ES1327433

<p>Client : ENVIRO RESOURCES MANAGEMENT</p> <p>Contact : MR JOSEPH FERRING</p> <p>Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</p>	<p>Laboratory : Environmental Division Sydney</p> <p>Contact : Barbara Hanna</p> <p>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</p>
---	--

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

<p>Project : Project Symphony</p> <p>Order number : 0224193</p> <p>C-O-C number : ----</p> <p>Site : LIDDELL</p> <p>Sampler : AR</p>	<p>Page : 1 of 4</p> <p>Quote number : ES2013ENVRES0369 (SY/794/13)</p> <p>QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement</p>
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Dates

<p>Date Samples Received : 13-DEC-2013</p> <p>Client Requested Due Date : 18-DEC-2013</p>	<p>Issue Date : 16-DEC-2013 10:23</p> <p>Scheduled Reporting Date : 18-DEC-2013</p>
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Delivery Details

<p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 1 HARD</p> <p>Security Seal : Intact.</p>	<p>Temperature : 6.8°C SYD - Ice present</p> <p>No. of samples received : 30</p> <p>No. of samples analysed : 16</p>
--	---

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 subcontracted to ASET.
- **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 LO_MW05_0.1 and LB_MW02_0.1 have not been received and received extra LB_MW04_0.5 and placed on hold, Please confirm**
- 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.



Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - S-24 TRH/BTEX/PAH + Phenols
ES1327433-013	09-DEC-2013 15:00	LO_MW10_0.5	✓
ES1327433-014	09-DEC-2013 15:00	LO_MW11_0.5	✓
ES1327433-015	09-DEC-2013 15:00	LO_SB05_0.5	✓
ES1327433-016	09-DEC-2013 15:00	LO_MW08_0.5	✓
ES1327433-017	09-DEC-2013 15:00	LB_MW09_0.5	✓
ES1327433-018	09-DEC-2013 15:00	LO_MW17_0.5	✓
ES1327433-019	09-DEC-2013 15:00	LB_MW15_0.5	✓
ES1327433-020	09-DEC-2013 15:00	LB_MW01_1.0	✓
ES1327433-021	09-DEC-2013 15:00	LB_MW14_0.5	✓
ES1327433-022	09-DEC-2013 15:00	LB_MW13_0.5	✓
ES1327433-023	09-DEC-2013 15:00	LB_MW11_0.5	✓
ES1327433-026	10-DEC-2013 15:00	LB_MW04_1.8	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-02T 8 metals (Total)	WATER - W-04 TRH/BTEXN
ES1327433-028	10-DEC-2013 15:00	R01_101213_TA	✓	✓

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

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
- Attachment - Report (SUBCO)	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 : ES1327433 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : Project Symphony Order number : 0224193 C-O-C number : ---- Sampler : AR Site : LIDDELL Quote number : SY/794/13	Page : 1 of 20 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 13-DEC-2013 Issue Date : 19-DEC-2013 No. of samples received : 30 No. of samples analysed : 16
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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
Phalak Inthaksono	Laboratory Manager - Organics	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.**
- **EP231: PFOA & PFOS results are reported as an aggregate of linear and branched isomers.**



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW10_0.5	LO_MW11_0.5	LO_SB05_0.5	LO_MW08_0.5	LB_MW09_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-013	ES1327433-014	ES1327433-015	ES1327433-016	ES1327433-017
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	16.1	18.5	21.2	21.9	16.3
EG005T: Total Metals by ICP-AES								
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	----	----	----	----	6
Manganese	7439-96-5	5	mg/kg	----	----	----	----	64
Molybdenum	7439-98-7	2	mg/kg	----	----	----	----	<2
Selenium	7782-49-2	5	mg/kg	----	----	----	----	<5
Vanadium	7440-62-2	5	mg/kg	----	----	----	----	28
Thallium	7440-28-0	5	mg/kg	----	----	----	----	<5
Arsenic	7440-38-2	5	mg/kg	14	8	8	9	12
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	23	30	21	18	17
Copper	7440-50-8	5	mg/kg	16	12	<5	8	14
Lead	7439-92-1	5	mg/kg	19	12	11	16	14
Nickel	7440-02-0	2	mg/kg	14	22	6	10	17
Zinc	7440-66-6	5	mg/kg	42	41	15	31	68
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----
EP074B: Oxygenated Compounds								



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW10_0.5	LO_MW11_0.5	LO_SB05_0.5	LO_MW08_0.5	LB_MW09_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-013	ES1327433-014	ES1327433-015	ES1327433-016	ES1327433-017
EP074B: Oxygenated Compounds - Continued								
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	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
EP074D: Fumigants								
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	----
EP074E: Halogenated Aliphatic Compounds								
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	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW10_0.5	LO_MW11_0.5	LO_SB05_0.5	LO_MW08_0.5	LB_MW09_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-013	ES1327433-014	ES1327433-015	ES1327433-016	ES1327433-017
EP074E: Halogenated Aliphatic Compounds - Continued								
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	----
EP074F: Halogenated Aromatic Compounds								
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	----
EP074G: Trihalomethanes								
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	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	----
EP075(SIM)A: Phenolic Compounds								
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

				LO_MW10_0.5	LO_MW11_0.5	LO_SB05_0.5	LO_MW08_0.5	LB_MW09_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-013	ES1327433-014	ES1327433-015	ES1327433-016	ES1327433-017
EP075(SIM)A: Phenolic Compounds - Continued								
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								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW10_0.5	LO_MW11_0.5	LO_SB05_0.5	LO_MW08_0.5	LB_MW09_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-013	ES1327433-014	ES1327433-015	ES1327433-016	ES1327433-017
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
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
EP080: BTEXN								
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
EP231: Perfluorinated Compounds								
PFOS	1763-23-1	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	----
PFOA	335-67-1	0.0005	mg/kg	<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	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	74.2	78.8	88.0	83.0	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	82.4	88.4	87.1	90.1	----
Toluene-D8	2037-26-5	0.1	%	85.0	90.4	87.4	90.9	----
4-Bromofluorobenzene	460-00-4	0.1	%	91.7	98.7	93.1	96.3	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	109	103	103	98.0	98.4
2-Chlorophenol-D4	93951-73-6	0.1	%	107	102	102	96.6	96.3
2,4,6-Tribromophenol	118-79-6	0.1	%	69.5	69.3	62.1	63.0	61.8
EP075(SIM)T: PAH Surrogates								



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LO_MW10_0.5	LO_MW11_0.5	LO_SB05_0.5	LO_MW08_0.5	LB_MW09_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
				ES1327433-013	ES1327433-014	ES1327433-015	ES1327433-016	ES1327433-017
Compound	CAS Number	LOR	Unit					
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	0.1	%	108	103	102	91.8	98.7
Anthracene-d10	1719-06-8	0.1	%	93.5	95.5	84.2	81.5	90.9
4-Terphenyl-d14	1718-51-0	0.1	%	78.0	77.5	74.1	72.1	72.9
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	92.9	99.4	98.0	101	95.0
Toluene-D8	2037-26-5	0.1	%	97.1	104	99.7	104	98.2
4-Bromofluorobenzene	460-00-4	0.1	%	94.4	101	95.6	98.7	92.4



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW17_0.5	LB_MW15_0.5	LB_MW01_1.0	LB_MW14_0.5	LB_MW13_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-018	ES1327433-019	ES1327433-020	ES1327433-021	ES1327433-022
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	16.3	16.6	19.3	12.0	18.5
EG005T: Total Metals by ICP-AES								
Barium	7440-39-3	10	mg/kg	----	50	140	80	170
Beryllium	7440-41-7	1	mg/kg	----	<1	2	<1	<1
Boron	7440-42-8	50	mg/kg	----	<50	<50	<50	<50
Cobalt	7440-48-4	2	mg/kg	----	5	20	5	4
Manganese	7439-96-5	5	mg/kg	----	150	214	187	18
Molybdenum	7439-98-7	2	mg/kg	----	<2	<2	<2	<2
Selenium	7782-49-2	5	mg/kg	----	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	----	24	35	32	59
Thallium	7440-28-0	5	mg/kg	----	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	9	7	10	11	19
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	10	14	12	20
Copper	7440-50-8	5	mg/kg	32	7	20	6	<5
Lead	7439-92-1	5	mg/kg	16	10	22	11	11
Nickel	7440-02-0	2	mg/kg	10	13	31	10	6
Zinc	7440-66-6	5	mg/kg	53	30	78	32	17
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----	----	----	----
EP074B: Oxygenated Compounds								



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW17_0.5	LB_MW15_0.5	LB_MW01_1.0	LB_MW14_0.5	LB_MW13_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-018	ES1327433-019	ES1327433-020	ES1327433-021	ES1327433-022
EP074B: Oxygenated Compounds - Continued								
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	----	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	----	----	----	----
EP074D: Fumigants								
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	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								
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	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW17_0.5	LB_MW15_0.5	LB_MW01_1.0	LB_MW14_0.5	LB_MW13_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-018	ES1327433-019	ES1327433-020	ES1327433-021	ES1327433-022
EP074E: Halogenated Aliphatic Compounds - Continued								
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	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
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	----	----	----	----
EP074G: Trihalomethanes								
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	----	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	----	----	----	----
EP075(SIM)A: Phenolic Compounds								
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

				LO_MW17_0.5	LB_MW15_0.5	LB_MW01_1.0	LB_MW14_0.5	LB_MW13_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-018	ES1327433-019	ES1327433-020	ES1327433-021	ES1327433-022
EP075(SIM)A: Phenolic Compounds - Continued								
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								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW17_0.5	LB_MW15_0.5	LB_MW01_1.0	LB_MW14_0.5	LB_MW13_0.5
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-018	ES1327433-019	ES1327433-020	ES1327433-021	ES1327433-022
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
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
EP080: BTEXN								
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
EP231: Perfluorinated Compounds								
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	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	85.4	----	----	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	84.8	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	84.6	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	90.7	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	107	101	99.6	102	100
2-Chlorophenol-D4	93951-73-6	0.1	%	108	95.3	93.3	99.2	96.0
2,4,6-Tribromophenol	118-79-6	0.1	%	66.2	64.0	62.1	60.6	59.2
EP075(SIM)T: PAH Surrogates								



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sample ID	LO_MW17_0.5	LB_MW15_0.5	LB_MW01_1.0	LB_MW14_0.5	LB_MW13_0.5
Client sampling date / time	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	ES1327433-018	ES1327433-019	ES1327433-020	ES1327433-021	ES1327433-022

Compound	CAS Number	LOR	Unit	ES1327433-018	ES1327433-019	ES1327433-020	ES1327433-021	ES1327433-022
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	0.1	%	105	97.2	97.5	102	98.6
Anthracene-d10	1719-06-8	0.1	%	95.3	84.5	89.3	93.4	90.0
4-Terphenyl-d14	1718-51-0	0.1	%	78.8	71.6	74.0	77.0	73.0
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	95.6	92.2	107	105	109
Toluene-D8	2037-26-5	0.1	%	96.5	85.4	97.1	92.5	98.8
4-Bromofluorobenzene	460-00-4	0.1	%	92.5	99.1	117	112	117



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LB_MW11_0.5	LB_MW04_1.8	T/BLANK	T/SPIKE	TSC
				09-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-023	ES1327433-026	ES1327433-029	ES1327433-030	ES1327433-031
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	16.4	12.8	----	----	----
EG005T: Total Metals by ICP-AES								
Barium	7440-39-3	10	mg/kg	100	170	----	----	----
Beryllium	7440-41-7	1	mg/kg	1	<1	----	----	----
Boron	7440-42-8	50	mg/kg	<50	<50	----	----	----
Cobalt	7440-48-4	2	mg/kg	22	5	----	----	----
Manganese	7439-96-5	5	mg/kg	401	87	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	<5	----	----	----
Vanadium	7440-62-2	5	mg/kg	25	22	----	----	----
Thallium	7440-28-0	5	mg/kg	<5	<5	----	----	----
Arsenic	7440-38-2	5	mg/kg	11	12	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	17	14	----	----	----
Copper	7440-50-8	5	mg/kg	22	8	----	----	----
Lead	7439-92-1	5	mg/kg	114	14	----	----	----
Nickel	7440-02-0	2	mg/kg	26	11	----	----	----
Zinc	7440-66-6	5	mg/kg	719	59	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP075(SIM)A: Phenolic Compounds								
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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LB_MW11_0.5	LB_MW04_1.8	T/BLANK	T/SPIKE	TSC
				09-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-023	ES1327433-026	ES1327433-029	ES1327433-030	ES1327433-031
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
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	0.6	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	76	76
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	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	88	87
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	52	52
>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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LB_MW11_0.5	LB_MW04_1.8	T/BLANK	T/SPIKE	TSC
				09-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00	10-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327433-023	ES1327433-026	ES1327433-029	ES1327433-030	ES1327433-031
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
^ >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	<0.2	0.7	0.7
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	17.7	17.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	2.2	2.2
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	11.0	10.6
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	4.5	4.3
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	36.1	35.3
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	15.5	14.9
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	100	102	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	96.5	105	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	61.9	61.7	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	97.1	100	----	----	----
Anthracene-d10	1719-06-8	0.1	%	89.4	94.6	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	74.9	76.2	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	110	112	113	106	107
Toluene-D8	2037-26-5	0.1	%	95.2	91.4	95.9	92.8	91.9
4-Bromofluorobenzene	460-00-4	0.1	%	111	109	122	116	118



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_101213_TA

Client sampling date / time

10-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327433-028	---	---	---	---
----------	------------	-----	------	---------------	-----	-----	-----	-----

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	---	---	---	---
---------	-----------	--------	------	---------	-----	-----	-----	-----

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	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_101213_TA

Client sampling date / time

10-DEC-2013 15:00

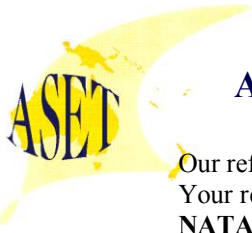
Compound	CAS Number	LOR	Unit	ES1327433-028	---	---	---	---
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	94.3	---	---	---	---
Toluene-D8	2037-26-5	0.1	%	84.8	---	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	89.3	---	---	---	---



Surrogate Control Limits

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

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128



Our ref : ASET36620/ 39800 / 1 - 13

Your ref : ES1327433

NATA Accreditation No: 14484

19 December 2013

Australian Laboratory Services Pty Ltd
277, Woodpark Road
Smithfield
NSW 2164

Attn: Ms Nanthini Coilparampil

Dear Nanthini

Asbestos Identification

This report presents the results of thirteen samples, forwarded by Australian Laboratory Services Pty Ltd on 19 December 2013, for analysis for asbestos.

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

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

3. Results : **Sample No. 1. ASET36620 / 39800 / 1. ES1327433 - 001 - LO - MW1 - 0.1.**
Approx dimensions 10.0 cm x 8.0 cm x 4.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.

Sample No. 2. ASET36620 / 39800 / 2. ES1327433 - 002 - LO - MW11 - 0.1.

Approx dimensions 12.0 cm x 10.0 cm x 6.0 cm

The sample consisted of a mixture of clayish soil, stones and plant matter.

No asbestos detected.

Sample No. 3. ASET36620 / 39800 / 3. ES1327433 - 003 - LO - SB05 - 0.1.

Approx dimensions 12.0 cm x 10.0 cm x 5.5 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.

Sample No. 4. ASET36620 / 39800 / 4. ES1327433 - 005 - LB - MW09 - 0.1.

Approx dimensions 12.0 cm x 10.0 cm x 5.65 cm

The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.



Sample No. 5. ASET36620 / 39800 / 5. ES1327433 - 006 - LO - MW17 - 0.1.
Approx dimensions 10.0 cm x 12.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 6. ASET36620 / 39800 / 6. ES1327433 - 007 - LB - MW15 - 0.1.
Approx dimensions 10.0 cm x 10.0 cm x 5.0 cm
The sample consisted of a mixture of reddish brown clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 7. ASET36620 / 39800 / 7. ES1327433 - 008 - LO - MW1 - 0.1.
Approx dimensions 8.0 cm x 7.5 cm x 5.65 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster and cement.
No asbestos detected.

Sample No. 8. ASET36620 / 39800 / 8. ES1327433 - 009 - LB - MW14 - 0.1.
Approx dimensions 10.0 cm x 7.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 9. ASET36620 / 39800 / 9. ES1327433 - 010 - LB - MW13 - 0.1.
Approx dimensions 10.0 cm x 7.0 cm x 4.75 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 10. ASET36620 / 39800 / 10. ES1327433 - 011 - LB - MW13 - 0.1.
Approx dimensions 10.0 cm x 8.0 cm x 5.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 11. ASET36620 / 39800 / 11. ES1327433 - 012 - LO - MW13 - 0.1.
Approx dimensions 10.0 cm x 8.5 cm x 5.65 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 12. ASET36620 / 39800 / 12. ES1327433 - 024 - LB - MW03 - 0.1.
Approx dimensions 10.0 cm x 7.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster and brick like material.
No asbestos detected.

The logo for ASET (Asbestos Sampling and Testing) features the letters 'ASET' in a bold, blue, serif font. The letters are set against a yellow background that is shaped like a stylized map of Sri Lanka.

Sample No. 13. ASET36620 / 39800 / 13. ES1327433 - 022 - LB - MW04 - 0.1.
Approx dimensions 120 cm x 12.0 cm x 5.5 cm

The sample consisted of a mixture of reddish brown clayish soil, stones, plant matter and fragments of plaster.

No asbestos detected.

Analysed and reported by,

A handwritten signature in black ink, appearing to read 'Mahen De Silva', is written over a horizontal line.

**Mahen De Silva. BSc, MSc, Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Identifier.
Approved Signatory**



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

QUALITY CONTROL REPORT

Work Order	: ES1327433	Page	: 1 of 20
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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 19-DEC-2013
Sampler	: AR	No. of samples received	: 30
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



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
Phalak Inthaksone

Position

Senior Spectroscopist
Laboratory Manager - Organics

Accreditation Category

Sydney Inorganics
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.

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 (%)
EA055: Moisture Content (QC Lot: 3214378)									
ES1327430-006	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.6	13.0	3.3	0% - 50%
ES1327433-022	LB_MW13_0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	18.5	17.8	4.2	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 3216123)									
ES1327433-013	LO_MW10_0.5	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	210	180	15.7	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	23	29	23.3	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	5	3	61.9	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	3	49.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	14	8	53.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	14	34	85.2	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	15	6.9	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	17	9.9	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	53	43	20.3	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	36	58	46.1	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	42	36	15.4	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		
ES1327433-023	LB_MW11_0.5	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	100	0.0	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	17	22	22.8	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	22	32	37.8	0% - 50%
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	26	32	22.5	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	12	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	21	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	114	101	12.0	0% - 20%
		EG005T: Manganese	7439-96-5	5	mg/kg	401	456	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	25	25	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	719	682	5.4	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		
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216124)									



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 (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216124) - continued									
ES1327433-013	LO_MW10_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327433-023	LB_MW11_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3214255)									
ES1327433-013	LO_MW10_0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3214374)									
ES1327433-013	LO_MW10_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
EP074B: Oxygenated Compounds (QC Lot: 3214374)									
ES1327433-013	LO_MW10_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
EP074C: Sulfonated Compounds (QC Lot: 3214374)									
ES1327433-013	LO_MW10_0.5	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074D: Fumigants (QC Lot: 3214374)									
ES1327433-013	LO_MW10_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
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3214374)									
ES1327433-013	LO_MW10_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



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3214374) - continued									
ES1327433-013	LO_MW10_0.5	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		
EP074F: Halogenated Aromatic Compounds (QC Lot: 3214374)									
ES1327433-013	LO_MW10_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
EP074G: Trihalomethanes (QC Lot: 3214374)									
ES1327433-013	LO_MW10_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
EP074H: Naphthalene (QC Lot: 3214374)									
ES1327433-013	LO_MW10_0.5	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3214187)									
ES1327433-013	LO_MW10_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



Sub-Matrix: SOIL

				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
EP075(SIM)A: Phenolic Compounds (QC Lot: 3214187) - continued											
ES1327433-013	LO_MW10_0.5	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		
ES1327433-023	LB_MW11_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		
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3214187)									
ES1327433-013	LO_MW10_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		
		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		
		ES1327433-023	LB_MW11_0.5	EP075(SIM): Naphthalene	91-20-3	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 (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3214187) - continued									
ES1327433-023	LB_MW11_0.5	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		
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3214186)									
ES1327433-013	LO_MW10_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
ES1327433-023	LB_MW11_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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3214373)									
ES1327433-013	LO_MW10_0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327433-023	LB_MW11_0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3214186)									
ES1327433-013	LO_MW10_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
ES1327433-023	LB_MW11_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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3214373)									
ES1327433-013	LO_MW10_0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1327433-023	LB_MW11_0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 3214373)									
ES1327433-013	LO_MW10_0.5	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 (%)
EP080: BTEXN (QC Lot: 3214373) - continued									
ES1327433-013	LO_MW10_0.5	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
		ES1327433-023	LB_MW11_0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2
		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
EP231: Perfluorinated Compounds (QC Lot: 3215778)									
ES1326974-013	Anonymous	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
ES1327422-036	Anonymous	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									
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 (%)
EG020T: Total Metals by ICP-MS (QC Lot: 3215707)									
ES1326945-002	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	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.065	0.065	0.0	0% - 20%
		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	0.013	0.013	0.0	No Limit
ES1327207-003	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	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.073	0.070	5.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.052	0.046	10.2	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3214176)									
ES1327422-010	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213903)									



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 (%)	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213903) - continued										
ES1327431-001	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	
ES1327435-006	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	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3214570)										
ES1327000-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit	
ES1327000-009	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213903)										
ES1327431-001	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	
ES1327435-006	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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3214570)										
ES1327000-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit	
ES1327000-009	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit	
EP080: BTEXN (QC Lot: 3214570)										
ES1327000-001	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	
ES1327000-009	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	
EG005T: Total Metals by ICP-AES (QCLot: 3216123)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	116	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	123	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	108	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	109	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	109	81	123	
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	117	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	112	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	118	84	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	119	75	131	
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	117	95	129	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	119	81	133	
EG005T: Thallium	7440-28-0	5	mg/kg	<5	5.96 mg/kg	82.7	70	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216124)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	91.5	66	112	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3214255)									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	88.0	57.4	117	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3214374)									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	79.8	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	82.5	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	75.8	63	129	
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	78.2	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	78.5	64	130	
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	79.3	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	75.6	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	76.6	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	77.4	61	131	
EP074B: Oxygenated Compounds (QCLot: 3214374)									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	36.9	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	
EP074B: Oxygenated Compounds (QCLot: 3214374) - continued									
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	116	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	95.9	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	97.6	54	136	
		5	mg/kg	<5	----	----	----	----	
EP074C: Sulfonated Compounds (QCLot: 3214374)									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	69.8	54	126	
EP074D: Fumigants (QCLot: 3214374)									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	79.9	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	87.3	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	85.4	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	88.8	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	89.2	66	126	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3214374)									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	60.2	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	63.2	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	116	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	69.6	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	81.4	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	91.4	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	79.5	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	74.5	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	78.9	62	130	
EP074: 1,1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	86.5	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	83.8	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	85.7	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	87.1	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	93.1	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	95.0	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	85.9	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	92.4	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	89.1	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	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3214374) - continued									
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	91.6	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	85.0	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	88.3	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	87.8	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	82.7	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	93.8	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	96.4	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	91.2	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	102	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	74.2	48	136	
EP074F: Halogenated Aromatic Compounds (QCLot: 3214374)									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	85.2	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	83.7	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	80.0	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	80.8	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	82.2	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	81.8	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	83.2	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	76.7	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	79.1	60	132	
EP074G: Trihalomethanes (QCLot: 3214374)									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	92.8	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	89.1	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	92.5	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	102	60	126	
EP074H: Naphthalene (QCLot: 3214374)									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	87.5	63	133	
		5	mg/kg	<5	----	----	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3214187)									
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	98.0	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	94.5	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	98.4	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	81.1	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	99.4	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	96.2	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	101	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	91.8	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	
EP075(SIM)A: Phenolic Compounds (QCLot: 3214187) - continued									
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	88.1	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	88.3	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	27.6	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214187)									
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	114	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	108	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	114	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	102	79	123	
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	105	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	106	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	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	97.2	76	122	
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	97.5	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	102	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	88.0	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214186)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	100	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	99.0	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	91.4	64	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214373)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	88.2	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214186)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	102	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	95.2	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	85.3	63	131	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214373)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	92.4	68.4	128	
EP080: BTEXN (QCLot: 3214373)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	77.7	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	86.1	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	90.0	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 (%)	Recovery Limits (%)		
								LCS	Low	High
EP080: BTEXN (QCLot: 3214373) - continued										
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	87.7	60	120		
	106-42-3									
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	87.7	60	120		
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	77.9	62	138		
EP231: Perfluorinated Compounds (QCLot: 3215778)										
EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	85.3	54	146		
EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	92.4	54	134		
EP231: 6:2 Fluorotelomer Sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	0.0125 mg/kg	129	56	138		

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report					
Method: Compound	CAS Number	LOR	Unit		Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)		
								LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 3215707)										
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	79	121		
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	106	82	114		
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	108	83	115		
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	111	83	117		
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	85	115		
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	115	83	117		
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	110	76	118		
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3214176)										
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	98.0	77	115		
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213903)										
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	88.3	59	129		
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	98.6	71	131		
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	102	62	120		
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214570)										
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	101	75	127		
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213903)										
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	91.4	58.9	131		
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	101	73.9	138		
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----		
		50	µg/L	----	1500 µg/L	104	67	127		
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214570)										
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	104	75	127		
EP080: BTEXN (QCLot: 3214570)										
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	114	70	124		
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	116	65	129		
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	110	70	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
EP080: BTEXN (QCLot: 3214570) - continued								
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	112	69	121
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	117	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	91.6	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	
EG005T: Total Metals by ICP-AES (QCLot: 3216123)							
ES1327433-013	LO_MW10_0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	107	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	108	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	108	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	103	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216124)							
ES1327433-013	LO_MW10_0.5	EG035T: Mercury	7439-97-6	5 mg/kg	93.4	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3214255)							
ES1327433-013	LO_MW10_0.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	86.4	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3214374)							
ES1327433-013	LO_MW10_0.5	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	76.3	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	95.7	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3214374)							
ES1327433-013	LO_MW10_0.5	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	99.6	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3214187)							
ES1327433-013	LO_MW10_0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	99.2	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	104	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	80.1	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.3	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	35.3	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214187)							



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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214187) - continued							
ES1327433-013	LO_MW10_0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	112	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214186)							
ES1327433-013	LO_MW10_0.5	EP071: C10 - C14 Fraction	----	640 mg/kg	82.8	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	78.8	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	63.9	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214373)							
ES1327433-013	LO_MW10_0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	101	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214186)							
ES1327433-013	LO_MW10_0.5	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	103	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	70.1	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	52.5	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214373)							
ES1327433-013	LO_MW10_0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	102	70	130
EP080: BTEXN (QCLot: 3214373)							
ES1327433-013	LO_MW10_0.5	EP080: Benzene	71-43-2	2.5 mg/kg	85.6	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	92.2	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	93.7	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	94.3	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	96.0	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	94.2	70	130
EP231: Perfluorinated Compounds (QCLot: 3215778)							
ES1326974-013	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	79.7	54	146
		EP231: PFOA	335-67-1	0.0025 mg/kg	86.7	54	134
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	78.4	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
EG020T: Total Metals by ICP-MS (QCLot: 3215707)							
ES1326945-003	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	110	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	114	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	109	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	110	70	130
		EG020A-T: Zinc	7440-66-6	1 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	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3214176)								
ES1327433-028	R01_101213_TA	EG035T: Mercury	7439-97-6	0.010 mg/L	89.2	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213903)								
ES1327431-002	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	102	74	150	
		EP071: C15 - C28 Fraction	----	300 µg/L	95.0	77	153	
		EP071: C29 - C36 Fraction	----	200 µg/L	106	67	153	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214570)								
ES1327000-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	112	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213903)								
ES1327431-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	250 µg/L	99.2	74	150	
		EP071: >C16 - C34 Fraction	----	350 µg/L	95.2	77	153	
		EP071: >C34 - C40 Fraction	----	150 µg/L	95.6	67	153	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214570)								
ES1327000-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	70	130	
EP080: BTEXN (QCLot: 3214570)								
ES1327000-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	94.5	70	130	
		EP080: Toluene	108-88-3	25 µg/L	97.4	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	98.7	70	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	99.6	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.2	70	130	
	EP080: Naphthalene	91-20-3	25 µg/L	109	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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214186)										
ES1327433-013	LO_MW10_0.5	EP071: C10 - C14 Fraction	----	640 mg/kg	82.8	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	78.8	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	63.9	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214186)										
ES1327433-013	LO_MW10_0.5	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	103	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	70.1	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	52.5	----	52	132	----	----



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								
EP075(SIM)A: Phenolic Compounds (QCLot: 3214187)											
ES1327433-013	LO_MW10_0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	99.2	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	104	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	80.1	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.3	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	35.3	----	20	130	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214187)											
ES1327433-013	LO_MW10_0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	112	----	70	130	----	----	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3214255)											
ES1327433-013	LO_MW10_0.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	86.4	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214373)											
ES1327433-013	LO_MW10_0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	101	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214373)											
ES1327433-013	LO_MW10_0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	102	----	70	130	----	----	
EP080: BTEXN (QCLot: 3214373)											
ES1327433-013	LO_MW10_0.5	EP080: Benzene	71-43-2	2.5 mg/kg	85.6	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	92.2	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	93.7	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	94.3	----	70	130	----	----	
		EP080: ortho-Xylene	106-42-3	2.5 mg/kg	96.0	----	70	130	----	----	
		EP080: Naphthalene	95-47-6	2.5 mg/kg	96.0	----	70	130	----	----	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3214374)											
ES1327433-013	LO_MW10_0.5	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	76.3	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	95.7	----	70	130	----	----	
EP074F: Halogenated Aromatic Compounds (QCLot: 3214374)											
ES1327433-013	LO_MW10_0.5	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	99.6	----	70	130	----	----	
EP231: Perfluorinated Compounds (QCLot: 3215778)											
ES1326974-013	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	79.7	----	54	146	----	----	
		EP231: PFOA	335-67-1	0.0025 mg/kg	86.7	----	54	134	----	----	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	78.4	----	56	138	----	----	
EG005T: Total Metals by ICP-AES (QCLot: 3216123)											
ES1327433-013	LO_MW10_0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	108	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	107	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	104	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	107	----	70	130	----	----	
		EG005T: Lead	7439-92-1	125 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 Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
EG005T: Total Metals by ICP-AES (QCLot: 3216123) - continued										
ES1327433-013	LO_MW10_0.5	EG005T: Nickel	7440-02-0	50 mg/kg	104	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	108	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	103	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216124)										
ES1327433-013	LO_MW10_0.5	EG035T: Mercury	7439-97-6	5 mg/kg	93.4	----	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	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213903)											
ES1327431-002	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	102	----	74	150	----	----	
		EP071: C15 - C28 Fraction	----	300 µg/L	95.0	----	77	153	----	----	
		EP071: C29 - C36 Fraction	----	200 µg/L	106	----	67	153	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213903)											
ES1327431-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	250 µg/L	99.2	----	74	150	----	----	
		EP071: >C16 - C34 Fraction	----	350 µg/L	95.2	----	77	153	----	----	
		EP071: >C34 - C40 Fraction	----	150 µg/L	95.6	----	67	153	----	----	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3214176)											
ES1327433-028	R01_101213_TA	EG035T: Mercury	7439-97-6	0.010 mg/L	89.2	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214570)											
ES1327000-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	112	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214570)											
ES1327000-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	----	70	130	----	----	
EP080: BTEXN (QCLot: 3214570)											
ES1327000-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	94.5	----	70	130	----	----	
		EP080: Toluene	108-88-3	25 µg/L	97.4	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	25 µg/L	98.7	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	99.6	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.2	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	25 µg/L	109	----	70	130	----	----	
EG020T: Total Metals by ICP-MS (QCLot: 3215707)											
ES1326945-003	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	----	70	130	----	----	
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	----	70	130	----	----	
		EG020A-T: Chromium	7440-47-3	1 mg/L	110	----	70	130	----	----	
		EG020A-T: Copper	7440-50-8	1 mg/L	114	----	70	130	----	----	
		EG020A-T: Lead	7439-92-1	1 mg/L	109	----	70	130	----	----	
		EG020A-T: Nickel	7440-02-0	1 mg/L	110	----	70	130	----	----	

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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
EG020T: Total Metals by ICP-MS (QCLot: 3215707) - continued										
ES1326945-003	Anonymous	EG020A-T: Zinc	7440-66-6	1 mg/L	110	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327433	Page	: 1 of 11
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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 19-DEC-2013
Sampler	: AR	No. of samples received	: 30
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	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved (EA055-103)								
LO_MW10_0.5, LO_SB05_0.5, LB_MW09_0.5, LB_MW15_0.5, LB_MW14_0.5, LB_MW11_0.5	LO_MW11_0.5, LO_MW08_0.5, LO_MW17_0.5, LB_MW01_1.0, LB_MW13_0.5	09-DEC-2013	----	----	----	16-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103)								
LB_MW04_1.8		10-DEC-2013	----	----	----	16-DEC-2013	24-DEC-2013	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
LO_MW10_0.5, LO_SB05_0.5, LB_MW09_0.5, LB_MW15_0.5, LB_MW14_0.5, LB_MW11_0.5	LO_MW11_0.5, LO_MW08_0.5, LO_MW17_0.5, LB_MW01_1.0, LB_MW13_0.5	09-DEC-2013	17-DEC-2013	07-JUN-2014	✓	18-DEC-2013	07-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T)								
LB_MW04_1.8		10-DEC-2013	17-DEC-2013	08-JUN-2014	✓	18-DEC-2013	08-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
LO_MW10_0.5, LO_SB05_0.5, LB_MW09_0.5, LB_MW15_0.5, LB_MW14_0.5, LB_MW11_0.5	LO_MW11_0.5, LO_MW08_0.5, LO_MW17_0.5, LB_MW01_1.0, LB_MW13_0.5	09-DEC-2013	17-DEC-2013	06-JAN-2014	✓	18-DEC-2013	06-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T)								
LB_MW04_1.8		10-DEC-2013	17-DEC-2013	07-JAN-2014	✓	18-DEC-2013	07-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	
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP071) LO_MW10_0.5, LO_SB05_0.5, LB_MW09_0.5, LB_MW15_0.5, LB_MW14_0.5, LB_MW11_0.5	LO_MW11_0.5, LO_MW08_0.5, LO_MW17_0.5, LB_MW01_1.0, LB_MW13_0.5	09-DEC-2013	16-DEC-2013	23-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) LB_MW04_1.8		10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP074D: Fumigants								
Soil Glass Jar - Unpreserved (EP074) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
EP074E: Halogenated Aliphatic Compounds								
Soil Glass Jar - Unpreserved (EP074) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
EP074F: Halogenated Aromatic Compounds								
Soil Glass Jar - Unpreserved (EP074) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-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	
EP074B: Oxygenated Compounds								
Soil Glass Jar - Unpreserved (EP074) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
EP074C: Sulfonated Compounds								
Soil Glass Jar - Unpreserved (EP074) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
EP074G: Trihalomethanes								
Soil Glass Jar - Unpreserved (EP074) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	16-DEC-2013	16-DEC-2013	✓	16-DEC-2013	16-DEC-2013	✓
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM)) LO_MW10_0.5, LO_SB05_0.5, LB_MW09_0.5, LB_MW15_0.5, LB_MW14_0.5, LB_MW11_0.5	LO_MW11_0.5, LO_MW08_0.5, LO_MW17_0.5, LB_MW01_1.0, LB_MW13_0.5	09-DEC-2013	16-DEC-2013	23-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LB_MW04_1.8		10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) LO_MW10_0.5, LO_SB05_0.5, LB_MW09_0.5, LB_MW15_0.5, LB_MW14_0.5, LB_MW11_0.5	LO_MW11_0.5, LO_MW08_0.5, LO_MW17_0.5, LB_MW01_1.0, LB_MW13_0.5	09-DEC-2013	16-DEC-2013	23-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LB_MW04_1.8		10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	17-DEC-2013	25-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	
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) LO_MW10_0.5, LO_SB05_0.5, LB_MW09_0.5, LB_MW15_0.5, LB_MW14_0.5, LB_MW11_0.5	LO_MW11_0.5, LO_MW08_0.5, LO_MW17_0.5, LB_MW01_1.0, LB_MW13_0.5	09-DEC-2013	16-DEC-2013	23-DEC-2013	✓	16-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LB_MW04_1.8, T/SPIKE,	T/BLANK, TSC	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	16-DEC-2013	24-DEC-2013	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080) LO_MW10_0.5, LO_SB05_0.5, LB_MW09_0.5, LB_MW15_0.5, LB_MW14_0.5, LB_MW11_0.5	LO_MW11_0.5, LO_MW08_0.5, LO_MW17_0.5, LB_MW01_1.0, LB_MW13_0.5	09-DEC-2013	16-DEC-2013	23-DEC-2013	✓	16-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LB_MW04_1.8, T/SPIKE,	T/BLANK, TSC	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	16-DEC-2013	24-DEC-2013	✓
EP231: Perfluorinated Compounds								
Soil Glass Jar - Unpreserved (EP231) LO_MW10_0.5, LO_SB05_0.5, LO_MW17_0.5	LO_MW11_0.5, LO_MW08_0.5	09-DEC-2013	17-DEC-2013	07-JUN-2014	✓	17-DEC-2013	26-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	
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) R01_101213_TA		10-DEC-2013	17-DEC-2013	08-JUN-2014	✓	17-DEC-2013	08-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) R01_101213_TA		10-DEC-2013	----	----	----	16-DEC-2013	07-JAN-2014	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Amber Glass Bottle - Unpreserved (EP071) R01_101213_TA		10-DEC-2013	16-DEC-2013	17-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080) R01_101213_TA		10-DEC-2013	17-DEC-2013	24-DEC-2013	✓	17-DEC-2013	24-DEC-2013	✓

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 Client : ENVIRO RESOURCES MANAGEMENT
 Project : Project Symphony



Matrix: **WATER**

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

Method <i>Container / Client Sample ID(s)</i>	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP080) R01_101213_TA	10-DEC-2013	17-DEC-2013	24-DEC-2013	✓	17-DEC-2013	24-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		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Reaular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
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	14	14.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	2	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.0	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	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	14	14.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	15	13.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	5	20.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.0	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	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	5	20.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.0	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	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	5	20.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.0	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	20	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	14	7.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	15	6.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	5	20.0	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	
Analytical Methods							
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	1	3	33.3	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 - Semivolatile Fraction	EP071	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
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	3	33.3	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	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
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	3	33.3	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	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
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	3	33.3	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	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



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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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.
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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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)
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>
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 ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
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

- 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 ->

12000-07 Environmental Protection Agency
17100-01 EPA 8160-G-02-001
17100-02 EPA 8160-G-02-002
17100-03 EPA 8160-G-02-003
17100-04 EPA 8160-G-02-004
17100-05 EPA 8160-G-02-005
17100-06 EPA 8160-G-02-006
17100-07 EPA 8160-G-02-007
17100-08 EPA 8160-G-02-008
17100-09 EPA 8160-G-02-009
17100-10 EPA 8160-G-02-010

17100-11 EPA 8160-G-02-011
17100-12 EPA 8160-G-02-012
17100-13 EPA 8160-G-02-013
17100-14 EPA 8160-G-02-014
17100-15 EPA 8160-G-02-015
17100-16 EPA 8160-G-02-016
17100-17 EPA 8160-G-02-017
17100-18 EPA 8160-G-02-018
17100-19 EPA 8160-G-02-019
17100-20 EPA 8160-G-02-020

17100-21 EPA 8160-G-02-021
17100-22 EPA 8160-G-02-022
17100-23 EPA 8160-G-02-023
17100-24 EPA 8160-G-02-024
17100-25 EPA 8160-G-02-025
17100-26 EPA 8160-G-02-026
17100-27 EPA 8160-G-02-027
17100-28 EPA 8160-G-02-028
17100-29 EPA 8160-G-02-029
17100-30 EPA 8160-G-02-030

17100-31 EPA 8160-G-02-031
17100-32 EPA 8160-G-02-032
17100-33 EPA 8160-G-02-033
17100-34 EPA 8160-G-02-034
17100-35 EPA 8160-G-02-035
17100-36 EPA 8160-G-02-036
17100-37 EPA 8160-G-02-037
17100-38 EPA 8160-G-02-038
17100-39 EPA 8160-G-02-039
17100-40 EPA 8160-G-02-040

CLIENT: ERM OFFICE: Sydney PROJECT: Project Symphony ORDER NUMBER: 0224198 PROJECT MANAGER: Joe Ferrigno SAMPLER MOBILE: Rizzotta CONTACT PH: 02 9390 2000 COC emailed to ALS? YES (NO) Email Reports to (will default to PM if no other addresses are listed): Symphony.uss@erm.com 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.: SY794113 SITE: BAYSWATER (ADELL) RELINQUISHED BY: R. Zan DATE/TIME: 10/12/13

COC SEQUENCE NUMBER (Circle):
COC: 1 2 3 4 5 6 7
OF: 1 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle):
Custody Seal Intact? Yes No N/A
Free Ice / Frozen Ice blocks present upon receipt? Yes No N/A
Random Sample Temperature on Receipt: °C

RECEIVED BY: PS DATE/TIME: 13/12/13
RELINQUISHED BY: PS DATE/TIME: 13/12/13

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

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 Metals are required, specify Total (unfiltered batch required) or Dissolved (filtered batch required).	Additional Information															
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (add as below)	refer to	TOTAL CONTAINERS	5-2 Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	17 Metals (As, Ba, Be, Cd, Cr, Cu, Ni, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se)	S-24 TRINCB-COYREXN, PAH, Phenols	VOC Target Scan	PCB	pH (1:5)	Exchangeable cations (ED07)	PFOs/PFOA	Asbestos (presence)	Particle Sizing to 75um (Sieve)	Organic Matter plus Carbon (EP04)	Comments on fully compliant levels, dilutions, or samples requiring specific GC analysis etc.	
1	LO-MW17-3.7	10.12.13	SOIL			14kg	X	X	X	X	X			X					
2	LO-MW08-2.2	-11-	-11-			-11-	X	X	X	X	X			X					

Environmental Division
Sydney
Work Order
ES1327439



Telephone : + 61-2-8784 8555

TAT

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Some PAH; V = VOA Vial Preserved; V2 = VOA Vial Solution (Bioscience) Preserved; NS = VOA Vial Solution; Z = Zinc Acetate Preserved Beads; E = EDTA Preserved Beads; ST = Stable Beads; ACS = Plastic

Amber Class: H = HCl Preserved Plastic; HG = HCl Preserved Spectralon bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : ES1327439

<p>Client : ENVIRO RESOURCES MANAGEMENT</p> <p>Contact : MR JOSEPH FERRING</p> <p>Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</p>	<p>Laboratory : Environmental Division Sydney</p> <p>Contact : Barbara Hanna</p> <p>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</p>
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<p>E-mail : joseph.ferring@erm.com</p> <p>Telephone : +61 02 8584 8888</p> <p>Facsimile : +61 02 8584 8800</p>	<p>E-mail : Barbara.Hanna@alsglobal.com</p> <p>Telephone : +61 2 8784 8555</p> <p>Facsimile : +61 2 8784 8555</p>
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<p>Project : Project Symphony</p> <p>Order number : 0224198</p> <p>C-O-C number : ----</p> <p>Site : LIDDELL</p> <p>Sampler : RO</p>	<p>Page : 1 of 2</p> <p>Quote number : ES2013ENVRES0369 (SY/794/13)</p> <p>QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement</p>
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Dates

<p>Date Samples Received : 13-DEC-2013</p> <p>Client Requested Due Date : 18-DEC-2013</p>	<p>Issue Date : 16-DEC-2013 10:12</p> <p>Scheduled Reporting Date : 18-DEC-2013</p>
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Delivery Details

<p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 1 HARD</p> <p>Security Seal : Intact.</p>	<p>Temperature : 6.8°C SYD - Ice present</p> <p>No. of samples received : 2</p> <p>No. of samples analysed : 2</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.**
- 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 - EP074 (solids) Volatile Organic Compounds	SOIL - EP231 Perfluorooxy Acids and Sulfonates by LC/MS/MS	SOIL - S-02 & Metals (incl. Digestion)	SOIL - S-24 TRH/TEXNPAH + Phenols
ES1327439-001	10-DEC-2013 15:00	LO_MW17_3.7	✓	✓	✓	✓
ES1327439-002	10-DEC-2013 15:00	LO_MW08_2.2	✓	✓	✓	✓

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

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 : ES1327439 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : Project Symphony Order number : 0224198 C-O-C number : ---- Sampler : RO Site : LIDDELL Quote number : SY/794/13	Page : 1 of 8 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 13-DEC-2013 Issue Date : 19-DEC-2013 No. of samples received : 2 No. of samples analysed : 2
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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
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	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

- **EP231: PFOA & PFOS results are reported as an aggregate of linear and branched isomers.**



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LO_MW17_3.7	LO_MW08_2.2	---	---	---
				10-DEC-2013 15:00	10-DEC-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1327439-001	ES1327439-002	---	---	---
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	---	1.0	%	12.4	16.1	---	---	---
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	7	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	<1	---	---	---
Chromium	7440-47-3	2	mg/kg	7	5	---	---	---
Copper	7440-50-8	5	mg/kg	10	8	---	---	---
Lead	7439-92-1	5	mg/kg	6	11	---	---	---
Nickel	7440-02-0	2	mg/kg	14	4	---	---	---
Zinc	7440-66-6	5	mg/kg	29	15	---	---	---
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	---	---	---
EP074A: Monocyclic Aromatic Hydrocarbons								
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	---	---	---
EP074B: Oxygenated Compounds								
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	---	---	---
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	---	---	---
EP074D: Fumigants								
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

				LO_MW17_3.7	LO_MW08_2.2	---	---	---
				10-DEC-2013 15:00	10-DEC-2013 15:00	---	---	---
				ES1327439-001	ES1327439-002	---	---	---
Compound	CAS Number	LOR	Unit					
EP074D: Fumigants - Continued								
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	---	---	---
EP074E: Halogenated Aliphatic Compounds								
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	---	---	---
EP074F: Halogenated Aromatic Compounds								
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

				LO_MW17_3.7	LO_MW08_2.2	---	---	---
				10-DEC-2013 15:00	10-DEC-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1327439-001	ES1327439-002	---	---	---
EP074F: Halogenated Aromatic Compounds - Continued								
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	---	---	---
EP074G: Trihalomethanes								
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	---	---	---
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	---	---	---
EP075(SIM)A: Phenolic Compounds								
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	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
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

				LO_MW17_3.7	LO_MW08_2.2	---	---	---
				10-DEC-2013 15:00	10-DEC-2013 15:00	---	---	---
Compound	CAS Number	LOR	Unit	ES1327439-001	ES1327439-002	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	---	---	---
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	---	---	---
EP080/071: Total Petroleum Hydrocarbons								
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	---	---	---
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	<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	---	---	---



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LO_MW17_3.7	LO_MW08_2.2	---	---	---
				10-DEC-2013 15:00	10-DEC-2013 15:00	---	---	---
				ES1327439-001	ES1327439-002	---	---	---
Compound	CAS Number	LOR	Unit					
EP080: BTEXN - Continued								
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	---	---	---
EP231: Perfluorinated Compounds								
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	---	---	---
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	99.8	102	---	---	---
Toluene-D8	2037-26-5	0.1	%	97.4	98.7	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	96.2	98.6	---	---	---
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	100	96.8	---	---	---
2-Chlorophenol-D4	93951-73-6	0.1	%	104	96.8	---	---	---
2,4,6-Tribromophenol	118-79-6	0.1	%	63.4	63.4	---	---	---
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	100	101	---	---	---
Anthracene-d10	1719-06-8	0.1	%	89.4	90.7	---	---	---
4-Terphenyl-d14	1718-51-0	0.1	%	73.6	74.8	---	---	---
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	88.5	90.6	---	---	---
Toluene-D8	2037-26-5	0.1	%	90.3	91.4	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	90.2	90.2	---	---	---



Surrogate Control Limits

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

QUALITY CONTROL REPORT

Work Order	: ES1327439	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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 19-DEC-2013
Sampler	: RO	No. of samples received	: 2
Order number	: 0224198	No. of samples analysed	: 2
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



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
Lana Nguyen	Senior LCMS Chemist	Sydney Organics
Pabi Subba	Senior Organic Chemist	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.

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 (%)
EA055: Moisture Content (QC Lot: 3216839)									
ES1327439-002	LO_MW08_2.2	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.1	17.5	8.3	0% - 50%
ES1327521-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.2	7.3	1.5	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 3216120)									
ES1327422-032	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	10	33.3	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	20	9	79.6	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	9	14.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	10	6	37.5	No Limit
ES1327430-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	26	6.8	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	13	14	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	21	20	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	18	20	9.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	44	44	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216121)									
ES1327422-032	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327430-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3215896)									
ES1327439-001	LO_MW17_3.7	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
ES1327527-008	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



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 (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3215896) - continued									
ES1327527-008	Anonymous	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
EP074B: Oxygenated Compounds (QC Lot: 3215896)									
ES1327439-001	LO_MW17_3.7	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
ES1327527-008	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
EP074C: Sulfonated Compounds (QC Lot: 3215896)									
ES1327439-001	LO_MW17_3.7	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1327527-008	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074D: Fumigants (QC Lot: 3215896)									
ES1327439-001	LO_MW17_3.7	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
ES1327527-008	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
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215896)									
ES1327439-001	LO_MW17_3.7	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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215896) - continued									
ES1327439-001	LO_MW17_3.7	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		
ES1327527-008	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



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215896) - continued									
ES1327527-008	Anonymous	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
EP074F: Halogenated Aromatic Compounds (QC Lot: 3215896)									
ES1327439-001	LO_MW17_3.7	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
ES1327527-008	Anonymous	EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		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
ES1327527-008	Anonymous	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
		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
		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
ES1327527-008	Anonymous	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
		EP074: Chloroform	67-66-3	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
EP074G: Trihalomethanes (QC Lot: 3215896)									
ES1327439-001	LO_MW17_3.7	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
ES1327527-008	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
EP074H: Naphthalene (QC Lot: 3215896)									
ES1327439-001	LO_MW17_3.7	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
ES1327527-008	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3214187)									
ES1327433-013	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



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 3214187) - continued									
ES1327433-013	Anonymous	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
ES1327433-023	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
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3214187)							
ES1327433-013	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
		ES1327433-023	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5
EP075(SIM): Acenaphthylene	208-96-8			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 (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3214187) - continued									
ES1327433-023	Anonymous	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		
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3214186)									
ES1327433-013	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
ES1327433-023	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3215895)									
ES1327439-001	LO_MW17_3.7	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327527-008	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3214186)									
ES1327433-013	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
ES1327433-023	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215895)									
ES1327439-001	LO_MW17_3.7	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1327527-008	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 3215895)									
ES1327439-001	LO_MW17_3.7	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: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3215895) - continued									
ES1327439-001	LO_MW17_3.7	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
ES1327527-008	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	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
EP231: Perfluorinated Compounds (QC Lot: 3215778)									
ES1326974-013	Anonymous	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
ES1327422-036	Anonymous	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



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	
EG005T: Total Metals by ICP-AES (QCLot: 3216120)									
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	105	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	111	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	103	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	112	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	108	81	133	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	93.8	66	112	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3215896)									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	93.0	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	98.9	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	91.6	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	94.2	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	96.8	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	94.6	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	93.0	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	94.7	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	95.4	61	131	
EP074B: Oxygenated Compounds (QCLot: 3215896)									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	38.8	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	130	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	108	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	118	54	136	
		5	mg/kg	<5	----	----	----	----	
EP074C: Sulfonated Compounds (QCLot: 3215896)									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	65.8	54	126	
EP074D: Fumigants (QCLot: 3215896)									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	90.4	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	100	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	76.2	54	124	



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	
EP074D: Fumigants (QCLot: 3215896) - continued									
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	73.4	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	103	66	126	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215896)									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	48.1	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	68.5	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	117	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	71.0	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	82.5	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	98.5	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	86.4	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	78.9	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	89.9	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	95.3	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	98.9	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	113	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	112	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	105	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	110	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	140	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	101	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	101	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	104	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	112	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	122	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	46.2	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	112	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	93.7	48	136	
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896)									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	98.7	70	128	



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	
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896) - continued									
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	95.2	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	96.5	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	96.3	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	97.2	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	96.2	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	97.8	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	92.4	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	93.6	60	132	
EP074G: Trihalomethanes (QCLot: 3215896)									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	105	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	97.1	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	99.7	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	114	60	126	
EP074H: Naphthalene (QCLot: 3215896)									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	104	63	133	
		5	mg/kg	<5	----	----	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3214187)									
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	98.0	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	94.5	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	98.4	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	81.1	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	99.4	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	96.2	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	101	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	91.8	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	88.1	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	88.3	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	27.6	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214187)									
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	114	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	108	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	114	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	102	79	123	
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	105	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	107	79	125	



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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214187) - continued									
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	106	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	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	97.2	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	97.5	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	102	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	88.0	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214186)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	100	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	99.0	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	91.4	64	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215895)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	74.6	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214186)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	102	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	95.2	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	85.3	63	131	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215895)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	77.0	68.4	128	
EP080: BTEXN (QCLot: 3215895)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	71.9	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	78.4	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	76.6	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	79.9	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	80.0	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	84.6	62	138	
EP231: Perfluorinated Compounds (QCLot: 3215778)									
EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	85.3	54	146	
EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	92.4	54	134	
EP231: 6:2 Fluorotelomer Sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	0.0125 mg/kg	129	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

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 3216120)							
ES1327422-032	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	109	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	111	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	111	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	109	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	108	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	108	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)							
ES1327422-032	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	96.6	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215896)							
ES1327439-001	LO_MW17_3.7	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	75.3	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	80.5	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896)							
ES1327439-001	LO_MW17_3.7	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	90.6	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3214187)							
ES1327433-013	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	99.2	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	104	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	80.1	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.3	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	35.3	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214187)							
ES1327433-013	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	112	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214186)							
ES1327433-013	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	82.8	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	78.8	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	63.9	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215895)							
ES1327439-001	LO_MW17_3.7	EP080: C6 - C9 Fraction	----	32.5 mg/kg	88.0	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214186)							
ES1327433-013	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	103	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	70.1	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	52.5	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215895)							
ES1327439-001	LO_MW17_3.7	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.8	70	130
EP080: BTEXN (QCLot: 3215895)							



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	
EP080: BTEXN (QCLot: 3215895) - continued								
ES1327439-001	LO_MW17_3.7	EP080: Benzene	71-43-2	2.5 mg/kg	72.3	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	79.6	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	83.8	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	83.7	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.8	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	88.3	70	130		
EP231: Perfluorinated Compounds (QCLot: 3215778)								
ES1326974-013	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	79.7	54	146	
		EP231: PFOA	335-67-1	0.0025 mg/kg	86.7	54	134	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	78.4	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						
				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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214186)										
ES1327433-013	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	82.8	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	78.8	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	63.9	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214186)										
ES1327433-013	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	103	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	70.1	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	52.5	----	52	132	----	----
EP075(SIM)A: Phenolic Compounds (QCLot: 3214187)										
ES1327433-013	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	99.2	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	104	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	80.1	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.3	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	35.3	----	20	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214187)										
ES1327433-013	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	112	----	70	130	----	----
EP231: Perfluorinated Compounds (QCLot: 3215778)										
ES1326974-013	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	79.7	----	54	146	----	----



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								
EP231: Perfluorinated Compounds (QCLot: 3215778) - continued											
ES1326974-013	Anonymous	EP231: PFOA	335-67-1	0.0025 mg/kg	86.7	----	54	134	----	----	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	78.4	----	56	138	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215895)											
ES1327439-001	LO_MW17_3.7	EP080: C6 - C9 Fraction	----	32.5 mg/kg	88.0	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215895)											
ES1327439-001	LO_MW17_3.7	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.8	----	70	130	----	----	
EP080: BTEXN (QCLot: 3215895)											
ES1327439-001	LO_MW17_3.7	EP080: Benzene	71-43-2	2.5 mg/kg	72.3	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	79.6	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	83.8	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	83.7	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.8	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	88.3	----	70	130	----	----	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215896)											
ES1327439-001	LO_MW17_3.7	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	75.3	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	80.5	----	70	130	----	----	
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896)											
ES1327439-001	LO_MW17_3.7	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	90.6	----	70	130	----	----	
EG005T: Total Metals by ICP-AES (QCLot: 3216120)											
ES1327422-032	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	109	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	111	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	111	----	70	130	----	----	
		EG005T: Lead	7439-92-1	125 mg/kg	109	----	70	130	----	----	
		EG005T: Nickel	7440-02-0	50 mg/kg	108	----	70	130	----	----	
		EG005T: Zinc	7440-66-6	125 mg/kg	108	----	70	130	----	----	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)											
ES1327422-032	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	96.6	----	70	130	----	----	

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327439	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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 19-DEC-2013
Sampler	: RO	No. of samples received	: 2
Order number	: 0224198	No. of samples analysed	: 2
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
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	----	----	----	17-DEC-2013	24-DEC-2013	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	08-JUN-2014	✓	17-DEC-2013	08-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	07-JAN-2014	✓	18-DEC-2013	07-JAN-2014	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP074D: Fumigants							
Soil Glass Jar - Unpreserved (EP074) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	17-DEC-2013	✓	18-DEC-2013	17-DEC-2013	*
EP074E: Halogenated Aliphatic Compounds							
Soil Glass Jar - Unpreserved (EP074) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	17-DEC-2013	✓	18-DEC-2013	17-DEC-2013	*
EP074F: Halogenated Aromatic Compounds							
Soil Glass Jar - Unpreserved (EP074) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	17-DEC-2013	✓	18-DEC-2013	17-DEC-2013	*
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	17-DEC-2013	✓	18-DEC-2013	17-DEC-2013	*
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	17-DEC-2013	✓	18-DEC-2013	17-DEC-2013	*
EP074B: Oxygenated Compounds							
Soil Glass Jar - Unpreserved (EP074) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	17-DEC-2013	✓	18-DEC-2013	17-DEC-2013	*
EP074C: Sulfonated Compounds							
Soil Glass Jar - Unpreserved (EP074) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	17-DEC-2013	✓	18-DEC-2013	17-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	
EP074G: Trihalomethanes								
Soil Glass Jar - Unpreserved (EP074) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	17-DEC-2013	✓	18-DEC-2013	17-DEC-2013	*	
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM)) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	16-DEC-2013	24-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓	
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	24-DEC-2013	✓	18-DEC-2013	24-DEC-2013	✓	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Soil Glass Jar - Unpreserved (EP080) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	24-DEC-2013	✓	18-DEC-2013	24-DEC-2013	✓	
EP231: Perfluorinated Compounds								
Soil Glass Jar - Unpreserved (EP231) LO_MW17_3.7, LO_MW08_2.2	10-DEC-2013	17-DEC-2013	08-JUN-2014	✓	17-DEC-2013	26-JAN-2014	✓	



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	
Analytical Methods							
Laboratory Duplicates (DUP)							
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	14	14.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	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	19	10.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	14	14.3	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
Laboratory Control Samples (LCS)							
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	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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	14	7.1	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
Method Blanks (MB)							
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	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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	14	7.1	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
Matrix Spikes (MS)							
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	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	19	5.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	14	7.1	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
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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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)
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
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 B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

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

Outliers : Analysis Holding Time Compliance

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

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
EP074A: Monocyclic Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved LO_MW17_3.7, LO_MW08_2.2	----	----	----	18-DEC-2013	17-DEC-2013	1
EP074B: Oxygenated Compounds						
Soil Glass Jar - Unpreserved LO_MW17_3.7, LO_MW08_2.2	----	----	----	18-DEC-2013	17-DEC-2013	1
EP074C: Sulfonated Compounds						
Soil Glass Jar - Unpreserved LO_MW17_3.7, LO_MW08_2.2	----	----	----	18-DEC-2013	17-DEC-2013	1
EP074D: Fumigants						
Soil Glass Jar - Unpreserved LO_MW17_3.7, LO_MW08_2.2	----	----	----	18-DEC-2013	17-DEC-2013	1
EP074E: Halogenated Aliphatic Compounds						
Soil Glass Jar - Unpreserved LO_MW17_3.7, LO_MW08_2.2	----	----	----	18-DEC-2013	17-DEC-2013	1
EP074F: Halogenated Aromatic Compounds						
Soil Glass Jar - Unpreserved LO_MW17_3.7, LO_MW08_2.2	----	----	----	18-DEC-2013	17-DEC-2013	1
EP074G: Trihalomethanes						
Soil Glass Jar - Unpreserved LO_MW17_3.7, LO_MW08_2.2	----	----	----	18-DEC-2013	17-DEC-2013	1



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
EP074H: Naphthalene						
Soil Glass Jar - Unpreserved LO_MW17_3.7, LO_MW08_2.2	----	----	----	18-DEC-2013	17-DEC-2013	1

Outliers : Frequency of Quality Control Samples

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

- **No Quality Control Sample Frequency Outliers exist.**



CHAIN OF CUSTODY

ALS Laboratory

ALS Laboratory
150 St Albans Road
St Albans, VIC 3023
Australia
Tel: 03 9472 2000
Fax: 03 9472 2001
Email: info@als.com.au

For more information, please contact your local office or the ALS Laboratory. The Chain of Custody form is used to track the sample from collection to analysis. It is important that this form is completed correctly and signed by the appropriate personnel. The Chain of Custody form is a legal document and should be kept for a minimum of 12 months.

For more information, please contact your local office or the ALS Laboratory. The Chain of Custody form is used to track the sample from collection to analysis. It is important that this form is completed correctly and signed by the appropriate personnel. The Chain of Custody form is a legal document and should be kept for a minimum of 12 months.

For more information, please contact your local office or the ALS Laboratory. The Chain of Custody form is used to track the sample from collection to analysis. It is important that this form is completed correctly and signed by the appropriate personnel. The Chain of Custody form is a legal document and should be kept for a minimum of 12 months.

CLIENT: ELAN TURNOAROUND REQUIREMENTS: Standard TAT (last day date) Fast TAT (last day date) No Standard or report TAT (last day date)

OFFICE: Sydney (Standard TAT may be longer for some tests only) No Standard or report TAT (last day date)

PROJECT: Project Symphony ALS QUOTE NO.: SV79473

ORDER NUMBER: 0224148 SITE: BAYSWATER/LUDSELL

PROJECT MANAGER: Laeterna CONTACT PIR: 071119 7068 RELINQUISHED BY: Laeterna

SAMPLER: KITZ SAMPLER MOBILE: 0224148 DATE/TIME: 16/12/13

COC emailed to ALS? (YES / NO) NO EDD FORMAT (or default): DATE/TIME

Email Reports to (will default to better no other addresses are listed): Sydney@als.com.au DATE/TIME: 16/12/13

Email Invoicing to (will default to PO if no other addresses are listed): Sydney@als.com.au DATE/TIME: 16/12/13

COMMENT/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ANALYSIS REQUIRED INCLUDING DATES (N/A, State Codes must be listed to align with price)

When Metals are required, specify Total (unless better results) or Dissolved (if different results required)

Additional Information

Comments on likely combination, levels, dilution, or sample requiring specific COC analysis etc.

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)	CONTAINER INFORMATION	ANALYSIS REQUIRED INCLUDING DATES (N/A, State Codes must be listed to align with price)	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 combination, levels, dilution, or sample requiring specific COC analysis etc.	
	<u>LG-MW03-1.0</u>	<u>16.12.13</u>	<u>SOIL</u>			<u>1 bag</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>										

TAT



Telephone : +61-2-8784 8555

Environmental Division
Sydney
Work Order
ES1327440

1700

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : ES1327440

<p>Client : ENVIRO RESOURCES MANAGEMENT</p> <p>Contact : MR JOSEPH FERRING</p> <p>Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</p>	<p>Laboratory : Environmental Division Sydney</p> <p>Contact : Barbara Hanna</p> <p>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</p>
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<p>E-mail : joseph.ferring@erm.com</p> <p>Telephone : +61 02 8584 8888</p> <p>Facsimile : +61 02 8584 8800</p>	<p>E-mail : Barbara.Hanna@alsglobal.com</p> <p>Telephone : +61 2 8784 8555</p> <p>Facsimile : +61 2 8784 8555</p>
---	--

<p>Project : Project Symphony</p> <p>Order number : 0224198</p> <p>C-O-C number : ----</p> <p>Site : ----</p> <p>Sampler : ----</p>	<p>Page : 1 of 2</p> <p>Quote number : ES2013ENVRES0369 (SY/794/13)</p>
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QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

<p>Date Samples Received : 13-DEC-2013</p> <p>Client Requested Due Date : 19-DEC-2013</p>	<p>Issue Date : 16-DEC-2013 10:54</p> <p>Scheduled Reporting Date : 19-DEC-2013</p>
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Delivery Details

<p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 1 HARD</p> <p>Security Seal : Intact.</p>	<p>Temperature : 6.8°C SYD - Ice present</p> <p>No. of samples received : 1</p> <p>No. of samples analysed : 1</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.**
- 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 - S-02 8 Metals (incl. Digestion)	SOIL - S-24 TRH/BTEX/PAH + Phenols
ES1327440-001	06-DEC-2013 15:00	LG_MW03_1.0	✓	✓

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

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 : ES1327440 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : Project Symphony Order number : 0224198 C-O-C number : ---- Sampler : ---- Site : ---- Quote number : SY/794/13	Page : 1 of 6 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 13-DEC-2013 Issue Date : 20-DEC-2013 No. of samples received : 1 No. of samples analysed : 1
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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
Phalak Inthaksono	Laboratory Manager - Organics	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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

LG_MW03_1.0

Client sampling date / time

06-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327440-001	---	---	---	---
----------	------------	-----	------	---------------	-----	-----	-----	-----

EA055: Moisture Content

Moisture Content (dried @ 103°C)	---	1.0	%	17.3	---	---	---	---
----------------------------------	-----	-----	---	------	-----	-----	-----	-----

EG005T: Total Metals by ICP-AES

Arsenic	7440-38-2	5	mg/kg	14	---	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	---	---	---	---
Chromium	7440-47-3	2	mg/kg	9	---	---	---	---
Copper	7440-50-8	5	mg/kg	15	---	---	---	---
Lead	7439-92-1	5	mg/kg	16	---	---	---	---
Nickel	7440-02-0	2	mg/kg	25	---	---	---	---
Zinc	7440-66-6	5	mg/kg	69	---	---	---	---

EG035T: Total Recoverable Mercury by FIMS

Mercury	7439-97-6	0.1	mg/kg	<0.1	---	---	---	---
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EP075(SIM)A: Phenolic Compounds

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	---	---	---	---

EP075(SIM)B: Polynuclear Aromatic Hydrocarbons

Naphthalene	91-20-3	0.5	mg/kg	<0.5	---	---	---	---
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	---	---	---	---
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	---	---	---	---
Fluorene	86-73-7	0.5	mg/kg	<0.5	---	---	---	---
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	---	---	---	---
Anthracene	120-12-7	0.5	mg/kg	<0.5	---	---	---	---
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	---	---	---	---
Pyrene	129-00-0	0.5	mg/kg	<0.5	---	---	---	---



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

LG_MW03_1.0

Client sampling date / time

06-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327440-001				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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	----	----	----	----
EP080: BTEXN								
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	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

LG_MW03_1.0

Client sampling date / time

06-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327440-001	----	----	----	----
EP080: BTEXN - Continued								
^ 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	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	98.1	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	97.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	79.1	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	95.2	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	80.2	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	75.4	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	100	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	87.0	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	98.4	----	----	----	----



Surrogate Control Limits

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

QUALITY CONTROL REPORT

Work Order	: ES1327440	Page	: 1 of 11
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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 20-DEC-2013
Sampler	: ----	No. of samples received	: 1
Order number	: 0224198	No. of samples analysed	: 1
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



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
Phalak Inthaksone

Position

Senior Spectroscopist
Laboratory Manager - Organics

Accreditation Category

Sydney Inorganics
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.

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 (%)
EA055: Moisture Content (QC Lot: 3218282)									
ES1327432-020	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	18.2	20.8	13.6	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 3218964)									
ES1327423-005	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	15	28.6	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	4	44.5	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	6	16.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	11	11	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	22	20	10.2	No Limit
ES1327432-021	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	14	28.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	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	8	8	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	9	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	27	29	4.6	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3218965)									
ES1327423-005	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327432-021	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3214189)									
ES1327432-001	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
		ES1327432-014	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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 3214189) - continued									
ES1327432-014	Anonymous	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3214189)									
ES1327432-001	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
ES1327432-014	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 (%)	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3214189) - continued										
ES1327432-014	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	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3214188)										
ES1327432-001	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	
ES1327432-014	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	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216017)										
ES1327432-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
ES1327432-014	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3214188)										
ES1327432-001	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	
ES1327432-014	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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216017)										
ES1327432-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1327432-014	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080: BTEXN (QC Lot: 3216017)										
ES1327432-001	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	
ES1327432-014	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							

Page : 6 of 11
 Work Order : ES1327440
 Client : ENVIRO RESOURCES MANAGEMENT
 Project : Project Symphony



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3216017) - continued									
ES1327432-014	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



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	
EG005T: Total Metals by ICP-AES (QCLot: 3218964)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	111	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	118	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	120	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	110	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	120	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	115	81	133	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218965)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	89.8	66	112	
EP075(SIM)A: Phenolic Compounds (QCLot: 3214189)									
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	99.2	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	95.5	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	79.3	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	100	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	90.6	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	95.2	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	89.0	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	84.5	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	84.0	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	38.4	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214189)									
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	97.9	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	101	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	106	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	105	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	109	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	98.3	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	95.5	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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214189) - continued									
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	101	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	96.9	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	101	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	90.6	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214188)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	117	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	108	64	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216017)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	68.8	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214188)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	118	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	112	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	116	63	131	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216017)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	69.2	68.4	128	
EP080: BTEXN (QCLot: 3216017)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	71.0	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	77.7	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	82.8	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	80.1	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	85.0	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	92.8	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	
EG005T: Total Metals by ICP-AES (QCLot: 3218964)								
ES1327423-005	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130	
		EG005T: Cadmium	7440-43-9	50 mg/kg	107	70	130	
		EG005T: Chromium	7440-47-3	50 mg/kg	101	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	
EG005T: Total Metals by ICP-AES (QCLot: 3218964) - continued								
ES1327423-005	Anonymous	EG005T: Copper	7440-50-8	125 mg/kg	113	70	130	
		EG005T: Lead	7439-92-1	125 mg/kg	108	70	130	
		EG005T: Nickel	7440-02-0	50 mg/kg	111	70	130	
		EG005T: Zinc	7440-66-6	125 mg/kg	126	70	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218965)								
ES1327423-005	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.4	70	130	
EP075(SIM)A: Phenolic Compounds (QCLot: 3214189)								
ES1327432-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	106	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	99.0	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	84.0	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	90.9	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	83.9	20	130	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214189)								
ES1327432-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	97.1	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	103	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214188)								
ES1327432-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	86.7	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	85.6	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	73.9	52	132	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216017)								
ES1327432-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.1	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214188)								
ES1327432-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	108	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	78.4	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	56.8	52	132	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216017)								
ES1327432-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.9	70	130	
EP080: BTEXN (QCLot: 3216017)								
ES1327432-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.0	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	93.4	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	98.1	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	98.7	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	102	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	95.2	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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
				Concentration	MS	MSD	Low	High	Value	Control Limit	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214188)											
ES1327432-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	86.7	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	85.6	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	73.9	----	52	132	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214188)											
ES1327432-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	108	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	78.4	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	56.8	----	52	132	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3214189)											
ES1327432-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	106	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	99.0	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	84.0	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	90.9	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	83.9	----	20	130	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3214189)											
ES1327432-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	97.1	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	103	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216017)											
ES1327432-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	96.1	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216017)											
ES1327432-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.9	----	70	130	----	----	
EP080: BTEXN (QCLot: 3216017)											
ES1327432-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.0	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	93.4	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	98.1	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	98.7	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	102	----	70	130	----	----	
	91-20-3	EP080: Naphthalene		2.5 mg/kg	95.2	----	70	130	----	----	
EG005T: Total Metals by ICP-AES (QCLot: 3218964)											
ES1327423-005	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	107	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	101	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	113	----	70	130	----	----	

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 Work Order : ES1327440
 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 Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
EG005T: Total Metals by ICP-AES (QCLot: 3218964) - continued										
ES1327423-005	Anonymous	EG005T: Lead	7439-92-1	125 mg/kg	108	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	111	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	126	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218965)										
ES1327423-005	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.4	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327440	Page	: 1 of 5
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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 20-DEC-2013
Sampler	: ----	No. of samples received	: 1
Order number	: 0224198	No. of samples analysed	: 1
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
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103) LG_MW03_1.0	06-DEC-2013	----	----	----	18-DEC-2013	20-DEC-2013	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) LG_MW03_1.0	06-DEC-2013	18-DEC-2013	04-JUN-2014	✓	19-DEC-2013	04-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) LG_MW03_1.0	06-DEC-2013	18-DEC-2013	03-JAN-2014	✓	19-DEC-2013	03-JAN-2014	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071) LG_MW03_1.0	06-DEC-2013	18-DEC-2013	20-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM)) LG_MW03_1.0	06-DEC-2013	18-DEC-2013	20-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) LG_MW03_1.0	06-DEC-2013	18-DEC-2013	20-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) LG_MW03_1.0	06-DEC-2013	18-DEC-2013	20-DEC-2013	✓	18-DEC-2013	20-DEC-2013	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013							
Soil Glass Jar - Unpreserved (EP080) LG_MW03_1.0	06-DEC-2013	18-DEC-2013	20-DEC-2013	✓	18-DEC-2013	20-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	
Analytical Methods							
Laboratory Duplicates (DUP)							
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	12	16.7	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	17	11.8	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
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	12	8.3	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	17	5.9	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
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	12	8.3	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	17	5.9	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 Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	12	8.3	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	17	5.9	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
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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

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

Outliers : Analysis Holding Time Compliance

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

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

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

- No Quality Control Sample Frequency Outliers exist.
-

CHAIN OF CUSTODY

ALS Laboratory Phone: Int 3

TURNAROUND REQUIREMENTS:

Standard TAT may be longer for some tests e.g.:

ALS QUOTE NO. SY29413

SITE: BAYSWATER (LIDELL)

CONTACT PIX:

SAMPLER MOBILE:

EDD FORMAT (if default):

DATE/TIME:

RECEIVED BY: [Signature]

DATE/TIME: 13/12/13 1645

RECEIVED BY: [Signature]

DATE/TIME: 13/12/13 1700

FOR LABORATORY USE ONLY (Circle)

Check final mixed?

Free for frozen the while present upon receipt?

Temperature Sample Temperature on Receipt?

Other comments

RECEIVED BY: [Signature]

DATE/TIME: 13/12/13

CLIENT: **ERM**
 OFFICE: **Gymnast**
 PROJECT: **Project Symphony**
 ORDER NUMBER: **0224198**
 PROJECT MANAGER: **Doc Ferring**
 SAMPLER: **JOHN GIBBY**
 COC emailed to ALS? (YES / NO)
 Email Reports to (will default to PIX if no other addresses are listed)
 Email Invoice to (will default to PIX if no other addresses are listed)
 COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S)/WATER (W)	CONTAINER INFORMATION	ANALYSIS REQUIRED	Additional Information															
	LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (Code 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), BTXN, PAH, Phenols	VOC Target Scan	PCR	pH (1:5)	Exchangeable cations (E0007)	PFOS:PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)	Comments on labo recommendations, dilution, or sample requiring specific QC analysis etc.	
1	LV-MW02-0.5	12/10/13		SOIL		16	X	X	X										
2	LV-MWB3-0.5	11	↓			11	X	X	X										
3	LV-MWB6-2-3																		

Water Contaminant Control: W - Unpermitted Point; N - Non-Permitted Transfer; QWC - None Permitted Entry
 V - VOA Volatile; P - Pesticides; N - Non-Volatile Organic; V - VOA Volatile; R - Radionuclides; V - Volatile; G - Gaseous
 Z - Zinc; Arsenic; Phosphate; Lead; Hg - Heavy Metals; PCBs; Dioxin; Furans; Organochlorine; Organophosphate; A - Acrylonitrile; B - Benzene; C - Chlorine; D - Dieldrin; E - Endrin; F - Heptachlor Epoxide; G - Heptachlor; H - Heptachlor Epoxide; I - Heptachlor Epoxide; J - Heptachlor Epoxide; K - Heptachlor Epoxide; L - Heptachlor Epoxide; M - Heptachlor Epoxide; N - Heptachlor Epoxide; O - Heptachlor Epoxide; P - Heptachlor Epoxide; Q - Heptachlor Epoxide; R - Heptachlor Epoxide; S - Heptachlor Epoxide; T - Heptachlor Epoxide; U - Heptachlor Epoxide; V - Heptachlor Epoxide; W - Heptachlor Epoxide; X - Heptachlor Epoxide; Y - Heptachlor Epoxide; Z - Heptachlor Epoxide

Environmental Division
 Sydney
 Work Order
ES1327441



Telephone : +61-2-8784 8555

TAT

ANALYSIS REQUIRED (including SITES ONLY, SILENT CODES must be stated to protect your privacy) - where blanks are required, specify Total (unless other method required) or Dip-rod field (unless blank required)

DATE/TIME	RECEIVED BY	DATE/TIME	RECEIVED BY
13/12/13 1645	[Signature]	13/12/13 1700	[Signature]

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : ES1327441

<p>Client : ENVIRO RESOURCES MANAGEMENT</p> <p>Contact : MR JOSEPH FERRING</p> <p>Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</p>	<p>Laboratory : Environmental Division Sydney</p> <p>Contact : Barbara Hanna</p> <p>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</p>
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<p>E-mail : joseph.ferring@erm.com</p> <p>Telephone : +61 02 8584 8888</p> <p>Facsimile : +61 02 8584 8800</p>	<p>E-mail : Barbara.Hanna@alsglobal.com</p> <p>Telephone : +61 2 8784 8555</p> <p>Facsimile : +61 2 8784 8555</p>
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<p>Project : Project Symphony</p> <p>Order number : 0224198</p> <p>C-O-C number : ----</p> <p>Site : LIDDELL</p> <p>Sampler : JG</p>	<p>Page : 1 of 2</p> <p>Quote number : ES2013ENVRES0369 (SY/794/13)</p> <p>QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement</p>
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Dates

<p>Date Samples Received : 13-DEC-2013</p> <p>Client Requested Due Date : 18-DEC-2013</p>	<p>Issue Date : 14-DEC-2013 13:52</p> <p>Scheduled Reporting Date : 18-DEC-2013</p>
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Delivery Details

<p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 1 HARD</p> <p>Security Seal : Intact.</p>	<p>Temperature : 6.8°C SYD - Ice present</p> <p>No. of samples received : 3</p> <p>No. of samples analysed : 3</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 - EG005T (solids)	Total Metals by ICP-AES	SOIL - S-02	8 Metals (incl. Digestion)	SOIL - S-03	15 Metals (NEPM 2013 Suite - incl. SOIL - S-24	TRH/BTEX/PAH + Phenols
ES1327441-001	12-DEC-2013 15:00	LV_MW02_0.5			✓				✓
ES1327441-002	12-DEC-2013 15:00	LV_MW03_0.5			✓				✓
ES1327441-003	12-DEC-2013 15:00	LB_MW06_2.3	✓				✓		✓

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

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 : ES1327441 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : Project Symphony Order number : 0224198 C-O-C number : ---- Sampler : JG Site : LIDDELL Quote number : SY/794/13	Page : 1 of 6 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 13-DEC-2013 Issue Date : 18-DEC-2013 No. of samples received : 3 No. of samples analysed : 3
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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
Phalak Inthaksono	Laboratory Manager - Organics	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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LV_MW02_0.5	LV_MW03_0.5	LB_MW06_2.3	---	---
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	---	---
Compound	CAS Number	LOR	Unit	ES1327441-001	ES1327441-002	ES1327441-003	---	---
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	---	1.0	%	18.8	18.1	9.3	---	---
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	---	---	10	---	---
Barium	7440-39-3	10	mg/kg	---	---	50	---	---
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	---	---	10	---	---
Cobalt	7440-48-4	2	mg/kg	---	---	6	---	---
Copper	7440-50-8	5	mg/kg	---	---	<5	---	---
Lead	7439-92-1	5	mg/kg	---	---	11	---	---
Manganese	7439-96-5	5	mg/kg	---	---	13	---	---
Molybdenum	7439-98-7	2	mg/kg	---	---	<2	---	---
Nickel	7440-02-0	2	mg/kg	---	---	7	---	---
Selenium	7782-49-2	5	mg/kg	---	---	<5	---	---
Vanadium	7440-62-2	5	mg/kg	---	---	22	---	---
Zinc	7440-66-6	5	mg/kg	---	---	56	---	---
Thallium	7440-28-0	5	mg/kg	---	---	<5	---	---
Arsenic	7440-38-2	5	mg/kg	14	9	---	---	---
Cadmium	7440-43-9	1	mg/kg	<1	<1	---	---	---
Chromium	7440-47-3	2	mg/kg	35	18	---	---	---
Copper	7440-50-8	5	mg/kg	22	8	---	---	---
Lead	7439-92-1	5	mg/kg	19	12	---	---	---
Nickel	7440-02-0	2	mg/kg	32	10	---	---	---
Zinc	7440-66-6	5	mg/kg	61	26	---	---	---
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	---	---
EP075(SIM)A: Phenolic Compounds								
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	---	---



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LV_MW02_0.5	LV_MW03_0.5	LB_MW06_2.3	----	----
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	----	----
Compound	CAS Number	LOR	Unit	ES1327441-001	ES1327441-002	ES1327441-003	----	----
EP075(SIM)A: Phenolic Compounds - Continued								
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	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ 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	0.6	0.6	0.6	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LV_MW02_0.5	LV_MW03_0.5	LB_MW06_2.3	---	---
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	---	---
Compound	CAS Number	LOR	Unit	ES1327441-001	ES1327441-002	ES1327441-003	---	---
EP080/071: Total Petroleum Hydrocarbons - Continued								
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<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	---	---
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	---	---
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Ethylbenzene	100-41-4	0.5	mg/kg	<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	---	---
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	---	---
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	100	102	111	---	---
2-Chlorophenol-D4	93951-73-6	0.1	%	104	103	110	---	---
2,4,6-Tribromophenol	118-79-6	0.1	%	64.0	60.4	65.9	---	---
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	102	103	101	---	---
Anthracene-d10	1719-06-8	0.1	%	88.0	87.6	86.3	---	---
4-Terphenyl-d14	1718-51-0	0.1	%	76.9	78.1	76.0	---	---
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	121	106	75.4	---	---
Toluene-D8	2037-26-5	0.1	%	109	98.9	118	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	109	106	95.3	---	---



Surrogate Control Limits

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

QUALITY CONTROL REPORT

Work Order	: ES1327441	Page	: 1 of 11
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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 18-DEC-2013
Sampler	: JG	No. of samples received	: 3
Order number	: 0224198	No. of samples analysed	: 3
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



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
Phalak Inthaksone

Position

Senior Spectroscopist
Laboratory Manager - Organics

Accreditation Category

Sydney Inorganics
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.

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 (%)
EA055: Moisture Content (QC Lot: 3216839)									
ES1327439-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.1	17.5	8.3	0% - 50%
ES1327521-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.2	7.3	1.5	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 3216120)									
ES1327422-032	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	70	90	25.4	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	10	33.3	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	20	9	79.6	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	9	14.1	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	57	64	11.6	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	10	6	37.5	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		
ES1327430-002	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	2	2	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	80	100	24.3	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	24	26	6.8	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	12	17	32.3	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	13	14	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	21	20	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	18	20	9.8	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	67	84	22.4	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	56	57	2.1	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	44	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		
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216121)									



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 (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216121) - continued									
ES1327422-032	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327430-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3213843)									
ES1327368-001	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		
ES1327368-004	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		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213843)									
ES1327368-001	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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213843) - continued									
ES1327368-001	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
ES1327368-004	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213536)									
ES1327301-022	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327312-005	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	50	36	31.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213842)									
ES1327368-001	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
ES1327368-004	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213536)									
ES1327301-022	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1327312-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	79	58	29.8	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213842)									



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213842) - continued									
ES1327368-001	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
ES1327368-004	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
EP080: BTEXN (QC Lot: 3213536)									
ES1327301-022	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
ES1327312-005	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		



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	
EG005T: Total Metals by ICP-AES (QCLot: 3216120)									
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	104	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	105	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	105	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	104	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	111	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	112	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	106	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	109	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	108	81	133	
EG005T: Thallium	7440-28-0	5	mg/kg	<5	5.96 mg/kg	87.3	70	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	93.8	66	112	
EP075(SIM)A: Phenolic Compounds (QCLot: 3213843)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	107	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	97.9	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	81.4	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	96.2	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	86.1	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	92.5	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	82.7	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	81.9	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	81.9	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	23.9	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213843)									
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	106	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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213843) - continued									
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	113	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	110	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	109	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	112	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	101	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	98.1	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	115	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	108	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	110	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	103	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213536)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	95.0	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213842)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	95.1	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	92.1	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	90.5	64	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213536)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	90.6	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213842)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	96.9	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	89.5	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	93.1	63	131	
EP080: BTEXN (QCLot: 3213536)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	83.4	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	85.6	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	87.4	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	87.0	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.4	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	88.7	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(%) MS	Recovery Limits (%)	
					Low	High	
EG005T: Total Metals by ICP-AES (QCLot: 3216120)							
ES1327422-032	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	109	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	111	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	111	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	109	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	108	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	110	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	108	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)							
ES1327422-032	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	96.6	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3213843)							
ES1327368-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	111	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	110	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	67.6	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	90.8	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	40.0	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213843)							
ES1327368-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	108	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	115	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213536)							
ES1327301-022	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.7	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213842)							
ES1327368-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	89.6	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	90.8	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	78.2	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213536)							
ES1327301-022	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	93.1	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213842)							
ES1327368-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	112	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	83.2	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	60.2	52	132
EP080: BTEXN (QCLot: 3213536)							
ES1327301-022	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	70.8	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	121	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	73.0	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
EP080: BTEXN (QCLot: 3213536) - continued							
ES1327301-022	Anonymous	EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	71.4	70	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	77.8	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	73.6	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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213536)											
ES1327301-022	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.7	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213536)											
ES1327301-022	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	93.1	----	70	130	----	----	
EP080: BTEXN (QCLot: 3213536)											
ES1327301-022	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	70.8	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	121	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	73.0	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	71.4	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	77.8	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	73.6	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213842)											
ES1327368-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	89.6	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	90.8	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	78.2	----	52	132	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213842)											
ES1327368-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	112	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	83.2	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	60.2	----	52	132	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3213843)											
ES1327368-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	111	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	110	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	67.6	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	90.8	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	40.0	----	20	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213843)										
ES1327368-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	108	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	115	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3216120)										
ES1327422-032	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	109	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	111	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	111	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	109	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	108	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	110	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	108	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216121)										
ES1327422-032	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	96.6	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327441	Page	: 1 of 5
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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 18-DEC-2013
Sampler	: JG	No. of samples received	: 3
Order number	: 0224198	No. of samples analysed	: 3
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	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved (EA055-103) LV_MW02_0.5, LB_MW06_2.3	LV_MW03_0.5,	12-DEC-2013	----	----	----	17-DEC-2013	26-DEC-2013	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) LV_MW02_0.5, LB_MW06_2.3	LV_MW03_0.5,	12-DEC-2013	17-DEC-2013	10-JUN-2014	✓	17-DEC-2013	10-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) LV_MW02_0.5, LB_MW06_2.3	LV_MW03_0.5,	12-DEC-2013	17-DEC-2013	09-JAN-2014	✓	18-DEC-2013	09-JAN-2014	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP071) LV_MW02_0.5, LB_MW06_2.3	LV_MW03_0.5,	12-DEC-2013	16-DEC-2013	26-DEC-2013	✓	16-DEC-2013	25-JAN-2014	✓
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM)) LV_MW02_0.5, LB_MW06_2.3	LV_MW03_0.5,	12-DEC-2013	16-DEC-2013	26-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) LV_MW02_0.5, LB_MW06_2.3	LV_MW03_0.5,	12-DEC-2013	16-DEC-2013	26-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) LV_MW02_0.5, LB_MW06_2.3	LV_MW03_0.5,	12-DEC-2013	17-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-DEC-2013	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Soil Glass Jar - Unpreserved (EP080) LV_MW02_0.5, LB_MW06_2.3	LV_MW03_0.5,	12-DEC-2013	17-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-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	
Analytical Methods							
Laboratory Duplicates (DUP)							
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	17	11.8	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	17	11.8	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
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	17	5.9	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
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	17	5.9	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 Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	17	5.9	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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

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

Outliers : Analysis Holding Time Compliance

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

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

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

- No Quality Control Sample Frequency Outliers exist.
-



CHAIN OF CUSTODY

ALS Laboratory

180 St Albans Road, St Albans, Vic 3021
Tel: 03 9472 2000 Fax: 03 9472 2001
www.als.com.au

180 St Albans Road, St Albans, Vic 3021
Tel: 03 9472 2000 Fax: 03 9472 2001
www.als.com.au

180 St Albans Road, St Albans, Vic 3021
Tel: 03 9472 2000 Fax: 03 9472 2001
www.als.com.au

180 St Albans Road, St Albans, Vic 3021
Tel: 03 9472 2000 Fax: 03 9472 2001
www.als.com.au

TAT

CLIENT: **ERM**

OFFICE: **Chadney**

PROJECT: **Project Synphony**

ORDER NUMBER: **0221198**

PROJECT MANAGER: **Rob Taylor**

SAMPLER: **R. Oshvianovsk**

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

Turnaround Requirements: Standard TAT (Use due date) Non Standard or urgent TAT (Use due date)

Site: **BAYSWATER / ROBERT**

ALS QUOTE NO.: **SYR0413**

CONTACT PH: **0424070768**

SAMPLER MOBILE: **0424821404**

RELINQUISHED BY: **Eric O O**

DATE/TIME: **05.12.13**

RECEIVED BY: **BY**

DATE/TIME: **13/12/13**

FOR LABORATORY USE ONLY (Client)

Customer Equal Inset? Yes No

Final Inset (or better) present upon receipt? Yes No

Random Sample Temperature on Receipt: **17.00**

Other comment: **ESB**

RECEIVED BY: **SO [Signature]**

DATE/TIME: **18/12/13**

RECEIVED BY: **SO [Signature]**

DATE/TIME: **18/12/13**

1900

Comments/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)	CONTAINER INFORMATION			ANALYSIS REQUIRED INCLUDING STATES (MS, State Codes must be listed in correct case only) Where Metals are required, specify Total (differs from filtered) or Dissolved (field filtered water only).										Additional Information		
		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, S, Mo, Ti, Se)	S-24 TRH (C6-C40) BTXN, 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 (EP004)
	LAB ID	SAMPLE ID	DATE / TIME														
	1	LY - NW02 - 0.4	05.12.13	SOIL			1	X									
	2	LT - NW01 - 0.8	-11-	W			1	X									
	3	ROL 051013-TK		W			3	X									TRM 18 TEX Metals
	4	T/BLANK		S			1	X									TRM 18 TEX
	5	T/SPIKE 10	28/11	S			1	X									TRM 18 TEX
	6	TSC 10	28/11	S			1	X									TRM 18 TEX

Project Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; GRC = Nitric Preserved Glass; SH = Sodium Hydroxide Preserved Plastic; AG = Amber
 V = VOA Volatil Preserved VA = VOA Volatil System Headlines Preserved; VS = VOA Volat Soluble Preserved; AV = Airtight Unpreserved Vial SB = Soluble Preserved Amber Glass; H = HCl preserved Plac
 C = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Strich Preserved Bottle; AS = Plastic Bin for Acid Stabilizer; SDC = B = Unpreserved Bin



Environmental Division
 Sydney
 Work Order
ES1327442

Telephone : + 61-2-8784 8555

Inc. F = Formidlyria Preserved Glass

Wael Saleh

From: Barbara Hanna
Sent: Monday, 16 December 2013 2:45 PM
To: Wael Saleh
Subject: FW: ES1327442 - change in analysis
Attachments: ES1327442_COC_1.pdf; ES1327442_0_SRN_131216104224.pdf

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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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: Clea Henderson [mailto:Clea.Henderson@erm.com]
Sent: Monday, 16 December 2013 1:13 PM
To: Barbara Hanna
Cc: ERM Australia Project Symphony MacGen; Joseph Ferring; John Ewing
Subject: ES1327442 - change in analysis

Hi Barbara, our field guys made a mistake on the attached COC.

Sample 002 (LJ_MW01_0.8):

- Please remove PFOS/PFOA analysis.

- Please add PCB analysis.

Please send through an updated SRN asap.

Many thanks and apologies,

Clea Henderson
Chemical Engineer

Environmental Resources Management
Level 3, Tower 3, 13-38 Siddeley Street,
World Trade Centre, Docklands Victoria 3005

Tel: +61 3 8606 4188 (Direct)

Tel: +61 3 9696 8011 (switchboard)

Fax: +61 3 9696 8022

www.erm.com

clea.henderson@erm.com

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SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: ES1327442		
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact Address	: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Contact Address	: Barbara Hanna 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	Page	: 1 of 3
Order number	: 0224198	Quote number	: ES2013ENVRES0369 (SY/794/13)
C-O-C number	: ----	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: LIDDELL		
Sampler	: RO		

Dates

Date Samples Received	: 13-DEC-2013	Issue Date	: 16-DEC-2013 15:19
Client Requested Due Date	: 18-DEC-2013	Scheduled Reporting Date	: 18-DEC-2013

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 6.8°C SYD - 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.**
- **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 - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-02 & Metals (incl. Digestion)	SOIL - S-18 (NO MOIST)	TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-24 TRH/BTEXN/PAH + Phenols
ES1327442-001	05-DEC-2013 15:00	LU_MW02_0.4			✓			✓
ES1327442-002	05-DEC-2013 15:00	LJ_MW01_0.8	✓	✓	✓			✓
ES1327442-004	28-NOV-2013 15:00	T/BLANK				✓		
ES1327442-005	28-NOV-2013 15:00	T/SPIKE				✓		
ES1327442-006	28-NOV-2013 15:00	TSC				✓		

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-05T TRH/BTEXN/8 Metals (Total)
ES1327442-003	05-DEC-2013 15:00	R01_051213_JK	✓



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	
Client Sample ID(s)	Container			Date	Evaluation	Date	Evaluation
EP074: Volatile Organic Compounds							
LJ_MW01_0.8	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*
EP080: TPH Volatiles/BTEX							
T/BLANK	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*
T/SPIKE	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*
TSC	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*

Matrix: **WATER**

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

Method		Due for extraction	Due for analysis	Samples Received		Instructions Received	
Client Sample ID(s)	Container			Date	Evaluation	Date	Evaluation
EP071: TPH - Semivolatile Fraction							
R01_051213_JK	Amber Glass Bottle - Unpreserved	12-DEC-2013	----	13-DEC-2013	*	13-DEC-2013	*

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

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 : ES1327442 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : Project Symphony Order number : 0224198 C-O-C number : ---- Sampler : RO Site : LIDDELL Quote number : SY/794/13	Page : 1 of 10 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 13-DEC-2013 Issue Date : 19-DEC-2013 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



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
Phalak Inthaksone	Laboratory Manager - Organics	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

- **EG020A: Positive result for sample ES1327442 #003 has been confirmed**
- **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

				LU_MW02_0.4	LJ_MW01_0.8	T/BLANK	T/SPIKE	TSC
				05-DEC-2013 15:00	05-DEC-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327442-001	ES1327442-002	ES1327442-004	ES1327442-005	ES1327442-006
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	17.2	7.4	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	28	10	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	14	9	----	----	----
Copper	7440-50-8	5	mg/kg	6	8	----	----	----
Lead	7439-92-1	5	mg/kg	17	13	----	----	----
Nickel	7440-02-0	2	mg/kg	16	12	----	----	----
Zinc	7440-66-6	5	mg/kg	50	59	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----	----	----
EP074B: Oxygenated Compounds								
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	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	----	<0.5	----	----	----
EP074D: Fumigants								
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

Client sampling date / time

				LU_MW02_0.4	LJ_MW01_0.8	T/BLANK	T/SPIKE	TSC
				05-DEC-2013 15:00	05-DEC-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327442-001	ES1327442-002	ES1327442-004	ES1327442-005	ES1327442-006
EP074D: Fumigants - Continued								
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	----	----	----
EP074E: Halogenated Aliphatic Compounds								
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	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	----	<0.5	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LU_MW02_0.4	LJ_MW01_0.8	T/BLANK	T/SPIKE	TSC
				05-DEC-2013 15:00	05-DEC-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327442-001	ES1327442-002	ES1327442-004	ES1327442-005	ES1327442-006
EP074F: Halogenated Aromatic Compounds - Continued								
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	----	----	----
EP074G: Trihalomethanes								
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	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	----	<5	----	----	----
EP075(SIM)A: Phenolic Compounds								
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	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
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

				LU_MW02_0.4	LJ_MW01_0.8	T/BLANK	T/SPIKE	TSC
				05-DEC-2013 15:00	05-DEC-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327442-001	ES1327442-002	ES1327442-004	ES1327442-005	ES1327442-006
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	16	97
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	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	17	111
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	11	79
>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	<0.2	<0.2	0.7



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LU_MW02_0.4	LJ_MW01_0.8	T/BLANK	T/SPIKE	TSC
				05-DEC-2013 15:00	05-DEC-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00	28-NOV-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327442-001	ES1327442-002	ES1327442-004	ES1327442-005	ES1327442-006
EP080: BTEXN - Continued								
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	3.7	15.3
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	2.1
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	1.8	9.8
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	0.8	4.0
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	6.3	31.9
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	2.6	13.8
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	83.0	----	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	109	----	----	----
Toluene-D8	2037-26-5	0.1	%	----	101	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	95.4	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	107	96.5	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	109	102	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	62.0	58.0	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	98.8	97.9	----	----	----
Anthracene-d10	1719-06-8	0.1	%	85.0	82.1	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	74.7	74.0	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	124	97.2	114	93.9	100
Toluene-D8	2037-26-5	0.1	%	101	93.6	79.3	96.5	99.3
4-Bromofluorobenzene	460-00-4	0.1	%	101	88.3	75.1	97.6	98.8



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_051213_JK

Client sampling date / time

05-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327442-003	---	---	---	---
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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	---	---	---	---
---------	-----------	--------	------	---------	-----	-----	-----	-----

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	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_051213_JK

Client sampling date / time

05-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327442-003	---	---	---	---
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	95.7	---	---	---	---
Toluene-D8	2037-26-5	0.1	%	97.2	---	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	90.6	---	---	---	---



Surrogate Control Limits

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

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

QUALITY CONTROL REPORT

Work Order	: ES1327442	Page	: 1 of 23
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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 19-DEC-2013
Sampler	: RO	No. of samples received	: 6
Order number	: 0224198	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



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
Phalak Inthaksone

Position

Senior Spectroscopist
Senior Organic Chemist
Laboratory Manager - Organics

Accreditation Category

Sydney Inorganics
Sydney Organics
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.

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 (%)
EA055: Moisture Content (QC Lot: 3216839)									
ES1327439-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.1	17.5	8.3	0% - 50%
ES1327521-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.2	7.3	1.5	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 3218160)									
ES1327442-001	LU_MW02_0.4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	12	11.5	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	16	18	10.3	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	28	32	10.2	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	6	7	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	17	19	9.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	50	46	6.2	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3218161)									
ES1327442-001	LU_MW02_0.4	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3216122)									
ES1327373-006	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327373-019	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3215896)									
ES1327439-001	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
		ES1327527-008	Anonymous	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5
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
EP074B: Oxygenated Compounds (QC Lot: 3215896)									



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 (%)
EP074B: Oxygenated Compounds (QC Lot: 3215896) - continued									
ES1327439-001	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
ES1327527-008	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
EP074C: Sulfonated Compounds (QC Lot: 3215896)									
ES1327439-001	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1327527-008	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074D: Fumigants (QC Lot: 3215896)									
ES1327439-001	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
ES1327527-008	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
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215896)									
ES1327439-001	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 (%)		
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215896) - continued											
ES1327439-001	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				
ES1327527-008	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		
		EP074F: Halogenated Aromatic Compounds (QC Lot: 3215896)									



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 (%)
EP074F: Halogenated Aromatic Compounds (QC Lot: 3215896) - continued									
ES1327439-001	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
ES1327527-008	Anonymous	EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		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
ES1327527-008	Anonymous	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
		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
		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
ES1327527-008	Anonymous	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
		EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
		EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit
EP074H: Naphthalene (QC Lot: 3215896)									
EP075(SIM)A: Phenolic Compounds (QC Lot: 3213843)									
ES1327368-001	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 (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 3213843) - continued									
ES1327368-001	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
ES1327368-004	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
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213843)							
ES1327368-001	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		
ES1327368-004	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



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3213843) - continued									
ES1327368-004	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		
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213842)									
ES1327368-001	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
ES1327368-004	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3215144)									
ES1327422-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327422-019	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3215895)									
ES1327439-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327527-008	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216012)									
ES1327422-025	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327521-016	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213842)									
ES1327368-001	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
ES1327368-004	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215144)									
ES1327422-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	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 (%)	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215144) - continued										
ES1327422-019	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215895)										
ES1327439-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1327527-008	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216012)										
ES1327422-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1327521-016	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080: BTEXN (QC Lot: 3215144)										
ES1327422-001	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	
ES1327422-019	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: BTEXN (QC Lot: 3215895)										
ES1327439-001	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	
ES1327527-008	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							
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
EP080: BTEXN (QC Lot: 3216012)										
ES1327422-025	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	



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3216012) - continued									
ES1327422-025	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
ES1327521-016	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
Sub-Matrix: WATER									
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 (%)
EG020T: Total Metals by ICP-MS (QC Lot: 3215707)									
ES1326945-002	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	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.065	0.065	0.0	0% - 20%
		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	0.013	0.013	0.0	No Limit
ES1327207-003	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	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.073	0.070	5.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.002	0.0	No Limit
EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.052	0.046	10.2	No Limit		
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3214176)									
ES1327422-010	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3213890)									
ES1327437-001	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
ES1327437-005	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3214570)									
ES1327000-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	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 (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3214570) - continued									
ES1327000-009	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3213890)									
ES1327437-001	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
ES1327437-005	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3214570)									
ES1327000-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES1327000-009	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 3214570)									
ES1327000-001	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
ES1327000-009	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	
EG005T: Total Metals by ICP-AES (QCLot: 3218160)									
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	114	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	104	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	107	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	100	81	133	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218161)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	85.0	66	112	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.0	57.4	117	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3215896)									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	93.0	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	98.9	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	91.6	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	94.2	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	96.8	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	94.6	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	93.0	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	94.7	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	95.4	61	131	
EP074B: Oxygenated Compounds (QCLot: 3215896)									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	38.8	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	130	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	108	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	118	54	136	
		5	mg/kg	<5	----	----	----	----	
EP074C: Sulfonated Compounds (QCLot: 3215896)									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	65.8	54	126	
EP074D: Fumigants (QCLot: 3215896)									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	90.4	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	
EP074D: Fumigants (QCLot: 3215896) - continued									
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	100	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	76.2	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	73.4	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	103	66	126	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215896)									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	48.1	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	68.5	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	117	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	71.0	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	82.5	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	98.5	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	86.4	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	78.9	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	89.9	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	95.3	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	98.9	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	113	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	112	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	105	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	110	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	140	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	101	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	101	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	104	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	112	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	122	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	46.2	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	112	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	93.7	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	
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896)									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	98.7	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	95.2	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	96.5	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	96.3	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	97.2	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	96.2	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	97.8	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	92.4	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	93.6	60	132	
EP074G: Trihalomethanes (QCLot: 3215896)									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	105	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	97.1	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	99.7	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	114	60	126	
EP074H: Naphthalene (QCLot: 3215896)									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	104	63	133	
		5	mg/kg	<5	----	----	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3213843)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	107	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	97.9	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	81.4	60.3	117	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	96.2	69	117	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	86.1	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	92.5	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	82.7	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	81.9	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	81.9	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	23.9	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213843)									
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	106	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	113	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	110	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	109	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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213843) - continued									
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	112	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	101	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	98.1	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	115	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	108	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	110	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	103	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213842)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	95.1	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	92.1	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	90.5	64	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215144)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	73.4	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215895)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	74.6	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.4	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213842)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	96.9	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	89.5	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	93.1	63	131	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215144)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	74.3	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215895)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	77.0	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	81.4	68.4	128	
EP080: BTEXN (QCLot: 3215144)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	72.5	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.0	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	85.2	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	85.9	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	92.9	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	86.6	62	138	



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	
EP080: BTEXN (QCLot: 3215895)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	71.9	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	78.4	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	76.6	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	79.9	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	80.0	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	84.6	62	138	
EP080: BTEXN (QCLot: 3216012)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	81.3	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.8	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	92.4	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	87.2	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	91.0	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	90.6	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	
EG020T: Total Metals by ICP-MS (QCLot: 3215707)									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	79	121	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	106	82	114	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	108	83	115	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	111	83	117	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	85	115	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	115	83	117	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	110	76	118	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3214176)									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	98.0	77	115	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213890)									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	97.4	59	129	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	97.7	71	131	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	101	62	120	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214570)									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	101	75	127	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213890)									
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	89.0	58.9	131	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	90.9	73.9	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213890) - continued								
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
		50	µg/L	----	1500 µg/L	98.8	67	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214570)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	104	75	127
EP080: BTEXN (QCLot: 3214570)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	114	70	124
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	116	65	129
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	110	70	120
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	112	69	121
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	117	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	91.6	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	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 3218160)							
ES1327442-001	LU_MW02_0.4	EG005T: Arsenic	7440-38-2	50 mg/kg	119	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	108	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	112	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	109	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	113	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	127	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218161)							
ES1327442-001	LU_MW02_0.4	EG035T: Mercury	7439-97-6	5 mg/kg	87.2	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)							
ES1327373-006	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215896)							
ES1327439-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	75.3	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	80.5	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896)							
ES1327439-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	90.6	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	
EP075(SIM)A: Phenolic Compounds (QCLot: 3213843)								
ES1327368-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	111	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	110	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	67.6	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	90.8	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	40.0	20	130	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213843)								
ES1327368-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	108	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	115	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213842)								
ES1327368-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	89.6	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	90.8	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	78.2	52	132	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215144)								
ES1327422-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	79.5	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215895)								
ES1327439-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	88.0	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)								
ES1327422-025	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213842)								
ES1327368-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	112	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	83.2	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	60.2	52	132	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215144)								
ES1327422-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	78.0	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215895)								
ES1327439-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.8	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)								
ES1327422-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	82.6	70	130	
EP080: BTEXN (QCLot: 3215144)								
ES1327422-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.4	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	72.6	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	74.8	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	75.8	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.1	70	130	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	72.5	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	
EP080: BTEXN (QCLot: 3215895)								
ES1327439-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	72.3	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	79.6	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	83.8	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	83.7	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.8	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	88.3	70	130		
EP080: BTEXN (QCLot: 3216012)								
ES1327422-025	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.5	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.2	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.0	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.9	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	83.2	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
EG020T: Total Metals by ICP-MS (QCLot: 3215707)							
ES1326945-003	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	110	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	114	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	109	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	110	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	110	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3214176)							
ES1327433-028	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	89.2	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213890)							
ES1327437-002	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	96.9	74	150
		EP071: C15 - C28 Fraction	----	300 µg/L	100	77	153
		EP071: C29 - C36 Fraction	----	200 µg/L	108	67	153
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214570)							
ES1327000-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	112	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213890)							
ES1327437-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	250 µg/L	99.8	74	150
		EP071: >C16 - C34 Fraction	----	350 µg/L	107	77	153



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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213890) - continued								
ES1327437-002	Anonymous	EP071: >C34 - C40 Fraction	----	150 µg/L	106	67	153	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214570)								
ES1327000-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	70	130	
EP080: BTEXN (QCLot: 3214570)								
ES1327000-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	94.5	70	130	
		EP080: Toluene	108-88-3	25 µg/L	97.4	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	98.7	70	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	99.6	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.2	70	130	
	EP080: Naphthalene	91-20-3	25 µg/L	109	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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213842)										
ES1327368-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	89.6	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	90.8	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	78.2	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213842)										
ES1327368-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	112	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	83.2	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	60.2	----	52	132	----	----
EP075(SIM)A: Phenolic Compounds (QCLot: 3213843)										
ES1327368-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	111	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	110	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	67.6	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	90.8	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	40.0	----	20	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3213843)										
ES1327368-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	108	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	115	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215144)										
ES1327422-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	79.5	----	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								
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215144)											
ES1327422-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	78.0	----	70	130	----	----	
EP080: BTEXN (QCLot: 3215144)											
ES1327422-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	85.4	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	72.6	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	74.8	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	75.8	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.1	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	72.5	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215895)											
ES1327439-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	88.0	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215895)											
ES1327439-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.8	----	70	130	----	----	
EP080: BTEXN (QCLot: 3215895)											
ES1327439-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	72.3	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	79.6	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	83.8	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	83.7	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.8	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	88.3	----	70	130	----	----	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215896)											
ES1327439-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	75.3	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	80.5	----	70	130	----	----	
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896)											
ES1327439-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	90.6	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)											
ES1327422-025	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)											
ES1327422-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	82.6	----	70	130	----	----	
EP080: BTEXN (QCLot: 3216012)											
ES1327422-025	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.5	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.2	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.0	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.9	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	83.2	----	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
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)										
ES1327373-006	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3218160)										
ES1327442-001	LU_MW02_0.4	EG005T: Arsenic	7440-38-2	50 mg/kg	119	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	108	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	112	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	109	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	113	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	127	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218161)										
ES1327442-001	LU_MW02_0.4	EG035T: Mercury	7439-97-6	5 mg/kg	87.2	----	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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3213890)										
ES1327437-002	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	96.9	----	74	150	----	----
		EP071: C15 - C28 Fraction	----	300 µg/L	100	----	77	153	----	----
		EP071: C29 - C36 Fraction	----	200 µg/L	108	----	67	153	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3213890)										
ES1327437-002	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	250 µg/L	99.8	----	74	150	----	----
		EP071: >C16 - C34 Fraction	----	350 µg/L	107	----	77	153	----	----
		EP071: >C34 - C40 Fraction	----	150 µg/L	106	----	67	153	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3214176)										
ES1327433-028	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	89.2	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3214570)										
ES1327000-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	112	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3214570)										
ES1327000-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	112	----	70	130	----	----
EP080: BTEXN (QCLot: 3214570)										
ES1327000-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	94.5	----	70	130	----	----
		EP080: Toluene	108-88-3	25 µg/L	97.4	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	25 µg/L	98.7	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	99.6	----	70	130	----	----
			106-42-3							
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.2	----	70	130	----	----
		EP080: Naphthalene	91-20-3	25 µg/L	109	----	70	130	----	----
EG020T: Total Metals by ICP-MS (QCLot: 3215707)										



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
EG020T: Total Metals by ICP-MS (QCLot: 3215707) - continued										
ES1326945-003	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	----	70	130	----	----
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	----	70	130	----	----
		EG020A-T: Chromium	7440-47-3	1 mg/L	110	----	70	130	----	----
		EG020A-T: Copper	7440-50-8	1 mg/L	114	----	70	130	----	----
		EG020A-T: Lead	7439-92-1	1 mg/L	109	----	70	130	----	----
		EG020A-T: Nickel	7440-02-0	1 mg/L	110	----	70	130	----	----
		EG020A-T: Zinc	7440-66-6	1 mg/L	110	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327442	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	: LIDDELL	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 19-DEC-2013
Sampler	: RO	No. of samples received	: 6
Order number	: 0224198	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
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103) LU_MW02_0.4, LJ_MW01_0.8	05-DEC-2013	----	----	----	17-DEC-2013	19-DEC-2013	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) LU_MW02_0.4, LJ_MW01_0.8	05-DEC-2013	18-DEC-2013	03-JUN-2014	✓	18-DEC-2013	03-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) LU_MW02_0.4, LJ_MW01_0.8	05-DEC-2013	18-DEC-2013	02-JAN-2014	✓	18-DEC-2013	02-JAN-2014	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	18-DEC-2013	26-JAN-2014	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013							
Soil Glass Jar - Unpreserved (EP071) LU_MW02_0.4, LJ_MW01_0.8	05-DEC-2013	16-DEC-2013	19-DEC-2013	✓	16-DEC-2013	25-JAN-2014	✓
EP074D: Fumigants							
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074E: Halogenated Aliphatic Compounds							
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074F: Halogenated Aromatic Compounds							
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074B: Oxygenated Compounds							
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-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
EP074C: Sulfonated Compounds							
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074G: Trihalomethanes							
Soil Glass Jar - Unpreserved (EP074) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM)) LU_MW02_0.4, LJ_MW01_0.8	05-DEC-2013	16-DEC-2013	19-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) LU_MW02_0.4, LJ_MW01_0.8	05-DEC-2013	16-DEC-2013	19-DEC-2013	✓	17-DEC-2013	25-JAN-2014	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) LU_MW02_0.4	05-DEC-2013	16-DEC-2013	19-DEC-2013	✓	17-DEC-2013	19-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	18-DEC-2013	19-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) T/BLANK, T/SPIKE	28-NOV-2013	16-DEC-2013	12-DEC-2013	*	17-DEC-2013	12-DEC-2013	*
Soil Glass Jar - Unpreserved (EP080) TSC	28-NOV-2013	17-DEC-2013	12-DEC-2013	*	17-DEC-2013	12-DEC-2013	*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013							
Soil Glass Jar - Unpreserved (EP080) LU_MW02_0.4	05-DEC-2013	16-DEC-2013	19-DEC-2013	✓	17-DEC-2013	19-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LJ_MW01_0.8	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	18-DEC-2013	19-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) T/BLANK, T/SPIKE	28-NOV-2013	16-DEC-2013	12-DEC-2013	*	17-DEC-2013	12-DEC-2013	*
Soil Glass Jar - Unpreserved (EP080) TSC	28-NOV-2013	17-DEC-2013	12-DEC-2013	*	17-DEC-2013	12-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
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) R01_051213_JK	05-DEC-2013	17-DEC-2013	03-JUN-2014	✓	17-DEC-2013	03-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) R01_051213_JK	05-DEC-2013	----	----	----	16-DEC-2013	02-JAN-2014	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) R01_051213_JK	05-DEC-2013	16-DEC-2013	12-DEC-2013	*	16-DEC-2013	25-JAN-2014	✓

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 Work Order : ES1327442
 Client : ENVIRO RESOURCES MANAGEMENT
 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
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) R01_051213_JK	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	17-DEC-2013	19-DEC-2013	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP080) R01_051213_JK	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	17-DEC-2013	19-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	
Laboratory Duplicates (DUP)							
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	17	11.8	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	1	2	50.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	2	50.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	17	11.8	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	6	59	10.2	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
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	59	5.1	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
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	59	5.1	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
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	17	5.9	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	59	5.1	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

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	
Analytical Methods							



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	
Analytical Methods							
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	1	3	33.3	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 - Semivolatile Fraction	EP071	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
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	3	33.3	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	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
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	3	33.3	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	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
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	3	33.3	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	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



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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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)
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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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>
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
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

- 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
EP074A: Monocyclic Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved LJ_MW01_0.8	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074B: Oxygenated Compounds						
Soil Glass Jar - Unpreserved LJ_MW01_0.8	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074C: Sulfonated Compounds						
Soil Glass Jar - Unpreserved LJ_MW01_0.8	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074D: Fumigants						
Soil Glass Jar - Unpreserved LJ_MW01_0.8	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074E: Halogenated Aliphatic Compounds						
Soil Glass Jar - Unpreserved LJ_MW01_0.8	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074F: Halogenated Aromatic Compounds						
Soil Glass Jar - Unpreserved LJ_MW01_0.8	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074G: Trihalomethanes						
Soil Glass Jar - Unpreserved LJ_MW01_0.8	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6



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
EP074H: Naphthalene						
Soil Glass Jar - Unpreserved LJ_MW01_0.8	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved T/BLANK, T/SPIKE	16-DEC-2013	12-DEC-2013	4	17-DEC-2013	12-DEC-2013	5
Soil Glass Jar - Unpreserved TSC	17-DEC-2013	12-DEC-2013	5	17-DEC-2013	12-DEC-2013	5
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013						
Soil Glass Jar - Unpreserved T/BLANK, T/SPIKE	16-DEC-2013	12-DEC-2013	4	17-DEC-2013	12-DEC-2013	5
Soil Glass Jar - Unpreserved TSC	17-DEC-2013	12-DEC-2013	5	17-DEC-2013	12-DEC-2013	5
EP080: BTEXN						
Soil Glass Jar - Unpreserved T/BLANK, T/SPIKE	16-DEC-2013	12-DEC-2013	4	17-DEC-2013	12-DEC-2013	5
Soil Glass Jar - Unpreserved TSC	17-DEC-2013	12-DEC-2013	5	17-DEC-2013	12-DEC-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
EP080/071: Total Petroleum Hydrocarbons						
Amber Glass Bottle - Unpreserved R01_051213_JK	16-DEC-2013	12-DEC-2013	4	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013						
Amber Glass Bottle - Unpreserved R01_051213_JK	16-DEC-2013	12-DEC-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.

Sydney Melbourne Brisbane Perth Hunter Valley North Coast Other
 Grand Floor, 33 Saunders Street, Pymont, NSW, 2008. (ph) 02 8584 8888 (fax) 02 8584 8800
 Level 3, Yarra Tower, WTC, 18-38 Siddley Street, Docklands, VIC, 3005. (ph) 03 9696 8011 (fax) 03 9696 8022
 Level 1, 60 Leichhardt Street, Spring Hill QLD, 4004. (ph) 07 3839 8393 (fax) 07 3839 8381
 Level 6, Grain Pool Bld, 172 St Georges Ter, WA, 6850. (ph) 08 9321 5200 (fax) 08 9321 5262
 53 Bonville Avenue, Thornton, NSW, 2322. (ph) 02 4964 2150 (fax) 02 4964 2152
 Suite 3/146 Gordon Street, Port Macquarie, NSW, 2444. (ph) 02 6584 7155 (fax) 02 6584 7160

Project No: 0224193
 Project Name: Symphony
 Project Location: Baywater
 Project Manager: Joe Fanning
 Sampler: Gavin Powell
 Laboratory: ALS
 COC Number: A 11741

Laboratory Number	Sample ID	Sample Depth	Sample Date	Sample Time	Matrix		Preservation			Yes (tick)		TPH (C10-C36) +	Speciated TPH	VOC Scan (USEPA 8260 List)	SVOC Scan (USEPA 8270 List)	OC OP Pesticides	PAH	Phenols	PCB	Metals* (dissolved / total)	Asbestos P/A	PH, GEC	VOCs, TOC	Other Comments on sample (eg: high voc, highly contaminated, special detection limits etc etc)
					Soil	Water	Acid	Filter	Other	Containers (number/type)	TRH													
1	BM-S001(2)-0.2	0.2	6/12			X											X	X	X	X	X	X	X	ON HOLD vs
2	BM-S001(2)-0.8	0.8															X	X	X	X	X	X	X	
3	BM-MW01-0.2	0.2															X	X	X	X	X	X	X	
4	BM-MW01-0.5	0.5															X	X	X	X	X	X	X	
5	BM-MW02-1.0	1.0															X	X	X	X	X	X	X	
6	BM-MW03-0.2	0.2															X	X	X	X	X	X	X	
7	BM-MW05-0.2	0.2															X	X	X	X	X	X	X	
8	BM-MW05-1.5	1.5															X	X	X	X	X	X	X	
9	DO1-061213-CP																X	X	X	X	X	X	X	
10	DO1-061213-CP		6/12			X											X	X	X	X	X	X	X	
11	BY-MW11-0.2	0.2				X											X	X	X	X	X	X	X	
12	BY-MW12-0.2	0.2															X	X	X	X	X	X	X	
13	BY-MW23-0.2	0.2															X	X	X	X	X	X	X	
14	BY-MW24-0.1	0.1															X	X	X	X	X	X	X	
15	BY-MW25-0.1	0.1															X	X	X	X	X	X	X	
16	BY-MW26-0.1	0.1															X	X	X	X	X	X	X	
17	BY-MW27-0.1	0.1															X	X	X	X	X	X	X	
18	BY-MW29-0.1	0.1	9/12			X											X	X	X	X	X	X	X	

Comments: email Symphony-macqen@erm.com
 Relinquished by: Gavin Powell Signed: [Signature] Date/Time: 10/12/17 0600
 Relinquished by: KL Signed: [Signature] Date/Time: 13/12/17 1700
 Relinquished by: Sarin Signed: [Signature] Date/Time: 14.12.15 10:00

Environmental Division
 Sydney
 Work Order
ES1327521
 Telephone: +61-2-8784 8555



Subcon / Forward Lab / Split WO
 Lab / Analysis: ASD - Nickel
 Organised By / Date: Asbestos - Asst
 Relinquished by / Date: JDS - 10/12/17
 Connote / Courier: to Enviro Lab, Macq
 WO No: 10
 Attach By PO / Internal Sheet: ---

*Metals (circle)
 As Cd Cr Cu Hg Ni Pb Zn

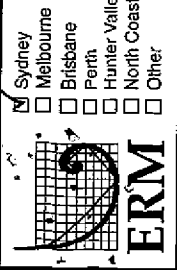
Project No: 0224193
 Project Name: Symphony
 Project Location: Bayswater
 Project Manager: Joe Ferring
 Sampler: Gavin Powell
 Laboratory: ALS
 COC Number: A 11742

Gnd Floor, 33 Saunders Street, Pymont, NSW, 2009. (ph) 02 8584 8888 (fax) 02 8584 8800
 Level 3, Yarra Tower, WTC, 18-38 Siddaley Street, Docklands, VIC, 3005. (ph) 03 9696 8011 (fax) 03 9696 8022
 Level 1, 60 Leichhardt Street, Spring Hill, QLD, 4004. (ph) 07 3839 8393 (fax) 07 3839 8381
 Level 6, Grain Pool Bld, 172 St Georges Ter, WA, 6850. (ph) 08 9321 5200 (fax) 08 9321 5262
 53 Bonville Avenue, Thornton, NSW, 2322. (ph) 02 4964 2150 (fax) 02 4964 2152
 Suite 3/146 Gordon Street, Port Macquarie, NSW, 2444. (ph) 02 6584 7155 (fax) 02 6584 7160

Laboratory Number	Sample ID	Sample Depth	Sample Date	Sample Time	Matrix		Preservation			Containers (number/type)	BTEX + TPH	Speciated TPH	VOC Scan (USEPA 8260 List)	SVOC Scan (USEPA 8270 List)	DC OP Pesticides	PAH	Phenols	PCB	Metals* (dissolved / total)	Asbestos P/A	VOCs	BTEX + G-6	Other Comments on sample (eg: high voc, highly contaminated, special detection limits etc etc)
					Water	Soil	Ice	Other	Acid														
19	BE-MN08-0.2		9/12		X			X		2						X			X				
20	BE-MN09-0.2									2						X			X				
21	BE-MN10-0.1									2						X			X				
22	BE-MN11-0.2		9/12		X			X		2						X			X				
23	BL-MN12-8.0		9/12		X			X		1						X			X				
24	LV-MN06-0.05		10/12		X			X		2						X			X				
25	Spike		11/2																				
26	Blank		0/2																				

TAT

Comments: Email symphony.margen@erm.com
 Relinquished by: gavin powell
 Relinquished by: KA
 Signed: [Signature]
 Signed: [Signature]
 Date/Time: 10/12/13 0600
 Date/Time: 13/12/13 1630
 Received by: TA
 Received by: [Signature]
 *Metals (circle) As Cd Cr Cu Hg Ni Pb Zn



Sydney
 Melbourne
 Brisbane
 Perth
 Hunter Valley
 North Coast
 Other

Grand Floor, 33 Saunders Street, Pyrmont, NSW, 2008. (ph) 02 8584 8888 (fax) 02 8584 8800
 Level 3, Yarra Tower, WTC, 48-38 Siddley Street, Docklands, VIC, 3005. (ph) 03 9696 8011 (fax) 03 9696 8022
 Level 1, 60 Leichhardt Street, Spring Hill, QLD, 4004. (ph) 07 3839 8393 (fax) 07 3839 8381
 Level 6, Grain Pool Bld, 172 St Georges Tce, WA, 6850. (ph) 08 9321 5200 (fax) 08 9321 5262
 53 Bonville Avenue, Thornion, NSW, 2322. (ph) 02 4964 2150 (fax) 02 4964 2152
 Suite 3/148 Gordon Street, Port Macquarie, NSW, 2444. (ph) 02 6584 7155 (fax) 02 6584 7160

Project No: 0024193
 Project Name: Symphony
 Project Location: Bayswater
 Project Manager: Joe Fering
 Sampler: Gavin Powell
 Laboratory: ALS
 COC Number: A 11744

Laboratory Number	Sample ID	Sample Depth	Sample Date	Sample Time	Matrix				Preservation			Containers (number/type)	Yes (tick)	Other Comments on sample (eg: high voc, highly contaminated, special detection limits etc etc)	
					Soil	Water	Ice	Other	Acid	Filter	Other				
27	BY-MW09-3.9		12/12		X				X			2			
28	BY-MW09-2.0											1			
29	BY-MW08-2.6											1			
30	BY-MW08-1.5											1			
31	BY-MW18-0.2				X							3			
32	BY-MW32-0.2				X							3			
33	RE1-121213-CP		12/12		X				X			4			
34	TS01				X				X			1			
35	TS01				X				X			1			
36	BE-MW11-4.0		13/12		X							1			
37	BE-MW11-5.0		13/12		X				X			1			
38	TSC9		12/12		X							1			
39	BY-MW-38-0.2				X							1			

Metals* (dissolved / total)	PB	Phenols	PAH	OC OP Pesticides	VOC scan (USEPA 8260 List)	SVOC scan (USEPA 8270 List)	Speciated TPH	TFH (C6-C9 P & T) +	BTEX + TRH
As Cd Cr Cu Hg Ni Pb Zn									
BTX + C6-6s									
ON HOLD									

Comments: email symphony.masgers@erm.com
 Relinquished by: Gavin Powell
 Relinquished by: [Signature]
 Date/Time: 13/12/13 1630
 Date/Time: 13/12/13 1630
 Received by: KA
 Received by: [Signature]
 Date/Time: 1700
 Date/Time: 1700

Wael Saleh

From: Fadi Soro
Sent: Monday, 16 December 2013 1:52 PM
To: Wael Saleh
Cc: Clea.Henderson@erm.com
Subject: FW: ERM Samples BY_MW08_1.5 and BM_SB01(2)_0.2
Attachments: img-Z16121212-0001.pdf

Hey Wael,

Can you please delete samples #1 & #37 as per clients email below?

Regards

Fadi

From: Clea Henderson [mailto:Clea.Henderson@erm.com]
Sent: Monday, 16 December 2013 1:25 PM
To: Fadi Soro; Joseph Ferring
Cc: ERM Australia Project Symphony MacGen; Barbara Hanna
Subject: RE: ERM Samples BY_MW08_1.5 and BM_SB01(2)_0.2

Thanks Fadi,

Yes, samples 001 and 037 should be placed on hold. Please send through SRN asap.

Clea Henderson
Chemical Engineer

Environmental Resources Management
Level 3, Tower 3, 13-38 Siddeley Street,
World Trade Centre, Docklands Victoria 3005

Tel: +61 3 8606 4188 (Direct)
Tel: +61 3 9696 8011 (switchboard)
Fax: +61 3 9696 8022

www.erm.com
clea.henderson@erm.com

From: Fadi Soro [mailto:fadi.soro@alsglobal.com]
Sent: Monday, December 16, 2013 1:06 PM
To: Clea Henderson; Joseph Ferring
Cc: ERM Australia Project Symphony MacGen
Subject: RE: ERM Samples BY_MW08_1.5 and BM_SB01(2)_0.2

Hi,

COC attached.

Regards

Environmental Division
Sydney

Work Order

ES1327521



Telephone : +61-2-8784 8555

TAT

Fadi

From: Clea Henderson [<mailto:Clea.Henderson@erm.com>]
Sent: Monday, 16 December 2013 12:55 PM
To: Fadi Soro; Joseph Ferring
Cc: ERM Australia Project Symphony MacGen
Subject: RE: ERM Samples BY_MW08_1.5 and BM_SB01(2)_0.2

Hi Fadi,

Can you please send through a scan of the COC (to the ERM Symphony MacGen mailbox) so I can have a look and get back to you?

Thanks,

Clea Henderson
Chemical Engineer

Environmental Resources Management
Level 3, Tower 3, 13-38 Siddeley Street,
World Trade Centre, Docklands Victoria 3005

Tel: +61 3 8606 4188 (Direct)
Tel: +61 3 9696 8011 (switchboard)
Fax: +61 3 9696 8022

www.erm.com
clea.henderson@erm.com

From: Fadi Soro [<mailto:fadi.soro@alsglobal.com>]
Sent: Monday, December 16, 2013 12:39 PM
To: Joseph Ferring
Cc: Clea Henderson
Subject: RE: ERM Samples BY_MW08_1.5 and BM_SB01(2)_0.2

Hi Joe,

The batch number for these 2 samples is ES1327521 ALS samples #1 & #37.

Sample ID BM_SB01(2)-0.2 requires PH,CEC,PSD & TOC
Sample ID BY_MW08-1.5 requires PH,CEC,TOC & PSD

Therefore you want these 2 samples placed on hold?

Regards

Fadi

From: Joseph Ferring [mailto:Joseph.Ferring@erm.com]
Sent: Monday, 16 December 2013 12:34 PM
To: Fadi Soro
Cc: Clea Henderson
Subject: ERM Samples BY_MW08_1.5 and BM_SB01(2)_0.2

Hi Fadi, please cancel the PSD, pH, CEC and TOC analysis for these two samples. If there are other analytes (TRH, BTEX, metals, etc) requested, please proceed with these analyses.

Can you please reply with the batch number once committed so we can track on our end?

cheers

Joe Ferring
Senior Environmental Scientist

ERM
Building C, 33 Saunders Street Pyrmont NSW 2009
Locked Bag 24, Broadway NSW 2007 AUSTRALIA

T: +61 (0)2 8584 8890 (Direct)
T: +61 (0)2 8584 8888 (Office)
F: +61 (0)2 8584 8800
M: +61 424970468
joseph.ferring@erm.com

www.erm.com

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Jacob Waugh

From: Barbara Hanna
Sent: Thursday, 19 December 2013 10:03 AM
To: Jacob Waugh
Subject: FW: ES1327251

Hi Jacob,

Could you please arrange this ASAP and add 3 days to the SRN.

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



Please consider the environment before printing this email.

From: Clea Henderson [mailto:Clea.Henderson@erm.com]
Sent: Thursday, 19 December 2013 9:27 AM
To: Barbara Hanna
Cc: Joseph Ferring; ERM Australia Project Symphony MacGen
Subject: ES1327251

Hi Barbara,

I was wondering if I could please add some analysis to batch ES1327521?

I know this batch is due but can we please urgently add VOC and PCB analysis to samples:

002
003
004
005
006
007
008
019

Let me know if it is possible. Thanks!

Clea Henderson
Chemical Engineer

Environmental Resources Management
Level 3, Tower 3, 13-38 Siddeley Street,
World Trade Centre, Docklands Victoria 3005

Tel: +61 3 8606 4188 (Direct)
Tel: +61 3 9696 8011 (switchboard)
Fax: +61 3 9696 8022

www.erm.com
clea.henderson@erm.com

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SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : ES1327521	
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 : 0224193 SYMPHONY	Page : 1 of 4
Order number : ----	
C-O-C number : 11741	Quote number : ES2013ENVRES0369 (SY/794/13)
Site : BAYSWATER	
Sampler : GAVIN POWELL	QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received : 13-DEC-2013	Issue Date : 19-DEC-2013 09:44
Client Requested Due Date : 24-DEC-2013	Scheduled Reporting Date : 24-DEC-2013

Delivery Details

Mode of Delivery : Carrier	Temperature : 4.4°C SYD - Ice present
No. of coolers/boxes : 1 HARD	No. of samples received : 37
Security Seal : Intact.	No. of samples analysed : 32

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
- Sample containers do not comply to pretreatment / preservation standards (AS, APHA, USEPA). Please refer to the Sample Container(s)/Preservation Non-Compliance Log at the end of this report for details.
- Asbestos analysis will be subcontracted to ASET.
- Sample T01_061213_GP to be forwarded to Envirolab.
- Samples TS01 and TB01 were not received.
- Sample BY_MW8_0.2 was received extra and placed on hold.
- **Sample containers do not comply to pretreatment / preservation standards (AS, APHA, USEPA). Please refer to the Sample Container(s)/Preservation Non-Compliance Log at the end of this report for details.**
- **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).**
- **VOC scan and PCB's added to samples 2, 3, 4, 5, 6, 7, 8 & 19 on 19/12/2013 as per Clea Henderson.**
- 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 - ASB-SOI (Subcontracted) Asbestos - Count (Solid)	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
ES1327521-034	13-DEC-2013 15:00	BF_MW11_4.0						✓
ES1327521-035	13-DEC-2013 15:00	BG_MW11_5.0						✓
ES1327521-036	12-DEC-2013 15:00	BY_MW09_2.6	✓					
ES1327521-037	12-DEC-2013 15:00	BY_MW08_1.5	✓					
ES1327521-038	12-DEC-2013 15:00	TSC 9				✓		
ES1327521-039	12-DEC-2013 15:00	BY_MW8_0.2	✓					

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) WATER No analysis requested	WATER - W-27 TRH/BTEXN/PAH/Phenols/8 Metals
ES1327521-010	09-DEC-2013 15:00	R01_091213_GP		✓
ES1327521-031	12-DEC-2013 15:00	R01_121213_GP	✓	

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	
Client Sample ID(s)	Container			Date	Evaluation	Date	Evaluation
EP074: Volatile Organic Compounds							
BM_MW01_0.2	Soil Glass Jar - Unpreserved	13-DEC-2013	----	13-DEC-2013	✔	16-DEC-2013	✖
BM_MW02_0.5	Soil Glass Jar - Unpreserved	13-DEC-2013	----	13-DEC-2013	✔	16-DEC-2013	✖
BM_MW02_1.0	Soil Glass Jar - Unpreserved	13-DEC-2013	----	13-DEC-2013	✔	16-DEC-2013	✖
BM_MW03_0.2	Soil Glass Jar - Unpreserved	13-DEC-2013	----	13-DEC-2013	✔	16-DEC-2013	✖
BM_MW05_0.2	Soil Glass Jar - Unpreserved	13-DEC-2013	----	13-DEC-2013	✔	16-DEC-2013	✖
BM_MW05_1.5	Soil Glass Jar - Unpreserved	13-DEC-2013	----	13-DEC-2013	✔	16-DEC-2013	✖
BM_SB01 (2)_0.8	Soil Glass Jar - Unpreserved	13-DEC-2013	----	13-DEC-2013	✔	16-DEC-2013	✖



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

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
- Attachment - Report (SUBCO)	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 : ES1327521 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : 0224193 SYMPHONY Order number : ---- C-O-C number : 11741 Sampler : GAVIN POWELL Site : BAYSWATER Quote number : SY/794/13	Page : 1 of 35 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 13-DEC-2013 Issue Date : 24-DEC-2013 No. of samples received : 37 No. of samples analysed : 32
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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
Pabi Subba	Senior Organic Chemist	Sydney Organics
Phalak Inthaksone	Laboratory Manager - Organics	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

				BM_SB01 (2)_0.8	BM_MW01_0.2	BM_MW02_0.5	BM_MW02_1.0	BM_MW03_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-002	ES1327521-003	ES1327521-004	ES1327521-005	ES1327521-006
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	7.2	6.6	23.3	14.7	17.3
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	13	10	8	12	11
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	14	11	18	17	22
Copper	7440-50-8	5	mg/kg	23	16	15	23	29
Lead	7439-92-1	5	mg/kg	18	14	16	24	22
Nickel	7440-02-0	2	mg/kg	24	22	15	22	27
Zinc	7440-66-6	5	mg/kg	133	66	101	127	86
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
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
Styrene	100-42-5	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
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
EP074B: Oxygenated Compounds								
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

				BM_SB01 (2)_0.8	BM_MW01_0.2	BM_MW02_0.5	BM_MW02_1.0	BM_MW03_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-002	ES1327521-003	ES1327521-004	ES1327521-005	ES1327521-006
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants								
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
EP074E: Halogenated Aliphatic Compounds								
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

				BM_SB01 (2)_0.8	BM_MW01_0.2	BM_MW02_0.5	BM_MW02_1.0	BM_MW03_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-002	ES1327521-003	ES1327521-004	ES1327521-005	ES1327521-006
EP074E: Halogenated Aliphatic Compounds - Continued								
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
EP074F: Halogenated Aromatic Compounds								
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
EP074G: Trihalomethanes								
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
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds								
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

				BM_SB01 (2)_0.8	BM_MW01_0.2	BM_MW02_0.5	BM_MW02_1.0	BM_MW03_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-002	ES1327521-003	ES1327521-004	ES1327521-005	ES1327521-006
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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

				BM_SB01 (2)_0.8	BM_MW01_0.2	BM_MW02_0.5	BM_MW02_1.0	BM_MW03_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-002	ES1327521-003	ES1327521-004	ES1327521-005	ES1327521-006
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
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
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	78.8	81.5	83.4	61.1	76.7
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	79.2	79.2	73.4	76.0	76.7
Toluene-D8	2037-26-5	0.1	%	110	108	106	109	105
4-Bromofluorobenzene	460-00-4	0.1	%	101	103	103	101	98.3
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	112	104	111	109	106
2-Chlorophenol-D4	93951-73-6	0.1	%	109	110	110	115	111
2,4,6-Tribromophenol	118-79-6	0.1	%	68.7	75.0	69.3	77.0	79.1
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	108	112	107	114	113
Anthracene-d10	1719-06-8	0.1	%	97.6	97.8	97.2	100	98.4
4-Terphenyl-d14	1718-51-0	0.1	%	84.9	83.6	80.8	83.8	83.3
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	110	105	106	88.1	89.4
Toluene-D8	2037-26-5	0.1	%	109	96.0	102	87.4	90.6
4-Bromofluorobenzene	460-00-4	0.1	%	97.7	90.9	94.0	87.6	91.1



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BM_MW05_0.2	BM_MW05_1.5	D01_061213_GP	BY_MW11_0.2	BY_MW12_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-007	ES1327521-008	ES1327521-009	ES1327521-011	ES1327521-012
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	25.4	11.9	18.1	9.6	14.8
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	10	8	15	11	12
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	33	20	12	8	7
Copper	7440-50-8	5	mg/kg	22	32	20	18	20
Lead	7439-92-1	5	mg/kg	18	17	18	14	13
Nickel	7440-02-0	2	mg/kg	19	30	20	12	13
Zinc	7440-66-6	5	mg/kg	48	89	175	56	65
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----	----	----
Styrene	100-42-5	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	----	----	----
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
EP074B: Oxygenated Compounds								
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

				BM_MW05_0.2	BM_MW05_1.5	D01_061213_GP	BY_MW11_0.2	BY_MW12_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-007	ES1327521-008	ES1327521-009	ES1327521-011	ES1327521-012
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	----	<0.5	<0.5
EP074D: Fumigants								
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
EP074E: Halogenated Aliphatic Compounds								
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

				BM_MW05_0.2	BM_MW05_1.5	D01_061213_GP	BY_MW11_0.2	BY_MW12_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-007	ES1327521-008	ES1327521-009	ES1327521-011	ES1327521-012
EP074E: Halogenated Aliphatic Compounds - Continued								
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
EP074F: Halogenated Aromatic Compounds								
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
EP074G: Trihalomethanes								
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
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	----	<5	<5
EP075(SIM)A: Phenolic Compounds								
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

				BM_MW05_0.2	BM_MW05_1.5	D01_061213_GP	BY_MW11_0.2	BY_MW12_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-007	ES1327521-008	ES1327521-009	ES1327521-011	ES1327521-012
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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

				BM_MW05_0.2	BM_MW05_1.5	D01_061213_GP	BY_MW11_0.2	BY_MW12_0.2
				06-DEC-2013 15:00	06-DEC-2013 15:00	06-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-007	ES1327521-008	ES1327521-009	ES1327521-011	ES1327521-012
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
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
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	76.8	70.1	----	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	70.3	79.3	----	93.2	105
Toluene-D8	2037-26-5	0.1	%	104	108	----	96.8	108
4-Bromofluorobenzene	460-00-4	0.1	%	101	103	----	88.3	101
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	97.4	101	97.7	98.3	102
2-Chlorophenol-D4	93951-73-6	0.1	%	99.7	104	100	104	107
2,4,6-Tribromophenol	118-79-6	0.1	%	90.8	86.9	88.9	85.5	90.1
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	101	102	99.7	100	104
Anthracene-d10	1719-06-8	0.1	%	85.9	86.4	88.4	86.6	90.3
4-Terphenyl-d14	1718-51-0	0.1	%	82.3	82.8	83.4	82.6	85.2
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	94.7	98.1	87.4	92.8	105
Toluene-D8	2037-26-5	0.1	%	92.9	97.2	86.9	85.4	94.8
4-Bromofluorobenzene	460-00-4	0.1	%	95.8	102	91.2	81.4	93.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BY_MW23_0.2	BY_MW24_0.1	BY_MW25_0.1	BY_MW26_0.1	BY_MW27_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-013	ES1327521-014	ES1327521-015	ES1327521-016	ES1327521-017
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	21.6	20.4	15.7	25.3	12.4
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	5	16	24	10	11
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	11	39	34	12	12
Copper	7440-50-8	5	mg/kg	<5	12	13	9	7
Lead	7439-92-1	5	mg/kg	9	24	19	17	15
Nickel	7440-02-0	2	mg/kg	4	8	28	9	6
Zinc	7440-66-6	5	mg/kg	13	37	47	58	41
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
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
EP074B: Oxygenated Compounds								
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
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	BY_MW23_0.2	BY_MW24_0.1	BY_MW25_0.1	BY_MW26_0.1	BY_MW27_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
				ES1327521-013	ES1327521-014	ES1327521-015	ES1327521-016	ES1327521-017
EP074D: Fumigants - Continued								
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074E: Halogenated Aliphatic Compounds								
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
EP074F: Halogenated Aromatic Compounds								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BY_MW23_0.2	BY_MW24_0.1	BY_MW25_0.1	BY_MW26_0.1	BY_MW27_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-013	ES1327521-014	ES1327521-015	ES1327521-016	ES1327521-017
EP074F: Halogenated Aromatic Compounds - Continued								
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
EP074G: Trihalomethanes								
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
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds								
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								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BY_MW23_0.2	BY_MW24_0.1	BY_MW25_0.1	BY_MW26_0.1	BY_MW27_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-013	ES1327521-014	ES1327521-015	ES1327521-016	ES1327521-017
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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
EP080: BTEXN								
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

				BY_MW23_0.2	BY_MW24_0.1	BY_MW25_0.1	BY_MW26_0.1	BY_MW27_0.1
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-013	ES1327521-014	ES1327521-015	ES1327521-016	ES1327521-017
EP080: BTEXN - Continued								
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
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	92.8	93.0	108	106	97.2
Toluene-D8	2037-26-5	0.1	%	95.9	93.6	108	102	92.4
4-Bromofluorobenzene	460-00-4	0.1	%	86.9	88.2	95.2	91.8	86.8
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	105	93.8	102	94.0	94.4
2-Chlorophenol-D4	93951-73-6	0.1	%	102	94.6	108	97.5	97.8
2,4,6-Tribromophenol	118-79-6	0.1	%	72.4	85.4	89.0	82.0	81.3
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	108	97.9	106	96.0	96.0
Anthracene-d10	1719-06-8	0.1	%	96.2	85.2	91.5	83.1	82.2
4-Terphenyl-d14	1718-51-0	0.1	%	78.8	80.7	86.3	79.2	77.8
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	92.4	93.1	108	106	96.5
Toluene-D8	2037-26-5	0.1	%	85.7	82.8	94.9	90.6	81.0
4-Bromofluorobenzene	460-00-4	0.1	%	82.1	83.9	90.5	88.4	80.8



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BY_MW29_0.1	BM_MW08_0.2	BF_MW09_0.2	BF_MW10_0.1	BF_MW11_0.2
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-018	ES1327521-019	ES1327521-020	ES1327521-021	ES1327521-022
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	17.3	19.3	18.2	16.5	15.3
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	10	10	<5	<5	11
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	20	32	94	<2	14
Copper	7440-50-8	5	mg/kg	14	6	40	10	9
Lead	7439-92-1	5	mg/kg	17	14	6	8	10
Nickel	7440-02-0	2	mg/kg	14	16	59	<2	13
Zinc	7440-66-6	5	mg/kg	64	34	60	78	42
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	<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	----	----	----
EP074B: Oxygenated Compounds								
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

				BY_MW29_0.1	BM_MW08_0.2	BF_MW09_0.2	BF_MW10_0.1	BF_MW11_0.2
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-018	ES1327521-019	ES1327521-020	ES1327521-021	ES1327521-022
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	----	----	----
EP074D: Fumigants								
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	----	----	----
EP074E: Halogenated Aliphatic Compounds								
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

				BY_MW29_0.1	BM_MW08_0.2	BF_MW09_0.2	BF_MW10_0.1	BF_MW11_0.2
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-018	ES1327521-019	ES1327521-020	ES1327521-021	ES1327521-022
EP074E: Halogenated Aliphatic Compounds - Continued								
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	----	----	----
EP074F: Halogenated Aromatic Compounds								
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	----	----	----
EP074G: Trihalomethanes								
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	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	----	----	----
EP075(SIM)A: Phenolic Compounds								
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

				BY_MW29_0.1	BM_MW08_0.2	BF_MW09_0.2	BF_MW10_0.1	BF_MW11_0.2
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-018	ES1327521-019	ES1327521-020	ES1327521-021	ES1327521-022
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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

				BY_MW29_0.1	BM_MW08_0.2	BF_MW09_0.2	BF_MW10_0.1	BF_MW11_0.2
				09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00	09-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-018	ES1327521-019	ES1327521-020	ES1327521-021	ES1327521-022
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
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
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	61.0	----	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	97.4	72.6	----	----	----
Toluene-D8	2037-26-5	0.1	%	90.0	105	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	81.4	96.6	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	98.8	99.0	98.2	91.8	98.4
2-Chlorophenol-D4	93951-73-6	0.1	%	101	103	102	92.4	102
2,4,6-Tribromophenol	118-79-6	0.1	%	83.1	86.7	83.1	83.9	85.6
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	97.3	99.4	99.2	97.2	98.3
Anthracene-d10	1719-06-8	0.1	%	83.4	85.8	85.9	84.4	84.8
4-Terphenyl-d14	1718-51-0	0.1	%	78.5	80.7	80.2	79.0	79.4
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	97.8	94.6	93.9	96.1	101
Toluene-D8	2037-26-5	0.1	%	79.3	90.3	90.7	93.1	93.4
4-Bromofluorobenzene	460-00-4	0.1	%	75.5	93.4	93.9	95.9	93.2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				BF_MW12_8.0	LV_MW06_0.05	SPIKE	BLANK	BY_MW09_3.9
				09-DEC-2013 15:00	10-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	12-DEC-2013 15:00
				ES1327521-023	ES1327521-024	ES1327521-025	ES1327521-026	ES1327521-027
Compound	CAS Number	LOR	Unit	Client sampling date / time				
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	13.5	20.2	----	----	11.2
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	20	<5	----	----	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	<1
Chromium	7440-47-3	2	mg/kg	15	6	----	----	23
Copper	7440-50-8	5	mg/kg	34	<5	----	----	49
Lead	7439-92-1	5	mg/kg	78	7	----	----	<5
Nickel	7440-02-0	2	mg/kg	16	<2	----	----	68
Zinc	7440-66-6	5	mg/kg	73	11	----	----	58
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
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	----	----	----
EP074B: Oxygenated Compounds								
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	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	----	<0.5	----	----	----
EP074D: Fumigants								
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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BF_MW12_8.0	LV_MW06_0.05	SPIKE	BLANK	BY_MW09_3.9
				09-DEC-2013 15:00	10-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-023	ES1327521-024	ES1327521-025	ES1327521-026	ES1327521-027
EP074D: Fumigants - Continued								
1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	----	<0.5	----	----	----
EP074E: Halogenated Aliphatic Compounds								
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	----	----	----
EP074F: Halogenated Aromatic Compounds								
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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BF_MW12_8.0	LV_MW06_0.05	SPIKE	BLANK	BY_MW09_3.9
				09-DEC-2013 15:00	10-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-023	ES1327521-024	ES1327521-025	ES1327521-026	ES1327521-027
EP074F: Halogenated Aromatic Compounds - Continued								
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	----	----	----
EP074G: Trihalomethanes								
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	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	----	<5	----	----	----
EP075(SIM)A: Phenolic Compounds								
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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BF_MW12_8.0	LV_MW06_0.05	SPIKE	BLANK	BY_MW09_3.9
				09-DEC-2013 15:00	10-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-023	ES1327521-024	ES1327521-025	ES1327521-026	ES1327521-027
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	----	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	----	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	56	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	62	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	35	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	----	<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
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.6	<0.2	<0.2



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BF_MW12_8.0	LV_MW06_0.05	SPIKE	BLANK	BY_MW09_3.9
				09-DEC-2013 15:00	10-DEC-2013 15:00	11-DEC-2013 15:00	11-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-023	ES1327521-024	ES1327521-025	ES1327521-026	ES1327521-027
EP080: BTEXN - Continued								
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	14.2	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	1.6	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	7.6	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	3.1	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	27.1	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	10.7	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	----	95.9	----	----	----
Toluene-D8	2037-26-5	0.1	%	----	89.0	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	80.6	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	88.1	94.8	----	----	88.1
2-Chlorophenol-D4	93951-73-6	0.1	%	90.4	94.2	----	----	89.3
2,4,6-Tribromophenol	118-79-6	0.1	%	48.8	61.4	----	----	44.1
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	91.8	93.6	----	----	90.2
Anthracene-d10	1719-06-8	0.1	%	86.5	90.4	----	----	87.8
4-Terphenyl-d14	1718-51-0	0.1	%	87.4	88.9	----	----	87.1
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	102	95.2	96.5	102	106
Toluene-D8	2037-26-5	0.1	%	95.7	75.9	94.9	95.0	99.8
4-Bromofluorobenzene	460-00-4	0.1	%	98.7	73.7	92.0	96.5	99.1



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				BY_MW08_2.6	BY_MW18_0.2	BY_MW32_0.2	BF_MW11_4.0	BG_MW11_5.0
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	13-DEC-2013 15:00	13-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-028	ES1327521-029	ES1327521-030	ES1327521-034	ES1327521-035
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	10.6	25.7	28.8	15.3	22.5
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	16	9	18	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	18	7	22	72	62
Copper	7440-50-8	5	mg/kg	10	9	36	55	55
Lead	7439-92-1	5	mg/kg	15	10	24	<5	<5
Nickel	7440-02-0	2	mg/kg	21	7	25	63	57
Zinc	7440-66-6	5	mg/kg	84	50	70	64	66
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)A: Phenolic Compounds								
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								
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

				BY_MW08_2.6	BY_MW18_0.2	BY_MW32_0.2	BF_MW11_4.0	BG_MW11_5.0
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	13-DEC-2013 15:00	13-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-028	ES1327521-029	ES1327521-030	ES1327521-034	ES1327521-035
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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
EP080: BTEXN								
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

				BY_MW08_2.6	BY_MW18_0.2	BY_MW32_0.2	BF_MW11_4.0	BG_MW11_5.0
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	13-DEC-2013 15:00	13-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327521-028	ES1327521-029	ES1327521-030	ES1327521-034	ES1327521-035
EP080: BTEXN - Continued								
^ 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
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	91.2	91.9	88.4	85.1	86.2
2-Chlorophenol-D4	93951-73-6	0.1	%	93.9	92.6	87.0	83.4	86.4
2,4,6-Tribromophenol	118-79-6	0.1	%	46.4	44.7	45.0	38.5	41.3
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	91.4	90.8	89.7	87.3	88.4
Anthracene-d10	1719-06-8	0.1	%	87.4	87.0	84.9	85.0	84.4
4-Terphenyl-d14	1718-51-0	0.1	%	86.8	86.4	84.7	83.8	83.9
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	94.8	101	94.2	107	100
Toluene-D8	2037-26-5	0.1	%	86.0	100	89.8	101	88.8
4-Bromofluorobenzene	460-00-4	0.1	%	86.9	98.5	92.3	102	83.5



Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)

Client sample ID

				TSC 9	----	----	----	----
				12-DEC-2013 15:00	----	----	----	----
<i>Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	ES1327521-038	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	73	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	80	----	----	----	----
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	42	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	0.8	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	20.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	2.2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	10.7	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	4.2	----	----	----	----
Sum of BTEX	----	0.2	mg/kg	38.4	----	----	----	----
Total Xylenes	1330-20-7	0.5	mg/kg	14.9	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	107	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	89.5	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	87.6	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_091213_GP

Client sampling date / time

09-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327521-010	---	---	---	---
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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

R01_091213_GP

Client sampling date / time

09-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327521-010	---	---	---	---
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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

R01_091213_GP

Client sampling date / time

09-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327521-010	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates - Continued								
Phenol-d6	13127-88-3	0.1	%	34.1	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	84.6	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	94.0	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	48.5	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	78.9	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	71.4	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	124	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	121	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	105	----	----	----	----



Surrogate Control Limits

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

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
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
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27.4	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

QUALITY CONTROL REPORT

Work Order	: ES1327521	Page	: 1 of 32
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	: 0224193 SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 13-DEC-2013
C-O-C number	: 11741	Issue Date	: 24-DEC-2013
Sampler	: GAVIN POWELL	No. of samples received	: 37
Order number	: ----	No. of samples analysed	: 32
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



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
Phalak Inthaksone

Position

Senior Spectroscopist
Senior Organic Chemist
Laboratory Manager - Organics

Accreditation Category

Sydney Inorganics
Sydney Organics
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.

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 (%)
EA055: Moisture Content (QC Lot: 3216839)									
ES1327439-002	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.1	17.5	8.3	0% - 50%
ES1327521-002	BM_SB01 (2)_0.8	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.2	7.3	1.5	No Limit
EA055: Moisture Content (QC Lot: 3216840)									
ES1327521-012	BY_MW12_0.2	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.8	16.6	11.2	0% - 50%
ES1327521-023	BF_MW12_8.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.5	13.2	2.4	0% - 50%
EA055: Moisture Content (QC Lot: 3216841)									
EW1303650-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	<1.0	<1.0	0.0	No Limit
EW1303657-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.1	13.4	5.1	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 3216123)									
ES1327433-013	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	23	29	23.3	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	14	8	53.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	14	34	85.2	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	15	6.9	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	17	9.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	42	36	15.4	No Limit
ES1327433-023	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	17	22	22.8	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	26	32	22.5	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	12	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	21	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	114	101	12.0	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	719	682	5.4	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 3216125)									
ES1327521-011	BY_MW11_0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	7	14.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	12	14	19.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	13	16.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	18	17	6.7	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	14	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	56	68	19.3	0% - 50%
ES1327521-021	BF_MW10_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005T: Total Metals by ICP-AES (QC Lot: 3216125) - continued									
ES1327521-021	BF_MW10_0.1	EG005T: Copper	7440-50-8	5	mg/kg	10	11	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	6	25.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	78	77	2.5	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216124)									
ES1327433-013	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327433-023	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3216126)									
ES1327521-011	BY_MW11_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327521-021	BF_MW10_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3220859)									
ES1327521-002	BM_SB01 (2)_0.8	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3216013)									
ES1327422-025	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
ES1327521-016	BY_MW26_0.1	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
ES1327521-002	BM_SB01 (2)_0.8	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
		EP074: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: meta- & para-Xylene	108-38-3	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: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3221397)									
ES1327521-002	BM_SB01 (2)_0.8	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: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074: ortho-Xylene	95-47-6	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: 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 (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3221397) - continued									
ES1327521-002	BM_SB01 (2)_0.8	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
EP074B: Oxygenated Compounds (QC Lot: 3216013)									
ES1327422-025	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
ES1327521-016	BY_MW26_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
EP074B: Oxygenated Compounds (QC Lot: 3221397)									
ES1327521-002	BM_SB01 (2)_0.8	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
EP074C: Sulfonated Compounds (QC Lot: 3216013)									
ES1327422-025	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1327521-016	BY_MW26_0.1	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 3221397)									
ES1327521-002	BM_SB01 (2)_0.8	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074D: Fumigants (QC Lot: 3216013)									
ES1327422-025	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
ES1327521-016	BY_MW26_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
EP074D: Fumigants (QC Lot: 3221397)									
ES1327521-002	BM_SB01 (2)_0.8	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 (%)
EP074D: Fumigants (QC Lot: 3221397) - continued									
ES1327521-002	BM_SB01 (2)_0.8	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
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3216013)									
ES1327422-025	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		
ES1327521-016	BY_MW26_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



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3216013) - continued									
ES1327521-016	BY_MW26_0.1	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		
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3221397)									
ES1327521-002	BM_SB01 (2)_0.8	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



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3221397) - continued									
ES1327521-002	BM_SB01 (2)_0.8	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
EP074F: Halogenated Aromatic Compounds (QC Lot: 3216013)									
ES1327422-025	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
ES1327521-016	BY_MW26_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
EP074F: Halogenated Aromatic Compounds (QC Lot: 3221397)									
ES1327521-002	BM_SB01 (2)_0.8	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
EP074G: Trihalomethanes (QC Lot: 3216013)									
ES1327422-025	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 (%)		
EP074G: Trihalomethanes (QC Lot: 3216013) - continued											
ES1327422-025	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		
ES1327521-016	BY_MW26_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		
EP074G: Trihalomethanes (QC Lot: 3221397)											
ES1327521-002	BM_SB01 (2)_0.8	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		
EP074H: Naphthalene (QC Lot: 3216013)											
ES1327422-025	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit		
ES1327521-016	BY_MW26_0.1	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit		
EP074H: Naphthalene (QC Lot: 3221397)											
ES1327521-002	BM_SB01 (2)_0.8	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit		
EP075(SIM)A: Phenolic Compounds (QC Lot: 3215994)											
ES1327521-002	BM_SB01 (2)_0.8	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		
		ES1327521-013	BY_MW23_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				



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 3215994) - continued									
ES1327521-013	BY_MW23_0.2	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
EP075(SIM)A: Phenolic Compounds (QC Lot: 3216003)									
ES1327422-025	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
ES1327422-036	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3215994)									
ES1327521-002	BM_SB01 (2)_0.8	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3215994) - continued									
ES1327521-002	BM_SB01 (2)_0.8	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
ES1327521-013	BY_MW23_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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3216003)									
ES1327422-025	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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3216003) - continued									
ES1327422-025	Anonymous	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
ES1327422-036	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3215831)									
ES1327521-002	BM_SB01 (2)_0.8	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327521-021	BF_MW10_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3215993)									
ES1327521-002	BM_SB01 (2)_0.8	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
ES1327521-013	BY_MW23_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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216002)									
ES1327422-025	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
ES1327422-036	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 (%)	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216002) - continued										
ES1327422-036	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	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216012)										
ES1327422-025	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
ES1327521-016	BY_MW26_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215831)										
ES1327521-002	BM_SB01 (2)_0.8	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1327521-021	BF_MW10_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215993)										
ES1327521-002	BM_SB01 (2)_0.8	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	
ES1327521-013	BY_MW23_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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216002)										
ES1327422-025	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	
ES1327422-036	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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216012)										
ES1327422-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
ES1327521-016	BY_MW26_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit	
EP080: BTEXN (QC Lot: 3215831)										
ES1327521-002	BM_SB01 (2)_0.8	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	
ES1327521-021	BF_MW10_0.1	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			



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
EP080: BTEXN (QC Lot: 3215831) - continued										
ES1327521-021	BF_MW10_0.1	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit	
EP080: BTEXN (QC Lot: 3216012)										
ES1327422-025	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	
ES1327521-016	BY_MW26_0.1	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			
Sub-Matrix: WATER										
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3215723)										
ES1327029-001	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	0.001	0.001	0.0	No Limit	
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.109	0.109	0.0	0% - 20%	
ES1327029-011	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0001	0.0002	0.0	No Limit	
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.004	0.0	No Limit	
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit	
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<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	0.002	0.003	0.0	No Limit	
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.147	0.144	2.3	0% - 20%	
EG035F: Dissolved Mercury by FIMS (QC Lot: 3215725)										
ES1327141-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216129)										
ES1326963-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit	
ES1327521-010	R01_091213_GP	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216129)										

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 Work Order : ES1327521
 Client : ENVIRO RESOURCES MANAGEMENT
 Project : 0224193 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 (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216129) - continued									
ES1326963-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES1327521-010	R01_091213_GP	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 3216129)									
ES1326963-001	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
ES1327521-010	R01_091213_GP	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	
EG005T: Total Metals by ICP-AES (QCLot: 3216123)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	116	87	129	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	108	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	118	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	109	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	119	81	133	
EG005T: Total Metals by ICP-AES (QCLot: 3216125)									
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	113	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	132	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	120	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	114	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	127	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	123	81	133	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216124)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	91.5	66	112	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216126)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	103	66	112	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3220859)									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	89.6	57.4	117	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3216013)									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	91.7	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	90.9	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	89.8	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	87.8	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	90.2	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	88.7	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	90.6	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	88.2	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	85.2	61	131	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3221397)									
EP074: Benzene	71-43-2	0.5	mg/kg	<0.5	1 mg/kg	104	64	118	
EP074: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	110	65	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	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3221397) - continued									
EP074: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	112	65	127	
EP074: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	116	69	127	
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	111	64	126	
EP074: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	110	65	119	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	118	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	119	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	121	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	121	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	123	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	118	61	131	
EP074B: Oxygenated Compounds (QCLot: 3216013)									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	30.1	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	113	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	95.2	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	91.1	54	136	
		5	mg/kg	<5	----	----	----	----	
EP074B: Oxygenated Compounds (QCLot: 3221397)									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	94.2	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	88.2	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	87.8	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	85.7	54	136	
		5	mg/kg	<5	----	----	----	----	
EP074C: Sulfonated Compounds (QCLot: 3216013)									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	87.2	54	126	
EP074C: Sulfonated Compounds (QCLot: 3221397)									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	115	54	126	
EP074D: Fumigants (QCLot: 3216013)									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	86.5	55	133	
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	90.7	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	71.7	54	124	



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	
EP074D: Fumigants (QCLot: 3216013) - continued									
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	71.0	51	125	
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	94.9	66	126	
EP074D: Fumigants (QCLot: 3221397)									
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	111	55	133	
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	95.0	69	127	
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	88.4	54	124	
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	84.9	51	125	
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	107	66	126	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216013)									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	135	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	118	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	144	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	109	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	116	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	113	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	102	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	80.1	43	129	
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	94.0	62	130	
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	98.6	66	132	
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	94.4	66	132	
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	94.4	62	126	
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	95.2	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	79.3	59	125	
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	97.8	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	94.4	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	96.9	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	97.1	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	96.2	67	143	
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	78.7	62	122	
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	80.1	54	128	
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	78.4	55	129	
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	96.1	56	132	



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	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216013) - continued									
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	91.5	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	85.2	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	92.2	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	80.8	48	136	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3221397)									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	85.0	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	86.0	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	66.6	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	75.4	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	88.7	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	92.6	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	102	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	77.9	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	98.9	66	132	
EP074: cis-1,2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	103	66	132	
EP074: 1,1,1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	107	62	126	
EP074: 1,1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	107	64	128	
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	98.4	59	125	
EP074: 1,2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	92.6	65	123	
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	109	64	120	
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	96.8	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	100	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	97.6	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	126	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	101	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	96.9	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	94.2	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	102	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	87.8	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	125	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	117	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	121	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	
EP074F: Halogenated Aromatic Compounds (QCLot: 3216013)									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	95.8	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	93.5	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	94.6	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	91.1	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	87.6	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	85.2	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	91.4	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	78.2	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	86.3	60	132	
EP074F: Halogenated Aromatic Compounds (QCLot: 3221397)									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	110	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	114	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	114	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	117	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	106	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	118	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	102	60	132	
EP074G: Trihalomethanes (QCLot: 3216013)									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	99.0	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	71.1	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	83.8	60	126	
EP074G: Trihalomethanes (QCLot: 3221397)									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	95.7	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	86.7	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	116	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	110	60	126	
EP074H: Naphthalene (QCLot: 3216013)									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	117	63	133	
		5	mg/kg	<5	----	----	----	----	
EP074H: Naphthalene (QCLot: 3221397)									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	102	63	133	
		5	mg/kg	<5	----	----	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3215994)									
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	102	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	
EP075(SIM)A: Phenolic Compounds (QCLot: 3215994) - continued									
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	99.4	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	103	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	87.1	60.3	117	
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	95.9	69	117	
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	96.0	68	112	
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	103	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	95.5	76.4	114	
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	85.2	57	111	
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	96.0	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	33.6	3.9	57	
EP075(SIM)A: Phenolic Compounds (QCLot: 3216003)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	89.9	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	95.6	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	90.0	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	88.9	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	92.8	60.3	117	
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	4 mg/kg	77.1	69	117	
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	4 mg/kg	90.1	68	112	
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	90.9	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	89.3	76.4	114	
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	81.0	57	111	
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	78.8	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	43.2	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3215994)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	114	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	116	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	114	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	108	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	111	79	123	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	114	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	112	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	99.8	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	102	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	94.7	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	99.1	71.7	113	



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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3215994) - continued									
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	85.4	72.4	114	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216003)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	93.8	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	99.7	77	123	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	96.3	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	96.6	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	97.3	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	98.1	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	96.8	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	98.0	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	97.0	70	118	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	96.2	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	92.0	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	89.1	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	86.5	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	90.9	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215831)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	90.4	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215993)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	103	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	97.9	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	83.1	64	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216002)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	96.4	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	97.1	64	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.4	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215831)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	90.6	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215993)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	104	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	91.2	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	71.6	63	131	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216002)									



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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216002) - continued									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	97.3	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	102	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	84.9	63	131	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	81.4	68.4	128	
EP080: BTEXN (QCLot: 3215831)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	95.7	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	90.9	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	94.0	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	95.4	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	97.6	62	138	
EP080: BTEXN (QCLot: 3216012)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	81.3	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.8	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	92.4	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	87.2	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	91.0	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	90.6	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	
EG020F: Dissolved Metals by ICP-MS (QCLot: 3215723)									
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	88.5	80	118	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	91.4	82	112	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.1	81	111	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	85.3	80	112	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.9	83	111	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.6	81	113	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	86.7	80	116	
EG035F: Dissolved Mercury by FIMS (QCLot: 3215725)									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	81.8	78	114	
EP075(SIM)A: Phenolic Compounds (QCLot: 3216312)									
EP075(SIM): Phenol	108-95-2	0.2	µg/L	----	20 µg/L	39.3	24.5	61.9	
		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	
EP075(SIM)A: Phenolic Compounds (QCLot: 3216312) - continued									
EP075(SIM): 2-Chlorophenol	95-57-8	0.2	µg/L	----	20 µg/L	86.3	63.8	110	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2-Methylphenol	95-48-7	0.2	µg/L	----	20 µg/L	75.2	55.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	0.4	µg/L	----	40 µg/L	74.2	42.5	114	
		2	µg/L	<2.0	----	----	----	----	
EP075(SIM): 2-Nitrophenol	88-75-5	0.2	µg/L	----	20 µg/L	89.6	62.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.2	µg/L	----	20 µg/L	96.8	59.9	112	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.2	µg/L	----	20 µg/L	91.0	59.3	122	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.2	µg/L	----	20 µg/L	93.1	64.3	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.2	µg/L	----	20 µg/L	90.5	63	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.2	µg/L	----	20 µg/L	91.9	58.7	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.2	µg/L	----	20 µg/L	92.6	50	108	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Pentachlorophenol	87-86-5	0.4	µg/L	----	40 µg/L	# 100	8.7	95	
		2	µg/L	<2.0	----	----	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216312)									
EP075(SIM): Naphthalene	91-20-3	0.2	µg/L	----	20 µg/L	92.0	58.6	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Acenaphthylene	208-96-8	0.2	µg/L	----	20 µg/L	96.0	63.6	114	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Acenaphthene	83-32-9	0.2	µg/L	----	20 µg/L	98.9	62.2	113	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluorene	86-73-7	0.2	µg/L	----	20 µg/L	99.4	63.9	115	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Phenanthrene	85-01-8	0.2	µg/L	----	20 µg/L	102	62.6	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Anthracene	120-12-7	0.2	µg/L	----	20 µg/L	101	64.3	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Fluoranthene	206-44-0	0.2	µg/L	----	20 µg/L	107	63.6	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Pyrene	129-00-0	0.2	µg/L	----	20 µg/L	100	63.1	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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216312) - continued									
EP075(SIM): Benz(a)anthracene	56-55-3	0.2	µg/L	----	20 µg/L	101	64.1	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Chrysene	218-01-9	0.2	µg/L	----	20 µg/L	103	62.5	116	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.2	µg/L	----	20 µg/L	99.4	61.7	119	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.2	µg/L	----	20 µg/L	106	61.7	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.2	µg/L	----	20 µg/L	99.2	63.3	117	
		0.5	µg/L	<0.5	----	----	----	----	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.2	µg/L	----	20 µg/L	99.5	59.9	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.2	µg/L	----	20 µg/L	105	61.2	117	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.2	µg/L	----	20 µg/L	94.8	59.1	118	
		1	µg/L	<1.0	----	----	----	----	
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	1	µg/L	<1.0	----	----	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216129)									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	98.3	75	127	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216313)									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	120	59	129	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	126	71	131	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	102	62	120	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216129)									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	98.1	75	127	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216313)									
EP071: >C10 - C16 Fraction	>C10_C16	100	µg/L	<100	2500 µg/L	111	58.9	131	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	111	73.9	138	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
		50	µg/L	----	1500 µg/L	91.2	67	127	
EP080: BTEXN (QCLot: 3216129)									
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	118	70	124	
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	109	65	129	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	100	70	120	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	99.8	69	121	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	101	72	122	
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	94.6	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
EG005T: Total Metals by ICP-AES (QCLot: 3216123)							
ES1327433-013	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	107	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	107	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	108	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	103	70	130
EG005T: Total Metals by ICP-AES (QCLot: 3216125)							
ES1327521-011	BY_MW11_0.2	EG005T: Arsenic	7440-38-2	50 mg/kg	112	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	106	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	115	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	107	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	114	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	109	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216124)							
ES1327433-013	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	93.4	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216126)							
ES1327521-011	BY_MW11_0.2	EG035T: Mercury	7439-97-6	5 mg/kg	94.8	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3220859)							
ES1327521-002	BM_SB01 (2)_0.8	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	91.8	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3221397)							
ES1327521-002	BM_SB01 (2)_0.8	EP074: Benzene	71-43-2	2.5 mg/kg	75.1	70	130
		EP074: Toluene	108-88-3	2.5 mg/kg	86.7	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216013)							
ES1327422-025	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	80.3	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	87.7	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3221397)							
ES1327521-002	BM_SB01 (2)_0.8	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	73.1	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	78.6	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3216013)							
ES1327422-025	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	96.1	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
EP074F: Halogenated Aromatic Compounds (QCLot: 3221397)							
ES1327521-002	BM_SB01 (2)_0.8	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	91.0	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3215994)							
ES1327521-002	BM_SB01 (2)_0.8	EP075(SIM): Phenol	108-95-2	10 mg/kg	111	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	114	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	72.4	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	97.6	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	36.8	20	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3216003)							
ES1327422-025	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	83.6	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.0	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	75.0	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	89.8	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	38.2	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3215994)							
ES1327521-002	BM_SB01 (2)_0.8	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	116	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	110	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216003)							
ES1327422-025	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.4	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.2	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215831)							
ES1327521-002	BM_SB01 (2)_0.8	EP080: C6 - C9 Fraction	----	32.5 mg/kg	91.9	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215993)							
ES1327521-002	BM_SB01 (2)_0.8	EP071: C10 - C14 Fraction	----	640 mg/kg	88.2	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	81.1	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	68.5	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216002)							
ES1327422-025	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	78.3	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.6	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	74.6	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)							
ES1327422-025	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215831)							
ES1327521-002	BM_SB01 (2)_0.8	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	91.6	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215993)							
ES1327521-002	BM_SB01 (2)_0.8	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	107	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	73.5	53	131



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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215993) - continued								
ES1327521-002	BM_SB01 (2)_0.8	EP071: >C34 - C40 Fraction	----	2400 mg/kg	53.0	52	132	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216002)								
ES1327422-025	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	102	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.5	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	61.9	52	132	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)								
ES1327422-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	82.6	70	130	
EP080: BTEXN (QCLot: 3215831)								
ES1327521-002	BM_SB01 (2)_0.8	EP080: Benzene	71-43-2	2.5 mg/kg	86.2	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	85.5	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.4	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	89.6	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	93.8	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	83.1	70	130		
EP080: BTEXN (QCLot: 3216012)								
ES1327422-025	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.5	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.2	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.0	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.9	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	83.2	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
EG020F: Dissolved Metals by ICP-MS (QCLot: 3215723)							
ES1327029-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	125	70	130
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	116	70	130
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	115	70	130
		EG020A-F: Copper	7440-50-8	0.2 mg/L	113	70	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	109	70	130
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	105	70	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	116	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 3215725)							
ES1327141-002	Anonymous	EG035F: Mercury	7439-97-6	0.0100 mg/L	79.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216129)							



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	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216129) - continued								
ES1326963-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	120	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216129)								
ES1326963-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	116	70	130	
EP080: BTEXN (QCLot: 3216129)								
ES1326963-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	116	70	130	
		EP080: Toluene	108-88-3	25 µg/L	109	70	130	
		EP080: Ethylbenzene	100-41-4	25 µg/L	112	70	130	
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	111	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	25 µg/L	115	70	130	
	EP080: Naphthalene	91-20-3		25 µg/L	100	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	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215831)											
ES1327521-002	BM_SB01 (2)_0.8	EP080: C6 - C9 Fraction	----	32.5 mg/kg	91.9	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215831)											
ES1327521-002	BM_SB01 (2)_0.8	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	91.6	----	70	130	----	----	
EP080: BTEXN (QCLot: 3215831)											
ES1327521-002	BM_SB01 (2)_0.8	EP080: Benzene	71-43-2	2.5 mg/kg	86.2	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	85.5	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.4	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	89.6	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	93.8	----	70	130	----	----	
	EP080: Naphthalene	91-20-3		2.5 mg/kg	83.1	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215993)											
ES1327521-002	BM_SB01 (2)_0.8	EP071: C10 - C14 Fraction	----	640 mg/kg	88.2	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	81.1	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	68.5	----	52	132	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215993)											
ES1327521-002	BM_SB01 (2)_0.8	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	107	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	73.5	----	53	131	----	----	



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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215993) - continued										
ES1327521-002	BM_SB01 (2)_0.8	EP071: >C34 - C40 Fraction	----	2400 mg/kg	53.0	----	52	132	----	----
EP075(SIM)A: Phenolic Compounds (QCLot: 3215994)										
ES1327521-002	BM_SB01 (2)_0.8	EP075(SIM): Phenol	108-95-2	10 mg/kg	111	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	114	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	72.4	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	97.6	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	36.8	----	20	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3215994)										
ES1327521-002	BM_SB01 (2)_0.8	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	116	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	110	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216002)										
ES1327422-025	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	78.3	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	80.6	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	74.6	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216002)										
ES1327422-025	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	102	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	76.5	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	61.9	----	52	132	----	----
EP075(SIM)A: Phenolic Compounds (QCLot: 3216003)										
ES1327422-025	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	83.6	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	93.0	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	75.0	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	89.8	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	38.2	----	20	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216003)										
ES1327422-025	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.4	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.2	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216012)										
ES1327422-025	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216012)										
ES1327422-025	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	82.6	----	70	130	----	----
EP080: BTEXN (QCLot: 3216012)										
ES1327422-025	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.5	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	88.9	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.2	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	86.0	----	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
EP080: BTEXN (QCLot: 3216012) - continued										
ES1327422-025	Anonymous	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.9	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	83.2	----	70	130	----	----
EP074E: Halogenated Aliphatic Compounds (QCLot: 3216013)										
ES1327422-025	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	80.3	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	87.7	----	70	130	----	----
EP074F: Halogenated Aromatic Compounds (QCLot: 3216013)										
ES1327422-025	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	96.1	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3216123)										
ES1327433-013	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	107	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	104	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	107	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	108	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	104	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	103	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216124)										
ES1327433-013	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	93.4	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3216125)										
ES1327521-011	BY_MW11_0.2	EG005T: Arsenic	7440-38-2	50 mg/kg	112	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	106	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	115	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	107	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	114	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	109	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3216126)										
ES1327521-011	BY_MW11_0.2	EG035T: Mercury	7439-97-6	5 mg/kg	94.8	----	70	130	----	----
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3220859)										
ES1327521-002	BM_SB01 (2)_0.8	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	91.8	----	70	130	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3221397)										
ES1327521-002	BM_SB01 (2)_0.8	EP074: Benzene	71-43-2	2.5 mg/kg	75.1	----	70	130	----	----
		EP074: Toluene	108-88-3	2.5 mg/kg	86.7	----	70	130	----	----
EP074E: Halogenated Aliphatic Compounds (QCLot: 3221397)										
ES1327521-002	BM_SB01 (2)_0.8	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	73.1	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	78.6	----	70	130	----	----
EP074F: Halogenated Aromatic Compounds (QCLot: 3221397)										
ES1327521-002	BM_SB01 (2)_0.8	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	91.0	----	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
EG020F: Dissolved Metals by ICP-MS (QCLot: 3215723)										
ES1327029-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	125	----	70	130	----	----
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	116	----	70	130	----	----
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	115	----	70	130	----	----
		EG020A-F: Copper	7440-50-8	0.2 mg/L	113	----	70	130	----	----
		EG020A-F: Lead	7439-92-1	0.2 mg/L	109	----	70	130	----	----
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	105	----	70	130	----	----
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	116	----	70	130	----	----
EG035F: Dissolved Mercury by FIMS (QCLot: 3215725)										
ES1327141-002	Anonymous	EG035F: Mercury	7439-97-6	0.0100 mg/L	79.5	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216129)										
ES1326963-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	120	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216129)										
ES1326963-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	116	----	70	130	----	----
EP080: BTEXN (QCLot: 3216129)										
ES1326963-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	116	----	70	130	----	----
		EP080: Toluene	108-88-3	25 µg/L	109	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	25 µg/L	112	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	111	----	70	130	----	----
			106-42-3							
		EP080: ortho-Xylene	95-47-6	25 µg/L	115	----	70	130	----	----
		EP080: Naphthalene	91-20-3	25 µg/L	100	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327521	Page	: 1 of 21
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	: 0224193 SYMPHONY	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER	Date Samples Received	: 13-DEC-2013
C-O-C number	: 11741	Issue Date	: 24-DEC-2013
Sampler	: GAVIN POWELL	No. of samples received	: 37
Order number	: ----	No. of samples analysed	: 32
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
EA055: Moisture Content							
Snap Lock Bag (EA055-103) BY_MW11_0.2	09-DEC-2013	----	----	----	17-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103) BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5, D01_061213_GP	06-DEC-2013	----	----	----	17-DEC-2013	20-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103) BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1, BM_MW08_0.2, BF_MW09_0.2, BF_MW10_0.1, BF_MW11_0.2, BF_MW12_8.0	09-DEC-2013	----	----	----	17-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103) LV_MW06_0.05	10-DEC-2013	----	----	----	17-DEC-2013	24-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103) BY_MW09_3.9, BY_MW08_2.6, BY_MW18_0.2, BY_MW32_0.2	12-DEC-2013	----	----	----	17-DEC-2013	26-DEC-2013	✓
Soil Glass Jar - Unpreserved (EA055-103) BF_MW11_4.0, BG_MW11_5.0	13-DEC-2013	----	----	----	17-DEC-2013	27-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
EG005T: Total Metals by ICP-AES							
Snap Lock Bag (EG005T) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	07-JUN-2014	✓	18-DEC-2013	07-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5, BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2, D01_061213_GP	06-DEC-2013	17-DEC-2013	04-JUN-2014	✓	18-DEC-2013	04-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1, BF_MW09_0.2, BF_MW11_0.2, BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1, BM_MW08_0.2, BF_MW10_0.1, BF_MW12_8.0	09-DEC-2013	17-DEC-2013	07-JUN-2014	✓	18-DEC-2013	07-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	08-JUN-2014	✓	18-DEC-2013	08-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) BY_MW09_3.9, BY_MW18_0.2, BY_MW08_2.6, BY_MW32_0.2	12-DEC-2013	17-DEC-2013	10-JUN-2014	✓	18-DEC-2013	10-JUN-2014	✓
Soil Glass Jar - Unpreserved (EG005T) BF_MW11_4.0, BG_MW11_5.0	13-DEC-2013	17-DEC-2013	11-JUN-2014	✓	18-DEC-2013	11-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Snap Lock Bag (EG035T) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	06-JAN-2014	✓	18-DEC-2013	06-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T) BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5, BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2, D01_061213_GP	06-DEC-2013	17-DEC-2013	03-JAN-2014	✓	18-DEC-2013	03-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T) BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1, BF_MW09_0.2, BF_MW11_0.2, BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1, BM_MW08_0.2, BF_MW10_0.1, BF_MW12_8.0	09-DEC-2013	17-DEC-2013	06-JAN-2014	✓	18-DEC-2013	06-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	07-JAN-2014	✓	18-DEC-2013	07-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T) BY_MW09_3.9, BY_MW18_0.2, BY_MW08_2.6, BY_MW32_0.2	12-DEC-2013	17-DEC-2013	09-JAN-2014	✓	18-DEC-2013	09-JAN-2014	✓
Soil Glass Jar - Unpreserved (EG035T) BF_MW11_4.0, BG_MW11_5.0	13-DEC-2013	17-DEC-2013	10-JAN-2014	✓	18-DEC-2013	10-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
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	06-DEC-2013	19-DEC-2013	20-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP066) BM_MW08_0.2	09-DEC-2013	19-DEC-2013	23-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013							
Snap Lock Bag (EP071) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5, D01_061213_GP	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1, BM_MW08_0.2, BF_MW09_0.2, BF_MW10_0.1, BF_MW11_0.2, BF_MW12_8.0	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	24-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) BY_MW09_3.9, BY_MW08_2.6, BY_MW18_0.2, BY_MW32_0.2	12-DEC-2013	17-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP071) BF_MW11_4.0, BG_MW11_5.0	13-DEC-2013	17-DEC-2013	27-DEC-2013	✓	17-DEC-2013	26-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
EP074D: Fumigants							
Snap Lock Bag (EP074) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	06-DEC-2013	19-DEC-2013	13-DEC-2013	✘	22-DEC-2013	13-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_MW08_0.2	09-DEC-2013	19-DEC-2013	16-DEC-2013	✘	22-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-DEC-2013	✔
EP074E: Halogenated Aliphatic Compounds							
Snap Lock Bag (EP074) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	06-DEC-2013	19-DEC-2013	13-DEC-2013	✘	22-DEC-2013	13-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_MW08_0.2	09-DEC-2013	19-DEC-2013	16-DEC-2013	✘	22-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-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
EP074F: Halogenated Aromatic Compounds							
Snap Lock Bag (EP074) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	06-DEC-2013	19-DEC-2013	13-DEC-2013	✘	22-DEC-2013	13-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_MW08_0.2	09-DEC-2013	19-DEC-2013	16-DEC-2013	✘	22-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-DEC-2013	✔
EP074A: Monocyclic Aromatic Hydrocarbons							
Snap Lock Bag (EP074) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	06-DEC-2013	19-DEC-2013	13-DEC-2013	✘	22-DEC-2013	13-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_MW08_0.2	09-DEC-2013	19-DEC-2013	16-DEC-2013	✘	22-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-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
EP074H: Naphthalene							
Snap Lock Bag (EP074) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	06-DEC-2013	19-DEC-2013	13-DEC-2013	✘	22-DEC-2013	13-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_MW08_0.2	09-DEC-2013	19-DEC-2013	16-DEC-2013	✘	22-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-DEC-2013	✔
EP074B: Oxygenated Compounds							
Snap Lock Bag (EP074) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	06-DEC-2013	19-DEC-2013	13-DEC-2013	✘	22-DEC-2013	13-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_MW08_0.2	09-DEC-2013	19-DEC-2013	16-DEC-2013	✘	22-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-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
EP074C: Sulfonated Compounds							
Snap Lock Bag (EP074) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5 BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2	06-DEC-2013	19-DEC-2013	13-DEC-2013	✘	22-DEC-2013	13-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1 BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_MW08_0.2	09-DEC-2013	19-DEC-2013	16-DEC-2013	✘	22-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-DEC-2013	✔
EP074G: Trihalomethanes							
Snap Lock Bag (EP074) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5 BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2	06-DEC-2013	19-DEC-2013	13-DEC-2013	✘	22-DEC-2013	13-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1 BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1	09-DEC-2013	17-DEC-2013	16-DEC-2013	✘	17-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) BM_MW08_0.2	09-DEC-2013	19-DEC-2013	16-DEC-2013	✘	22-DEC-2013	16-DEC-2013	✘
Soil Glass Jar - Unpreserved (EP074) LV_MW06_0.05	10-DEC-2013	17-DEC-2013	17-DEC-2013	✔	17-DEC-2013	17-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	
EP075(SIM)A: Phenolic Compounds								
Snap Lock Bag (EP075(SIM)) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓	
Soil Glass Jar - Unpreserved (EP075(SIM)) BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5,	BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2, D01_061213_GP	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1, BF_MW09_0.2, BF_MW11_0.2,	BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1, BM_MW08_0.2, BF_MW10_0.1, BF_MW12_8.0	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LV_MW06_0.05		10-DEC-2013	17-DEC-2013	24-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BY_MW09_3.9, BY_MW18_0.2,	BY_MW08_2.6, BY_MW32_0.2	12-DEC-2013	17-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BF_MW11_4.0,	BG_MW11_5.0	13-DEC-2013	17-DEC-2013	27-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Snap Lock Bag (EP075(SIM)) BY_MW11_0.2		09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5,	BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2, D01_061213_GP	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1, BF_MW09_0.2, BF_MW11_0.2,	BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1, BM_MW08_0.2, BF_MW10_0.1, BF_MW12_8.0	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) LV_MW06_0.05		10-DEC-2013	17-DEC-2013	24-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BY_MW09_3.9, BY_MW18_0.2,	BY_MW08_2.6, BY_MW32_0.2	12-DEC-2013	17-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-JAN-2014	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BF_MW11_4.0,	BG_MW11_5.0	13-DEC-2013	17-DEC-2013	27-DEC-2013	✓	17-DEC-2013	26-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	
EP080: BTEXN								
Snap Lock Bag (EP080) BY_MW11_0.2	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓	
Soil Glass Jar - Unpreserved (EP080) BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5,	BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2, D01_061213_GP	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	17-DEC-2013	20-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1, BF_MW09_0.2, BF_MW11_0.2,	BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1, BM_MW08_0.2, BF_MW10_0.1, BF_MW12_8.0	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) LV_MW06_0.05		10-DEC-2013	17-DEC-2013	24-DEC-2013	✓	17-DEC-2013	24-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) SPIKE,	BLANK	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) BY_MW09_3.9, BY_MW18_0.2, TSC 9	BY_MW08_2.6, BY_MW32_0.2,	12-DEC-2013	17-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080) BF_MW11_4.0,	BG_MW11_5.0	13-DEC-2013	17-DEC-2013	27-DEC-2013	✓	17-DEC-2013	27-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	
EP080/071: Total Petroleum Hydrocarbons								
Snap Lock Bag (EP080)								
BY_MW11_0.2	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓	
Soil Glass Jar - Unpreserved (EP080)								
BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5,	BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2, D01_061213_GP	06-DEC-2013	17-DEC-2013	20-DEC-2013	✓	17-DEC-2013	20-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080)								
BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1, BF_MW09_0.2, BF_MW11_0.2,	BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1, BM_MW08_0.2, BF_MW10_0.1, BF_MW12_8.0	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080)								
LV_MW06_0.05		10-DEC-2013	17-DEC-2013	24-DEC-2013	✓	17-DEC-2013	24-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080)								
SPIKE,	BLANK	11-DEC-2013	17-DEC-2013	25-DEC-2013	✓	17-DEC-2013	25-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080)								
BY_MW09_3.9, BY_MW18_0.2, TSC 9	BY_MW08_2.6, BY_MW32_0.2,	12-DEC-2013	17-DEC-2013	26-DEC-2013	✓	17-DEC-2013	26-DEC-2013	✓
Soil Glass Jar - Unpreserved (EP080)								
BF_MW11_4.0,	BG_MW11_5.0	13-DEC-2013	17-DEC-2013	27-DEC-2013	✓	17-DEC-2013	27-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
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
R01_091213_GP	09-DEC-2013	---	07-JUN-2014	----	17-DEC-2013	07-JUN-2014	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
R01_091213_GP	09-DEC-2013	---	06-JAN-2014	----	17-DEC-2013	06-JAN-2014	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013							
Amber Glass Bottle - Unpreserved (EP071)							
R01_091213_GP	09-DEC-2013	17-DEC-2013	16-DEC-2013	*	17-DEC-2013	26-JAN-2014	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
R01_091213_GP	09-DEC-2013	17-DEC-2013	16-DEC-2013	*	18-DEC-2013	26-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
R01_091213_GP	09-DEC-2013	17-DEC-2013	16-DEC-2013	*	18-DEC-2013	26-JAN-2014	✓

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 Client : ENVIRO RESOURCES MANAGEMENT
 Project : 0224193 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
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) R01_091213_GP	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-DEC-2013	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013							
Amber VOC Vial - Sulfuric Acid (EP080) R01_091213_GP	09-DEC-2013	17-DEC-2013	23-DEC-2013	✓	17-DEC-2013	23-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	
Analytical Methods							
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	6	53	11.3	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	4	40	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	8	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	40	10.0	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	40	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	3	24	12.5	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	40	5.0	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	40	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	2	24	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	40	5.0	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	40	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	2	24	8.3	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	40	5.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	40	5.0	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	40	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	2	24	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	
Analytical Methods							



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	
Analytical Methods							
Laboratory Duplicates (DUP)							
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	20	10.0	10.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
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	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	2	50.0	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
Method Blanks (MB)							
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	2	50.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	2	50.0	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 Spikes (MS)							
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	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
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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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 - 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)
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 ₂)(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 ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Appdx. 2)



Analytical Methods	Method	Matrix	Method Descriptions
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)
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 ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
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
Laboratory Control Spike (LCS) Recoveries							
EP075(SIM)A: Phenolic Compounds	3839371-002	----	Pentachlorophenol	87-86-5	100 %	8.7-95%	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

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	ES1327521-034	BF_MW11_4.0	2.4.6-Tribromophenol	118-79-6	38.5 %	40-138 %	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	Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP074A: Monocyclic Aromatic Hydrocarbons							
Snap Lock Bag							
BY_MW11_0.2		17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved							
BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5	BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2,	19-DEC-2013	13-DEC-2013	6	22-DEC-2013	13-DEC-2013	9
Soil Glass Jar - Unpreserved							
BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1	BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1,	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1



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
EP074A: Monocyclic Aromatic Hydrocarbons - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved BM_MW08_0.2	19-DEC-2013	16-DEC-2013	3	22-DEC-2013	16-DEC-2013	6
EP074B: Oxygenated Compounds						
Snap Lock Bag BY_MW11_0.2	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	19-DEC-2013	13-DEC-2013	6	22-DEC-2013	13-DEC-2013	9
Soil Glass Jar - Unpreserved BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_MW08_0.2	19-DEC-2013	16-DEC-2013	3	22-DEC-2013	16-DEC-2013	6
EP074C: Sulfonated Compounds						
Snap Lock Bag BY_MW11_0.2	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	19-DEC-2013	13-DEC-2013	6	22-DEC-2013	13-DEC-2013	9
Soil Glass Jar - Unpreserved BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_MW08_0.2	19-DEC-2013	16-DEC-2013	3	22-DEC-2013	16-DEC-2013	6
EP074D: Fumigants						
Snap Lock Bag BY_MW11_0.2	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	19-DEC-2013	13-DEC-2013	6	22-DEC-2013	13-DEC-2013	9



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
EP074D: Fumigants - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1 BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_MW08_0.2	19-DEC-2013	16-DEC-2013	3	22-DEC-2013	16-DEC-2013	6
EP074E: Halogenated Aliphatic Compounds						
Snap Lock Bag BY_MW11_0.2	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5 BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2	19-DEC-2013	13-DEC-2013	6	22-DEC-2013	13-DEC-2013	9
Soil Glass Jar - Unpreserved BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1 BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_MW08_0.2	19-DEC-2013	16-DEC-2013	3	22-DEC-2013	16-DEC-2013	6
EP074F: Halogenated Aromatic Compounds						
Snap Lock Bag BY_MW11_0.2	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_SB01 (2)_0.8, BM_MW02_0.5, BM_MW03_0.2, BM_MW05_1.5 BM_MW01_0.2, BM_MW02_1.0, BM_MW05_0.2	19-DEC-2013	13-DEC-2013	6	22-DEC-2013	13-DEC-2013	9
Soil Glass Jar - Unpreserved BY_MW12_0.2, BY_MW24_0.1, BY_MW26_0.1, BY_MW29_0.1 BY_MW23_0.2, BY_MW25_0.1, BY_MW27_0.1	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_MW08_0.2	19-DEC-2013	16-DEC-2013	3	22-DEC-2013	16-DEC-2013	6
EP074G: Trihalomethanes						
Snap Lock Bag BY_MW11_0.2	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1



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
EP074G: Trihalomethanes - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	19-DEC-2013	13-DEC-2013	6	22-DEC-2013	13-DEC-2013	9
Soil Glass Jar - Unpreserved BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_MW08_0.2	19-DEC-2013	16-DEC-2013	3	22-DEC-2013	16-DEC-2013	6
EP074H: Naphthalene						
Snap Lock Bag BY_MW11_0.2	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_SB01 (2)_0.8, BM_MW01_0.2, BM_MW02_0.5, BM_MW02_1.0, BM_MW03_0.2, BM_MW05_0.2, BM_MW05_1.5	19-DEC-2013	13-DEC-2013	6	22-DEC-2013	13-DEC-2013	9
Soil Glass Jar - Unpreserved BY_MW12_0.2, BY_MW23_0.2, BY_MW24_0.1, BY_MW25_0.1, BY_MW26_0.1, BY_MW27_0.1, BY_MW29_0.1	17-DEC-2013	16-DEC-2013	1	17-DEC-2013	16-DEC-2013	1
Soil Glass Jar - Unpreserved BM_MW08_0.2	19-DEC-2013	16-DEC-2013	3	22-DEC-2013	16-DEC-2013	6

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
EP075(SIM)A: Phenolic Compounds						
Amber Glass Bottle - Unpreserved R01_091213_GP	17-DEC-2013	16-DEC-2013	1	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Amber Glass Bottle - Unpreserved R01_091213_GP	17-DEC-2013	16-DEC-2013	1	----	----	----
EP080/071: Total Petroleum Hydrocarbons						
Amber Glass Bottle - Unpreserved R01_091213_GP	17-DEC-2013	16-DEC-2013	1	----	----	----



Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013						
Amber Glass Bottle - Unpreserved R01_091213_GP	17-DEC-2013	16-DEC-2013	1	----	----	----

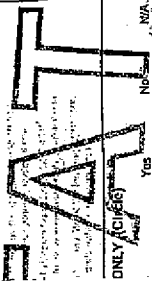
Outliers : Frequency of Quality Control Samples

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

- **No Quality Control Sample Frequency Outliers exist.**

Environmental Division
Sydney
Work Order

ES1327527



CHAIN OF CUSTODY
ALS Laboratory
please tick →

ONLY (COC) Yes No
an upon receipt? Yes No
in Receipt Yes No

CLIENT: **ERM**
OFFICE: **Sydney**
PROJECT: **Project Symphony**

ORDER NUMBER: **0174189**
PROJECT MANAGER: **Joe Petting**

CONTACT PH: _____
SAMPLER MOBILE: **040614304**
SAMPLER: **Sean Penza**

RECEIVED BY: **Sean Penza**
DATE/TIME: **5/12/13**

RELINQUISHED BY: **Sean Penza**
DATE/TIME: **13/12/13 16:45**

COC emailed to ALS? (YES / NO)
Email Reports to (will default to PM if no other addresses are listed): **john.petting@erm.com**

ALSO QUOTE NO.: **SY79813**
SITE: **BAYSWATER LIJELL**

TURNAROUND REQUIREMENTS: Standard TAT (List due date)
 Non Standard or urgent TAT (List due date): **3 Day**

Telephone: + 61-2-8784 8555

ANALYSIS REQUIRED INCLUDING SUITES (NO. Suit Codes must be listed to allow suit price)
Where Metals are required, specify Tank (undiluted balls returned) or Diluted (acid filtered balls required).

LAB ID	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below	CONTAINER INFORMATION TOTAL	ANALYSIS REQUIRED INCLUDING SUITES (NO. Suit Codes must be listed to allow suit price)	ADDITIONAL INFORMATION
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LAB ID	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)	DATE / TIME	MATRIX	TYPE & PRESERVATIVE codes below	CONTAINER INFORMATION TOTAL	ANALYSIS REQUIRED INCLUDING SUITES (NO. Suit Codes must be listed to allow suit price)	ADDITIONAL INFORMATION
1	LS-SB12-0.5	5/12/13 0835	SOIL	1 jar / 1 bag	2	S-2 Metals (As, Ba, Cr, Cu, Ni, Pb, Zn, Hg), S-24 TRHGS (Co, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se), S-24 TRHGS (Cd, Pb, Cr, Ni, Cu, Zn, Mn, Ni, Se), P-10 Phos (As, Ba, Cr, Cu, Ni, Pb, Zn, Hg), P-10 Phos (Cd, Pb, Cr, Ni, Cu, Zn, Mn, Ni, Se), P-10 Phos (Co, Mn, Ni, Pb, V, Zn, B, Mo, Ti, Se), P-10 Phos (Hg, Ni, Pb, Zn, Cd, Cr, Cu, Mn, Ni, Se, V)	Comments on likely contaminants, dilutions, or samples requiring specific GC analysis etc.
2	LS-SB11-0.5	0855		" "	2		
3	LO-MW03-1.0	0920		" "	2		
4	LO-MW04-1.5	1415		1 jar	1		
5	LO-MW04-4.0	1150		" "	1		
6	LO-MW05-1.5	1325		" "	1		
7	LO-MW05-3.0	1405		" "	1		
8	LO-MW06-1.0	1615		" "	1		
9	LO-MW06-5.0	1655		" "	1		
10	DO-051213-SP			" "	1		
11	TO1-051213-SP			" "	1		

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; QSC = Nitric Preserved Glass; SP = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Amber Glass Unpreserved Plastic; F = Formaldehyde Preserved Glass;
V = VOA Vol HCl Preserved; VO = VOA Vol Sulfuric Preserved; VS = VOA Vol Sulfuric Preserved; AV = Acetone Unpreserved; WJ = Sulfuric Preserved; H = HCl Preserved; HS = HCl Preserved; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved; F = EDTA Preserved; B1 = Sigma Bellini; A85 = Plastic Bin for Acid Substrate; S1 = Unpreserved Bin

Submit via
Asbestos
ANZS
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WO No
Please forward to
Enrolment

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : ES1327527

<p>Client : ENVIRO RESOURCES MANAGEMENT</p> <p>Contact : MR JOSEPH FERRING</p> <p>Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007</p>	<p>Laboratory : Environmental Division Sydney</p> <p>Contact : Barbara Hanna</p> <p>Address : 277-289 Woodpark Road Smithfield NSW Australia 2164</p>
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<p>E-mail : joseph.ferring@erm.com</p> <p>Telephone : +61 02 8584 8888</p> <p>Facsimile : +61 02 8584 8800</p>	<p>E-mail : Barbara.Hanna@alsglobal.com</p> <p>Telephone : +61 2 8784 8555</p> <p>Facsimile : +61 2 8784 8555</p>
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<p>Project : Project Symphony</p> <p>Order number : 0224189</p> <p>C-O-C number : ----</p> <p>Site : ----</p> <p>Sampler : SP</p>	<p>Page : 1 of 3</p> <p>Quote number : ES2013ENVRES0369 (SY/794/13)</p> <p>QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement</p>
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Dates

<p>Date Samples Received : 13-DEC-2013</p> <p>Client Requested Due Date : 19-DEC-2013</p>	<p>Issue Date : 16-DEC-2013 16:45</p> <p>Scheduled Reporting Date : 19-DEC-2013</p>
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Delivery Details

<p>Mode of Delivery : Carrier</p> <p>No. of coolers/boxes : 1 HARD</p> <p>Security Seal : Intact.</p>	<p>Temperature : 11' C SYD - Ice present</p> <p>No. of samples received : 10</p> <p>No. of samples analysed : 10</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.
- Particle Size Analysis to be conducted by ALS Newcastle.
- Asbestos analysis will be subcontracted to ASET.
- **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 T01_051213_SP to be forwarded 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	SOIL - ASB-SOL (Subcontracted) Asbestos - Count (Solid)	SOIL - EA150* Particle Size Analysis by Sieving (Default sieves from SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS SOIL - EP074 (solids) Volatile Organic Compounds SOIL - EP231 Perfluorooctyl Acids and Sulfonates by LC/MS/MS SOIL - S-02 & Metals (incl. Digestion) SOIL - S-24 TRH/BTEX/PAH + Phenols	SOIL - EP066 (solids) Polychlorinated Biphenyls by GCMS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231 Perfluorooctyl Acids and Sulfonates by LC/MS/MS	SOIL - S-02 & Metals (incl. Digestion)	SOIL - S-24 TRH/BTEX/PAH + Phenols
ES1327527-001	05-DEC-2013 08:35	LJ_SB12_0.5	✓		✓	✓		✓	✓
ES1327527-002	05-DEC-2013 08:55	LJ_SB11_0.5	✓		✓	✓		✓	✓
ES1327527-003	05-DEC-2013 09:20	LO_MW03_1.0		✓		✓	✓	✓	✓
ES1327527-004	05-DEC-2013 11:15	LO_MW04_1.5				✓	✓	✓	✓
ES1327527-005	05-DEC-2013 11:50	LO_MW04_4.0				✓	✓		✓
ES1327527-006	05-DEC-2013 13:25	LO_MW05_1.5				✓	✓	✓	✓
ES1327527-007	05-DEC-2013 14:05	LO_MW05_3.0				✓	✓		✓
ES1327527-008	05-DEC-2013 16:15	LO_MW06_1.0				✓	✓	✓	✓
ES1327527-009	05-DEC-2013 16:55	LO_MW06_5.0				✓	✓		✓
ES1327527-010	05-DEC-2013 15:00	D01_051213_SP				✓	✓	✓	✓

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	
Client Sample ID(s)	Container			Date	Evaluation	Date	Evaluation
EP074: Volatile Organic Compounds							
D01_051213_SP	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘
LJ_SB11_0.5	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘
LJ_SB12_0.5	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘
LO_MW03_1.0	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘
LO_MW04_1.5	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘
LO_MW04_4.0	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘
LO_MW05_1.5	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘
LO_MW05_3.0	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘
LO_MW06_1.0	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘
LO_MW06_5.0	Soil Glass Jar - Unpreserved	12-DEC-2013	----	13-DEC-2013	✘	13-DEC-2013	✘



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
- 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

SYMPHONY ERARING

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

THE ACCOUNTS PAYABLE

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

Work Order	: ES1327527	Page	: 1 of 14
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
Order number	: 0224189	Date Samples Received	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: SP	No. of samples received	: 10
Site	: ----	No. of samples analysed	: 10
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

- **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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - 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

				LJ_SB12_0.5	LJ_SB11_0.5	LO_MW03_1.0	LO_MW04_1.5	LO_MW04_4.0
				05-DEC-2013 08:35	05-DEC-2013 08:55	05-DEC-2013 09:20	05-DEC-2013 11:15	05-DEC-2013 11:50
				ES1327527-001	ES1327527-002	ES1327527-003	ES1327527-004	ES1327527-005
Compound	CAS Number	LOR	Unit					
EA150: Particle Sizing								
+75µm	----	1	%	----	----	22	----	----
+150µm	----	1	%	----	----	18	----	----
+300µm	----	1	%	----	----	14	----	----
+425µm	----	1	%	----	----	13	----	----
+600µm	----	1	%	----	----	13	----	----
+1180µm	----	1	%	----	----	13	----	----
+2.36mm	----	1	%	----	----	12	----	----
+4.75mm	----	1	%	----	----	11	----	----
+9.5mm	----	1	%	----	----	11	----	----
+19.0mm	----	1	%	----	----	2	----	----
+37.5mm	----	1	%	----	----	<1	----	----
+75.0mm	----	1	%	----	----	<1	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	13.2	21.5	16.2	17.0	14.8
EA150: Soil Classification based on Particle Size								
Fines (<75 µm)	----	1	%	----	----	78	----	----
Sand (>75 µm)	----	1	%	----	----	10	----	----
Gravel (>2mm)	----	1	%	----	----	12	----	----
Cobbles (>6cm)	----	1	%	----	----	<1	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	14	7	20	18	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	13	17	14	11	----
Copper	7440-50-8	5	mg/kg	22	18	32	24	----
Lead	7439-92-1	5	mg/kg	12	12	18	16	----
Nickel	7440-02-0	2	mg/kg	18	20	32	39	----
Zinc	7440-66-6	5	mg/kg	70	54	91	62	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	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

				LJ_SB12_0.5	LJ_SB11_0.5	LO_MW03_1.0	LO_MW04_1.5	LO_MW04_4.0
				05-DEC-2013 08:35	05-DEC-2013 08:55	05-DEC-2013 09:20	05-DEC-2013 11:15	05-DEC-2013 11:50
Compound	CAS Number	LOR	Unit	ES1327527-001	ES1327527-002	ES1327527-003	ES1327527-004	ES1327527-005
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
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
EP074B: Oxygenated Compounds								
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
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants								
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
EP074E: Halogenated Aliphatic Compounds								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LJ_SB12_0.5	LJ_SB11_0.5	LO_MW03_1.0	LO_MW04_1.5	LO_MW04_4.0
				05-DEC-2013 08:35	05-DEC-2013 08:55	05-DEC-2013 09:20	05-DEC-2013 11:15	05-DEC-2013 11:50
Compound	CAS Number	LOR	Unit	ES1327527-001	ES1327527-002	ES1327527-003	ES1327527-004	ES1327527-005
EP074E: Halogenated Aliphatic Compounds - Continued								
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
EP074F: Halogenated Aromatic Compounds								
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
EP074G: Trihalomethanes								
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
EP074H: Naphthalene								



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LJ_SB12_0.5	LJ_SB11_0.5	LO_MW03_1.0	LO_MW04_1.5	LO_MW04_4.0
				05-DEC-2013 08:35	05-DEC-2013 08:55	05-DEC-2013 09:20	05-DEC-2013 11:15	05-DEC-2013 11:50
Compound	CAS Number	LOR	Unit	ES1327527-001	ES1327527-002	ES1327527-003	ES1327527-004	ES1327527-005
EP074H: Naphthalene - Continued								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds								
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								
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	0.6	0.6	0.6	0.6	0.6



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LJ_SB12_0.5	LJ_SB11_0.5	LO_MW03_1.0	LO_MW04_1.5	LO_MW04_4.0
				05-DEC-2013 08:35	05-DEC-2013 08:55	05-DEC-2013 09:20	05-DEC-2013 11:15	05-DEC-2013 11:50
Compound	CAS Number	LOR	Unit	ES1327527-001	ES1327527-002	ES1327527-003	ES1327527-004	ES1327527-005
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	60
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	150
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	210
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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	120
>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	120
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	120
EP080: BTEXN								
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
EP231: Perfluorinated Compounds								
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
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	100	111	----	----	----
EP074S: VOC Surrogates								



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LJ_SB12_0.5	LJ_SB11_0.5	LO_MW03_1.0	LO_MW04_1.5	LO_MW04_4.0
				05-DEC-2013 08:35	05-DEC-2013 08:55	05-DEC-2013 09:20	05-DEC-2013 11:15	05-DEC-2013 11:50
Compound	CAS Number	LOR	Unit	ES1327527-001	ES1327527-002	ES1327527-003	ES1327527-004	ES1327527-005
EP074S: VOC Surrogates - Continued								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	114	106	106	110	111
Toluene-D8	2037-26-5	0.1	%	107	102	97.7	98.1	100
4-Bromofluorobenzene	460-00-4	0.1	%	101	96.8	94.5	93.5	97.3
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	106	94.3	99.5	97.7	105
2-Chlorophenol-D4	93951-73-6	0.1	%	110	94.0	99.8	99.0	104
2,4,6-Tribromophenol	118-79-6	0.1	%	83.5	72.9	75.9	73.2	80.4
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	102	90.0	95.1	93.7	93.6
Anthracene-d10	1719-06-8	0.1	%	87.3	76.6	80.7	79.5	82.6
4-Terphenyl-d14	1718-51-0	0.1	%	80.9	72.6	75.3	75.0	78.1
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	101	94.4	94.3	98.0	98.8
Toluene-D8	2037-26-5	0.1	%	99.4	94.1	90.4	90.8	92.8
4-Bromofluorobenzene	460-00-4	0.1	%	93.8	90.8	88.3	87.7	90.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LO_MW05_1.5	LO_MW05_3.0	LO_MW06_1.0	LO_MW06_5.0	D01_051213_SP
				05-DEC-2013 13:25	05-DEC-2013 14:05	05-DEC-2013 16:15	05-DEC-2013 16:55	05-DEC-2013 15:00
				ES1327527-006	ES1327527-007	ES1327527-008	ES1327527-009	ES1327527-010
Compound	CAS Number	LOR	Unit					
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	21.5	20.2	20.5	18.1	9.7
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	9	----	13
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	1
Chromium	7440-47-3	2	mg/kg	11	----	5	----	12
Copper	7440-50-8	5	mg/kg	8	----	<5	----	24
Lead	7439-92-1	5	mg/kg	6	----	8	----	14
Nickel	7440-02-0	2	mg/kg	24	----	<2	----	93
Zinc	7440-66-6	5	mg/kg	42	----	6	----	125
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
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
EP074B: Oxygenated Compounds								
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
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

Compound	CAS Number	LOR	Unit	LO_MW05_1.5	LO_MW05_3.0	LO_MW06_1.0	LO_MW06_5.0	D01_051213_SP
				05-DEC-2013 13:25	05-DEC-2013 14:05	05-DEC-2013 16:15	05-DEC-2013 16:55	05-DEC-2013 15:00
				ES1327527-006	ES1327527-007	ES1327527-008	ES1327527-009	ES1327527-010
EP074D: Fumigants - Continued								
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074E: Halogenated Aliphatic Compounds								
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
EP074F: Halogenated Aromatic Compounds								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW05_1.5	LO_MW05_3.0	LO_MW06_1.0	LO_MW06_5.0	D01_051213_SP
				05-DEC-2013 13:25	05-DEC-2013 14:05	05-DEC-2013 16:15	05-DEC-2013 16:55	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327527-006	ES1327527-007	ES1327527-008	ES1327527-009	ES1327527-010
EP074F: Halogenated Aromatic Compounds - Continued								
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
EP074G: Trihalomethanes								
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
EP074H: Naphthalene								
Naphthalene	91-20-3	5	mg/kg	<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds								
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								
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LO_MW05_1.5	LO_MW05_3.0	LO_MW06_1.0	LO_MW06_5.0	D01_051213_SP
				05-DEC-2013 13:25	05-DEC-2013 14:05	05-DEC-2013 16:15	05-DEC-2013 16:55	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327527-006	ES1327527-007	ES1327527-008	ES1327527-009	ES1327527-010
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	70	<50
C15 - C28 Fraction	----	100	mg/kg	<100	160	<100	170	180
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	160	<50	240	180
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
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	80	<50	130	120
>C16 - C34 Fraction	----	100	mg/kg	<100	130	<100	100	100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	210	<50	230	220
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	80	<50	130	120
EP080: BTEXN								
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

				LO_MW05_1.5	LO_MW05_3.0	LO_MW06_1.0	LO_MW06_5.0	D01_051213_SP
				05-DEC-2013 13:25	05-DEC-2013 14:05	05-DEC-2013 16:15	05-DEC-2013 16:55	05-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327527-006	ES1327527-007	ES1327527-008	ES1327527-009	ES1327527-010
EP080: BTEXN - Continued								
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
EP231: Perfluorinated Compounds								
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
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	99.0	111	109	105	107
Toluene-D8	2037-26-5	0.1	%	96.0	101	102	97.7	96.5
4-Bromofluorobenzene	460-00-4	0.1	%	91.3	97.6	100	96.1	97.4
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	97.4	98.6	88.8	97.0	88.1
2-Chlorophenol-D4	93951-73-6	0.1	%	101	102	91.2	98.6	91.8
2,4,6-Tribromophenol	118-79-6	0.1	%	72.3	82.4	78.8	77.9	73.9
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	95.4	95.2	95.2	96.2	92.5
Anthracene-d10	1719-06-8	0.1	%	78.9	81.8	70.6	72.6	68.9
4-Terphenyl-d14	1718-51-0	0.1	%	75.3	77.0	76.5	78.6	75.0
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	87.9	98.3	97.2	93.0	95.2
Toluene-D8	2037-26-5	0.1	%	88.9	93.6	94.4	90.3	89.2
4-Bromofluorobenzene	460-00-4	0.1	%	85.3	89.5	93.5	89.4	89.8



Surrogate Control Limits

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

QUALITY CONTROL REPORT

Work Order	: ES1327527	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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: SP	No. of samples received	: 10
Order number	: 0224189	No. of samples analysed	: 10
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>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Hamish Murray	Supervisor - Soils	Newcastle - 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 (%)
EA055: Moisture Content (QC Lot: 3217331)									
ES1327287-003	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.8	14.9	0.9	0% - 50%
ES1327527-005	LO_MW04_4.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.8	12.9	13.2	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 3218964)									
ES1327423-005	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	15	28.6	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	4	44.5	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	6	16.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	11	11	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	22	20	10.2	No Limit
ES1327432-021	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	14	28.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	2	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	8	8	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	9	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	27	29	4.6	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3218965)									
ES1327423-005	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327432-021	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3216122)									
ES1327373-006	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES1327373-019	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3215896)									
ES1327439-001	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
ES1327527-008	LO_MW06_1.0	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



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 (%)
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3215896) - continued									
ES1327527-008	LO_MW06_1.0	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
EP074B: Oxygenated Compounds (QC Lot: 3215896)									
ES1327439-001	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
ES1327527-008	LO_MW06_1.0	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
EP074C: Sulfonated Compounds (QC Lot: 3215896)									
ES1327439-001	Anonymous	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES1327527-008	LO_MW06_1.0	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074D: Fumigants (QC Lot: 3215896)									
ES1327439-001	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
ES1327527-008	LO_MW06_1.0	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
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215896)									
ES1327439-001	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



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215896) - continued									
ES1327439-001	Anonymous	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		
ES1327527-008	LO_MW06_1.0	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		



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 (%)		
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3215896) - continued											
ES1327527-008	LO_MW06_1.0	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		
EP074F: Halogenated Aromatic Compounds (QC Lot: 3215896)											
ES1327439-001	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		
ES1327527-008	LO_MW06_1.0	EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		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		
ES1327439-001	Anonymous	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		
		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		
		ES1327527-008	LO_MW06_1.0	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		
EP074G: Trihalomethanes (QC Lot: 3215896)											
EP074H: Naphthalene (QC Lot: 3215896)											
ES1327439-001	Anonymous	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit		
ES1327527-008	LO_MW06_1.0	EP074: Naphthalene	91-20-3	5	mg/kg	<5	<5	0.0	No Limit		
EP075(SIM)A: Phenolic Compounds (QC Lot: 3216007)											
ES1327527-001	LJ_SB12_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		



Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 3216007) - continued									
ES1327527-001	LJ_SB12_0.5	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
ES1327527-008	LO_MW06_1.0	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		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3216007)									
ES1327527-001	LJ_SB12_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
		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 (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3216007) - continued									
ES1327527-001	LJ_SB12_0.5	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
ES1327527-008	LO_MW06_1.0	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		
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3215895)									
ES1327439-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327527-008	LO_MW06_1.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3216006)									
ES1327527-001	LJ_SB12_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
ES1327527-008	LO_MW06_1.0	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3215895)									
ES1327439-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1327527-008	LO_MW06_1.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216006)									
ES1327527-001	LJ_SB12_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
ES1327527-008	LO_MW06_1.0	EP071: >C16 - C34 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 (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3216006) - continued									
ES1327527-008	LO_MW06_1.0	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
EP080: BTEXN (QC Lot: 3215895)									
ES1327439-001	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
ES1327527-008	LO_MW06_1.0	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
EP231: Perfluorinated Compounds (QC Lot: 3215779)									
ES1327373-010	Anonymous	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



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	
EG005T: Total Metals by ICP-AES (QCLot: 3218964)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	111	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	118	71	133	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	120	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	110	81	123	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	120	84	130	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	115	81	133	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218965)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	89.8	66	112	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	98.0	57.4	117	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3215896)									
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	93.0	64	126	
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	98.9	66	128	
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	91.6	63	129	
EP074: 1,3,5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	94.2	63	129	
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	96.8	64	130	
EP074: 1,2,4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	94.6	63	129	
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	93.0	63	129	
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	94.7	62	130	
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	95.4	61	131	
EP074B: Oxygenated Compounds (QCLot: 3215896)									
EP074: Vinyl Acetate	108-05-4	1	mg/kg	----	10 mg/kg	38.8	29.6	156	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Butanone (MEK)	78-93-3	1	mg/kg	----	10 mg/kg	130	58	136	
		5	mg/kg	<5	----	----	----	----	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	1	mg/kg	----	10 mg/kg	108	54	138	
		5	mg/kg	<5	----	----	----	----	
EP074: 2-Hexanone (MBK)	591-78-6	1	mg/kg	----	10 mg/kg	118	54	136	
		5	mg/kg	<5	----	----	----	----	
EP074C: Sulfonated Compounds (QCLot: 3215896)									
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	65.8	54	126	
EP074D: Fumigants (QCLot: 3215896)									
EP074: 2,2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	90.4	55	133	



Sub-Matrix: SOIL

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	
EP074D: Fumigants (QCLot: 3215896) - continued									
EP074: 1,2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	100	69	127	
EP074: cis-1,3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	76.2	54	124	
EP074: trans-1,3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	73.4	51	125	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	103	66	126	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215896)									
EP074: Dichlorodifluoromethane	75-71-8	1	mg/kg	----	10 mg/kg	48.1	30	148	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloromethane	74-87-3	1	mg/kg	----	10 mg/kg	68.5	41	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Vinyl chloride	75-01-4	1	mg/kg	----	10 mg/kg	117	43	147	
		5	mg/kg	<5	----	----	----	----	
EP074: Bromomethane	74-83-9	1	mg/kg	----	10 mg/kg	71.0	47	141	
		5	mg/kg	<5	----	----	----	----	
EP074: Chloroethane	75-00-3	1	mg/kg	----	10 mg/kg	82.5	49	143	
		5	mg/kg	<5	----	----	----	----	
EP074: Trichlorofluoromethane	75-69-4	1	mg/kg	----	10 mg/kg	98.5	49	135	
		5	mg/kg	<5	----	----	----	----	
EP074: 1,1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	86.4	54	126	
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	78.9	43	129	
EP074: trans-1,2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	89.9	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	95.3	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	98.9	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	113	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	112	65	127	
EP074: 1,1,2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	105	70	130	
EP074: 1,3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	110	72	128	
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	140	67	143	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	101	62	122	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	101	54	128	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	104	55	129	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	112	56	132	
EP074: 1,2,3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	122	65	135	
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	46.2	19.8	134	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	112	53	129	
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	93.7	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	
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896)									
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	98.7	70	128	
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	95.2	67	127	
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	96.5	64	130	
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	96.3	62	130	
EP074: 1,3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	97.2	63	129	
EP074: 1,4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	96.2	63	129	
EP074: 1,2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	97.8	66	128	
EP074: 1,2,4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	92.4	54	134	
EP074: 1,2,3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	93.6	60	132	
EP074G: Trihalomethanes (QCLot: 3215896)									
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	105	62	120	
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	97.1	61	121	
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	99.7	63	121	
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	114	60	126	
EP074H: Naphthalene (QCLot: 3215896)									
EP074: Naphthalene	91-20-3	0.5	mg/kg	----	1 mg/kg	104	63	133	
		5	mg/kg	<5	----	----	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3216007)									
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	104	74	116	
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	4 mg/kg	102	72	116	
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1	8 mg/kg	107	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	83.0	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	99.1	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	96.9	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	92.7	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	92.2	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	31.3	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216007)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	111	80	124	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	107	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	112	77	123	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	104	79	123	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	103	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	104	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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216007) - continued									
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	106	79	125	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	110	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	104	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	114	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	# 114	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	102	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215895)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	74.6	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216006)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	104	71	131	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	97.6	74	138	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	79.4	64	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215895)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	77.0	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216006)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	99.2	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	91.3	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	66.9	63	131	
EP080: BTEXN (QCLot: 3215895)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	71.9	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	78.4	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	76.6	58	118	
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	79.9	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	80.0	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	84.6	62	138	
EP231: Perfluorinated Compounds (QCLot: 3215779)									
EP231: PFOS	1763-23-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	72.8	54	146	
EP231: PFOA	335-67-1	0.0005	mg/kg	<0.0005	0.0025 mg/kg	78.0	54	134	
EP231: 6:2 Fluorotelomer Sulfonate (6:2 FtS)	27619-97-2	0.005	mg/kg	<0.005	0.0125 mg/kg	72.6	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		
EG005T: Total Metals by ICP-AES (QCLot: 3218964)							
ES1327423-005	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	107	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	101	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	113	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	108	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	111	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	126	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218965)							
ES1327423-005	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.4	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)							
ES1327373-006	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215896)							
ES1327439-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	75.3	70	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	80.5	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896)							
ES1327439-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	90.6	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3216007)							
ES1327527-001	LJ_SB12_0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	103	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	100	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	91.5	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	81.4	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216007)							
ES1327527-001	LJ_SB12_0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	99.2	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	107	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215895)							
ES1327439-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	88.0	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216006)							
ES1327527-001	LJ_SB12_0.5	EP071: C10 - C14 Fraction	----	640 mg/kg	79.2	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	89.5	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	75.9	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215895)							
ES1327439-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.8	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216006)							



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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216006) - continued								
ES1327527-001	LJ_SB12_0.5	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	95.4	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	79.4	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	62.8	52	132	
EP080: BTEXN (QCLot: 3215895)								
ES1327439-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	72.3	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	79.6	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	83.8	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	83.7	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.8	70	130	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	88.3	70	130		
EP231: Perfluorinated Compounds (QCLot: 3215779)								
ES1327373-010	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	80.4	54	146	
		EP231: PFOA	335-67-1	0.0025 mg/kg	102	54	134	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	101	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							
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit	
EP231: Perfluorinated Compounds (QCLot: 3215779)											
ES1327373-010	Anonymous	EP231: PFOS	1763-23-1	0.0025 mg/kg	80.4	----	54	146	----	----	
		EP231: PFOA	335-67-1	0.0025 mg/kg	102	----	54	134	----	----	
		EP231: 6:2 Fluorotelomer sulfonate (6:2 FtS)	27619-97-2	0.0125 mg/kg	101	----	56	138	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3215895)											
ES1327439-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	88.0	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3215895)											
ES1327439-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	89.8	----	70	130	----	----	
EP080: BTEXN (QCLot: 3215895)											
ES1327439-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	72.3	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	79.6	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	83.8	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	83.7	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.8	----	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								
EP080: BTEXN (QCLot: 3215895) - continued											
ES1327439-001	Anonymous	EP080: Naphthalene	91-20-3	2.5 mg/kg	88.3	----	70	130	----	----	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3215896)											
ES1327439-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	2.5 mg/kg	75.3	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	80.5	----	70	130	----	----	
EP074F: Halogenated Aromatic Compounds (QCLot: 3215896)											
ES1327439-001	Anonymous	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	90.6	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3216006)											
ES1327527-001	LJ_SB12_0.5	EP071: C10 - C14 Fraction	----	640 mg/kg	79.2	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	89.5	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	75.9	----	52	132	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3216006)											
ES1327527-001	LJ_SB12_0.5	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	95.4	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	79.4	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	62.8	----	52	132	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3216007)											
ES1327527-001	LJ_SB12_0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	103	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	100	----	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	91.5	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	81.4	----	20	130	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3216007)											
ES1327527-001	LJ_SB12_0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	99.2	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	107	----	70	130	----	----	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3216122)											
ES1327373-006	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	102	----	70	130	----	----	
EG005T: Total Metals by ICP-AES (QCLot: 3218964)											
ES1327423-005	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	108	----	70	130	----	----	
		EG005T: Cadmium	7440-43-9	50 mg/kg	107	----	70	130	----	----	
		EG005T: Chromium	7440-47-3	50 mg/kg	101	----	70	130	----	----	
		EG005T: Copper	7440-50-8	125 mg/kg	113	----	70	130	----	----	
		EG005T: Lead	7439-92-1	125 mg/kg	108	----	70	130	----	----	
		EG005T: Nickel	7440-02-0	50 mg/kg	111	----	70	130	----	----	
		EG005T: Zinc	7440-66-6	125 mg/kg	126	----	70	130	----	----	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3218965)											
ES1327423-005	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	94.4	----	70	130	----	----	

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327527	Page	: 1 of 11
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	: 13-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: SP	No. of samples received	: 10
Order number	: 0224189	No. of samples analysed	: 10
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	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved (EA055-103) LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	----	----	----	17-DEC-2013	19-DEC-2013	✓
EA150: Particle Sizing								
Snap Lock Bag (EA150) LO_MW03_1.0		05-DEC-2013	---	03-JUN-2014	----	23-DEC-2013	17-JUN-2014	✓
EA150: Soil Classification based on Particle Size								
Snap Lock Bag (EA150) LO_MW03_1.0		05-DEC-2013	---	03-JUN-2014	----	23-DEC-2013	17-JUN-2014	✓
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) LJ_SB12_0.5, LO_MW03_1.0, LO_MW05_1.5, D01_051213_SP	LJ_SB11_0.5, LO_MW04_1.5, LO_MW06_1.0,	05-DEC-2013	18-DEC-2013	03-JUN-2014	✓	19-DEC-2013	03-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) LJ_SB12_0.5, LO_MW03_1.0, LO_MW05_1.5, D01_051213_SP	LJ_SB11_0.5, LO_MW04_1.5, LO_MW06_1.0,	05-DEC-2013	18-DEC-2013	02-JAN-2014	✓	19-DEC-2013	02-JAN-2014	✓
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066) LJ_SB12_0.5,	LJ_SB11_0.5	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	18-DEC-2013	26-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	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Soil Glass Jar - Unpreserved (EP071)								
LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	18-DEC-2013	19-DEC-2013	✓	18-DEC-2013	27-JAN-2014	✓
EP074D: Fumigants								
Soil Glass Jar - Unpreserved (EP074)								
LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074E: Halogenated Aliphatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074F: Halogenated Aromatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074)								
LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-DEC-2013	*
EP074H: Naphthalene								
Soil Glass Jar - Unpreserved (EP074)								
LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	12-DEC-2013	*	18-DEC-2013	12-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	
EP074B: Oxygenated Compounds								
Soil Glass Jar - Unpreserved (EP074) LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖	
EP074C: Sulfonated Compounds								
Soil Glass Jar - Unpreserved (EP074) LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖	
EP074G: Trihalomethanes								
Soil Glass Jar - Unpreserved (EP074) LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	12-DEC-2013	✖	18-DEC-2013	12-DEC-2013	✖	
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM)) LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	18-DEC-2013	19-DEC-2013	✔	19-DEC-2013	27-JAN-2014	✔	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	18-DEC-2013	19-DEC-2013	✔	19-DEC-2013	27-JAN-2014	✔	
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	19-DEC-2013	✔	18-DEC-2013	19-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	
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080)								
LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	19-DEC-2013	✓	18-DEC-2013	19-DEC-2013	✓
EP231: Perfluorinated Compounds								
Soil Glass Jar - Unpreserved (EP231)								
LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	05-DEC-2013	17-DEC-2013	03-JUN-2014	✓	17-DEC-2013	26-JAN-2014	✓



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	
Analytical Methods							
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	19	10.5	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
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	10	10.0	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	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	13	15.4	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
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	10	10.0	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	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	13	7.7	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
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	10	10.0	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	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	13	7.7	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
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	13	7.7	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Perfluorooctyl Acids and Sulfonates by LC/MS/MS	EP231	1	10	10.0	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	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	13	7.7	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
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
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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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 - 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
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 ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.



<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 ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	3839070-007	----	Dibenz(a,h)anthracene	53-70-3	114 %	71.7-113%	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 Container / Client Sample ID(s)	Extraction / Preparation			Analysis			
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue	
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved							
LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074B: Oxygenated Compounds							
Soil Glass Jar - Unpreserved							
LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0,	LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074C: Sulfonated Compounds							



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
EP074C: Sulfonated Compounds - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074D: Fumigants						
Soil Glass Jar - Unpreserved LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074E: Halogenated Aliphatic Compounds						
Soil Glass Jar - Unpreserved LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074F: Halogenated Aromatic Compounds						
Soil Glass Jar - Unpreserved LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074G: Trihalomethanes						
Soil Glass Jar - Unpreserved LJ_SB12_0.5, LO_MW03_1.0, LO_MW04_4.0, LO_MW05_3.0, LO_MW06_5.0, LJ_SB11_0.5, LO_MW04_1.5, LO_MW05_1.5, LO_MW06_1.0, D01_051213_SP	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-2013	6
EP074H: Naphthalene						



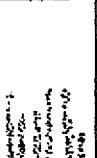
Matrix: **SOIL**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP074H: Naphthalene - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved						
LJ_SB12_0.5, LJ_SB11_0.5, LO_MW03_1.0, LO_MW04_1.5, LO_MW04_4.0, LO_MW05_1.5, LO_MW05_3.0, LO_MW06_1.0, LO_MW06_5.0, D01_051213_SP	17-DEC-2013	12-DEC-2013	5	18-DEC-2013	12-DEC-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.**



CHAIN OF CUSTODY

ALS Laboratory
ALS Laboratory
ALS Laboratory

CLIENT: *John Smith*
OFFICE: *Sydney*
PROJECT: *Project Sydney*
ORDER NUMBER: *02111110*
PROJECT MANAGER: *John Smith*
SAMPLER: *Rick*
CONTACT PERSON: *John Smith*
SAMPLER MOBILE:
EDJ FORMAT (if deposit):
EDJ FOR MAT (if deposit):
EDJ FOR MAT (if deposit):

TURNAROUND REQUIREMENTS:
 Standard TAT (List the date)
 Non-Standard TAT (List the date)
ALS QUOTE NO.: SY770013
SITE: *BAYSWATER LIDDELL*
CONTACT PII:
SAMPLER MOBILE:
EDJ FORMAT (if deposit):
EDJ FOR MAT (if deposit):
EDJ FOR MAT (if deposit):

FOR LABORATORY USE ONLY (Barcode)
Output Sheet Number:
From the Matrix for In-line analysis (upon receipt):
Retention of sample Temperature on Receipt:
Other comments:

RECEIVED BY: *Kevin*
DATE/TIME: *2/13/13 11:15*
RECEIVED BY: *Kevin*
DATE/TIME: *2/13/13 11:15*

RECEIVED BY: *Kevin*
DATE/TIME: *2/13/13 11:15*

RECEIVED BY: *Kevin*
DATE/TIME: *2/13/13 11:15*

RECEIVED BY: *Kevin*
DATE/TIME: *2/13/13 11:15*

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

LAB ID	SAMPLE DETAILS MATRIX, SOLID (S) WATER (W)	DATE/TIME	CONTAINER INFORMATION		ANALYSES REQUIRED (including SURFATS (N), SARA Codes, must be listed to attract attention) Where blank, no analysis required (indicated below) or indicated (indicated below)	ADDITIONAL INFORMATION	
			TYPE & PRESERVATIVE (see below)	TOTAL CONTAINERS		PH (13)	Additional Information
1	LL-1111-0.5	27/11/13					
2	LL-1111-0.5	27/11/13					
3	LL-1111-0.5	27/11/13					
4	LL-1111-0.5	27/11/13					
5	LL-1111-0.5	27/11/13					
6	LL-1111-0.5	27/11/13					
7	LL-1111-0.5	27/11/13					
8	LL-1111-0.5	27/11/13					
9	LL-1111-0.5	27/11/13					
10	LL-1111-0.5	27/11/13					
11	LL-1111-0.5	27/11/13					
12	LL-1111-0.5	27/11/13					

Environmental Division
 Sydney
 Work Order
ES1327746



Telephone : +61-2-8784 8555

Water Contaminants: P = Unprotected Plastic, N = Nitric (Inactivated) Plastic, ORG = Organic (Inactivated) Plastic, S = Sealed (Inactivated) Plastic, V = Volatile (Inactivated) Plastic, W = Volatile (Inactivated) Plastic, X = Volatile (Inactivated) Plastic, Y = Volatile (Inactivated) Plastic, Z = Volatile (Inactivated) Plastic. Matrix: S = Solid, W = Water. Preservation: P = Polyethylene, PE = Polyethylene, PP = Polypropylene, PS = Polystyrene, PVC = Polyvinyl Chloride, PTFE = Polytetrafluoroethylene, V = Volatile (Inactivated) Plastic, W = Volatile (Inactivated) Plastic, X = Volatile (Inactivated) Plastic, Y = Volatile (Inactivated) Plastic, Z = Volatile (Inactivated) Plastic. Matrix: S = Solid, W = Water. Preservation: P = Polyethylene, PE = Polyethylene, PP = Polypropylene, PS = Polystyrene, PVC = Polyvinyl Chloride, PTFE = Polytetrafluoroethylene.

S251-252 #2-12

u-8181-01-11-12

Fadi 

18/12/13
4:45 PM

Fadi Soro

From: Barbara Hanna
Sent: Wednesday, 18 December 2013 4:24 PM
To: Fadi Soro
Cc: Jacob Waugh
Subject: FW: ES1326162 - additional samples to be analysed if possible
Attachments: ES1326162 Updated COC.PDF
Importance: High

Hi Fadi,

Please arrange this rebatch ASAP. Please note as per below the sample ID's were entered incorrectly in workorder ES1326162. This needs to be on a 3 day TAT.

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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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: Clea Henderson [mailto:Clea.Henderson@erm.com]
Sent: Wednesday, 18 December 2013 4:15 PM
To: Barbara Hanna
Cc: ERM Australia Project Symphony MacGen; Joseph Ferring
Subject: ES1326162 - additional samples to be analysed if possible
Importance: High

Hi Barbara,

I have just discovered that our field guys did not request analysis for 11 samples of batch ES1326162 that were supposed to be sampled. We already have results for the one sample for which analysis was correctly requested (sample 001).

The samples were collected 27 November so we are aware that holding times will have been breached for many analytes. We would like to go ahead and schedule analysis regardless, with fast TAT if possible.

Please see the attached COC for required analysis of samples 002 - 012. Note that sample 001 has already been analysed and reported as batch ES1326162. Please also note that the SRN for ES1326162 listed our sample IDs incorrectly (they are hard to read, sorry). The correct sample IDs are:

- 002 - LO_SB02_2.0 (1)
- 003 - LD_SB05_3.0 (2)
- 004 - LL_MW04_0.5 (3)
- 005 - LL_SB18_0.5 (4)
- 006 - LL_SB02_0.5 (5)
- 007 - LL_SB19_0.5 (6)
- 008 - LL_MW06_0.5 (7)

009 – LO_SB08_3.0 (8)
010 – LL_SB03_0.5 (A)
011 – LL_SB13_1.5 (10)
012 – LL_MW09_0.5 (1)

Please let me know if this is possible. Thanks Barbara!

Clea Henderson
Chemical Engineer

Environmental Resources Management
Level 3, Tower 3, 13-38 Siddeley Street,
World Trade Centre, Docklands Victoria 3005

Tel: +61 3 8606 4188 (Direct)
Tel: +61 3 9696 8011 (switchboard)
Fax: +61 3 9696 8022

www.erm.com
clea.henderson@erm.com

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CHAIN OF CUSTODY DOCUMENTATION

CLIENT: Carbon Based Environmental Pty Ltd
LABORATORY BATCH NO.: _____
POSTAL ADDRESS: 47 Boomerang St CESSNOCK NSW 2325
SAMPLERS: Carbon Based Environmental Pty Ltd
PHONE: 0439604443 **FAX:** 0248904442 **E-MAIL:** cbaseed@bigpond.com, cbaseed1@bigpond.com
SEND REPORT TO: Colin Davies, Renae Mikka **SEND INVOICE TO:** Carbon Based Environmental
REPORT NEEDED BY: 7 working days
DISK: _____ **BULLETIN BOARD:** _____ **E-MAIL:** Yes
DATA NEEDED BY: 7 working days
QUOTE NO.: SY 428/12 **QC LEVEL:** _____ **QC S1:** _____ **QC S2:** _____ **QC S3:** Yes
PROJECT ID: OCAL Monthly SW **COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:** _____
P.O. NO.: _____

FOR LAB USE ONLY:
COOLER SEAL: Yes _____ No _____
Broken: _____ **Intact:** _____
COOLER TEMP: _____ deg.C
Metals are Total unless specified

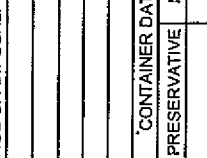
SAMPLE ID	SAMPLE DATA			CONTAINER DATA	
	MATRIX	DATE	TIME	TYPE	PRESERVATIVE NO.
Pond 3	Water	17-12-13			
Mat. Pond 1	Water				
Mat. Pond 5	Water				
Tailings Dam	Water				
REA Dam	Water				
Cockle Ck U/S	Water				
Cockle Ck D/S	Water				

RECEIVED BY: _____
NAME: Colin Davies **DATE:** 18/12/13
OF: Carbon Based Environmental **TIME:** _____
NAME: _____ **DATE:** 18/12/13
OF: _____ **TIME:** 7:00

RELINQUISHED BY: _____
NAME: _____ **DATE:** 18/12/13
OF: _____ **TIME:** _____
NAME: _____ **DATE:** 18/12/13
OF: _____ **TIME:** _____

*Container Type and Preservative Codes: P = Neutral Plastic; N = Nitric Acid Preserved; C = Sodium Hydroxide Preserved; J = Solvent Washed Acid Rinsed Jar; S = Solvent Washed Acid Rinsed Glass Bottle;
 VC = Hydrochloric Acid Preserved Vial; VS = Sulfuric Acid Preserved Vial; BS = Sulfuric Acid Preserved Glass Bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle;
 O = Other.

Australian Laboratory Services Pty Ltd
Page 1 of 1
Environmental Division Sydney Work Order ES1327775
Telephone : +61-2-8784 8555



PH @ EN

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: ES1327746		
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact Address	: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Contact Address	: Barbara Hanna 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	Page	: 1 of 4
Order number	: 0224198	Quote number	: ES2013ENVRES0369 (SY/794/13)
C-O-C number	: ----	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: BAYSWATER/LIDDELL		
Sampler	: RIZA		

Dates

Date Samples Received	: 18-DEC-2013	Issue Date	: 19-DEC-2013 16:22
Client Requested Due Date	: 24-DEC-2013	Scheduled Reporting Date	: 24-DEC-2013

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.1°C
No. of coolers/boxes	: REBATCH	No. of samples received	: 11
Security Seal	: Not intact.	No. of samples analysed	: 11

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 subcontracted to ASET.
- **Samples received in appropriately pretreated and preserved containers.**
- **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.**
- **This is a rebatch of ES1326162.**
- 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 - ASB-SOL (Subcontracted) Asbestos - Count (Solid)	SOIL - EP066 (solids) Polychlorinated Biphenyls by GC/MS	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - EP231 Perfluorooctyl Acids and Sulfonates by LC/MS/MS	SOIL - S-27 TRH/BTEX/NP/PAH/Phenols/8Metals
ES1327746-001	27-NOV-2013 15:00	LO_SB02_2.0		✓	✓	✓	✓
ES1327746-002	27-NOV-2013 15:00	LD_SB05_3.0					✓
ES1327746-003	27-NOV-2013 15:00	LL_MW04_0.5	✓	✓			✓
ES1327746-004	27-NOV-2013 15:00	LL_SB18_0.5	✓	✓			✓
ES1327746-005	27-NOV-2013 15:00	LL_SB02_0.5	✓	✓			✓
ES1327746-006	27-NOV-2013 15:00	LL_SB19_0.5	✓	✓			✓
ES1327746-007	27-NOV-2013 15:00	LL_MW06_0.5	✓	✓			✓
ES1327746-008	27-NOV-2013 15:00	LO_SB08_3.0		✓	✓	✓	✓
ES1327746-009	27-NOV-2013 15:00	LL_SB03_0.5	✓	✓			✓
ES1327746-010	27-NOV-2013 15:00	LL_SB13_1.5	✓	✓			✓
ES1327746-011	27-NOV-2013 15:00	LL_MW09_0.5	✓	✓			✓



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	
Client Sample ID(s)	Container			Date	Evaluation	Date	Evaluation
EA055-103: Moisture Content							
LD_SB05_3.0	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LL_MW04_0.5	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LL_MW06_0.5	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LL_MW09_0.5	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LL_SB02_0.5	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LL_SB03_0.5	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LL_SB13_1.5	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LL_SB18_0.5	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LL_SB19_0.5	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LO_SB02_2.0	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
LO_SB08_3.0	Soil Glass Jar - Unpreserved	----	11-DEC-2013	18-DEC-2013	*	----	----
EP066: Polychlorinated Biphenyls (PCB)							
LL_MW04_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW06_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW09_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB02_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB03_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB13_1.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB18_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB19_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LO_SB02_2.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LO_SB08_3.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
EP071: TPH - Semivolatile Fraction							
LD_SB05_3.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW04_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW06_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW09_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB02_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB03_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB13_1.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB18_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB19_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LO_SB02_2.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LO_SB08_3.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
EP074: Volatile Organic Compounds							
LO_SB02_2.0	Soil Glass Jar - Unpreserved	04-DEC-2013	----	18-DEC-2013	*	----	----
LO_SB08_3.0	Soil Glass Jar - Unpreserved	04-DEC-2013	----	18-DEC-2013	*	----	----
EP075(SIM): PAH/Phenols (SIM)							
LD_SB05_3.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW04_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW06_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW09_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB02_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB03_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB13_1.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB18_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB19_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LO_SB02_2.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LO_SB08_3.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
EP080: TPH Volatiles/BTEX							
LD_SB05_3.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW04_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW06_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_MW09_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB02_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB03_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----
LL_SB13_1.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	*	----	----

Issue Date : 19-DEC-2013 16:22
Page : 4 of 4
Work Order : ES1327746
Client : ENVIRO RESOURCES MANAGEMENT



LL_SB18_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	✘	----	----
LL_SB19_0.5	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	✘	----	----
LO_SB02_2.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	✘	----	----
LO_SB08_3.0	Soil Glass Jar - Unpreserved	11-DEC-2013	----	18-DEC-2013	✘	----	----

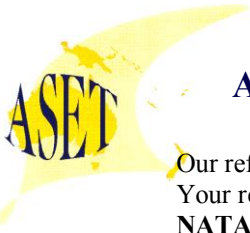
Requested Deliverables

MR JOSEPH FERRING

- *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)
 - Attachment - Report (SUBCO)
 - 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 joseph.ferring@erm.com
Email joseph.ferring@erm.com
Email joseph.ferring@erm.com
Email joseph.ferring@erm.com
Email joseph.ferring@erm.com
Email joseph.ferring@erm.com
Email joseph.ferring@erm.com
Email joseph.ferring@erm.com
Email joseph.ferring@erm.com
Email joseph.ferring@erm.com

THE ACCOUNTS PAYABLE

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



Our ref : ASET36696/ 39876 / 1 - 11

Your ref :ES1327746

NATA Accreditation No: 14484

24 December 2013

Australian Laboratory Services Pty Ltd
277, Woodpark Road
Smithfield
NSW 2164

Attn: Ms Nanthini Coilparampil

Dear Nanthini

Asbestos Identification

This report presents the results of eleven samples, forwarded by Australian Laboratory Services Pty Ltd on 20 December 2013, for analysis for asbestos.

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

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

3. Results : **Sample No. 1. ASET36696 / 39876 / 1. ES1327746 - 001 - LO - SB02 - 2.0.**
Approx dimensions 4.5 cm x 5.0 cm x 0.45 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster and brick like material.
No asbestos detected.

Sample No. 2. ASET36696 / 39876 / 2. ES1327746 - 002 - LD - SB05 - 3.0.
Approx dimensions 5.0 cm x 5.0 cm x 0.45 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster and brick like material..
No asbestos detected.

Sample No. 3. ASET36696 / 39876 / 3. ES1327746 - 003 - LL - MW04 - 0.5.
Approx dimensions 10.0 cm x 8.0 cm x 4.25 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 4. ASET36696 / 39876 / 4. ES1327746 - 004 - LL - SB18 - 0.5.
Approx dimensions 10.0 cm x 7.5 cm x 4.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 5. ASET36696 / 39876 / 5. ES1327746 - 005- LL - SB02 - 0.5.
Approx dimensions 10.0 cm x 8.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of shale and plaster.
No asbestos detected.



Sample No. 6. ASET36696 / 39876 / 6. ES1327746 - 008 - LL - SB19 - 0.5.
Approx dimensions 8.0 cm x 8.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster and brick like material.
No asbestos detected.

Sample No. 7. ASET36696 / 39876 / 7. ES1327746 - 007 - LL - MW06 - 0.5.
Approx dimensions 10.0 cm x 8.0 cm x 4.75 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 8. ASET36696 / 39876 / 8. ES1327746 - 008 - LO - SB08 - 3.0.
Approx dimensions 8.0 cm x 8.0 cm x 1.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 9. ASET36696 / 39876 / 9. ES1327746 - 009 - LL - SB03 - 0.5.
Approx dimensions 8.0 cm x 10.0 cm x 4.5 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 10. ASET36696 / 39876 / 10. ES1327746 - 010 - LL - SB13 - 1.5.
Approx dimensions 8.0 cm x 8.0 cm x 2.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Sample No. 11. ASET36696 / 39876 / 11. ES1327746 - 011 - LL - MW09 - 0.5.
Approx dimensions 10.0 cm x 8.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of plaster.
No asbestos detected.

Analysed and reported by,

A handwritten signature in black ink, appearing to read "Mahen De Silva", is written over a light blue grid background.

**Mahen De Silva. BSc, MSc, Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Identifier.
Approved Signatory**



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



CHAIN OF CUSTODY
ALS Laboratory
Phone: 61-2-951-9300

ALS Laboratory is an ISO 17025 Accredited Laboratory for the following:
 - Drinking Water
 - Wastewater
 - Environmental
 - Industrial
 - Air Quality
 - Soils
 - Sediment
 - Sludge
 - Food
 - Forensic
 - Pharmaceutical
 - Clinical
 - Environmental
 - Industrial
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 - Soils
 - Sediment
 - Sludge
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 - Environmental
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 - Soils
 - Sediment
 - Sludge
 - Food
 - Forensic
 - Pharmaceutical
 - Clinical

CLIENT: EPW Sydney

OFFICE: Sydney

PROJECT: Project Synphony

ORDER NUMBER: 028198

PROJECT MANAGER: Tom Ferris

SAMPLER: R. O'Keefe

COC enabled to ALS? YES / NO

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

Email Invoice to (will default to PM if no other addresses are listed): None

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS: Standard TAT (list due date) Expedited TAT (list due date) No Standard or urgent TAT (list due date)

ALS QUOTE NO.: SY79413

SITE: BAYSWATER / (DEED)

CONTACT PH: 044070468

SAMPLER MOBILE: 042588964

EDU FORMAT (or default): None

RELINQUISHED BY: R. O'Keefe

DATE/TIME: 13/12/11

RECEIVED BY: Tom Ferris

DATE/TIME: 18/12/11 15:45

FOR LABORATORY USE ONLY (Date)

Custody Seal Intact? Yes No N/A

Free Ice / Freeze Ice Molds present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: Other comment:

RECEIVED BY: Tom Ferris

DATE/TIME: 18/12/11 14:00

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (codes below)	(refer to)	TOTAL CONTAINERS	ANALYSIS REQUIRED (including SUITES (N/A) - Scan Code must be listed to attach suite code)												Additional Information		
							6-2 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)	6-24 TRH (C6-C40) BTXN, PAH, Phenols	VOC Target Scan	PCB	pH (1-5)	Exchangeable cations (EQ007)	PFOA/PFOA	Asbestos (absence/presence)	Particle Sizing to 75µm (Sieve)	Organic Matter plus Total Organic Carbon (EP004)				
1	LB-MW14-20	13.12.11	SOIL			1 HSG	X	X													
2	LB-MW13-17	"	"			1 HSG	X	X													
3	R01-B1213-120	"	"			1 HSG	X	X													
	R01-B1213-R0	"	"			1 HSG	X	X													
	R01-B1213-120	"	"			1 HSG	X	X													
4	TS	"	"			1 HSG	X	X													
5	TR	"	"			1 HSG	X	X													

Environmental Division
Sydney
Work Order
ES1327785

Barcode:

Telephone: +61-2-8784 8555

Major Contaminant Classes: P = Unprotected Plastic; N = Nitric Potassium Phosphate; S = Sodium Hydroxide Potassium Phosphate; AG = Amber Glass unvial use; ...
 V = VOA Volatile Preserved; VD = VOA Volatile Disruption Preserved; VA = VOA Volatile Static Preserved; AV = Airborne Unpreserved Volatile; SC = Sulfur Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Plastic; SP = Sulfur Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc Ammonium Phosphate Buffer; F = EDTA Preserved Buffer; ST = Strontium Salt; U = Unpreserved Bag

T

20/12

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: ES1327785		
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact Address	: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Contact Address	: Barbara Hanna 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	Page	: 1 of 3
Order number	: 0224198	Quote number	: ES2013ENVRES0354 (EN/009/13)
C-O-C number	: ----	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
Sampler	: RO		

Dates

Date Samples Received	: 18-DEC-2013	Issue Date	: 18-DEC-2013 21:09
Client Requested Due Date	: 20-DEC-2013	Scheduled Reporting Date	: 20-DEC-2013

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.6°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.**
- **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 - EG005T (solids) Total Metals by ICP-AES	SOIL - EP080 BTEXN	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-24 TRH/BTEXN/PAH + Phenols
ES1327785-001	13-DEC-2013 15:00	LB_MW14_2.0	✓		✓		✓
ES1327785-002	13-DEC-2013 15:00	LB_MW13_1.7	✓		✓		✓
ES1327785-004	[18-DEC-2013]	TS		✓			
ES1327785-005	[18-DEC-2013]	TB				✓	
ES1327785-006	[18-DEC-2013]	TSC		✓			

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-02T 8 metals (Total)	WATER - W-23 SVOC/VOC
ES1327785-003	[18-DEC-2013]	R01_131213_120	✓	✓

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

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 - 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 : ES1327785 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : PROJECT SYMPHONY Order number : 0224198 C-O-C number : ---- Sampler : RO Site : ---- Quote number : EN/009/13	Page : 1 of 13 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 18-DEC-2013 Issue Date : 23-DEC-2013 No. of samples received : 6 No. of samples analysed : 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>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Pabi Subba	Senior Organic Chemist	Sydney Organics
Phalak Inthaksone	Laboratory Manager - Organics	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

- **EP075: 'Sum of PAH' is the sum of the USEPA 16 priority PAHs**
- **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

				LB_MW14_2.0	LB_MW13_1.7	TS	TB	TSC
				13-DEC-2013 15:00	13-DEC-2013 15:00	[18-DEC-2013]	[18-DEC-2013]	[18-DEC-2013]
				ES1327785-001	ES1327785-002	ES1327785-004	ES1327785-005	ES1327785-006
Compound	CAS Number	LOR	Unit					
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	18.6	11.8	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	12	24	----	----	----
Barium	7440-39-3	10	mg/kg	140	60	----	----	----
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	14	10	----	----	----
Cobalt	7440-48-4	2	mg/kg	5	<2	----	----	----
Copper	7440-50-8	5	mg/kg	16	<5	----	----	----
Lead	7439-92-1	5	mg/kg	9	9	----	----	----
Manganese	7439-96-5	5	mg/kg	<5	<5	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	----	----	----
Nickel	7440-02-0	2	mg/kg	10	<2	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	<5	----	----	----
Vanadium	7440-62-2	5	mg/kg	28	43	----	----	----
Zinc	7440-66-6	5	mg/kg	69	10	----	----	----
Titanium	7440-32-6	10	mg/kg	20	20	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP075(SIM)A: Phenolic Compounds								
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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LB_MW14_2.0	LB_MW13_1.7	TS	TB	TSC
				13-DEC-2013 15:00	13-DEC-2013 15:00	[18-DEC-2013]	[18-DEC-2013]	[18-DEC-2013]
Compound	CAS Number	LOR	Unit	ES1327785-001	ES1327785-002	ES1327785-004	ES1327785-005	ES1327785-006
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
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	0.6	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<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	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LB_MW14_2.0	LB_MW13_1.7	TS	TB	TSC
Client sampling date / time				13-DEC-2013 15:00	13-DEC-2013 15:00	[18-DEC-2013]	[18-DEC-2013]	[18-DEC-2013]
Compound	CAS Number	LOR	Unit	ES1327785-001	ES1327785-002	ES1327785-004	ES1327785-005	ES1327785-006
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
^ >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	<0.2	<0.2	0.9
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	4.0	<0.5	18.6
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	2.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	2.3	<0.5	11.2
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.9	<0.5	4.7
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	3.2	<0.5	15.9
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	7.2	<0.2	37.9
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	82.1	89.7	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	74.8	93.1	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	82.7	72.3	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	94.0	98.4	----	----	----
Anthracene-d10	1719-06-8	0.1	%	95.5	90.0	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	102	97.6	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	90.6	105	94.0	106	112
Toluene-D8	2037-26-5	0.1	%	97.1	107	97.1	105	109
4-Bromofluorobenzene	460-00-4	0.1	%	107	107	96.2	102	106



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_131213_120

Client sampling date / time

[18-DEC-2013]

Compound	CAS Number	LOR	Unit	ES1327785-003	---	---	---	---
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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	<0.001	---	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	---	---	---	---
Manganese	7439-96-5	0.001	mg/L	<0.001	---	---	---	---
Molybdenum	7439-98-7	0.001	mg/L	<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	---	---	---	---
Selenium	7782-49-2	0.01	mg/L	<0.01	---	---	---	---
Titanium	7440-32-6	0.01	mg/L	<0.01	---	---	---	---
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	---	---	---	---

EG035T: Total Recoverable Mercury by FIMS

Mercury	7439-97-6	0.0001	mg/L	<0.0001	---	---	---	---
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EP074A: Monocyclic Aromatic Hydrocarbons

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	---	---	---	---
Styrene	100-42-5	5	µg/L	<5	---	---	---	---
ortho-Xylene	95-47-6	2	µg/L	<2	---	---	---	---
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	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_131213_120

Client sampling date / time

[18-DEC-2013]

Compound	CAS Number	LOR	Unit	ES1327785-003	---	---	---	---
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	---	---	---	---
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	---	---	---	---
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	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_131213_120

Client sampling date / time

[18-DEC-2013]

Compound	CAS Number	LOR	Unit	ES1327785-003	---	---	---	---
EP074E: Halogenated Aliphatic Compounds - Continued								
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	---	---	---	---
EP074F: Halogenated Aromatic Compounds								
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	---	---	---	---
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	---	---	---	---
EP074G: Trihalomethanes								
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	---	---	---	---
EP075A: Phenolic Compounds								
Phenol	108-95-2	2	µg/L	<2	---	---	---	---
2-Chlorophenol	95-57-8	2	µg/L	<2	---	---	---	---
2-Methylphenol	95-48-7	2	µg/L	<2	---	---	---	---
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	---	---	---	---
2-Nitrophenol	88-75-5	2	µg/L	<2	---	---	---	---
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	---	---	---	---
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	---	---	---	---
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	---	---	---	---
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	---	---	---	---
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	---	---	---	---
Pentachlorophenol	87-86-5	4	µg/L	<4	---	---	---	---
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	2	µg/L	<2	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_131213_120

Client sampling date / time

[18-DEC-2013]

ES1327785-003

EP075B: Polynuclear Aromatic Hydrocarbons - Continued

Compound	CAS Number	LOR	Unit					
2-Methylnaphthalene	91-57-6	2	µg/L	<2	---	---	---	---
2-Chloronaphthalene	91-58-7	2	µg/L	<2	---	---	---	---
Acenaphthylene	208-96-8	2	µg/L	<2	---	---	---	---
Acenaphthene	83-32-9	2	µg/L	<2	---	---	---	---
Fluorene	86-73-7	2	µg/L	<2	---	---	---	---
Phenanthrene	85-01-8	2	µg/L	<2	---	---	---	---
Anthracene	120-12-7	2	µg/L	<2	---	---	---	---
Fluoranthene	206-44-0	2	µg/L	<2	---	---	---	---
Pyrene	129-00-0	2	µg/L	<2	---	---	---	---
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	---	---	---	---
Benz(a)anthracene	56-55-3	2	µg/L	<2	---	---	---	---
Chrysene	218-01-9	2	µg/L	<2	---	---	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	---	---	---	---
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	---	---	---	---
Benzo(a)pyrene	50-32-8	2	µg/L	<2	---	---	---	---
3-Methylcholanthrene	56-49-5	2	µg/L	<2	---	---	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	---	---	---	---
Dibenz(a.h)anthracene	53-70-3	2	µg/L	<2	---	---	---	---
Benzo(g.h.i)perylene	191-24-2	2	µg/L	<2	---	---	---	---
^ Sum of PAHs	----	2	µg/L	<2	---	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	---	---	---	---

EP075C: Phthalate Esters

Dimethyl phthalate	131-11-3	2	µg/L	<2	---	---	---	---
Diethyl phthalate	84-66-2	2	µg/L	<2	---	---	---	---
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	---	---	---	---
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	---	---	---	---
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	---	---	---	---
Di-n-octylphthalate	117-84-0	2	µg/L	<2	---	---	---	---

EP075D: Nitrosamines

N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	---	---	---	---
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	---	---	---	---
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	---	---	---	---
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_131213_120

Client sampling date / time

[18-DEC-2013]

Compound	CAS Number	LOR	Unit	ES1327785-003	---	---	---	---
EP075D: Nitrosamines - Continued								
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	---	---	---	---
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	---	---	---	---
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	---	---	---	---
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	---	---	---	---
Methapyrilene	91-80-5	2	µg/L	<2	---	---	---	---
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	---	---	---	---
Acetophenone	98-86-2	2	µg/L	<2	---	---	---	---
Nitrobenzene	98-95-3	2	µg/L	<2	---	---	---	---
Isophorone	78-59-1	2	µg/L	<2	---	---	---	---
2,6-Dinitrotoluene	606-20-2	4	µg/L	<4	---	---	---	---
2,4-Dinitrotoluene	121-14-2	4	µg/L	<4	---	---	---	---
1-Naphthylamine	134-32-7	2	µg/L	<2	---	---	---	---
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	---	---	---	---
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	---	---	---	---
Azobenzene	103-33-3	2	µg/L	<2	---	---	---	---
1,3,5-Trinitrobenzene	99-35-4	2	µg/L	<2	---	---	---	---
Phenacetin	62-44-2	2	µg/L	<2	---	---	---	---
4-Aminobiphenyl	92-67-1	2	µg/L	<2	---	---	---	---
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	---	---	---	---
Pronamide	23950-58-5	2	µg/L	<2	---	---	---	---
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	---	---	---	---
Chlorobenzilate	510-15-6	2	µg/L	<2	---	---	---	---
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	---	---	---	---
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	---	---	---	---
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	---	---	---	---
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	---	---	---	---
EP075G: Chlorinated Hydrocarbons								
1,4-Dichlorobenzene	106-46-7	2	µg/L	<2	---	---	---	---
1,3-Dichlorobenzene	541-73-1	2	µg/L	<2	---	---	---	---
1,2-Dichlorobenzene	95-50-1	2	µg/L	<2	---	---	---	---
Hexachloroethane	67-72-1	2	µg/L	<2	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_131213_120

Client sampling date / time

[18-DEC-2013]

Compound	CAS Number	LOR	Unit	ES1327785-003	---	---	---	---
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EP075G: Chlorinated Hydrocarbons - Continued

1,2,4-Trichlorobenzene	120-82-1	2	µg/L	<2	---	---	---	---
Hexachloropropylene	1888-71-7	2	µg/L	<2	---	---	---	---
Hexachlorobutadiene	87-68-3	2	µg/L	<2	---	---	---	---
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	---	---	---	---
Pentachlorobenzene	608-93-5	2	µg/L	<2	---	---	---	---
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	---	---	---	---

EP075H: Anilines and Benzidines

Aniline	62-53-3	2	µg/L	<2	---	---	---	---
4-Chloroaniline	106-47-8	2	µg/L	<2	---	---	---	---
2-Nitroaniline	88-74-4	4	µg/L	<4	---	---	---	---
3-Nitroaniline	99-09-2	4	µg/L	<4	---	---	---	---
Dibenzofuran	132-64-9	2	µg/L	<2	---	---	---	---
4-Nitroaniline	100-01-6	2	µg/L	<2	---	---	---	---
Carbazole	86-74-8	2	µg/L	<2	---	---	---	---
3,3'-Dichlorobenzidine	91-94-1	2	µg/L	<2	---	---	---	---

EP075I: Organochlorine Pesticides

alpha-BHC	319-84-6	2	µg/L	<2	---	---	---	---
beta-BHC	319-85-7	2	µg/L	<2	---	---	---	---
gamma-BHC	58-89-9	2	µg/L	<2	---	---	---	---
delta-BHC	319-86-8	2	µg/L	<2	---	---	---	---
Heptachlor	76-44-8	2	µg/L	<2	---	---	---	---
Aldrin	309-00-2	2	µg/L	<2	---	---	---	---
Heptachlor epoxide	1024-57-3	2	µg/L	<2	---	---	---	---
alpha-Endosulfan	959-98-8	2	µg/L	<2	---	---	---	---
4,4'-DDE	72-55-9	2	µg/L	<2	---	---	---	---
Dieldrin	60-57-1	2	µg/L	<2	---	---	---	---
Endrin	72-20-8	2	µg/L	<2	---	---	---	---
beta-Endosulfan	33213-65-9	2	µg/L	<2	---	---	---	---
4,4'-DDD	72-54-8	2	µg/L	<2	---	---	---	---
Endosulfan sulfate	1031-07-8	2	µg/L	<2	---	---	---	---
4,4'-DDT	50-29-3	4	µg/L	<4	---	---	---	---
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	---	---	---	---
^ Sum of DDD + DDE + DDT	---	4	µg/L	<4	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_131213_120

Client sampling date / time

[18-DEC-2013]

Compound	CAS Number	LOR	Unit	ES1327785-003	----	----	----	----
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	----	----	----	----
Dimethoate	60-51-5	2	µg/L	<2	----	----	----	----
Diazinon	333-41-5	2	µg/L	<2	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	----	----	----	----
Malathion	121-75-5	2	µg/L	<2	----	----	----	----
Fenthion	55-38-9	2	µg/L	<2	----	----	----	----
Chlorpyrifos	2921-88-2	2	µg/L	<2	----	----	----	----
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	----	----	----	----
Chlorfenvinphos	470-90-6	2	µg/L	<2	----	----	----	----
Prothiofos	34643-46-4	2	µg/L	<2	----	----	----	----
Ethion	563-12-2	2	µg/L	<2	----	----	----	----
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	106	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	119	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	98.7	----	----	----	----
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	0.1	%	61.5	----	----	----	----
Phenol-d6	13127-88-3	0.1	%	27.9	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	74.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	74.7	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	0.1	%	81.2	----	----	----	----
1,2-Dichlorobenzene-D4	2199-69-1	0.1	%	66.0	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.1	%	76.6	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	74.5	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	80.0	----	----	----	----



Surrogate Control Limits

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

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP074S: VOC Surrogates			
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
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10.0	116.6
Phenol-d6	13127-88-3	10.0	69.0
2-Chlorophenol-D4	93951-73-6	20.9	129.7
2.4.6-Tribromophenol	118-79-6	10.0	150.7
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29.4	141.7
1.2-Dichlorobenzene-D4	2199-69-1	23.6	120.7
2-Fluorobiphenyl	321-60-8	27.2	134.9
Anthracene-d10	1719-06-8	26.6	113
4-Terphenyl-d14	1718-51-0	21.4	123

QUALITY CONTROL REPORT

Work Order	: ES1327785	Page	: 1 of 20
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-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: RO	No. of samples received	: 6
Order number	: 0224198	No. of samples analysed	: 6
Quote number	: EN/009/13		

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
Phalak Inthaksone

Position

Senior Spectroscopist
Senior Organic Chemist
Laboratory Manager - Organics

Accreditation Category

Sydney Inorganics
Sydney Organics
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.

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 (%)
EA055: Moisture Content (QC Lot: 3220478)									
ES1327648-003	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	34.6	33.9	1.9	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 3220313)									
ES1327325-001	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	1	1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	2	1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	70	60	0.0	No Limit
		EG005T: Titanium	7440-32-6	10	mg/kg	230	230	0.0	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	59	59	0.0	0% - 20%
		EG005T: Cobalt	7440-48-4	2	mg/kg	14	14	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	3	4	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	20	20	0.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	12	13	12.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	191	166	14.0	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	270	249	8.0	0% - 20%
		EG005T: Manganese	7439-96-5	5	mg/kg	202	223	10.1	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	65	66	2.0	0% - 50%
EG005T: Zinc	7440-66-6	5	mg/kg	746	680	9.2	0% - 20%		
EG005T: Boron	7440-42-8	50	mg/kg	60	60	0.0	No Limit		
ES1327786-001	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	140	170	17.0	0% - 50%
		EG005T: Titanium	7440-32-6	10	mg/kg	110	80	28.2	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	24	21	14.9	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	9	11	15.5	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	22	20	7.5	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	10	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	10	8	22.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	15	10.2	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	161	180	10.9	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	45	39	13.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	41	36	12.5	No Limit		
EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3220314)									
ES1327325-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	2.2	2.0	10.6	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 (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3220314) - continued									
ES1327786-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3220857)									
ES1327785-001	LB_MW14_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
ES1327803-004	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3220857)									
ES1327785-001	LB_MW14_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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3220857) - continued									
ES1327785-001	LB_MW14_2.0	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
ES1327803-004	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3220527)									
ES1327450-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	66	78	16.2	No Limit
ES1327786-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3220856)									
ES1327785-001	LB_MW14_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
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES1327803-004	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3220527)									
ES1327450-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	132	155	16.2	0% - 50%
ES1327786-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3220856)									
ES1327785-001	LB_MW14_2.0	EP071: >C16 - C34 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 (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3220856) - continued									
ES1327785-001	LB_MW14_2.0	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
ES1327803-004	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
EP080: BTEXN (QC Lot: 3220527)									
ES1327450-001	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	11.3	12.8	12.1	0% - 20%
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	0.8	0.9	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	2.7	3.0	10.6	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	1.2	1.3	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	14	15	13.3	0% - 50%
ES1327786-002	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	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
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 (%)
EG020T: Total Metals by ICP-MS (QC Lot: 3222934)									
ES1327227-010	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: 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	<0.001	<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: Cobalt	7440-48-4	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: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	0.004	0.004	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
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		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
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3223149)									
ES1327617-001	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 (%)	
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3220433)										
ES1327787-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit	
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit	
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit	
		EP074: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit	
			106-42-3							
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit	
		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			
EP074B: Oxygenated Compounds (QC Lot: 3220433)										
ES1327787-001	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	
EP074C: Sulfonated Compounds (QC Lot: 3220433)										
ES1327787-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit	
EP074D: Fumigants (QC Lot: 3220433)										
ES1327787-001	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	
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3220433)										
ES1327787-001	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	



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3220433) - continued									
ES1327787-001	Anonymous	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: 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		
EP074F: Halogenated Aromatic Compounds (QC Lot: 3220433)									
ES1327787-001	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: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 3220433)									
ES1327787-001	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



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	
EG005T: Total Metals by ICP-AES (QCLot: 3220313)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	120	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	105	83	129	
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	118	88	130	
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	113	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	104	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	110	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	112	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	115	81	123	
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	117	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	113	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	118	84	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	114	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	118	81	133	
EG005T: Titanium	7440-32-6	10	mg/kg	<10	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3220314)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	87.7	66	112	
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	104	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	105	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	102	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	75.4	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	97.7	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	97.2	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	103	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	93.4	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	84.4	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	37.0	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857)									
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	113	77	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857) - continued									
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	106	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	109	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	110	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	109	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	108	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	110	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	108	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	95.7	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	92.6	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	89.6	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	94.4	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220527)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	84.6	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	103	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	90.5	64	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220527)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	76.9	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	98.2	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	106	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	69.4	63	131	
EP080: BTEXN (QCLot: 3220527)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	95.2	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	102	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	103	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	105	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	96.0	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	High



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	
EG020T: Total Metals by ICP-MS (QCLot: 3222934)									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	107	79	121	
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	96.5	76	120	
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	93.1	84	116	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.0	82	114	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.9	83	115	
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	95.8	84	116	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.2	83	117	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	103	85	115	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	100	83	115	
EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	106	81	125	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.6	83	117	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	98.2	68	128	
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	93.9	84	114	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	89.3	76	118	
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	90.1	73	127	
EG020T: Total Metals by ICP-MS (QCLot: 3222937)									
EG020B-T: Titanium	7440-32-6	0.01	mg/L	<0.01	0.1 mg/L	100	80	124	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3223149)									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	94.4	77	115	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3220433)									
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	98.6	78	116	
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	106	68	128	
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	109	74	118	
EP074: meta- & para-Xylene	108-38-3	2	µg/L	<2	20 µg/L	104	74	122	
	106-42-3								
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	94.0	74	118	
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	104	77	121	
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	102	75	121	
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	104	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	105	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	102	70	122	
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	100	67	123	
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	93.2	62	126	
EP074B: Oxygenated Compounds (QCLot: 3220433)									
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	77.0	61.4	134	
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	86.6	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	
EP074B: Oxygenated Compounds (QCLot: 3220433) - continued									
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	86.4	61	139	
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	82.9	65	137	
EP074C: Sulfonated Compounds (QCLot: 3220433)									
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	106	72.8	127	
EP074D: Fumigants (QCLot: 3220433)									
EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	91.5	61	119	
EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	88.6	76	120	
EP074: cis-1,3-Dichloropropylene	10061-01-5	10	µg/L	<10	10 µg/L	79.6	62	120	
EP074: trans-1,3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	77.0	61	119	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	92.3	69	117	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3220433)									
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	83.1	60.6	138	
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	91.0	67.4	130	
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	78.1	69.4	129	
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	106	56	140	
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	99.0	63	135	
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	100	65	131	
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	97.6	69	123	
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	95.9	70.2	128	
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	97.9	71	119	
EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	96.9	75	119	
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	98.7	77	117	
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	99.6	61	119	
EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	98.2	73	119	
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	85.8	63	121	
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	92.5	78	122	
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	101	74	120	
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	94.6	74	118	
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	91.9	75	123	
EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	94.8	79	121	
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	100	72	124	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	89.8	66	114	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	73.8	60	120	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	76.2	70.6	128	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	92.2	70	124	
EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	95.2	74	128	
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	110	71.8	126	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	103	66.4	136	



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	
EP074F: Halogenated Aromatic Compounds (QCLot: 3220433)									
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	102	80	118	
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	95.8	76	116	
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	104	71	121	
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	98.9	71	121	
EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	86.7	67	125	
EP074G: Trihalomethanes (QCLot: 3220433)									
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	96.0	76	118	
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	86.4	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	88.0	73.5	126	
EP075A: Phenolic Compounds (QCLot: 3220879)									
EP075: Phenol	108-95-2	2	µg/L	<2	5 µg/L	37.1	25.5	64.1	
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	5 µg/L	80.2	63.1	105	
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	5 µg/L	68.4	55.6	98.4	
EP075: 3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	10 µg/L	68.9	45	96.2	
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	5 µg/L	72.5	55.4	110	
EP075: 2,4-Dimethylphenol	105-67-9	2	µg/L	<2	5 µg/L	74.0	61.7	110	
EP075: 2,4-Dichlorophenol	120-83-2	2	µg/L	<2	5 µg/L	74.1	61.9	109	
EP075: 2,6-Dichlorophenol	87-65-0	2	µg/L	<2	5 µg/L	78.8	61.5	108	
EP075: 4-Chloro-3-Methylphenol	59-50-7	2	µg/L	<2	5 µg/L	73.7	61.4	107	
EP075: 2,4,6-Trichlorophenol	88-06-2	2	µg/L	<2	5 µg/L	76.9	57.6	112	
EP075: 2,4,5-Trichlorophenol	95-95-4	2	µg/L	<2	5 µg/L	73.2	58	110	
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	10 µg/L	40.8	10	110	
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220879)									
EP075: Naphthalene	91-20-3	2	µg/L	<2	5 µg/L	67.2	61	108	
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	5 µg/L	68.2	59	108	
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	5 µg/L	71.5	60.6	106	
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	5 µg/L	75.9	64	108	
EP075: Acenaphthene	83-32-9	2	µg/L	<2	5 µg/L	80.8	65	108	
EP075: Fluorene	86-73-7	2	µg/L	<2	5 µg/L	79.9	65.2	107	
EP075: Phenanthrene	85-01-8	2	µg/L	<2	5 µg/L	83.1	66.7	108	
EP075: Anthracene	120-12-7	2	µg/L	<2	5 µg/L	82.4	65.8	108	
EP075: Fluoranthene	206-44-0	2	µg/L	<2	5 µg/L	82.3	64.9	109	
EP075: Pyrene	129-00-0	2	µg/L	<2	5 µg/L	83.6	60.1	111	
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	5 µg/L	69.4	59.7	110	
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	5 µg/L	84.2	62.2	112	
EP075: Chrysene	218-01-9	2	µg/L	<2	5 µg/L	81.0	59.3	114	
EP075: Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	10 µg/L	84.5	60.1	111	



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	
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220879) - continued									
EP075: 7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	5 µg/L	87.8	49.8	107	
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	5 µg/L	79.5	59.2	112	
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	5 µg/L	91.6	60.1	110	
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	5 µg/L	67.6	59.6	110	
EP075: Dibenz(a,h)anthracene	53-70-3	2	µg/L	<2	5 µg/L	69.1	57.2	109	
EP075: Benzo(g,h,i)perylene	191-24-2	2	µg/L	<2	5 µg/L	67.1	60.6	110	
EP075C: Phthalate Esters (QCLot: 3220879)									
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	5 µg/L	77.7	64.3	112	
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	5 µg/L	85.1	67.3	111	
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	5 µg/L	85.8	68.4	122	
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	5 µg/L	81.7	61.2	114	
EP075: bis(2-ethylhexyl) phthalate	117-81-7	20	µg/L	<20	5 µg/L	103	72.8	135	
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	5 µg/L	88.2	62.1	115	
EP075D: Nitrosamines (QCLot: 3220879)									
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	5 µg/L	67.1	39.5	95.9	
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	5 µg/L	85.2	60.6	113	
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	5 µg/L	73.5	35	99	
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	5 µg/L	72.5	40	106	
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	5 µg/L	94.2	63.5	108	
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	5 µg/L	88.1	61.7	107	
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	5 µg/L	87.3	62.5	108	
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	10 µg/L	86.1	64.6	112	
EP075: Methapyrilene	91-80-5	2	µg/L	<2	5 µg/L	# 101	4.21	94	
EP075E: Nitroaromatics and Ketones (QCLot: 3220879)									
EP075: 2-Picoline	109-06-8	2	µg/L	<2	5 µg/L	31.8	11.4	100	
EP075: Acetophenone	98-86-2	2	µg/L	<2	5 µg/L	83.0	68.3	112	
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	5 µg/L	85.6	68.3	112	
EP075: Isophorone	78-59-1	2	µg/L	<2	5 µg/L	85.5	67.6	111	
EP075: 2,6-Dinitrotoluene	606-20-2	4	µg/L	<4	5 µg/L	76.8	64.4	113	
EP075: 2,4-Dinitrotoluene	121-14-2	4	µg/L	<4	5 µg/L	77.5	59.5	109	
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	5 µg/L	94.6	46.8	102	
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	5 µg/L	57.0	8.93	98.7	
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	5 µg/L	91.8	58.3	106	
EP075: Azobenzene	103-33-3	2	µg/L	<2	5 µg/L	83.6	66	112	
EP075: 1,3,5-Trinitrobenzene	99-35-4	2	µg/L	<2	5 µg/L	88.4	39	105	
EP075: Phenacetin	62-44-2	2	µg/L	<2	5 µg/L	76.1	57.8	101	
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	5 µg/L	75.8	60.1	112	
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	5 µg/L	78.3	59	109	



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	
EP075E: Nitroaromatics and Ketones (QCLot: 3220879) - continued									
EP075: Pronamide	23950-58-5	2	µg/L	<2	5 µg/L	82.9	62.7	109	
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	5 µg/L	81.5	59.4	108	
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	5 µg/L	78.4	57.7	110	
EP075F: Haloethers (QCLot: 3220879)									
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	5 µg/L	74.3	69.1	112	
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	5 µg/L	83.6	66.2	111	
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	5 µg/L	79.9	64.7	109	
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	5 µg/L	83.8	61.6	108	
EP075G: Chlorinated Hydrocarbons (QCLot: 3220879)									
EP075: 1,4-Dichlorobenzene	106-46-7	2	µg/L	<2	5 µg/L	69.3	42	114	
EP075: 1,3-Dichlorobenzene	541-73-1	2	µg/L	<2	5 µg/L	64.8	37	109	
EP075: 1,2-Dichlorobenzene	95-50-1	2	µg/L	<2	5 µg/L	69.5	37	109	
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	5 µg/L	62.1	30	112	
EP075: 1,2,4-Trichlorobenzene	120-82-1	2	µg/L	<2	5 µg/L	73.3	42.9	115	
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	5 µg/L	47.4	23.8	111	
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	5 µg/L	61.5	37.4	116	
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	5 µg/L	26.9	23.5	107	
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	5 µg/L	81.7	64.5	107	
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	5 µg/L	86.0	65.7	110	
EP075H: Anilines and Benzidines (QCLot: 3220879)									
EP075: Aniline	62-53-3	2	µg/L	<2	5 µg/L	84.0	10.9	89.7	
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	5 µg/L	84.8	44.4	106	
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	5 µg/L	76.9	60.9	110	
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	5 µg/L	# 98.4	51.5	96.9	
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	5 µg/L	79.8	65.3	108	
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	5 µg/L	79.9	48.9	99.5	
EP075: Carbazole	86-74-8	2	µg/L	<2	5 µg/L	82.1	64.3	107	
EP075: 3,3'-Dichlorobenzidine	91-94-1	2	µg/L	<2	5 µg/L	95.1	60.3	119	
EP075I: Organochlorine Pesticides (QCLot: 3220879)									
EP075: alpha-BHC	319-84-6	2	µg/L	<2	5 µg/L	# 64.0	64.3	110	
EP075: beta-BHC	319-85-7	2	µg/L	<2	5 µg/L	79.5	59	110	
EP075: gamma-BHC	58-89-9	2	µg/L	<2	5 µg/L	# 60.4	63.7	112	
EP075: delta-BHC	319-86-8	2	µg/L	<2	5 µg/L	# 116	57	115	
EP075: Heptachlor	76-44-8	2	µg/L	<2	5 µg/L	82.6	57.9	108	
EP075: Aldrin	309-00-2	2	µg/L	<2	5 µg/L	84.3	56	114	
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	5 µg/L	86.8	60.3	112	
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	5 µg/L	79.5	52.5	115	
EP075: 4,4'-DDE	72-55-9	2	µg/L	<2	5 µg/L	92.7	64.1	111	



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	
EP075I: Organochlorine Pesticides (QCLot: 3220879) - continued									
EP075: Dieldrin	60-57-1	2	µg/L	<2	5 µg/L	86.4	65	113	
EP075: Endrin	72-20-8	2	µg/L	<2	5 µg/L	91.6	52	118	
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	5 µg/L	79.7	60.4	111	
EP075: 4,4'-DDD	72-54-8	2	µg/L	<2	5 µg/L	73.0	59.8	115	
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	5 µg/L	106	52.8	114	
EP075: 4,4'-DDT	50-29-3	4	µg/L	<4	5 µg/L	97.1	44	116	
EP075J: Organophosphorus Pesticides (QCLot: 3220879)									
EP075: Dichlorvos	62-73-7	2	µg/L	<2	5 µg/L	71.8	51	113	
EP075: Dimethoate	60-51-5	2	µg/L	<2	5 µg/L	72.9	45	119	
EP075: Diazinon	333-41-5	2	µg/L	<2	5 µg/L	# 122	54	116	
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	5 µg/L	69.0	54.1	116	
EP075: Malathion	121-75-5	2	µg/L	<2	5 µg/L	75.9	57.6	118	
EP075: Fenthion	55-38-9	2	µg/L	<2	5 µg/L	66.5	57	115	
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	5 µg/L	76.6	57	115	
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	5 µg/L	85.7	54	116	
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	5 µg/L	99.9	57	111	
EP075: Prothiofos	34643-46-4	2	µg/L	<2	5 µg/L	76.3	54	118	
EP075: Ethion	563-12-2	2	µg/L	<2	5 µg/L	72.4	54	120	

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	
EG005T: Total Metals by ICP-AES (QCLot: 3220313)								
ES1327325-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	116	70	130	
		EG005T: Cadmium	7440-43-9	50 mg/kg	112	70	130	
		EG005T: Chromium	7440-47-3	50 mg/kg	111	70	130	
		EG005T: Copper	7440-50-8	125 mg/kg	108	70	130	
		EG005T: Lead	7439-92-1	125 mg/kg	107	70	130	
		EG005T: Nickel	7440-02-0	50 mg/kg	113	70	130	
		EG005T: Selenium	7782-49-2	50 mg/kg	110	70	130	
		EG005T: Zinc	7440-66-6	125 mg/kg	98.5	70	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3220314)								
ES1327325-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	86.4	70	130	
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857)								



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	
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857) - continued								
ES1327785-001	LB_MW14_2.0	EP075(SIM): Phenol	108-95-2	10 mg/kg	97.6	70	130	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	96.3	70	130	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	118	60	130	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	100	70	130	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	83.4	20	130	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857)								
ES1327785-001	LB_MW14_2.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.7	70	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	98.0	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220527)								
ES1327450-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	120	70	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856)								
ES1327785-001	LB_MW14_2.0	EP071: C10 - C14 Fraction	----	640 mg/kg	77.5	73	137	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	76.7	53	131	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	67.7	52	132	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220527)								
ES1327450-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	106	70	130	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856)								
ES1327785-001	LB_MW14_2.0	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	96.4	73	137	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.8	53	131	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	65.7	52	132	
EP080: BTEXN (QCLot: 3220527)								
ES1327450-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	96.1	70	130	
		EP080: Toluene	108-88-3	2.5 mg/kg	88.4	70	130	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	105	70	130	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	99.7	70	130	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	98.3	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
EG020T: Total Metals by ICP-MS (QCLot: 3222934)							
ES1327785-003	R01_131213_120	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	70	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	108	70	130
		EG020A-T: Barium	7440-39-3	1 mg/L	106	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	70	130
		EG020A-T: Chromium	7440-47-3	1 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
EG020T: Total Metals by ICP-MS (QCLot: 3222934) - continued							
ES1327785-003	R01_131213_120	EG020A-T: Cobalt	7440-48-4	1 mg/L	109	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	117	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	117	70	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	121	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	106	70	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	108	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	114	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3223149)							
ES1327785-003	R01_131213_120	EG035T: Mercury	7439-97-6	0.010 mg/L	95.3	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3220433)							
ES1327787-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	97.5	70	130
		EP074: Toluene	108-88-3	25 µg/L	101	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3220433)							
ES1327787-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	77.2	70	130
		EP074: Trichloroethene	79-01-6	25 µg/L	97.4	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3220433)							
ES1327787-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	102	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
EG005T: Total Metals by ICP-AES (QCLot: 3220313)										
ES1327325-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	116	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	112	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	111	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	108	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	107	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	113	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	110	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	98.5	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3220314)										
ES1327325-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	86.4	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220527)										



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								
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220527) - continued											
ES1327450-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	120	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220527)											
ES1327450-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	106	----	70	130	----	----	
EP080: BTEXN (QCLot: 3220527)											
ES1327450-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	96.1	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	88.4	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	105	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	99.7	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	98.3	----	70	130	----	----	
	EP080: Naphthalene	91-20-3		2.5 mg/kg	106	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856)											
ES1327785-001	LB_MW14_2.0	EP071: C10 - C14 Fraction	----	640 mg/kg	77.5	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	76.7	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	67.7	----	52	132	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856)											
ES1327785-001	LB_MW14_2.0	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	96.4	----	73	137	----	----	
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.8	----	53	131	----	----	
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	65.7	----	52	132	----	----	
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857)											
ES1327785-001	LB_MW14_2.0	EP075(SIM): Phenol	108-95-2	10 mg/kg	97.6	----	70	130	----	----	
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	96.3	----	70	130	----	----	
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	118	----	60	130	----	----	
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	100	----	70	130	----	----	
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	83.4	----	20	130	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857)											
ES1327785-001	LB_MW14_2.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.7	----	70	130	----	----	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	98.0	----	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								
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3220433)											
ES1327787-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	97.5	----	70	130	----	----	
		EP074: Toluene	108-88-3	25 µg/L	101	----	70	130	----	----	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3220433)											
ES1327787-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	77.2	----	70	130	----	----	
		EP074: Trichloroethene	79-01-6	25 µg/L	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
EP074F: Halogenated Aromatic Compounds (QCLot: 3220433)										
ES1327787-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	102	----	70	130	----	----
EG020T: Total Metals by ICP-MS (QCLot: 3222934)										
ES1327785-003	R01_131213_120	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	----	70	130	----	----
		EG020A-T: Beryllium	7440-41-7	1 mg/L	108	----	70	130	----	----
		EG020A-T: Barium	7440-39-3	1 mg/L	106	----	70	130	----	----
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	110	----	70	130	----	----
		EG020A-T: Chromium	7440-47-3	1 mg/L	110	----	70	130	----	----
		EG020A-T: Cobalt	7440-48-4	1 mg/L	109	----	70	130	----	----
		EG020A-T: Copper	7440-50-8	1 mg/L	117	----	70	130	----	----
		EG020A-T: Lead	7439-92-1	1 mg/L	117	----	70	130	----	----
		EG020A-T: Manganese	7439-96-5	1 mg/L	121	----	70	130	----	----
		EG020A-T: Nickel	7440-02-0	1 mg/L	106	----	70	130	----	----
		EG020A-T: Vanadium	7440-62-2	1 mg/L	108	----	70	130	----	----
		EG020A-T: Zinc	7440-66-6	1 mg/L	114	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3223149)										
ES1327785-003	R01_131213_120	EG035T: Mercury	7439-97-6	0.010 mg/L	95.3	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327785	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	: 18-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: RO	No. of samples received	: 6
Order number	: 0224198	No. of samples analysed	: 6
Quote number	: EN/009/13		

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	
EA055: Moisture Content								
Soil Glass Jar - Unpreserved (EA055-103) LB_MW14_2.0, LB_MW13_1.7	13-DEC-2013	----	----	----	19-DEC-2013	27-DEC-2013	✓	
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) LB_MW14_2.0, LB_MW13_1.7	13-DEC-2013	19-DEC-2013	11-JUN-2014	✓	19-DEC-2013	11-JUN-2014	✓	
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) LB_MW14_2.0, LB_MW13_1.7	13-DEC-2013	19-DEC-2013	10-JAN-2014	✓	20-DEC-2013	10-JAN-2014	✓	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Soil Glass Jar - Unpreserved (EP071) LB_MW14_2.0, LB_MW13_1.7	13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	28-JAN-2014	✓	
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM)) LB_MW14_2.0, LB_MW13_1.7	13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	28-JAN-2014	✓	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) LB_MW14_2.0, LB_MW13_1.7	13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	28-JAN-2014	✓	
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) LB_MW14_2.0, LB_MW13_1.7	13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	27-DEC-2013	✓	
Soil Glass Jar - Unpreserved (EP080) TS, TB, TSC	18-DEC-2013	19-DEC-2013	01-JAN-2014	✓	19-DEC-2013	01-JAN-2014	✓	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
Soil Glass Jar - Unpreserved (EP080) LB_MW14_2.0, LB_MW13_1.7	13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	27-DEC-2013	✓	
Soil Glass Jar - Unpreserved (EP080) TB	18-DEC-2013	19-DEC-2013	01-JAN-2014	✓	19-DEC-2013	01-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



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
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Unspecified; Lab-acidified (EG020A-T) R01_131213_120	18-DEC-2013	20-DEC-2013	16-JUN-2014	✓	20-DEC-2013	16-JUN-2014	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Unspecified; Lab-acidified (EG020B-T) R01_131213_120	18-DEC-2013	20-DEC-2013	16-JUN-2014	✓	20-DEC-2013	16-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Unspecified; Lab-acidified (EG035T) R01_131213_120	18-DEC-2013	----	----	----	20-DEC-2013	15-JAN-2014	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131213_120	18-DEC-2013	19-DEC-2013	01-JAN-2014	✓	19-DEC-2013	01-JAN-2014	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131213_120	18-DEC-2013	19-DEC-2013	01-JAN-2014	✓	19-DEC-2013	01-JAN-2014	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131213_120	18-DEC-2013	19-DEC-2013	01-JAN-2014	✓	19-DEC-2013	01-JAN-2014	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131213_120	18-DEC-2013	19-DEC-2013	01-JAN-2014	✓	19-DEC-2013	01-JAN-2014	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131213_120	18-DEC-2013	19-DEC-2013	01-JAN-2014	✓	19-DEC-2013	01-JAN-2014	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131213_120	18-DEC-2013	19-DEC-2013	01-JAN-2014	✓	19-DEC-2013	01-JAN-2014	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074) R01_131213_120	18-DEC-2013	19-DEC-2013	01-JAN-2014	✓	19-DEC-2013	01-JAN-2014	✓
EP075H: Anilines and Benzidines							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
EP075G: Chlorinated Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
EP075F: Haloethers							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
EP075E: Nitroaromatics and Ketones							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-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
EP075D: Nitrosamines							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
EP075I: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
EP075J: Organophosphorus Pesticides							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
EP075A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075) R01_131213_120	18-DEC-2013	19-DEC-2013	25-DEC-2013	✓	20-DEC-2013	28-JAN-2014	✓



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	
Analytical Methods							
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	1	13	7.7	10.0	✖	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	17	11.8	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	14	14.3	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	17	11.8	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
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	17	5.9	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
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	17	5.9	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
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	17	5.9	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

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	
Analytical Methods							
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	1	4	25.0	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	9	11.1	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	9	11.1	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Semivolatile Organic Compounds	EP075	1	1	100.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	9	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	
Analytical Methods							
Laboratory Control Samples (LCS) - Continued							
Total Metals by ICP-MS - Suite B	EG020B-T	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Semivolatile Organic Compounds	EP075	1	1	100.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite B	EG020B-T	1	8	12.5	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	4	25.0	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	9	11.1	5.0	✓	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	9	11.1	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).
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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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 Metals by ICP-MS - Suite B	EG020B-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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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>
Semivolatile Organic Compounds	EP075	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)
<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, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
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)
Lab Acidification of Metals	EN80	WATER	USEPA Method 200.8
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
Laboratory Control Spike (LCS) Recoveries							
EP075D: Nitrosamines	3845354-002	----	Methapyrilene	91-80-5	101 %	4.21-94%	Recovery greater than upper control limit
EP075H: Anilines and Benzidines	3845354-002	----	3-Nitroaniline	99-09-2	98.4 %	51.5-96.9%	Recovery greater than upper control limit
EP075I: Organochlorine Pesticides	3845354-002	----	alpha-BHC	319-84-6	64.0 %	64.3-110%	Recovery less than lower control limit
EP075I: Organochlorine Pesticides	3845354-002	----	gamma-BHC	58-89-9	60.4 %	63.7-112%	Recovery less than lower control limit
EP075I: Organochlorine Pesticides	3845354-002	----	delta-BHC	319-86-8	116 %	57-115%	Recovery greater than upper control limit
EP075J: Organophosphorus Pesticides	3845354-002	----	Diazinon	333-41-5	122 %	54-116%	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.

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Moisture Content	1	13	7.7	10.0	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

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

Work Order : **ES1327786**

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 2

Order number : 0224198

C-O-C number : ---- **Quote number** : ES2013ENVRES0369 (SY/794/13)

Site : ----

Sampler : JG **QC Level** : NEPM 2013 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received : 18-DEC-2013 **Issue Date** : 18-DEC-2013 21:12
Client Requested Due Date : 20-DEC-2013 **Scheduled Reporting Date** : **20-DEC-2013**

Delivery Details

Mode of Delivery : Carrier **Temperature** : 4.6°C - Ice present
No. of coolers/boxes : 1 HARD **No. of samples received** : 3
Security Seal : Intact. **No. of samples analysed** : 3

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 - EG005T (solids) Total Metals by ICP-AES	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-24 TRH/BTEX/PAH + Phenols
ES1327786-001	13-DEC-2013 15:00	LB_MW05_0.5	✓	✓	✓
ES1327786-002	13-DEC-2013 15:00	LB_MW05_2.4	✓	✓	✓
ES1327786-003	13-DEC-2013 15:00	LB_MW07_1.6	✓	✓	✓

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

Work Order : ES1327786 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : Project Symphony Order number : 0224198 C-O-C number : ---- Sampler : JG Site : ---- Quote number : SY/794/13	Page : 1 of 6 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 18-DEC-2013 Issue Date : 20-DEC-2013 No. of samples received : 3 No. of samples analysed : 3
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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
Pabi Subba	Senior Organic Chemist	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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LB_MW05_0.5	LB_MW05_2.4	LB_MW07_1.6	---	---
				13-DEC-2013 15:00	13-DEC-2013 15:00	13-DEC-2013 15:00	---	---
Compound	CAS Number	LOR	Unit	ES1327786-001	ES1327786-002	ES1327786-003	---	---
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	---	1.0	%	17.8	17.5	12.7	---	---
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	14	10	---	---
Barium	7440-39-3	10	mg/kg	140	50	90	---	---
Beryllium	7440-41-7	1	mg/kg	1	1	<1	---	---
Boron	7440-42-8	50	mg/kg	<50	<50	<50	---	---
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	---	---
Chromium	7440-47-3	2	mg/kg	24	20	15	---	---
Cobalt	7440-48-4	2	mg/kg	9	4	8	---	---
Copper	7440-50-8	5	mg/kg	10	9	9	---	---
Lead	7439-92-1	5	mg/kg	16	13	11	---	---
Manganese	7439-96-5	5	mg/kg	161	87	162	---	---
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	---	---
Nickel	7440-02-0	2	mg/kg	22	16	12	---	---
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	---	---
Vanadium	7440-62-2	5	mg/kg	45	32	31	---	---
Zinc	7440-66-6	5	mg/kg	41	45	49	---	---
Titanium	7440-32-6	10	mg/kg	110	60	20	---	---
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	---	---
EP075(SIM)A: Phenolic Compounds								
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

				LB_MW05_0.5	LB_MW05_2.4	LB_MW07_1.6	---	---
				13-DEC-2013 15:00	13-DEC-2013 15:00	13-DEC-2013 15:00	---	---
Compound	CAS Number	LOR	Unit	ES1327786-001	ES1327786-002	ES1327786-003	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
^ 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	0.6	0.6	0.6	---	---
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	---	---
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	---	---
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	---	---
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	---	---
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	---	---
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	---	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	---	---
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<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

				LB_MW05_0.5	LB_MW05_2.4	LB_MW07_1.6	---	---
				13-DEC-2013 15:00	13-DEC-2013 15:00	13-DEC-2013 15:00	---	---
Compound	CAS Number	LOR	Unit	ES1327786-001	ES1327786-002	ES1327786-003	---	---
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	---	50	mg/kg	<50	<50	<50	---	---
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Ethylbenzene	100-41-4	0.5	mg/kg	<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	---	---
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
^ Sum of BTEX	---	0.2	mg/kg	<0.2	<0.2	<0.2	---	---
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	---	---
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	---	---
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	75.3	65.4	65.1	---	---
2-Chlorophenol-D4	93951-73-6	0.1	%	70.4	62.3	63.4	---	---
2,4,6-Tribromophenol	118-79-6	0.1	%	106	93.2	120	---	---
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	82.5	70.8	84.4	---	---
Anthracene-d10	1719-06-8	0.1	%	89.1	86.8	83.6	---	---
4-Terphenyl-d14	1718-51-0	0.1	%	97.4	96.5	89.7	---	---
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	74.3	74.2	76.4	---	---
Toluene-D8	2037-26-5	0.1	%	101	103	104	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	101	103	101	---	---



Surrogate Control Limits

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

QUALITY CONTROL REPORT

Work Order	: ES1327786	Page	: 1 of 11
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-DEC-2013
C-O-C number	: ----	Issue Date	: 20-DEC-2013
Sampler	: JG	No. of samples received	: 3
Order number	: 0224198	No. of samples analysed	: 3
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



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

Position

Senior Spectroscopist
Senior Organic Chemist

Accreditation Category

Sydney Inorganics
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.

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 (%)
EA055: Moisture Content (QC Lot: 3220478)									
ES1327648-003	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	34.6	33.9	1.9	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 3220313)									
ES1327325-001	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	1	1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	2	1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	70	60	0.0	No Limit
		EG005T: Titanium	7440-32-6	10	mg/kg	230	230	0.0	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	59	59	0.0	0% - 20%
		EG005T: Cobalt	7440-48-4	2	mg/kg	14	14	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	3	4	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	20	20	0.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	12	13	12.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	191	166	14.0	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	270	249	8.0	0% - 20%
		EG005T: Manganese	7439-96-5	5	mg/kg	202	223	10.1	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	65	66	2.0	0% - 50%
EG005T: Zinc	7440-66-6	5	mg/kg	746	680	9.2	0% - 20%		
EG005T: Boron	7440-42-8	50	mg/kg	60	60	0.0	No Limit		
ES1327786-001	LB_MW05_0.5	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	140	170	17.0	0% - 50%
		EG005T: Titanium	7440-32-6	10	mg/kg	110	80	28.2	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	24	21	14.9	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	9	11	15.5	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	22	20	7.5	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	10	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	10	8	22.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	15	10.2	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	161	180	10.9	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	45	39	13.0	No Limit
EG005T: Zinc	7440-66-6	5	mg/kg	41	36	12.5	No Limit		
EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit		
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3220314)									
ES1327325-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	2.2	2.0	10.6	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 (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3220314) - continued									
ES1327786-001	LB_MW05_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3220857)									
ES1327785-001	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
ES1327803-004	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		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3220857)									
ES1327785-001	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



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3220857) - continued									
ES1327785-001	Anonymous	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
ES1327803-004	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3220527)									
ES1327450-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	66	78	16.2	No Limit
ES1327786-002	LB_MW05_2.4	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3220856)									
ES1327785-001	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
ES1327803-004	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3220527)									
ES1327450-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	132	155	16.2	0% - 50%
ES1327786-002	LB_MW05_2.4	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3220856)									
ES1327785-001	Anonymous	EP071: >C16 - C34 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 (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3220856) - continued									
ES1327785-001	Anonymous	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
ES1327803-004	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
EP080: BTEXN (QC Lot: 3220527)									
ES1327450-001	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	11.3	12.8	12.1	0% - 20%
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	0.8	0.9	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	2.7	3.0	10.6	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	1.2	1.3	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	14	15	13.3	0% - 50%
ES1327786-002	LB_MW05_2.4	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	
EG005T: Total Metals by ICP-AES (QCLot: 3220313)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	120	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	105	83	129	
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	118	88	130	
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	113	80	122	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	104	71	133	
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16.0 mg/kg	110	84	128	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	112	86	128	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	115	81	123	
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	117	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	113	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	118	84	130	
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	114	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	118	81	133	
EG005T: Titanium	7440-32-6	10	mg/kg	<10	----	----	----	----	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3220314)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	87.7	66	112	
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	104	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	105	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	102	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	75.4	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	97.7	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	97.2	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	103	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	93.4	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	84.4	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	37.0	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857)									
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	113	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	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857) - continued									
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	106	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	109	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	110	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	109	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	108	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	110	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	108	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	95.7	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	92.6	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	89.6	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	94.4	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220527)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	84.6	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	103	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	90.5	64	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220527)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	76.9	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	98.2	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	106	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	69.4	63	131	
EP080: BTEXN (QCLot: 3220527)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	95.2	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	102	62	128	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	103	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	105	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	96.0	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(%) MS	Recovery Limits (%)	
					Low	High	
EG005T: Total Metals by ICP-AES (QCLot: 3220313)							
ES1327325-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	116	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	112	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	111	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	108	70	130
		EG005T: Lead	7439-92-1	125 mg/kg	107	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	113	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	110	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	98.5	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3220314)							
ES1327325-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	86.4	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857)							
ES1327785-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	97.6	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	96.3	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	118	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	100	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	83.4	20	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857)							
ES1327785-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.7	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	98.0	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220527)							
ES1327450-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	120	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856)							
ES1327785-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	77.5	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	76.7	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	67.7	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220527)							
ES1327450-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	106	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856)							
ES1327785-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	96.4	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.8	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	65.7	52	132
EP080: BTEXN (QCLot: 3220527)							
ES1327450-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	96.1	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	88.4	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	105	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
EP080: BTEXN (QCLot: 3220527) - continued							
ES1327450-001	Anonymous	EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	99.7	70	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	98.3	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	106	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
EG005T: Total Metals by ICP-AES (QCLot: 3220313)										
ES1327325-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	116	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	112	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	111	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	108	----	70	130	----	----
		EG005T: Lead	7439-92-1	125 mg/kg	107	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	113	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	110	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	98.5	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3220314)										
ES1327325-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	86.4	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220527)										
ES1327450-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	120	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220527)										
ES1327450-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	106	----	70	130	----	----
EP080: BTEXN (QCLot: 3220527)										
ES1327450-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	96.1	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	88.4	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	105	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	99.7	70	130	----	----	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	98.3	----	70	130	----	----
EP080: Naphthalene	91-20-3	2.5 mg/kg	106	----	70	130	----	----		
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856)										
ES1327785-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	77.5	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	76.7	----	53	131	----	----



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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856) - continued										
ES1327785-001	Anonymous	EP071: C29 - C36 Fraction	----	2860 mg/kg	67.7	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856)										
ES1327785-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	96.4	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.8	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	65.7	----	52	132	----	----
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857)										
ES1327785-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	97.6	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	96.3	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	118	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	100	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	83.4	----	20	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857)										
ES1327785-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.7	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	98.0	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327786	Page	: 1 of 5
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-DEC-2013
C-O-C number	: ----	Issue Date	: 20-DEC-2013
Sampler	: JG	No. of samples received	: 3
Order number	: 0224198	No. of samples analysed	: 3
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
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103) LB_MW05_0.5, LB_MW07_1.6	LB_MW05_2.4, 13-DEC-2013	----	----	----	19-DEC-2013	27-DEC-2013	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) LB_MW05_0.5, LB_MW07_1.6	LB_MW05_2.4, 13-DEC-2013	19-DEC-2013	11-JUN-2014	✓	19-DEC-2013	11-JUN-2014	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) LB_MW05_0.5, LB_MW07_1.6	LB_MW05_2.4, 13-DEC-2013	19-DEC-2013	10-JAN-2014	✓	20-DEC-2013	10-JAN-2014	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071) LB_MW05_0.5, LB_MW07_1.6	LB_MW05_2.4, 13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	28-JAN-2014	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM)) LB_MW05_0.5, LB_MW07_1.6	LB_MW05_2.4, 13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	28-JAN-2014	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) LB_MW05_0.5, LB_MW07_1.6	LB_MW05_2.4, 13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	28-JAN-2014	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) LB_MW05_0.5, LB_MW07_1.6	LB_MW05_2.4, 13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	27-DEC-2013	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013							
Soil Glass Jar - Unpreserved (EP080) LB_MW05_0.5, LB_MW07_1.6	LB_MW05_2.4, 13-DEC-2013	19-DEC-2013	27-DEC-2013	✓	19-DEC-2013	27-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	
Analytical Methods							
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	1	13	7.7	10.0	✖	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	17	11.8	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	14	14.3	10.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	17	11.8	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
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	17	5.9	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
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	17	5.9	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
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	17	5.9	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	14	7.1	5.0	✔	NEPM 2013 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	17	5.9	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



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 ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (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
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

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

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	ES1327786-003	LB_MW07_1.6	2-Chlorophenol-D4	93951-73-6	63.4 %	66-122 %	Recovery less than lower data quality objective
EP075(SIM)S: Phenolic Compound Surrogates	ES1327786-002	LB_MW05_2.4	2-Chlorophenol-D4	93951-73-6	62.3 %	66-122 %	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.

- 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	
Laboratory Duplicates (DUP)					
Moisture Content	1	13	7.7	10.0	NEPM 2013 Schedule B(3) and ALS QCS3 requirement

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: ES1327802		
Client	: ENVIRO RESOURCES MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact Address	: MR JOSEPH FERRING GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007	Contact Address	: Barbara Hanna 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	Page	: 1 of 3
Order number	: 0224198	Quote number	: ES2013ENVRES0369 (SY/794/13)
C-O-C number	: ----	QC Level	: NEPM 2013 Schedule B(3) and ALS QCS3 requirement
Site	: LIDDELL		
Sampler	: RO		

Dates

Date Samples Received	: 18-DEC-2013	Issue Date	: 19-DEC-2013 09:42
Client Requested Due Date	: 20-DEC-2013	Scheduled Reporting Date	: 20-DEC-2013

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 4.1' C SYD - 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.**
- **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 - EG005T (solids) Total Metals by ICP-AES	SOIL - EP080 BTEXN	SOIL - S-03 15 Metals (NEPM 2013 Suite - incl. Digestion)	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-24 TRH/BTEXN/PAH + Phenols
ES1327802-001	12-DEC-2013 15:00	LB_MW01_1.4	✓		✓		✓
ES1327802-002	12-DEC-2013 15:00	LB_MW15_1.6	✓		✓		✓
ES1327802-004	12-DEC-2013 15:00	TB				✓	
ES1327802-005	12-DEC-2013 15:00	TS		✓			
ES1327802-006	12-DEC-2013 15:00	TSC		✓			

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EG020A-T Total Metals by ICPMS - Suite A	WATER - W-03T 15 Metals (Total) (NEPM)	WATER - W-23 SVOC/VOC
ES1327802-003	12-DEC-2013 15:00	R01_121213_RO	✓	✓	✓

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

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

THE ACCOUNTS PAYABLE

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

Work Order : ES1327802 Client : ENVIRO RESOURCES MANAGEMENT Contact : MR JOSEPH FERRING Address : GROUND FLOOR 33 SAUNDERS STREET, PYRMONT NSW 2009 LOCKED BAG 24 BROADWAY NSW, AUSTRALIA 2007 E-mail : joseph.ferring@erm.com Telephone : +61 02 8584 8888 Facsimile : +61 02 8584 8800 Project : Project Symphony Order number : 0224198 C-O-C number : ---- Sampler : RO Site : LIDDELL Quote number : SY/794/13	Page : 1 of 13 Laboratory : Environmental Division Sydney Contact : Barbara Hanna Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Barbara.Hanna@alsglobal.com Telephone : +61 2 8784 8555 Facsimile : +61 2 8784 8555 QC Level : NEPM 2013 Schedule B(3) and ALS QCS3 requirement Date Samples Received : 18-DEC-2013 Issue Date : 23-DEC-2013 No. of samples received : 6 No. of samples analysed : 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>
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Phalak Inthaksono	Laboratory Manager - Organics	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

- **EP075: 'Sum of PAH' is the sum of the USEPA 16 priority PAHs**
- **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

				LB_MW01_1.4	LB_MW15_1.6	TB	TS	TSC
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327802-001	ES1327802-002	ES1327802-004	ES1327802-005	ES1327802-006
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	11.0	7.1	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	12	12	----	----	----
Barium	7440-39-3	10	mg/kg	120	80	----	----	----
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	13	13	----	----	----
Cobalt	7440-48-4	2	mg/kg	6	11	----	----	----
Copper	7440-50-8	5	mg/kg	11	16	----	----	----
Lead	7439-92-1	5	mg/kg	14	17	----	----	----
Manganese	7439-96-5	5	mg/kg	116	233	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	----	----	----
Nickel	7440-02-0	2	mg/kg	20	47	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	<5	----	----	----
Vanadium	7440-62-2	5	mg/kg	24	27	----	----	----
Zinc	7440-66-6	5	mg/kg	89	112	----	----	----
Thallium	7440-28-0	5	mg/kg	<5	<5	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP075(SIM)A: Phenolic Compounds								
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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				LB_MW01_1.4	LB_MW15_1.6	TB	TS	TSC
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327802-001	ES1327802-002	ES1327802-004	ES1327802-005	ES1327802-006
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
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	0.6	0.6	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<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	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<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	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

				LB_MW01_1.4	LB_MW15_1.6	TB	TS	TSC
				12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00	12-DEC-2013 15:00
Compound	CAS Number	LOR	Unit	ES1327802-001	ES1327802-002	ES1327802-004	ES1327802-005	ES1327802-006
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 - Continued								
^ >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	<0.2	0.8	0.9
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	17.8	21.2
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	2.4	3.0
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	10.9	13.3
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	4.5	5.6
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	15.4	18.9
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	36.4	44.0
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	91.5	93.1	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	100	102	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	122	109	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	104	104	----	----	----
Anthracene-d10	1719-06-8	0.1	%	88.5	87.1	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	96.6	93.4	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	96.8	103	95.0	97.6	95.7
Toluene-D8	2037-26-5	0.1	%	115	118	109	109	109
4-Bromofluorobenzene	460-00-4	0.1	%	110	115	103	107	103



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_121213_RO

Client sampling date / time

12-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327802-003	---	---	---	---
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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	<0.001	---	---	---	---
Lead	7439-92-1	0.001	mg/L	<0.001	---	---	---	---
Manganese	7439-96-5	0.001	mg/L	<0.001	---	---	---	---
Molybdenum	7439-98-7	0.001	mg/L	<0.001	---	---	---	---
Nickel	7440-02-0	0.001	mg/L	<0.001	---	---	---	---
Selenium	7782-49-2	0.01	mg/L	<0.01	---	---	---	---
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	---	---	---	---

EG035T: Total Recoverable Mercury by FIMS

Mercury	7439-97-6	0.0001	mg/L	<0.0001	---	---	---	---
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EP074A: Monocyclic Aromatic Hydrocarbons

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	---	---	---	---
Styrene	100-42-5	5	µg/L	<5	---	---	---	---
ortho-Xylene	95-47-6	2	µg/L	<2	---	---	---	---
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	---	---	---	---



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	ES1327802-003	---	---	---	---
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	---	---	---	---
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	---	---	---	---
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	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_121213_RO

Client sampling date / time

12-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327802-003	---	---	---	---
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EP074E: Halogenated Aliphatic Compounds - Continued

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	---	---	---	---

EP074F: Halogenated Aromatic Compounds

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	---	---	---	---
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	---	---	---	---

EP074G: Trihalomethanes

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	---	---	---	---

EP075A: Phenolic Compounds

Phenol	108-95-2	2	µg/L	<2	---	---	---	---
2-Chlorophenol	95-57-8	2	µg/L	<2	---	---	---	---
2-Methylphenol	95-48-7	2	µg/L	<2	---	---	---	---
3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	---	---	---	---
2-Nitrophenol	88-75-5	2	µg/L	<2	---	---	---	---
2.4-Dimethylphenol	105-67-9	2	µg/L	<2	---	---	---	---
2.4-Dichlorophenol	120-83-2	2	µg/L	<2	---	---	---	---
2.6-Dichlorophenol	87-65-0	2	µg/L	<2	---	---	---	---
4-Chloro-3-methylphenol	59-50-7	2	µg/L	<2	---	---	---	---
2.4.6-Trichlorophenol	88-06-2	2	µg/L	<2	---	---	---	---
2.4.5-Trichlorophenol	95-95-4	2	µg/L	<2	---	---	---	---
Pentachlorophenol	87-86-5	4	µg/L	<4	---	---	---	---

EP075B: Polynuclear Aromatic Hydrocarbons

Naphthalene	91-20-3	2	µg/L	<2	---	---	---	---
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Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_121213_RO

Client sampling date / time

12-DEC-2013 15:00

ES1327802-003

EP075B: Polynuclear Aromatic Hydrocarbons - Continued

Compound	CAS Number	LOR	Unit					
2-Methylnaphthalene	91-57-6	2	µg/L	<2	---	---	---	---
2-Chloronaphthalene	91-58-7	2	µg/L	<2	---	---	---	---
Acenaphthylene	208-96-8	2	µg/L	<2	---	---	---	---
Acenaphthene	83-32-9	2	µg/L	<2	---	---	---	---
Fluorene	86-73-7	2	µg/L	<2	---	---	---	---
Phenanthrene	85-01-8	2	µg/L	<2	---	---	---	---
Anthracene	120-12-7	2	µg/L	<2	---	---	---	---
Fluoranthene	206-44-0	2	µg/L	<2	---	---	---	---
Pyrene	129-00-0	2	µg/L	<2	---	---	---	---
N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	---	---	---	---
Benz(a)anthracene	56-55-3	2	µg/L	<2	---	---	---	---
Chrysene	218-01-9	2	µg/L	<2	---	---	---	---
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	---	---	---	---
7.12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	---	---	---	---
Benzo(a)pyrene	50-32-8	2	µg/L	<2	---	---	---	---
3-Methylcholanthrene	56-49-5	2	µg/L	<2	---	---	---	---
Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	---	---	---	---
Dibenz(a,h)anthracene	53-70-3	2	µg/L	<2	---	---	---	---
Benzo(g,h,i)perylene	191-24-2	2	µg/L	<2	---	---	---	---
^ Sum of PAHs	----	2	µg/L	<2	---	---	---	---
^ Benzo(a)pyrene TEQ (zero)	----	2	µg/L	<2	---	---	---	---

EP075C: Phthalate Esters

Dimethyl phthalate	131-11-3	2	µg/L	<2	---	---	---	---
Diethyl phthalate	84-66-2	2	µg/L	<2	---	---	---	---
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	---	---	---	---
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	---	---	---	---
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	---	---	---	---
Di-n-octylphthalate	117-84-0	2	µg/L	<2	---	---	---	---

EP075D: Nitrosamines

N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	---	---	---	---
N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	---	---	---	---
N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	---	---	---	---
N-Nitrosomorpholine	59-89-2	2	µg/L	<2	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_121213_RO

Client sampling date / time

12-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327802-003	---	---	---	---
EP075D: Nitrosamines - Continued								
N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	---	---	---	---
N-Nitrosopiperidine	100-75-4	2	µg/L	<2	---	---	---	---
N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	---	---	---	---
N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	---	---	---	---
Methapyrilene	91-80-5	2	µg/L	<2	---	---	---	---
EP075E: Nitroaromatics and Ketones								
2-Picoline	109-06-8	2	µg/L	<2	---	---	---	---
Acetophenone	98-86-2	2	µg/L	<2	---	---	---	---
Nitrobenzene	98-95-3	2	µg/L	<2	---	---	---	---
Isophorone	78-59-1	2	µg/L	<2	---	---	---	---
2,6-Dinitrotoluene	606-20-2	4	µg/L	<4	---	---	---	---
2,4-Dinitrotoluene	121-14-2	4	µg/L	<4	---	---	---	---
1-Naphthylamine	134-32-7	2	µg/L	<2	---	---	---	---
4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	---	---	---	---
5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	---	---	---	---
Azobenzene	103-33-3	2	µg/L	<2	---	---	---	---
1,3,5-Trinitrobenzene	99-35-4	2	µg/L	<2	---	---	---	---
Phenacetin	62-44-2	2	µg/L	<2	---	---	---	---
4-Aminobiphenyl	92-67-1	2	µg/L	<2	---	---	---	---
Pentachloronitrobenzene	82-68-8	2	µg/L	<2	---	---	---	---
Pronamide	23950-58-5	2	µg/L	<2	---	---	---	---
Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	---	---	---	---
Chlorobenzilate	510-15-6	2	µg/L	<2	---	---	---	---
EP075F: Haloethers								
Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	---	---	---	---
Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	---	---	---	---
4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	---	---	---	---
4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	---	---	---	---
EP075G: Chlorinated Hydrocarbons								
1,4-Dichlorobenzene	106-46-7	2	µg/L	<2	---	---	---	---
1,3-Dichlorobenzene	541-73-1	2	µg/L	<2	---	---	---	---
1,2-Dichlorobenzene	95-50-1	2	µg/L	<2	---	---	---	---
Hexachloroethane	67-72-1	2	µg/L	<2	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_121213_RO

Client sampling date / time

12-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327802-003	---	---	---	---
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EP075G: Chlorinated Hydrocarbons - Continued

1,2,4-Trichlorobenzene	120-82-1	2	µg/L	<2	---	---	---	---
Hexachloropropylene	1888-71-7	2	µg/L	<2	---	---	---	---
Hexachlorobutadiene	87-68-3	2	µg/L	<2	---	---	---	---
Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	---	---	---	---
Pentachlorobenzene	608-93-5	2	µg/L	<2	---	---	---	---
Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	---	---	---	---

EP075H: Anilines and Benzidines

Aniline	62-53-3	2	µg/L	<2	---	---	---	---
4-Chloroaniline	106-47-8	2	µg/L	<2	---	---	---	---
2-Nitroaniline	88-74-4	4	µg/L	<4	---	---	---	---
3-Nitroaniline	99-09-2	4	µg/L	<4	---	---	---	---
Dibenzofuran	132-64-9	2	µg/L	<2	---	---	---	---
4-Nitroaniline	100-01-6	2	µg/L	<2	---	---	---	---
Carbazole	86-74-8	2	µg/L	<2	---	---	---	---
3,3'-Dichlorobenzidine	91-94-1	2	µg/L	<2	---	---	---	---

EP075I: Organochlorine Pesticides

alpha-BHC	319-84-6	2	µg/L	<2	---	---	---	---
beta-BHC	319-85-7	2	µg/L	<2	---	---	---	---
gamma-BHC	58-89-9	2	µg/L	<2	---	---	---	---
delta-BHC	319-86-8	2	µg/L	<2	---	---	---	---
Heptachlor	76-44-8	2	µg/L	<2	---	---	---	---
Aldrin	309-00-2	2	µg/L	<2	---	---	---	---
Heptachlor epoxide	1024-57-3	2	µg/L	<2	---	---	---	---
alpha-Endosulfan	959-98-8	2	µg/L	<2	---	---	---	---
4,4'-DDE	72-55-9	2	µg/L	<2	---	---	---	---
Dieldrin	60-57-1	2	µg/L	<2	---	---	---	---
Endrin	72-20-8	2	µg/L	<2	---	---	---	---
beta-Endosulfan	33213-65-9	2	µg/L	<2	---	---	---	---
4,4'-DDD	72-54-8	2	µg/L	<2	---	---	---	---
Endosulfan sulfate	1031-07-8	2	µg/L	<2	---	---	---	---
4,4'-DDT	50-29-3	4	µg/L	<4	---	---	---	---
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	4	µg/L	<4	---	---	---	---
^ Sum of DDD + DDE + DDT	---	4	µg/L	<4	---	---	---	---



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)

Client sample ID

R01_121213_RO

Client sampling date / time

12-DEC-2013 15:00

Compound	CAS Number	LOR	Unit	ES1327802-003	---	---	---	---
EP075J: Organophosphorus Pesticides								
Dichlorvos	62-73-7	2	µg/L	<2	---	---	---	---
Dimethoate	60-51-5	2	µg/L	<2	---	---	---	---
Diazinon	333-41-5	2	µg/L	<2	---	---	---	---
Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	---	---	---	---
Malathion	121-75-5	2	µg/L	<2	---	---	---	---
Fenthion	55-38-9	2	µg/L	<2	---	---	---	---
Chlorpyrifos	2921-88-2	2	µg/L	<2	---	---	---	---
Pirimphos-ethyl	23505-41-1	2	µg/L	<2	---	---	---	---
Chlorfenvinphos	470-90-6	2	µg/L	<2	---	---	---	---
Prothiofos	34643-46-4	2	µg/L	<2	---	---	---	---
Ethion	563-12-2	2	µg/L	<2	---	---	---	---
EP074S: VOC Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	122	---	---	---	---
Toluene-D8	2037-26-5	0.1	%	120	---	---	---	---
4-Bromofluorobenzene	460-00-4	0.1	%	108	---	---	---	---
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	0.1	%	49.6	---	---	---	---
Phenol-d6	13127-88-3	0.1	%	30.7	---	---	---	---
2-Chlorophenol-D4	93951-73-6	0.1	%	62.4	---	---	---	---
2,4,6-Tribromophenol	118-79-6	0.1	%	78.6	---	---	---	---
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	0.1	%	59.5	---	---	---	---
1,2-Dichlorobenzene-D4	2199-69-1	0.1	%	53.8	---	---	---	---
2-Fluorobiphenyl	321-60-8	0.1	%	73.5	---	---	---	---
Anthracene-d10	1719-06-8	0.1	%	64.8	---	---	---	---
4-Terphenyl-d14	1718-51-0	0.1	%	68.2	---	---	---	---



Surrogate Control Limits

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

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP074S: VOC Surrogates			
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
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10.0	116.6
Phenol-d6	13127-88-3	10.0	69.0
2-Chlorophenol-D4	93951-73-6	20.9	129.7
2.4.6-Tribromophenol	118-79-6	10.0	150.7
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29.4	141.7
1.2-Dichlorobenzene-D4	2199-69-1	23.6	120.7
2-Fluorobiphenyl	321-60-8	27.2	134.9
Anthracene-d10	1719-06-8	26.6	113
4-Terphenyl-d14	1718-51-0	21.4	123

QUALITY CONTROL REPORT

Work Order	: ES1327802	Page	: 1 of 20
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	: LIDDELL	Date Samples Received	: 18-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: RO	No. of samples received	: 6
Order number	: 0224198	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



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
Phalak Inthaksone

Position

Senior Spectroscopist
Laboratory Manager - Organics

Accreditation Category

Sydney Inorganics
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.

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 (%)
EA055: Moisture Content (QC Lot: 3223613)									
ES1327802-002	LB_MW15_1.6	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.1	8.4	16.9	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 3221529)									
ES1327293-001	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	30	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	12	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	7	7	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	7	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	85	75	12.0	0% - 50%
		EG005T: Manganese	7439-96-5	5	mg/kg	206	214	3.6	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	22	22	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	60	60	0.0	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		
ES1327293-017	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	50	50	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	16	16	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	6	6	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	6	6	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	10	16	40.9	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	11	18	44.3	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	279	313	11.5	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	46	43	7.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	47	46	2.4	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		
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3221530)									
ES1327293-001	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 (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3221530) - continued									
ES1327293-017	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3220857)									
ES1327785-001	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
ES1327803-004	Anonymous	EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		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		
ES1327785-001	Anonymous	EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		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		



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3220857) - continued									
ES1327785-001	Anonymous	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
ES1327803-004	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3220760)									
ES1327802-001	LB_MW01_1.4	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES1327803-007	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3220856)									
ES1327785-001	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
ES1327803-004	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3220760)									
ES1327802-001	LB_MW01_1.4	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES1327803-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3220856)									
ES1327785-001	Anonymous	EP071: >C16 - C34 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 (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QC Lot: 3220856) - continued									
ES1327785-001	Anonymous	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
ES1327803-004	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
EP080: BTEXN (QC Lot: 3220760)									
ES1327802-001	LB_MW01_1.4	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
ES1327803-007	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	108-38-3 106-42-3	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		
Sub-Matrix: WATER									
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 (%)
EG020T: Total Metals by ICP-MS (QC Lot: 3221626)									
ES1327852-001	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	<0.001	<0.001	0.0	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	0.038	0.038	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	0.001	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: Manganese	7439-96-5	0.001	mg/L	0.245	0.246	0.0	0% - 20%
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	0.014	0.013	0.0	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.0	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	<0.005	<0.005	0.0	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
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		
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3221405)									



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 (%)	
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3221405) - continued										
ES1327096-002	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit	
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3222306)										
ES1327805-001	Anonymous	EP074: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit	
		EP074: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit	
		EP074: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit	
		EP074: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit	
			106-42-3							
		EP074: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit	
		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			
EP074B: Oxygenated Compounds (QC Lot: 3222306)										
ES1327805-001	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	
EP074C: Sulfonated Compounds (QC Lot: 3222306)										
ES1327805-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit	
EP074D: Fumigants (QC Lot: 3222306)										
ES1327805-001	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	
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3222306)										
ES1327805-001	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	



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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3222306) - continued									
ES1327805-001	Anonymous	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: 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		
EP074F: Halogenated Aromatic Compounds (QC Lot: 3222306)									
ES1327805-001	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: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 3222306)									
ES1327805-001	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



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	
EG005T: Total Metals by ICP-AES (QCLot: 3221529)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	113	87	129	
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	111	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	107	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	108	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	107	81	123	
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	115	85	127	
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	114	70	130	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	117	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	115	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	89.1	70	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3221530)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	88.4	66	112	
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857)									
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	4 mg/kg	104	74	116	
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	4 mg/kg	105	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	102	69	123	
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	4 mg/kg	75.4	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	97.7	68	112	
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	4 mg/kg	97.2	73	117	
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	4 mg/kg	103	76.4	114	
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	4 mg/kg	93.4	57	111	
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	4 mg/kg	84.4	68.9	112	
EP075(SIM): Pentachlorophenol	87-86-5	1.0	mg/kg	<1	8 mg/kg	37.0	3.9	57	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857)									
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	113	77	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857) - continued									
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	106	79	123	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	109	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	110	79	123	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	109	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	108	73	121	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	110	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	108	77	123	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	95.7	76	122	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	92.6	71	113	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	89.6	71.7	113	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	94.4	72.4	114	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220760)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	92.2	68.4	128	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	103	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	90.5	64	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220760)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.6	68.4	128	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856)									
EP071: >C10 - C16 Fraction	>C10_C16	50	mg/kg	<50	250 mg/kg	98.2	70	130	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	106	74	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
		50	mg/kg	----	150 mg/kg	69.4	63	131	
EP080: BTEXN (QCLot: 3220760)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	93.1	62	116	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	102	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	104	60	120	
	106-42-3								
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	108	60	120	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	100	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	High



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	
EG020T: Total Metals by ICP-MS (QCLot: 3221626)									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	115	79	121	
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	83.0	76	120	
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	97.6	84	116	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.1	82	114	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.6	83	115	
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.2	84	116	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.0	83	117	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.4	85	115	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.1	83	115	
EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	103	81	125	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.3	83	117	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	122	68	128	
EG020A-T: Thallium	7440-28-0	0.001	mg/L	<0.001	0.1 mg/L	98.7	86	116	
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	95.8	84	114	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	115	76	118	
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	85.5	73	127	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3221405)									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.010 mg/L	98.4	77	115	
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3222306)									
EP074: Benzene	71-43-2	1	µg/L	<1	10 µg/L	94.9	78	116	
EP074: Toluene	108-88-3	2	µg/L	<2	10 µg/L	94.2	68	128	
EP074: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	93.1	74	118	
EP074: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	94.2	74	122	
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	90.9	74	118	
EP074: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	99.9	77	121	
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	95.5	75	121	
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	93.1	67	123	
EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	95.5	70	122	
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	97.8	69	123	
EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	96.7	71	121	
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	95.9	70	122	
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	95.2	67	123	
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	92.2	62	126	
EP074B: Oxygenated Compounds (QCLot: 3222306)									
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	85.8	61.4	134	
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	89.1	73.6	130	
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	91.7	61	139	
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	96.0	65	137	



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	
EP074C: Sulfonated Compounds (QCLot: 3222306)									
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	85.5	72.8	127	
EP074D: Fumigants (QCLot: 3222306)									
EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	92.8	61	119	
EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	98.3	76	120	
EP074: cis-1,3-Dichloropropylene	10061-01-5	10	µg/L	<10	10 µg/L	79.5	62	120	
EP074: trans-1,3-Dichloropropylene	10061-02-6	10	µg/L	<10	10 µg/L	70.7	61	119	
EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	95.6	69	117	
EP074E: Halogenated Aliphatic Compounds (QCLot: 3222306)									
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	71.3	67.4	130	
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	109	69.4	129	
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	81.9	56	140	
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	86.4	63	135	
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	96.2	65	131	
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	87.7	69	123	
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	82.4	70.2	128	
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	91.4	71	119	
EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	98.4	75	119	
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	93.3	77	117	
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	98.8	61	119	
EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	93.6	73	119	
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	103	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	98.7	74	120	
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	99.2	74	118	
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	96.5	75	123	
EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	101	79	121	
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	92.3	72	124	
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	100	66	114	
EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	89.0	60	120	
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	91.2	70.6	128	
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	101	70	124	
EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	102	74	128	
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	104	71.8	126	
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	100	66.4	136	
EP074F: Halogenated Aromatic Compounds (QCLot: 3222306)									
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	95.6	76	116	
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	98.2	71	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	
EP074F: Halogenated Aromatic Compounds (QCLot: 3222306) - continued									
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	97.1	71	121	
EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	99.8	67	125	
EP074G: Trihalomethanes (QCLot: 3222306)									
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	99.9	76	118	
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	101	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	108	73.5	126	
EP075A: Phenolic Compounds (QCLot: 3221561)									
EP075: Phenol	108-95-2	2	µg/L	<2	5 µg/L	37.6	25.5	64.1	
EP075: 2-Chlorophenol	95-57-8	2	µg/L	<2	5 µg/L	# 62.8	63.1	105	
EP075: 2-Methylphenol	95-48-7	2	µg/L	<2	5 µg/L	59.3	55.6	98.4	
EP075: 3- & 4-Methylphenol	1319-77-3	4	µg/L	<4	10 µg/L	57.0	45	96.2	
EP075: 2-Nitrophenol	88-75-5	2	µg/L	<2	5 µg/L	67.9	55.4	110	
EP075: 2,4-Dimethylphenol	105-67-9	2	µg/L	<2	5 µg/L	64.2	61.7	110	
EP075: 2,4-Dichlorophenol	120-83-2	2	µg/L	<2	5 µg/L	65.0	61.9	109	
EP075: 2,6-Dichlorophenol	87-65-0	2	µg/L	<2	5 µg/L	67.3	61.5	108	
EP075: 4-Chloro-3-Methylphenol	59-50-7	2	µg/L	<2	5 µg/L	69.1	61.4	107	
EP075: 2,4,6-Trichlorophenol	88-06-2	2	µg/L	<2	5 µg/L	59.6	57.6	112	
EP075: 2,4,5-Trichlorophenol	95-95-4	2	µg/L	<2	5 µg/L	60.6	58	110	
EP075: Pentachlorophenol	87-86-5	4	µg/L	<4	10 µg/L	47.7	10	110	
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3221561)									
EP075: Naphthalene	91-20-3	2	µg/L	<2	5 µg/L	68.2	61	108	
EP075: 2-Methylnaphthalene	91-57-6	2	µg/L	<2	5 µg/L	65.1	59	108	
EP075: 2-Chloronaphthalene	91-58-7	2	µg/L	<2	5 µg/L	64.5	60.6	106	
EP075: Acenaphthylene	208-96-8	2	µg/L	<2	5 µg/L	# 61.0	64	108	
EP075: Acenaphthene	83-32-9	2	µg/L	<2	5 µg/L	70.6	65	108	
EP075: Fluorene	86-73-7	2	µg/L	<2	5 µg/L	65.5	65.2	107	
EP075: Phenanthrene	85-01-8	2	µg/L	<2	5 µg/L	73.3	66.7	108	
EP075: Anthracene	120-12-7	2	µg/L	<2	5 µg/L	71.3	65.8	108	
EP075: Fluoranthene	206-44-0	2	µg/L	<2	5 µg/L	71.4	64.9	109	
EP075: Pyrene	129-00-0	2	µg/L	<2	5 µg/L	70.1	60.1	111	
EP075: N-2-Fluorenyl Acetamide	53-96-3	2	µg/L	<2	5 µg/L	77.0	59.7	110	
EP075: Benz(a)anthracene	56-55-3	2	µg/L	<2	5 µg/L	67.6	62.2	112	
EP075: Chrysene	218-01-9	2	µg/L	<2	5 µg/L	69.2	59.3	114	
EP075: Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	4	µg/L	<4	10 µg/L	66.8	60.1	111	
EP075: 7,12-Dimethylbenz(a)anthracene	57-97-6	2	µg/L	<2	5 µg/L	67.2	49.8	107	
EP075: Benzo(a)pyrene	50-32-8	2	µg/L	<2	5 µg/L	67.9	59.2	112	
EP075: 3-Methylcholanthrene	56-49-5	2	µg/L	<2	5 µg/L	65.8	60.1	110	



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	
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 3221561) - continued									
EP075: Indeno(1.2.3.cd)pyrene	193-39-5	2	µg/L	<2	5 µg/L	63.8	59.6	110	
EP075: Dibenzo(a,h)anthracene	53-70-3	2	µg/L	<2	5 µg/L	68.1	57.2	109	
EP075: Benzo(g,h,i)perylene	191-24-2	2	µg/L	<2	5 µg/L	71.0	60.6	110	
EP075C: Phthalate Esters (QCLot: 3221561)									
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	5 µg/L	73.4	64.3	112	
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	5 µg/L	67.6	67.3	111	
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	5 µg/L	78.2	68.4	122	
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	5 µg/L	72.9	61.2	114	
EP075: bis(2-ethylhexyl) phthalate	117-81-7	20	µg/L	<20	5 µg/L	94.4	72.8	135	
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	5 µg/L	69.0	62.1	115	
EP075D: Nitrosamines (QCLot: 3221561)									
EP075: N-Nitrosomethylethylamine	10595-95-6	2	µg/L	<2	5 µg/L	92.2	39.5	95.9	
EP075: N-Nitrosodiethylamine	55-18-5	2	µg/L	<2	5 µg/L	70.3	60.6	113	
EP075: N-Nitrosopyrrolidine	930-55-2	4	µg/L	<4	5 µg/L	77.3	35	99	
EP075: N-Nitrosomorpholine	59-89-2	2	µg/L	<2	5 µg/L	71.6	40	106	
EP075: N-Nitrosodi-n-propylamine	621-64-7	2	µg/L	<2	5 µg/L	77.6	63.5	108	
EP075: N-Nitrosopiperidine	100-75-4	2	µg/L	<2	5 µg/L	70.3	61.7	107	
EP075: N-Nitrosodibutylamine	924-16-3	2	µg/L	<2	5 µg/L	66.9	62.5	108	
EP075: N-Nitrosodiphenyl & Diphenylamine	86-30-6 122-39-4	4	µg/L	<4	10 µg/L	# 62.4	64.6	112	
EP075: Methapyrilene	91-80-5	2	µg/L	<2	5 µg/L	55.5	4.21	94	
EP075E: Nitroaromatics and Ketones (QCLot: 3221561)									
EP075: 2-Picoline	109-06-8	2	µg/L	<2	5 µg/L	19.7	11.4	100	
EP075: Acetophenone	98-86-2	2	µg/L	<2	5 µg/L	# 68.1	68.3	112	
EP075: Nitrobenzene	98-95-3	2	µg/L	<2	5 µg/L	70.6	68.3	112	
EP075: Isophorone	78-59-1	2	µg/L	<2	5 µg/L	73.6	67.6	111	
EP075: 2,6-Dinitrotoluene	606-20-2	4	µg/L	<4	5 µg/L	69.8	64.4	113	
EP075: 2,4-Dinitrotoluene	121-14-2	4	µg/L	<4	5 µg/L	63.4	59.5	109	
EP075: 1-Naphthylamine	134-32-7	2	µg/L	<2	5 µg/L	50.5	46.8	102	
EP075: 4-Nitroquinoline-N-oxide	56-57-5	2	µg/L	<2	5 µg/L	54.3	8.93	98.7	
EP075: 5-Nitro-o-toluidine	99-55-8	2	µg/L	<2	5 µg/L	83.7	58.3	106	
EP075: Azobenzene	103-33-3	2	µg/L	<2	5 µg/L	70.0	66	112	
EP075: 1,3,5-Trinitrobenzene	99-35-4	2	µg/L	<2	5 µg/L	83.9	39	105	
EP075: Phenacetin	62-44-2	2	µg/L	<2	5 µg/L	73.3	57.8	101	
EP075: 4-Aminobiphenyl	92-67-1	2	µg/L	<2	5 µg/L	# 39.6	60.1	112	
EP075: Pentachloronitrobenzene	82-68-8	2	µg/L	<2	5 µg/L	67.1	59	109	
EP075: Pronamide	23950-58-5	2	µg/L	<2	5 µg/L	76.1	62.7	109	
EP075: Dimethylaminoazobenzene	60-11-7	2	µg/L	<2	5 µg/L	68.8	59.4	108	
EP075: Chlorobenzilate	510-15-6	2	µg/L	<2	5 µg/L	76.1	57.7	110	



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	
EP075F: Haloethers (QCLot: 3221561)									
EP075: Bis(2-chloroethyl) ether	111-44-4	2	µg/L	<2	5 µg/L	73.4	69.1	112	
EP075: Bis(2-chloroethoxy) methane	111-91-1	2	µg/L	<2	5 µg/L	68.0	66.2	111	
EP075: 4-Chlorophenyl phenyl ether	7005-72-3	2	µg/L	<2	5 µg/L	66.8	64.7	109	
EP075: 4-Bromophenyl phenyl ether	101-55-3	2	µg/L	<2	5 µg/L	66.6	61.6	108	
EP075G: Chlorinated Hydrocarbons (QCLot: 3221561)									
EP075: 1,4-Dichlorobenzene	106-46-7	2	µg/L	<2	5 µg/L	61.8	42	114	
EP075: 1,3-Dichlorobenzene	541-73-1	2	µg/L	<2	5 µg/L	63.5	37	109	
EP075: 1,2-Dichlorobenzene	95-50-1	2	µg/L	<2	5 µg/L	62.1	37	109	
EP075: Hexachloroethane	67-72-1	2	µg/L	<2	5 µg/L	60.5	30	112	
EP075: 1,2,4-Trichlorobenzene	120-82-1	2	µg/L	<2	5 µg/L	66.8	42.9	115	
EP075: Hexachloropropylene	1888-71-7	2	µg/L	<2	5 µg/L	61.8	23.8	111	
EP075: Hexachlorobutadiene	87-68-3	2	µg/L	<2	5 µg/L	65.4	37.4	116	
EP075: Hexachlorocyclopentadiene	77-47-4	10	µg/L	<10	5 µg/L	27.6	23.5	107	
EP075: Pentachlorobenzene	608-93-5	2	µg/L	<2	5 µg/L	70.2	64.5	107	
EP075: Hexachlorobenzene (HCB)	118-74-1	4	µg/L	<4	5 µg/L	66.6	65.7	110	
EP075H: Anilines and Benzidines (QCLot: 3221561)									
EP075: Aniline	62-53-3	2	µg/L	<2	5 µg/L	44.0	10.9	89.7	
EP075: 4-Chloroaniline	106-47-8	2	µg/L	<2	5 µg/L	77.6	44.4	106	
EP075: 2-Nitroaniline	88-74-4	4	µg/L	<4	5 µg/L	61.7	60.9	110	
EP075: 3-Nitroaniline	99-09-2	4	µg/L	<4	5 µg/L	71.7	51.5	96.9	
EP075: Dibenzofuran	132-64-9	2	µg/L	<2	5 µg/L	73.7	65.3	108	
EP075: 4-Nitroaniline	100-01-6	2	µg/L	<2	5 µg/L	53.6	48.9	99.5	
EP075: Carbazole	86-74-8	2	µg/L	<2	5 µg/L	69.9	64.3	107	
EP075: 3,3'-Dichlorobenzidine	91-94-1	2	µg/L	<2	5 µg/L	64.2	60.3	119	
EP075I: Organochlorine Pesticides (QCLot: 3221561)									
EP075: alpha-BHC	319-84-6	2	µg/L	<2	5 µg/L	69.1	64.3	110	
EP075: beta-BHC	319-85-7	2	µg/L	<2	5 µg/L	65.9	59	110	
EP075: gamma-BHC	58-89-9	2	µg/L	<2	5 µg/L	70.0	63.7	112	
EP075: delta-BHC	319-86-8	2	µg/L	<2	5 µg/L	76.2	57	115	
EP075: Heptachlor	76-44-8	2	µg/L	<2	5 µg/L	71.2	57.9	108	
EP075: Aldrin	309-00-2	2	µg/L	<2	5 µg/L	75.7	56	114	
EP075: Heptachlor epoxide	1024-57-3	2	µg/L	<2	5 µg/L	70.0	60.3	112	
EP075: alpha-Endosulfan	959-98-8	2	µg/L	<2	5 µg/L	79.0	52.5	115	
EP075: 4,4'-DDE	72-55-9	2	µg/L	<2	5 µg/L	72.2	64.1	111	
EP075: Dieldrin	60-57-1	2	µg/L	<2	5 µg/L	79.2	65	113	
EP075: Endrin	72-20-8	2	µg/L	<2	5 µg/L	69.9	52	118	
EP075: beta-Endosulfan	33213-65-9	2	µg/L	<2	5 µg/L	68.1	60.4	111	
EP075: 4,4'-DDD	72-54-8	2	µg/L	<2	5 µg/L	73.5	59.8	115	
EP075: Endosulfan sulfate	1031-07-8	2	µg/L	<2	5 µg/L	86.6	52.8	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
EP075I: Organochlorine Pesticides (QCLot: 3221561) - continued								
EP075: 4,4'-DDT	50-29-3	4	µg/L	<4	5 µg/L	66.0	44	116
EP075J: Organophosphorus Pesticides (QCLot: 3221561)								
EP075: Dichlorvos	62-73-7	2	µg/L	<2	5 µg/L	63.2	51	113
EP075: Dimethoate	60-51-5	2	µg/L	<2	5 µg/L	69.9	45	119
EP075: Diazinon	333-41-5	2	µg/L	<2	5 µg/L	75.9	54	116
EP075: Chlorpyrifos-methyl	5598-13-0	2	µg/L	<2	5 µg/L	74.6	54.1	116
EP075: Malathion	121-75-5	2	µg/L	<2	5 µg/L	94.5	57.6	118
EP075: Fenthion	55-38-9	2	µg/L	<2	5 µg/L	74.4	57	115
EP075: Chlorpyrifos	2921-88-2	2	µg/L	<2	5 µg/L	76.4	57	115
EP075: Pirimphos-ethyl	23505-41-1	2	µg/L	<2	5 µg/L	75.0	54	116
EP075: Chlorfenvinphos	470-90-6	2	µg/L	<2	5 µg/L	74.8	57	111
EP075: Prothiofos	34643-46-4	2	µg/L	<2	5 µg/L	73.0	54	118
EP075: Ethion	563-12-2	2	µg/L	<2	5 µg/L	77.2	54	120

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	
EG005T: Total Metals by ICP-AES (QCLot: 3221529)							
ES1327293-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	110	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	109	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	113	70	130
		EG005T: Copper	7440-50-8	125 mg/kg	112	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	80.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	113	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	113	70	130
		EG005T: Zinc	7440-66-6	125 mg/kg	113	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3221530)							
ES1327293-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	92.0	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857)							
ES1327785-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	97.6	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	96.3	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	118	60	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	100	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	83.4	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857)							
ES1327785-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.7	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	98.0	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220760)							
ES1327802-001	LB_MW01_1.4	EP080: C6 - C9 Fraction	----	32.5 mg/kg	114	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856)							
ES1327785-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	77.5	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	76.7	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	67.7	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220760)							
ES1327802-001	LB_MW01_1.4	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	106	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856)							
ES1327785-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	96.4	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.8	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	65.7	52	132
EP080: BTEXN (QCLot: 3220760)							
ES1327802-001	LB_MW01_1.4	EP080: Benzene	71-43-2	2.5 mg/kg	104	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	107	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	113	70	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	112	70	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	110	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	92.5	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
EG020T: Total Metals by ICP-MS (QCLot: 3221626)							
ES1327562-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	108	70	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	91.1	70	130
		EG020A-T: Barium	7440-39-3	1 mg/L	105	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	99.5	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	97.2	70	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	93.2	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	118	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	101	70	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	104	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.4	70	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	92.9	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
EG020T: Total Metals by ICP-MS (QCLot: 3221626) - continued							
ES1327562-001	Anonymous	EG020A-T: Zinc	7440-66-6	1 mg/L	108	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3221405)							
ES1327096-003	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	93.0	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3222306)							
ES1327805-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	107	70	130
		EP074: Toluene	108-88-3	25 µg/L	113	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3222306)							
ES1327805-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	80.2	70	130
		EP074: Trichloroethene	79-01-6	25 µg/L	112	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3222306)							
ES1327805-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	119	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	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220760)											
ES1327802-001	LB_MW01_1.4	EP080: C6 - C9 Fraction	----	32.5 mg/kg	114	----	70	130	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220760)											
ES1327802-001	LB_MW01_1.4	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	106	----	70	130	----	----	
EP080: BTEXN (QCLot: 3220760)											
ES1327802-001	LB_MW01_1.4	EP080: Benzene	71-43-2	2.5 mg/kg	104	----	70	130	----	----	
		EP080: Toluene	108-88-3	2.5 mg/kg	107	----	70	130	----	----	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	113	----	70	130	----	----	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	112	----	70	130	----	----	
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	110	----	70	130	----	----	
		EP080: Naphthalene	91-20-3	2.5 mg/kg	92.5	----	70	130	----	----	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3220856)											
ES1327785-001	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	77.5	----	73	137	----	----	
		EP071: C15 - C28 Fraction	----	3140 mg/kg	76.7	----	53	131	----	----	
		EP071: C29 - C36 Fraction	----	2860 mg/kg	67.7	----	52	132	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856)											
ES1327785-001	Anonymous	EP071: >C10 - C16 Fraction	>C10_C16	850 mg/kg	96.4	----	73	137	----	----	



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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 (QCLot: 3220856) - continued										
ES1327785-001	Anonymous	EP071: >C16 - C34 Fraction	----	4800 mg/kg	71.8	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	65.7	----	52	132	----	----
EP075(SIM)A: Phenolic Compounds (QCLot: 3220857)										
ES1327785-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	97.6	----	70	130	----	----
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	96.3	----	70	130	----	----
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	118	----	60	130	----	----
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	100	----	70	130	----	----
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	83.4	----	20	130	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3220857)										
ES1327785-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.7	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	98.0	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 3221529)										
ES1327293-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	110	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	109	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	113	----	70	130	----	----
		EG005T: Copper	7440-50-8	125 mg/kg	112	----	70	130	----	----
		EG005T: Lead	7439-92-1	250 mg/kg	80.4	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	113	----	70	130	----	----
		EG005T: Selenium	7782-49-2	50 mg/kg	113	----	70	130	----	----
		EG005T: Zinc	7440-66-6	125 mg/kg	113	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3221530)										
ES1327293-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	92.0	----	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
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3221405)										
ES1327096-003	Anonymous	EG035T: Mercury	7439-97-6	0.010 mg/L	93.0	----	70	130	----	----
EG020T: Total Metals by ICP-MS (QCLot: 3221626)										
ES1327562-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	108	----	70	130	----	----
		EG020A-T: Beryllium	7440-41-7	1 mg/L	91.1	----	70	130	----	----
		EG020A-T: Barium	7440-39-3	1 mg/L	105	----	70	130	----	----
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	99.5	----	70	130	----	----
		EG020A-T: Chromium	7440-47-3	1 mg/L	97.2	----	70	130	----	----
		EG020A-T: Cobalt	7440-48-4	1 mg/L	93.2	----	70	130	----	----
		EG020A-T: Copper	7440-50-8	1 mg/L	118	----	70	130	----	----
		EG020A-T: Lead	7439-92-1	1 mg/L	101	----	70	130	----	----
		EG020A-T: Manganese	7439-96-5	1 mg/L	104	----	70	130	----	----
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.4	----	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>
EG020T: Total Metals by ICP-MS (QCLot: 3221626) - continued										
ES1327562-001	Anonymous	EG020A-T: Vanadium	7440-62-2	1 mg/L	92.9	----	70	130	----	----
		EG020A-T: Zinc	7440-66-6	1 mg/L	108	----	70	130	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3222306)										
ES1327805-001	Anonymous	EP074: Benzene	71-43-2	25 µg/L	107	----	70	130	----	----
		EP074: Toluene	108-88-3	25 µg/L	113	----	70	130	----	----
EP074E: Halogenated Aliphatic Compounds (QCLot: 3222306)										
ES1327805-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	25 µg/L	80.2	----	70	130	----	----
		EP074: Trichloroethene	79-01-6	25 µg/L	112	----	70	130	----	----
EP074F: Halogenated Aromatic Compounds (QCLot: 3222306)										
ES1327805-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	119	----	70	130	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1327802	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	: LIDDELL	Date Samples Received	: 18-DEC-2013
C-O-C number	: ----	Issue Date	: 23-DEC-2013
Sampler	: RO	No. of samples received	: 6
Order number	: 0224198	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