Stantec Consulting Services Inc.
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Job #191710867

August 18, 2011

Mr. Dale O'Connell, P.G.
New Hampshire Department of Transportation
John O. Morton Building
7 Hazen Drive, P.O. Box 483
Concord, NH 03302-0483

Reference: Report on Soil/Sediment Sampling and Hazardous Material Sampling
Memorial Bridge Replacement, Route 1, Portsmouth, NH
NHDOT Project # 13678-F

Dear Mr. O'Connell:

Stantec Consulting Services Inc. (Stantec) is pleased to provide the New Hampshire Department of Transportation (NHDOT) with this report documenting services related to the replacement of the Memorial Bridge over the Piscataqua River in Portsmouth, New Hampshire (the Site). The purpose of the work was to gather information regarding river sediment quality in the vicinity of the bridge and the presence of possible hazardous materials in the buildings associated with the bridge to determine if these materials would require special handling during future demolition/construction activities. The work described in this report was conducted in accordance with our Statewide Hazardous Materials Service Agreement (#4000695) and a Request for Authorization (RFA) dated June 21, 2011. The RFA was approved by NHDOT on July 7, 2011.

WORK PERFORMED

Drilling Oversight and Soil/Sediment Sampling

Between July 15, 2011 and July 21, 2011, Stantec oversaw the drilling of four borings at the Site including B-1, B-3 (a water boring), B-5, and B-6. Borings were advanced by New Hampshire Boring, Inc. (NHB) of Derry, New Hampshire in locations identified by NHDOT staff. Although the original scope of work called for installation of six borings, installation of two water borings (B-2 and B-4) was postponed due to issues with the drilling barge. A separate submittal describing installation of borings B-2 and B-4 will be submitted upon their completion. Boring locations are depicted on the attached figure.

NHB advanced the borings using drive and wash drilling techniques under the direction of an NHDOT geotechnical technician. During boring advancement, soil/sediment samples were collected at approximate five-foot intervals thereafter. NHDOT staff characterized the samples as part of the geotechnical evaluation. Stantec field staff characterized the soil samples for visual or olfactory evidence of environmental impacts and field-screened samples for volatile organic compounds (VOCs) using a properly calibrated photo-ionization detector (PID).

At least one soil/sediment sample from each boring was collected for laboratory analysis from the zone with the greatest field evidence of contamination (i.e., visual, olfactory, or PID). If no evidence of impacts was noted, a sample from the fill layer (if observed) was collected. In the absence of impacts or an observed fill layer, samples were collected from interval with higher soil recoveries. The ability to collect samples for laboratory analysis was hampered by poor recovery and the need to split samples for NHDOT's geotechnical analysis.

Samples were placed in laboratory supplied glassware and delivered under appropriate chain-of-custody to Spectrum Analytical, Inc (Spectrum) of Agawam, Massachusetts for analysis of Toxicity Characteristic Leaching Procedure (TCLP) VOCs via EPA Method 8260B, TCLP Semi-VOCs via EPA Method 8270C, TCLP RCRA8 Metals via EPA 200/6000/7000 Series Methods, TCLP Herbicides via EPA Method 8151, TCLP Pesticides via EPA Method 8081, Polychlorinated Biphenyls (PCBs) via EPA Method 8082, Corrosivity (pH), Reactivity, and Ignitability. Analytical results are discussed below.

Hazardous Materials Survey

Stantec retained Desmarais Environmental, Inc. (DEI) to conduct an asbestos-containing material (ACM) survey within the bridge buildings. On August 12, 2011, Mr. Ray Desmarais (License # 024-IMD) completed a survey within the buildings. The surveyed areas included the Control Room, Gate Shack North, Gate Shack South, and the Center Shack (a storage area). Sampling methodologies are provided in the attached DEI report. Survey results are discussed below.

On August 15, 2011, Stantec personnel surveyed the bridge buildings to complete an inventory of oils, chemicals, potential polychlorinated biphenyl (PCB) containing equipment, and other materials likely to require special handling as part of the bridge demolition process. The survey encompassed the Control Room, Gate Shack North, Gate Shack South, and the Center Shack (a storage area). With the help of a bridge electrician, Stantec also accessed several electrical panels located throughout the bridge structure to identify possible ACMs and PCB-containing devices therein. Inventory results are discussed below.

RESULTS

Soil/Sediment Analytical Results

No TCLP VOC, TCLP SVOC, TCLP pesticide, TCLP herbicide, or PCB analytes were detected above laboratory reporting limits in any of the samples submitted for analysis. One or more TCLP metals were detected in each of the samples submitted for analysis. Detected metals included barium, lead and selenium. All detected concentrations were less than 1 milligram/kilogram (mg/kg or part per million). None of the detected concentrations exceeded the applicable TCLP standard.

None of the samples tested positive for ignitability or reactivity. Corrosivity testing indicated that pH ranged from 6.99 to 8.03 standard units, which is considered to be non-hazardous for corrosivity.

It should be noted that the laboratory was not able to complete analysis for all of the requested parameters for sample B-6 (19-21') due to a lack of sufficient sample volume. As noted above, the sample volume available for chemical laboratory analysis was limited by poor recovery and the NHDOT's need to collect soil volume for geotechnical testing.

Soil analytical results are summarized in attached Table 1. The laboratory analytical reports are also attached.

Hazardous Material Survey

A total of 21 samples were collected for analysis of asbestos content. The suspect ACMs sampled during the survey included floor tiles, mastic, wall panels, paint, ceiling tiles, various roofing materials, and generator exhaust insulation. Upon analysis, several materials were found to contain at least 1% asbestos, and are therefore considered asbestos containing including transite wall panel and double cover roofing in the Control Shack, and troweled on roofing in the Center Shack, Gate Shack North, and Gate Shack South. The survey methods and results are summarized in the attached DEI report and in Table 2 (attached).

An inventory of the oils, chemicals, and potential PCB-containing equipment observed in the bridge structures is summarized in Table 2 (attached).

Stantec has appreciated the opportunity to work with you on this project. If you have any questions, comments, or require additional information, please do not hesitate to contact the undersigned at 603-669-8672.

Sincerely,

STANTEC CONSULTING SERVICES INC.

Craig R. Gendron, P.G., P.E., L.S.R.P.
Principal

David A. Allwine, P.G., C.G.
Senior Associate

CRG/DAA:las

Attachments

cc. file

Table 1
Soil/Sediment Analytical Data Summary
Memorial Bridge
Portsmouth, New Hampshire

Analyte/Method	Units	Standard to be Considered Hazardous	Sample ID				
			B-1	B-3	B-5	B-6	B-6
Sample Depth	feet		14-16	0-2	4-11	4-7	19-21
Sample Collection Date			7/15/2011	7/21/2011	7/19/2011	7/18/2011	7/18/2011
TCLP VOCs by EPA Method 8260B (TCL)							
Benzene	µg/L	500	<5.0	<5.0	<5.0	<5.0	NA
2-Butanone (MEK)	µg/L	200,000	<50.0	<50.0	<50.0	<50.0	NA
Carbon Tetrachloride	µg/L	500	<5.0	<5.0	<5.0	<5.0	NA
Chlorobenzene	µg/L	100,000	<5.0	<5.0	<5.0	<5.0	NA
Chloroform	µg/L	6,000	<5.0	<5.0	<5.0	<5.0	NA
1,2-Dichloroethane	µg/L	500	<5.0	<5.0	<5.0	<5.0	NA
1,1-Dichloroethene	µg/L	700	<5.0	<5.0	<5.0	<5.0	NA
Tetrachloroethene (PCE)	µg/L	700	<5.0	<5.0	<5.0	<5.0	NA
Trichloroethene (TCE)	µg/L	500	<5.0	<5.0	<5.0	<5.0	NA
Vinyl Chloride	µg/L	200	<5.0	<5.0	<5.0	<5.0	NA
TCLP SVOCs by EPA Methods 1311/8270C (TCL)							
1,4-Dichlorobenzene	µg/L	7,500	<5.00	<5.00	<5.00	<5.00	<5.00
2,4-Dinitrotoluene	µg/L	130	<5.00	<5.00	<5.00	<5.00	<5.00
Hexachlorobenzene	µg/L	130	<5.00	<5.00	<5.00	<5.00	<5.00
Hexachlorobutadiene	µg/L	500	<5.00	<5.00	<5.00	<5.00	<5.00
Hexachloroethane	µg/L	3,000	<5.00	<5.00	<5.00	<5.00	<5.00
2-Methylphenol	µg/L	NS	<5.00	<5.00	<5.00	<5.00	<5.00
3&4-Methylphenol	µg/L	NS	<10.0	<10.0	<10.0	<10.0	<10.0
Nitrobenzene	µg/L	2,000	<5.00	<5.00	<5.00	<5.00	<5.00
Pentachlorophenol	µg/L	100,000	<5.00	<5.00	<5.00	<5.00	<5.00
Pyridine	µg/L	5,000	<5.00	<5.00	<5.00	<5.00	<5.00
2,4,5-Trichlorophenol	µg/L	400,000	<5.00	<5.00	<5.00	<5.00	<5.00
2,4,6-Trichlorophenol	µg/L	2,000	<5.00	<5.00	<5.00	<5.00	<5.00
TCLP Pesticides by EPA Methods 1311/8081A							
gamma-BHC (Lindane)	µg/L	400	<0.032	<0.032	<0.032	<0.030	NA
Heptachlor	µg/L	8	<0.032	<0.032	<0.032	<0.030	NA
Heptachlor Epoxide	µg/L	8	<0.032	<0.032	<0.032	<0.030	NA
Dieldrin	µg/L	NS	<0.021	<0.021	<0.021	<0.020	NA
4,4'-DDD (p,p')	µg/L	NS	<0.032	<0.032	<0.032	<0.030	NA
4,4'-DDT (p,p')	µg/L	NS	<0.032	<0.032	<0.032	<0.030	NA
Methoxychlor	µg/L	10,000	<0.032	<0.032	<0.032	<0.030	NA
Endrin Ketone	µg/L	20	<0.021	<0.021	<0.021	<0.020	NA
Endrin Aldehyde	µg/L	20	<0.021	<0.021	<0.021	<0.020	NA
Toxaphene	µg/L	500	<0.368	<0.368	<0.368	<0.350	NA
Chlordane	µg/L	30	<0.074	<0.074	<0.074	<0.070	NA

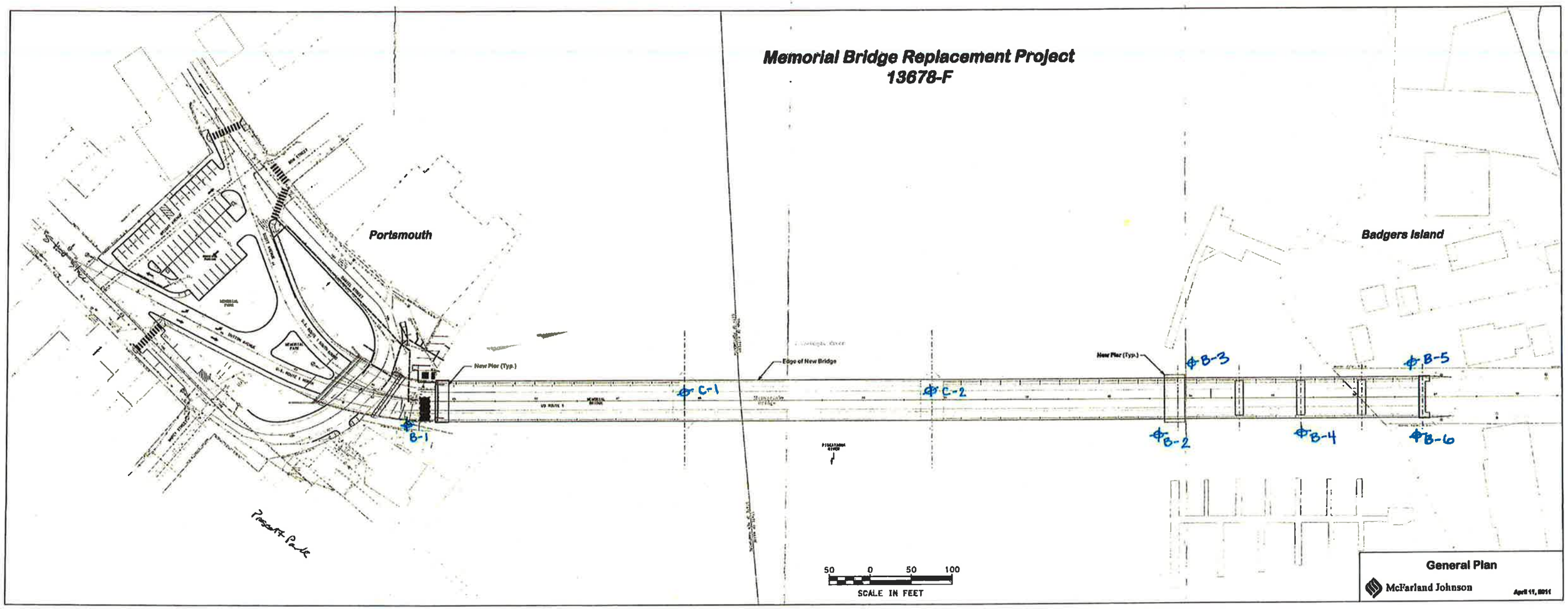
Table 1
Soil/Sediment Analytical Data Summary
Memorial Bridge
Portsmouth, New Hampshire

Polychlorinated Biphenyls by EPA Method 8082							
Aroclor-1016	µg/kg	NS	<25.0	<28.5	<22.1	<22.9	<22.3
Aroclor-1221	µg/kg	NS	<25.0	<28.5	<22.1	<22.9	<22.3
Aroclor-1232	µg/kg	NS	<25.0	<28.5	<22.1	<22.9	<22.3
Aroclor-1242	µg/kg	NS	<25.0	<28.5	<22.1	<22.9	<22.3
Aroclor-1248	µg/kg	NS	<25.0	<28.5	<22.1	<22.9	<22.3
Aroclor-1254	µg/kg	NS	<25.0	<28.5	<22.1	<22.9	<22.3
Aroclor-1260	µg/kg	NS	<25.0	<28.5	<22.1	<22.9	<22.3
Aroclor-1262	µg/kg	NS	<25.0	<28.5	<22.1	<22.9	<22.3
Aroclor-1268	µg/kg	NS	<25.0	<28.5	<22.1	<22.9	<22.3
TCLP Herbicides by EPA Methods 1311/8151A							
2,4,5-TP (Silvex)	µg/L	1,000	<0.100	<0.100	<0.100	<0.100	NA
2,4-D	µg/L	10,000	<0.100	<0.100	<0.100	<0.100	NA
TCLP Metals by EPA Methods 1311 &6000/7000							
Arsenic	mg/L	5	<0.0080	<0.0080	<0.0080	<0.0080	<0.0080
Barium	mg/L	100	<0.140	<0.0420	0.319	0.278	0.333
Cadmium	mg/L	1	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chromium	mg/L	5	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Lead	mg/L	5	0.246	<0.0150	<0.0150	0.0162	<0.0150
Mercury	mg/L	0.2	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Selenium	mg/L	1	<0.0300	0.0300	<0.0300	<0.0300	<0.0300
Silver	mg/L	5	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Ignitability							
Ignitability by Definition	N/A	Positive	Negative	Negative	Negative	Negative	NA
Corrosivity							
pH	Standard Units	$2 \leq pH \leq 12.5$	7.91	6.99	7.87	8.03	NA
Reactivity							
Reactivity	N/A	Reactive	Nonreactive	Nonreactive	Nonreactive	Nonreactive	NA
Reactive Cyanide	mg/kg		<24.7	<22.8	<22.7	<24.0	NA
Reactive Sulfide	mg/kg		<49.4	164	<45.5	<47.9	NA

Notes:
µg/L = micrograms per liter = parts per billion (ppb)
µg/kg = micrograms per kilogram = parts per billion (ppb)
mg/L = miligrams per liter = parts per million (ppm)
mg/kg = miligrams per kilogram = parts per million (ppm)
NA = not analyzed
NS = No standard

Table 2
Hazardous Materials Inventory
Memorial Bridge
Portsmouth, New Hampshire

Item/Material	Location	Estimated Quantity
Identified Asbestos Containing Materials		
Transite Wall Panel - ACM	Control Shack	300 Square feet
Double Cover Roofing	Control Shack	200 square feet
Troweled on Roofing	Center Shack	40 square feet
Troweled on Roofing	Gate Shack North	40 square feet
Troweled on Roofing	Gate Shack South	40 square feet
Suspect Asbestos Containing Materials (not sampled due to energized equipment)		
Electrical insulator discs	Resistor Bank - Control Shack	45 linear feet of 0.5"x1.0" discs
Corrugated insulation panels	Main Switch Panel - South Tower	20 square feet
Miscellaneous electrical components	Electrical panels/equipment throughout bridge	Unknown
Oils and Chemicals		
WD-40 spray can, 12 oz	Gate Shack South	1 can
Oil in traffic gate gear boxes (2)	North and south ends of bridge	5 gallons total
Enamel paint in gallon can	Green tool storage box near Gate Shack South	1 gallon
Gasoline in 5-gallon metal gas can	Yellow flammables cabinet near Center Shed	5 gallons
Oil/gas mix in 1.5 gallon plastic container	Yellow flammables cabinet near Center Shed	1.5 gallons
Grease in 1 gallon plastic pails	Center Shed	3 1-gallon containers
Krylon paint spray can, 17 oz	Center Shed	1 can
Lestoil Grease and Stain Remover, 28 oz	Center Shed	1 bottle
Dry chemical fire extinguisher, 8 lb	Center Shed	1 extinguisher
Propane cylinders (3' x 4')	Center Shed	3 cylinders
Salt/sand mix in 55-gal drum	Near Center Shed	1 drum
Non-PCB oil in main cable supply transformers (3)	Top of South Tower	20 gallons oil per transformer
Non-PCB oil in low voltage transformer (1)	Top of South Tower	20 gallons oil
Grease in 1 gallon plastic pail	Green wood storage box near Main Switch Panel	1 1-gallon container
Waste oil in 3-gallon plastic sprayer	Green wood storage box near Main Switch Panel	3 gallons
Oil in gear case for large generator	Control Shed	10 gallons
Oil in gear case for large generator	Control Shed	300 gallons
12V lead acid car batteries	Control Shed	5 batteries
30 weight oil in 1 quart plastic bottles	Control Shed	3 bottles
Suspect PCB containing capacitors	High voltage electrical panel in Control Shed	6 capacitors
Lysol I. C. disinfectant spray, 19 oz	Control Shed bathroom	3 cans
Windex spray, 32 oz	Control Shed bathroom	2 bottles
Fantastik spray, 32 oz	Control Shed bathroom	2 bottles
WD-40 spray can, 12 oz	Control Shed bathroom	1 can
Lestoil Grease and Stain Remover, 28 oz	Control Shed bathroom	1 bottle
Ammonia bottle, 1 gallon	Control Shed bathroom	1 bottle
Clorox bleach, 1 gallon	Control Shed bathroom	1 bottle
Simple Green cleaner, 1 gallon	Control Shed bathroom	1 bottle
Grey-off degreaser, 1 gallon	Control Shed bathroom	1 bottle
Anti-freeze/coolant, 1 gallon	Control Shed	1 bottle
Pit toilet fluid	Control Shed	275 gallons
Suspect PCB-containing light fixture ballasts	Control Shed	5 ballasts
Emergency light batteries	Control Shed	6 D-cell batteries
Dry chemical fire extinguisher, 8 lb	Control Shed	2 extinguishers
Latex paint in gallon can	Control Shed	1 gallon
Suspect PCB-containing light fixture ballast	Gate Shack North	1 ballast
Fantastik spray, 32 oz	Gate Shack North	1 bottle
Lysol I. C. disinfectant spray, 19 oz	Gate Shack North	1 bottle
Windex spray, 32 oz	Gate Shack North	1 bottle
Dry chemical fire extinguisher, 8 lb	Gate Shack North	1 extinguisher


Memorial Bridge Replacement Project
13678-F
Portsmouth
Badgers Island
New Pier (Typ.)
Edge of New Bridge
New Pier (Typ.)
C-1
C-2
B-1
B-2
B-3
B-4
B-5
B-6
Prescott Park
50 0 50 100
SCALE IN FEET
General Plan
McFarland Johnson
April 11, 2011

Report Date:
02-Aug-11 11:00

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Stantec Consulting Services
5 Dartmouth Drive, Suite 101
Auburn, NH 03032
Attn: Dave Allwine

Project: NHDOT Memorial Bridge - Kittery, ME
Project #: 19170867/200

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB31833-03	B-5 (4-11)	Soil	19-Jul-11 13:00	20-Jul-11 10:20

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes.
Please note that this report contains 18 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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CASE NARRATIVE:

The samples were received 11.3 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

These samples do not exhibit the characteristics of reactivity as defined in 40 CFR 261.23, sections (1), (2), (4), and (5); however, Spectrum Analytical, Inc. does not test for detonation, explosive reaction or potential, or forbidden explosives as defined in 40 CFR 261.23, sections (3), (6), (7) and (8).

All VOC soils samples submitted and analyzed in methanol will have a minimum dilution factor of 50. This is the minimum amount of solvent allowed on the instrumentation without causing interference. Additional dilution factors may be required to keep analyte concentration within instrument calibration.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 1030

Samples:

SB31833-03 *B-5 (4-11)*

A hold time of 24 hours has been set to expedite the analyses through the laboratory. However, the hold time for Ignitability is not specified within the method other than to state that the samples should be analyzed as soon as possible.

Ignitability by Definition

SW846 1311

Samples:

SB31833-03 *B-5 (4-11)*

Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23° C.+/-2°. The minimum temperature for this batch was low at 20°C.

TCLP Extraction
TCLP Extraction
TCLP Extraction
TCLP Extraction
TCLP Extraction

SW846 1311/6010C

Laboratory Control Samples:

1114625 BS/BSD

Selenium percent recoveries (117/119) are outside individual acceptance criteria (85-115), but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

B-5 (4-11)

SW846 1311/8151A

Laboratory Control Samples:

1114668-BSD1

RPD out of acceptance range.

2,4-D [2C]

SW846 1311/8260C

SW846 1311/8260C

Calibration:

S106527-ICV1

Analyte percent recovery is outside individual acceptance criteria (70-130).

Carbon tetrachloride (132%)

This affected the following samples:

1114742-BLK1
1114742-BLK2
1114742-BS1
1114742-BSD1
B-5 (4-11)
S106569-CCV1

Laboratory Control Samples:

1114742 BS

2-Butanone (MEK) percent recovery 133 (70-130) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

B-5 (4-11)

Carbon tetrachloride percent recovery 143 (70-130) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

B-5 (4-11)

Samples:

S106569-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

Carbon tetrachloride (43.7%)

This affected the following samples:

1114742-BLK1
1114742-BLK2
1114742-BS1
1114742-BSD1
B-5 (4-11)

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-5 (4-11)	19170867/200	Soil	19-Jul-11 13:00	20-Jul-11
SB31833-03				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	26-Jul-11	27-Jul-11	JRF	1114679	X
TCLP Volatile Organic Compounds by 8260B (TCL)												
Prepared by method SW846 5030 Water MS					Initial weight: 5 ml							
71-43-2	Benzene	BRL		µg/l	5.0	5	SW846 1311/8260C	27-Jul-11	27-Jul-11	eq	1114742	
78-93-3	2-Butanone (MEK)	BRL		µg/l	50.0	5	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL		µg/l	5.0	5	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
67-66-3	Chloroform	BRL		µg/l	5.0	5	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
79-01-6	Trichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL		µg/l	5.0	5	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*97*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*100*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*108*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*105*			*70-130 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GCMS												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	25-Jul-11	26-Jul-11	JRF	1114581	X
	TCLP Extraction	Completed	ExL	N/A		1	"	25-Jul-11	26-Jul-11	"	1114577	X
TCLP Semivolatiles by SW846 1311/8270C (TCL)												
Prepared by method SW846 3535												
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	5.00	1	SW846 1311/8270D	26-Jul-11	27-Jul-11	ML	1114665	X
121-14-2	2,4-Dinitrotoluene	BRL		µg/l	5.00	1	"	"	"	"	"	X
118-74-1	Hexachlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-68-3	Hexachlorobutadiene	BRL		µg/l	5.00	1	"	"	"	"	"	X
67-72-1	Hexachloroethane	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-48-7	2-Methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
108-39-4, 106-44-5	3 & 4-Methylphenol	BRL		µg/l	10.0	1	"	"	"	"	"	X
98-95-3	Nitrobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-86-5	Pentachlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
110-86-1	Pyridine	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-95-4	2,4,5-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
88-06-2	2,4,6-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
Surrogate recoveries:												
321-60-8	*2-Fluorobiphenyl*	*85*			*30-130 %*		"	"	"	"	"	
367-12-4	*2-Fluorophenol*	*62*			*30-130 %*		"	"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*58*			*30-130 %*		"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*85*			*30-130 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GC												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	25-Jul-11	26-Jul-11	JRF	1114580	X
TCLP Pesticides by SW846 1311/8081A												
Prepared by method SW846 3535												
58-89-9	gamma-BHC (Lindane)	BRL		µg/l	0.032	1	SW846 1311/8081B	26-Jul-11	27-Jul-11	TG	1114667	X
76-44-8	Heptachlor	BRL		µg/l	0.032	1	"	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-5 (4-11)	19170867/200	Soil	19-Jul-11 13:00	20-Jul-11
SB31833-03				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Semivolatile Organic Compounds by GC												
TCLP Pesticides by SW846 1311/8081A												
Prepared by method SW846 3535												
1024-57-3	Heptachlor epoxide	BRL		µg/l	0.032	1	SW846 1311/8081B	26-Jul-11	27-Jul-11	TG	1114667	X
60-57-1	Dieldrin	BRL		µg/l	0.021	1	"	"	"	"	"	X
72-55-9	4,4'-DDE (p,p')	BRL		µg/l	0.032	1	"	"	"	"	"	X
72-20-8	Endrin	BRL		µg/l	0.032	1	"	"	"	"	"	X
72-54-8	4,4'-DDD (p,p')	BRL		µg/l	0.032	1	"	"	"	"	"	X
50-29-3	4,4'-DDT (p,p')	BRL		µg/l	0.032	1	"	"	"	"	"	X
72-43-5	Methoxychlor	BRL		µg/l	0.032	1	"	"	"	"	"	X
53494-70-5	Endrin ketone	BRL		µg/l	0.021	1	"	"	"	"	"	X
7421-93-4	Endrin aldehyde	BRL		µg/l	0.021	1	"	"	"	"	"	X
8001-35-2	Toxaphene	BRL		µg/l	0.368	1	"	"	"	"	"	X
57-74-9	Chlordane	BRL		µg/l	0.074	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*89*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*80*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*94*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*83*			*30-150 %*		"	"	"	"	"	
Polychlorinated Biphenyls by SW846 8082												
Prepared by method SW846 3545A												
12674-11-2	Aroclor-1016	BRL		µg/kg dry	22.1	1	SW846 8082A	21-Jul-11	21-Jul-11	IMR	1114243	X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	22.1	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	22.1	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	22.1	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	22.1	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	BRL		µg/kg dry	22.1	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	BRL		µg/kg dry	22.1	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	22.1	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	22.1	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*110*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*120*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*115*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*115*			*30-150 %*		"	"	"	"	"	
TCLP Herbicides by SW846 1311/8151A												
Prepared by method SW846 3535									Methylation date: 26-Jul-11			
93-72-1	2,4,5-TP (Silvex)	BRL		µg/l	0.100	1	SW846 1311/8151A	26-Jul-11	29-Jul-11	TG	1114668	X
94-75-7	2,4-D	BRL		µg/l	0.100	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*56*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*46*			*30-150 %*		"	"	"	"	"	
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	25-Jul-11	26-Jul-11	JRF	1114578	X
7440-22-4	Silver	BRL		mg/l	0.0100	1	SW846 1311/6010C	26-Jul-11	28-Jul-11	ARF	1114625	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-5 (4-11)	19170867/200	Soil	19-Jul-11 13:00	20-Jul-11
SB31833-03				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0080	1	SW846 1311/6010C	26-Jul-11	28-Jul-11	ARF	1114625	X
7440-39-3	Barium	0.319		mg/l	0.0100	1	"	"	"	"	"	X
7440-43-9	Cadmium	BRL		mg/l	0.0050	1	"	"	"	"	"	X
7440-47-3	Chromium	BRL		mg/l	0.0100	1	"	"	"	"	"	X
7439-97-6	Mercury	BRL		mg/l	0.00020	1	SW846 1311/7470A	"	27-Jul-11	EDT	1114626	X
7439-92-1	Lead	BRL		mg/l	0.0150	1	SW846 1311/6010C	"	28-Jul-11	ARF	1114625	X
7782-49-2	Selenium	BRL		mg/l	0.0300	1	"	"	"	"	"	X
General Chemistry Parameters												
	% Solids	84.0		%		1	SM2540 G Mod.	20-Jul-11	20-Jul-11	DT	1114222	
Toxicity Characteristics												
	Ignitability by Definition	Negative	IgHT	N/A		1	SW846 1030	22-Jul-11 11:00	22-Jul-11 11:00	BD	1114421	X
	pH	7.87	pH	pH Units		1	SW846 9045C	20-Jul-11 17:30	20-Jul-11 17:30	JLH	1114199	X
Reactivity Cyanide/Sulfide												
Prepared by method General Preparation												
	Reactivity	Nonreactive		mg/kg dry		1	SW846 Ch. 7.3	23-Jul-11	25-Jul-11	BD	1114483	X
	Reactive Cyanide	BRL		mg/kg dry	22.7	1	"	"	"	"	"	X
	Reactive Sulfide	BRL		mg/kg dry	45.5	1	"	"	"	"	"	X

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114742 - SW846 5030 Water MS										
Blank (1114742-BLK1)						Prepared & Analyzed: 27-Jul-11				
Benzene	BRL		µg/l	1.0						
2-Butanone (MEK)	BRL		µg/l	10.0						
Carbon tetrachloride	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
Chloroform	BRL		µg/l	1.0						
1,2-Dichloroethane	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Tetrachloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Vinyl chloride	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*29.2*		µg/l		*30.0*		*97*	*70-130*		
Surrogate: Toluene-d8	*29.0*		µg/l		*30.0*		*97*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*29.9*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: Dibromofluoromethane	*31.0*		µg/l		*30.0*		*103*	*70-130*		
Blank (1114742-BLK2)						Prepared: 27-Jul-11 Analyzed: 28-Jul-11				
Benzene	BRL		µg/l	5.0						
2-Butanone (MEK)	BRL		µg/l	50.0						
Carbon tetrachloride	BRL		µg/l	5.0						
Chlorobenzene	BRL		µg/l	5.0						
Chloroform	BRL		µg/l	5.0						
1,2-Dichloroethane	BRL		µg/l	5.0						
1,1-Dichloroethene	BRL		µg/l	5.0						
Tetrachloroethene	BRL		µg/l	5.0						
Trichloroethene	BRL		µg/l	5.0						
Vinyl chloride	BRL		µg/l	5.0						
Surrogate: 4-Bromofluorobenzene	*28.7*		µg/l		*30.0*		*96*	*70-130*		
Surrogate: Toluene-d8	*28.5*		µg/l		*30.0*		*95*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*30.9*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Dibromofluoromethane	*32.0*		µg/l		*30.0*		*107*	*70-130*		
LCS (1114742-BS1)						Prepared & Analyzed: 27-Jul-11				
Benzene	20.4		µg/l		20.0		102	70-130		
2-Butanone (MEK)	26.6		µg/l		20.0		133	70-130		
Carbon tetrachloride	28.6	QC2	µg/l		20.0		143	70-130		
Chlorobenzene	19.3		µg/l		20.0		97	70-130		
Chloroform	19.4		µg/l		20.0		97	70-130		
1,2-Dichloroethane	19.4		µg/l		20.0		97	70-130		
1,1-Dichloroethene	22.2		µg/l		20.0		111	70-130		
Tetrachloroethene	20.9		µg/l		20.0		104	70-130		
Trichloroethene	21.0		µg/l		20.0		105	70-130		
Vinyl chloride	25.0		µg/l		20.0		125	70-130		
Surrogate: 4-Bromofluorobenzene	*30.5*		µg/l		*30.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*29.8*		µg/l		*30.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*28.8*		µg/l		*30.0*		*96*	*70-130*		
Surrogate: Dibromofluoromethane	*31.1*		µg/l		*30.0*		*104*	*70-130*		
LCS Dup (1114742-BSD1)						Prepared & Analyzed: 27-Jul-11				
Benzene	20.4		µg/l		20.0		102	70-130	0.1	30
2-Butanone (MEK)	26.2		µg/l		20.0		131	70-130	2	30
Carbon tetrachloride	27.9	QC2	µg/l		20.0		139	70-130	3	30
Chlorobenzene	19.5		µg/l		20.0		97	70-130	0.8	30
Chloroform	19.3		µg/l		20.0		97	70-130	0.3	30

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114742 - SW846 5030 Water MS										
LCS Dup (1114742-BSD1)					Prepared & Analyzed: 27-Jul-11					
1,2-Dichloroethane	19.7		µg/l		20.0		99	70-130	2	30
1,1-Dichloroethene	22.8		µg/l		20.0		114	70-130	2	30
Tetrachloroethene	20.9		µg/l		20.0		104	70-130	0.1	30
Trichloroethene	21.2		µg/l		20.0		106	70-130	0.6	30
Vinyl chloride	24.1		µg/l		20.0		121	70-130	4	30
Surrogate: 4-Bromofluorobenzene	*30.1*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*29.7*		µg/l		*30.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*28.3*		µg/l		*30.0*		*94*	*70-130*		
Surrogate: Dibromofluoromethane	*30.7*		µg/l		*30.0*		*102*	*70-130*		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114665 - SW846 3535										
Blank (1114665-BLK1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	BRL		µg/l	5.00						
2,4-Dinitrotoluene	BRL		µg/l	5.00						
Hexachlorobenzene	BRL		µg/l	5.00						
Hexachlorobutadiene	BRL		µg/l	5.00						
Hexachloroethane	BRL		µg/l	5.00						
2-Methylphenol	BRL		µg/l	5.00						
3 & 4-Methylphenol	BRL		µg/l	10.0						
Nitrobenzene	BRL		µg/l	5.00						
Pentachlorophenol	BRL		µg/l	5.00						
Pyridine	BRL		µg/l	5.00						
2,4,5-Trichlorophenol	BRL		µg/l	5.00						
2,4,6-Trichlorophenol	BRL		µg/l	5.00						
Surrogate: 2-Fluorobiphenyl	*52.5*		µg/l		*57.1*		*92*	*30-130*		
Surrogate: 2-Fluorophenol	*39.6*		µg/l		*57.1*		*69*	*30-130*		
Surrogate: Nitrobenzene-d5	*37.0*		µg/l		*57.1*		*65*	*30-130*		
Surrogate: Terphenyl-dl4	*53.2*		µg/l		*57.1*		*93*	*30-130*		
LCS (1114665-BS1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	37.9		µg/l	5.00	55.6		68	40-140		
2,4-Dinitrotoluene	48.8		µg/l	5.00	55.6		88	40-140		
Hexachlorobenzene	51.2		µg/l	5.00	55.6		92	40-140		
Hexachlorobutadiene	37.3		µg/l	5.00	55.6		67	40-140		
Hexachloroethane	31.8		µg/l	5.00	55.6		57	40-140		
2-Methylphenol	34.3		µg/l	5.00	55.6		62	30-130		
3 & 4-Methylphenol	35.2		µg/l	10.0	55.6		63	40-130		
Nitrobenzene	26.2		µg/l	5.00	55.6		47	40-140		
Pentachlorophenol	45.2		µg/l	5.00	55.6		81	30-130		
Pyridine	24.1		µg/l	5.00	55.6		43	40-140		
2,4,5-Trichlorophenol	44.7		µg/l	5.00	55.6		80	30-130		
2,4,6-Trichlorophenol	42.2		µg/l	5.00	55.6		76	30-130		
Surrogate: 2-Fluorobiphenyl	*52.3*		µg/l		*55.6*		*94*	*30-130*		
Surrogate: 2-Fluorophenol	*43.7*		µg/l		*55.6*		*79*	*15-110*		
Surrogate: Nitrobenzene-d5	*33.9*		µg/l		*55.6*		*61*	*30-130*		
Surrogate: Terphenyl-dl4	*55.9*		µg/l		*55.6*		*101*	*30-130*		
LCS Dup (1114665-BSD1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	40.2		µg/l	5.00	55.6		72	40-140	6	20
2,4-Dinitrotoluene	51.6		µg/l	5.00	55.6		93	40-140	6	20
Hexachlorobenzene	54.2		µg/l	5.00	55.6		98	40-140	6	20
Hexachlorobutadiene	39.6		µg/l	5.00	55.6		71	40-140	6	20
Hexachloroethane	34.0		µg/l	5.00	55.6		61	40-140	7	20
2-Methylphenol	36.6		µg/l	5.00	55.6		66	30-130	6	20
3 & 4-Methylphenol	37.8		µg/l	10.0	55.6		68	40-130	7	20
Nitrobenzene	27.8		µg/l	5.00	55.6		50	40-140	6	20
Pentachlorophenol	47.1		µg/l	5.00	55.6		85	30-130	4	20
Pyridine	27.9		µg/l	5.00	55.6		50	40-140	14	20
2,4,5-Trichlorophenol	48.3		µg/l	5.00	55.6		87	30-130	8	20
2,4,6-Trichlorophenol	44.5		µg/l	5.00	55.6		80	30-130	5	20
Surrogate: 2-Fluorobiphenyl	*48.9*		µg/l		*55.6*		*88*	*30-130*		
Surrogate: 2-Fluorophenol	*41.6*		µg/l		*55.6*		*75*	*15-110*		
Surrogate: Nitrobenzene-d5	*32.1*		µg/l		*55.6*		*58*	*30-130*		
Surrogate: Terphenyl-dl4	*52.3*		µg/l		*55.6*		*94*	*30-130*		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114665 - SW846 3535										
Duplicate (1114665-DUP1)			**Source: SB31833-03**		Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	BRL		µg/l	5.00		BRL				50
2,4-Dinitrotoluene	BRL		µg/l	5.00		BRL				50
Hexachlorobenzene	BRL		µg/l	5.00		BRL				50
Hexachlorobutadiene	BRL		µg/l	5.00		BRL				50
Hexachloroethane	BRL		µg/l	5.00		BRL				50
2-Methylphenol	BRL		µg/l	5.00		BRL				50
3 & 4-Methylphenol	BRL		µg/l	10.0		BRL				50
Nitrobenzene	BRL		µg/l	5.00		BRL				50
Pentachlorophenol	BRL		µg/l	5.00		BRL				50
Pyridine	BRL		µg/l	5.00		BRL				50
2,4,5-Trichlorophenol	BRL		µg/l	5.00		BRL				50
2,4,6-Trichlorophenol	BRL		µg/l	5.00		BRL				50
Surrogate: 2-Fluorobiphenyl	*44.4*		µg/l		*52.6*		*84*	*30-130*		
Surrogate: 2-Fluorophenol	*32.6*		µg/l		*52.6*		*62*	*30-130*		
Surrogate: Nitrobenzene-d5	*30.1*		µg/l		*52.6*		*57*	*30-130*		
Surrogate: Terphenyl-dl4	*45.0*		µg/l		*52.6*		*85*	*30-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114243 - SW846 3545A										
Blank (1114243-BLK1)					Prepared & Analyzed: 21-Jul-11					
Aroclor-1016	BRL		µg/kg wet	20.0						
Aroclor-1016 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1221	BRL		µg/kg wet	20.0						
Aroclor-1221 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1232	BRL		µg/kg wet	20.0						
Aroclor-1232 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1242	BRL		µg/kg wet	20.0						
Aroclor-1242 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1248	BRL		µg/kg wet	20.0						
Aroclor-1248 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1254	BRL		µg/kg wet	20.0						
Aroclor-1254 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1260	BRL		µg/kg wet	20.0						
Aroclor-1260 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1262	BRL		µg/kg wet	20.0						
Aroclor-1262 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1268	BRL		µg/kg wet	20.0						
Aroclor-1268 [2C]	BRL		µg/kg wet	20.0						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*20.0*		µg/kg wet		*20.0*		*100*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*20.0*		µg/kg wet		*20.0*		*100*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*24.0*		µg/kg wet		*20.0*		*120*	*30-150*		
LCS (1114243-BS1)					Prepared & Analyzed: 21-Jul-11					
Aroclor-1016	261		µg/kg wet	20.0	250		104	50-140		
Aroclor-1016 [2C]	266		µg/kg wet	20.0	250		106	50-140		
Aroclor-1260	242		µg/kg wet	20.0	250		97	50-140		
Aroclor-1260 [2C]	268		µg/kg wet	20.0	250		107	50-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*27.0*		µg/kg wet		*20.0*		*135*	*30-150*		
LCS Dup (1114243-BSD1)					Prepared & Analyzed: 21-Jul-11					
Aroclor-1016	252		µg/kg wet	20.0	250		101	50-140	4	30
Aroclor-1016 [2C]	266		µg/kg wet	20.0	250		106	50-140	0	30
Aroclor-1260	234		µg/kg wet	20.0	250		94	50-140	3	30
Aroclor-1260 [2C]	247		µg/kg wet	20.0	250		99	50-140	8	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*23.0*		µg/kg wet		*20.0*		*115*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*25.0*		µg/kg wet		*20.0*		*125*	*30-150*		
Batch 1114667 - SW846 3535										
Blank (1114667-BLK1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
gamma-BHC (Lindane)	BRL		µg/l	0.033						
gamma-BHC (Lindane) [2C]	BRL		µg/l	0.033						
Heptachlor	BRL		µg/l	0.033						
Heptachlor [2C]	BRL		µg/l	0.033						
Heptachlor epoxide	BRL		µg/l	0.033						
Heptachlor epoxide [2C]	BRL		µg/l	0.033						
Dieldrin	BRL		µg/l	0.022						
Dieldrin [2C]	BRL		µg/l	0.022						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114667 - SW846 3535										
Blank (1114667-BLK1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
4,4'-DDE (p,p')	BRL		µg/l	0.033						
4,4'-DDE (p,p') [2C]	BRL		µg/l	0.033						
Endrin	BRL		µg/l	0.033						
Endrin [2C]	BRL		µg/l	0.033						
4,4'-DDD (p,p')	BRL		µg/l	0.033						
4,4'-DDD (p,p') [2C]	BRL		µg/l	0.033						
4,4'-DDT (p,p')	BRL		µg/l	0.033						
4,4'-DDT (p,p') [2C]	BRL		µg/l	0.033						
Methoxychlor	BRL		µg/l	0.033						
Methoxychlor [2C]	BRL		µg/l	0.033						
Endrin ketone	BRL		µg/l	0.022						
Endrin ketone [2C]	BRL		µg/l	0.022						
Endrin aldehyde	BRL		µg/l	0.022						
Endrin aldehyde [2C]	BRL		µg/l	0.022						
Toxaphene	BRL		µg/l	0.389						
Toxaphene [2C]	BRL		µg/l	0.389						
Chlordane	BRL		µg/l	0.078						
Chlordane [2C]	BRL		µg/l	0.078						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.222*		µg/l		*0.222*		*100*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.232*		µg/l		*0.222*		*104*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.224*		µg/l		*0.222*		*101*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.244*		µg/l		*0.222*		*110*	*30-150*		
LCS (1114667-BS1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
gamma-BHC (Lindane)	0.415		µg/l	0.030	0.500		83	50-120		
gamma-BHC (Lindane) [2C]	0.413		µg/l	0.030	0.500		83	50-120		
Heptachlor	0.433		µg/l	0.030	0.500		87	40-140		
Heptachlor [2C]	0.421		µg/l	0.030	0.500		84	40-140		
Heptachlor epoxide	0.421		µg/l	0.030	0.500		84	50-140		
Heptachlor epoxide [2C]	0.421		µg/l	0.030	0.500		84	50-140		
Dieldrin	0.444		µg/l	0.020	0.500		89	40-130		
Dieldrin [2C]	0.447		µg/l	0.020	0.500		89	40-130		
4,4'-DDE (p,p')	0.435		µg/l	0.030	0.500		87	50-140		
4,4'-DDE (p,p') [2C]	0.423		µg/l	0.030	0.500		85	50-140		
Endrin	0.523		µg/l	0.030	0.500		105	50-120		
Endrin [2C]	0.534		µg/l	0.030	0.500		107	50-120		
4,4'-DDD (p,p')	0.484		µg/l	0.030	0.500		97	40-140		
4,4'-DDD (p,p') [2C]	0.475		µg/l	0.030	0.500		95	40-140		
4,4'-DDT (p,p')	0.332		µg/l	0.030	0.500		66	40-140		
4,4'-DDT (p,p') [2C]	0.353		µg/l	0.030	0.500		71	40-140		
Methoxychlor	0.406		µg/l	0.030	0.500		81	40-140		
Methoxychlor [2C]	0.423		µg/l	0.030	0.500		85	40-140		
Endrin ketone	0.402		µg/l	0.020	0.500		80	40-140		
Endrin ketone [2C]	0.428		µg/l	0.020	0.500		86	40-140		
Endrin aldehyde	0.308		µg/l	0.020	0.500		62	40-140		
Endrin aldehyde [2C]	0.313		µg/l	0.020	0.500		63	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.153*		µg/l		*0.200*		*77*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.148*		µg/l		*0.200*		*74*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.174*		µg/l		*0.200*		*87*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.172*		µg/l		*0.200*		*86*	*30-150*		
LCS Dup (1114667-BSD1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
gamma-BHC (Lindane)	0.426		µg/l	0.030	0.500		85	50-120	3	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114667 - SW846 3535										
LCS Dup (1114667-BSD1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
gamma-BHC (Lindane) [2C]	0.437		µg/l	0.030	0.500		87	50-120	6	20
Heptachlor	0.430		µg/l	0.030	0.500		86	40-140	0.7	20
Heptachlor [2C]	0.450		µg/l	0.030	0.500		90	40-140	7	20
Heptachlor epoxide	0.411		µg/l	0.030	0.500		82	50-140	2	20
Heptachlor epoxide [2C]	0.445		µg/l	0.030	0.500		89	50-140	6	20
Dieldrin	0.426		µg/l	0.020	0.500		85	40-130	4	20
Dieldrin [2C]	0.430		µg/l	0.020	0.500		86	40-130	4	20
4,4'-DDE (p,p')	0.422		µg/l	0.030	0.500		84	50-140	3	20
4,4'-DDE (p,p') [2C]	0.444		µg/l	0.030	0.500		89	50-140	5	20
Endrin	0.487		µg/l	0.030	0.500		97	50-120	7	20
Endrin [2C]	0.560		µg/l	0.030	0.500		112	50-120	5	20
4,4'-DDD (p,p')	0.466		µg/l	0.030	0.500		93	40-140	4	20
4,4'-DDD (p,p') [2C]	0.494		µg/l	0.030	0.500		99	40-140	4	20
4,4'-DDT (p,p')	0.315		µg/l	0.030	0.500		63	40-140	5	20
4,4'-DDT (p,p') [2C]	0.375		µg/l	0.030	0.500		75	40-140	6	20
Methoxychlor	0.374		µg/l	0.030	0.500		75	40-140	8	20
Methoxychlor [2C]	0.472		µg/l	0.030	0.500		94	40-140	11	20
Endrin ketone	0.378		µg/l	0.020	0.500		76	40-140	6	20
Endrin ketone [2C]	0.449		µg/l	0.020	0.500		90	40-140	5	20
Endrin aldehyde	0.287		µg/l	0.020	0.500		57	40-140	7	20
Endrin aldehyde [2C]	0.332		µg/l	0.020	0.500		66	40-140	6	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.154*		µg/l		*0.200*		*77*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.157*		µg/l		*0.200*		*78*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.165*		µg/l		*0.200*		*83*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.198*		µg/l		*0.200*		*99*	*30-150*		
Duplicate (1114667-DUP1)			**Source: SB31833-03**		Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
gamma-BHC (Lindane)	BRL		µg/l	0.032		BRL				30
gamma-BHC (Lindane) [2C]	BRL		µg/l	0.032		BRL				30
Heptachlor	BRL		µg/l	0.032		BRL				30
Heptachlor [2C]	BRL		µg/l	0.032		BRL				30
Heptachlor epoxide	BRL		µg/l	0.032		BRL				30
Heptachlor epoxide [2C]	BRL		µg/l	0.032		BRL				30
Dieldrin	BRL		µg/l	0.021		BRL				30
Dieldrin [2C]	BRL		µg/l	0.021		BRL				30
4,4'-DDE (p,p')	BRL		µg/l	0.032		BRL				30
4,4'-DDE (p,p') [2C]	BRL		µg/l	0.032		BRL				30
Endrin	BRL		µg/l	0.032		BRL				30
Endrin [2C]	BRL		µg/l	0.032		BRL				30
4,4'-DDD (p,p')	BRL		µg/l	0.032		BRL				30
4,4'-DDD (p,p') [2C]	BRL		µg/l	0.032		BRL				30
4,4'-DDT (p,p')	BRL		µg/l	0.032		BRL				30
4,4'-DDT (p,p') [2C]	BRL		µg/l	0.032		BRL				30
Methoxychlor	BRL		µg/l	0.032		BRL				30
Methoxychlor [2C]	BRL		µg/l	0.032		BRL				30
Endrin ketone	BRL		µg/l	0.021		BRL				30
Endrin ketone [2C]	BRL		µg/l	0.021		BRL				30
Endrin aldehyde	BRL		µg/l	0.021		BRL				30
Endrin aldehyde [2C]	BRL		µg/l	0.021		BRL				30
Toxaphene	BRL		µg/l	0.368		BRL				30
Toxaphene [2C]	BRL		µg/l	0.368		BRL				30
Chlordane	BRL		µg/l	0.074		BRL				30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114667 - SW846 3535										
Duplicate (1114667-DUP1)			**Source: SB31833-03**		Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
Chlordane [2C]	BRL		µg/l	0.074		BRL				30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.189*		µg/l		*0.211*		*90*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.177*		µg/l		*0.211*		*84*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.200*		µg/l		*0.211*		*95*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.186*		µg/l		*0.211*		*89*	*30-150*		
Batch 1114668 - SW846 3535										
Blank (1114668-BLK1)					Prepared: 26-Jul-11 Analyzed: 29-Jul-11					
2,4,5-TP (Silvex)	BRL		µg/l	0.100						
2,4,5-TP (Silvex) [2C]	BRL		µg/l	0.100						
2,4-D	BRL		µg/l	0.100						
2,4-D [2C]	BRL		µg/l	0.100						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.142*		µg/l		*0.222*		*64*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.103*		µg/l		*0.222*		*46*	*30-150*		
LCS (1114668-BS1)					Prepared: 26-Jul-11 Analyzed: 29-Jul-11					
2,4,5-TP (Silvex)	0.208		µg/l	0.100	0.500		42	40-140		
2,4,5-TP (Silvex) [2C]	0.212		µg/l	0.100	0.500		42	40-140		
2,4-D	0.209		µg/l	0.100	0.500		42	40-140		
2,4-D [2C]	0.161	QC2	µg/l	0.100	0.500		32	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.0930*		µg/l		*0.200*		*46*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.0860*		µg/l		*0.200*		*43*	*30-150*		
LCS Dup (1114668-BSD1)					Prepared: 26-Jul-11 Analyzed: 29-Jul-11					
2,4,5-TP (Silvex)	0.214		µg/l	0.100	0.500		43	40-140	3	20
2,4,5-TP (Silvex) [2C]	0.227		µg/l	0.100	0.500		45	40-140	7	20
2,4-D	0.224		µg/l	0.100	0.500		45	40-140	7	20
2,4-D [2C]	0.126	QC2, QR5	µg/l	0.100	0.500		25	40-140	24	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.0870*		µg/l		*0.200*		*44*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.0950*		µg/l		*0.200*		*48*	*30-150*		
Duplicate (1114668-DUP1)			**Source: SB31833-03**		Prepared: 26-Jul-11 Analyzed: 29-Jul-11					
2,4,5-TP (Silvex)	BRL		µg/l	0.100		BRL				30
2,4,5-TP (Silvex) [2C]	BRL		µg/l	0.100		BRL				30
2,4-D	BRL		µg/l	0.100		BRL				30
2,4-D [2C]	BRL		µg/l	0.100		BRL				30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.104*		µg/l		*0.235*		*44*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.100*		µg/l		*0.235*		*42*	*30-150*		

TCLP Metals by EPA 1311 & 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114625 - SW846 3010A										
Blank (1114625-BLK1)					Prepared: 26-Jul-11 Analyzed: 28-Jul-11					
Lead	BRL		mg/l	0.0150						
Selenium	BRL		mg/l	0.0300						
Arsenic	BRL		mg/l	0.0080						
Silver	BRL		mg/l	0.0100						
Cadmium	BRL		mg/l	0.0050						
Chromium	BRL		mg/l	0.0100						
Barium	BRL		mg/l	0.0100						
LCS (1114625-BS1)					Prepared: 26-Jul-11 Analyzed: 28-Jul-11					
Selenium	2.93	QM9	mg/l	0.0300	2.50		117	85-115		
Lead	2.42		mg/l	0.0150	2.50		97	85-115		
Arsenic	2.82		mg/l	0.0080	2.50		113	85-115		
Chromium	2.53		mg/l	0.0100	2.50		101	85-115		
Silver	2.65		mg/l	0.0100	2.50		106	85-115		
Cadmium	2.66		mg/l	0.0050	2.50		106	85-115		
Barium	2.66		mg/l	0.0100	2.50		106	85-115		
LCS Dup (1114625-BSD1)					Prepared: 26-Jul-11 Analyzed: 28-Jul-11					
Selenium	2.97	QM9	mg/l	0.0300	2.50		119	85-115	1	20
Lead	2.38		mg/l	0.0150	2.50		95	85-115	2	20
Arsenic	2.85		mg/l	0.0080	2.50		114	85-115	1	20
Silver	2.65		mg/l	0.0100	2.50		106	85-115	0	104
Cadmium	2.60		mg/l	0.0050	2.50		104	85-115	2	20
Chromium	2.45		mg/l	0.0100	2.50		98	85-115	3	20
Barium	2.66		mg/l	0.0100	2.50		107	85-115	0.2	20
Duplicate (1114625-DUP1)			**Source: SB31833-03**		Prepared: 26-Jul-11 Analyzed: 28-Jul-11					
Selenium	0.0062	J	mg/l	0.0300		0.0063			2	20
Lead	BRL		mg/l	0.0150		BRL				20
Cadmium	BRL		mg/l	0.0050		BRL				20
Arsenic	BRL		mg/l	0.0080		0.0043				20
Silver	BRL		mg/l	0.0100		BRL				20
Chromium	BRL		mg/l	0.0100		BRL				20
Barium	0.316		mg/l	0.0100		0.319			1	20
Batch 1114626 - EPA200/SW7000 Series										
Blank (1114626-BLK1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
Mercury	BRL		mg/l	0.00020						
LCS (1114626-BS1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
Mercury	0.00489		mg/l	0.00020	0.00500		98	85-115		
Duplicate (1114626-DUP1)			**Source: SB31833-03**		Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
Mercury	BRL		mg/l	0.00020		BRL				20

Toxicity Characteristics - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114199 - General Preparation										
Reference (1114199-SRM1)						Prepared & Analyzed: 20-Jul-11				
pH	5.97		pH Units		6.00		100	97.5-102.5		
Reference (1114199-SRM2)						Prepared & Analyzed: 20-Jul-11				
pH	5.48		pH Units		5.51		99	92-108		
Batch 1114483 - General Preparation										
Blank (1114483-BLK1)						Prepared: 23-Jul-11 Analyzed: 25-Jul-11				
Reactivity	Nonreactive		mg/kg wet							
Reactive Cyanide	BRL		mg/kg wet	25.0						
Reactive Sulfide	BRL		mg/kg wet	50.0						
Reference (1114483-SRM1)						Prepared: 23-Jul-11 Analyzed: 25-Jul-11				
Reactive Cyanide	2.93		mg/kg wet	25.0	100		3	0-200		
Reference (1114483-SRM2)						Prepared: 23-Jul-11 Analyzed: 25-Jul-11				
Reactive Sulfide	120		mg/kg wet	50.0	6700		2	0-200		

Semivolatile Organic Compounds by GC - Pesticide Breakdown Report

Analyte(s)	Column	% Breakdown	Limit
Batch S106609			
Performance Mix (S106609-PEM1)			
4,4'-DDT (p,p')	1	7.0	15.0
Endrin	1	2.7	15.0
4,4'-DDT (p,p')	2	5.1	15.0
Endrin	2	2.9	15.0
Performance Mix (S106609-PEM2)			
4,4'-DDT (p,p')	1	9.4	15.0
Endrin	1	1.9	15.0
4,4'-DDT (p,p')	2	7.2	15.0
Endrin	2	2.0	15.0

Notes and Definitions

ExL	Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23°C.+/-2°. The minimum temperature for this batch was low at 20°C.
IgHT	A hold time of 24 hours has been set to expedite the analyses through the laboratory. However, the hold time for Ignitability is not specified within the method other than to state that the samples should be analyzed as soon as possible.
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
QR5	RPD out of acceptance range.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
pH	The method for pH does not stipulate a specific holding time other than to state that the samples should be analyzed as soon as possible. For aqueous samples the 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous pH samples not analyzed in the field are considered out of hold time at the time of sample receipt. All soil samples are analyzed as soon as possible after sample receipt.

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
June O'Connor
Kimberly Wisk
Nicole Leja

SB31833 (1)

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: DAVE Allwine
STANTEC
5 DARTMOUTH DR
AUBURN NH 03032
Telephone #: 603-498-4674
Project Mgr. DAVE Allwine

Invoice To: STANTEC
5 DARTMOUTH DR
AUBURN NH 03032
P.O. No.: _____ RQN: _____

Project No.: 191710867/200
Site Name: NHDOT MEMORIAL BRIDGE
Location: BADGER ISLAND Kittery State: ME
Sampler(s): JW

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10= _____ 11= _____

List preservative code below:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Containers: # of VOA Vials; # of Amber Glass; # of Clear Glass; # of Plastic

Analyses: TCLP-VOC 8260B; TCLP-SVOC 8270; TCLP-RCRA-8 8151; TCLP-Herbicides/Pest-8081; PCBs-8082; Corrosivity; Reactivity; Flammability

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	TCLP-VOC 8260B	TCLP-SVOC 8270	TCLP-RCRA-8 8151	TCLP-Herbicides/Pest-8081	PCBs-8082	Corrosivity Reactivity Flammability			
31833.01	B-5(4-6)	7-19-11	1000	G	SO		2			x	x	x	x	x	x			cancelled samples per client req.
↓ .02	B-5(9-11)	7-19-11	1300	G	SO		1			x	x	x	x	x	x			
31833.03	B-5(4-11)	7/19/11	1300	C	SO		3			x	x	x	x	x	x			added sample/ client req.

QA/QC Reporting Notes:
* additional charges may apply

MA DEP MCP CAM Report: Yes☐ No☐
CT DPH RCP Report: Yes☐ No☐

QA/QC Reporting Level
☐ Standard ☐ No QC ☐ DQA*
☐ NY ASP A* ☐ NY ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ TIER II* ☐ TIER V*
☐ Other _____

State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	Fed Ex # 8603 2959 2673	7-19-11	1445	
Fed EX	~~Fed EX~~ [signature]	7/20/11	10:20	11.3

☐ EDD Format _____
[x] E-mail to DAVE.Allwine@STANTEC.com

☐ Ambient ☒ Iced ☐ Refrigerated ☐ Fridge temp ____ °C ☐ Freezer temp ____ °C

Report Date:
29-Jul-11 10:46

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Stantec Consulting Services
5 Dartmouth Drive, Suite 101
Auburn, NH 03032
Attn: Dave Allwine

Project: NHDOT Memorial Bridge - Kittery, ME
Project #: [none]

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB31711-01	B-6 (4-7)	Soil	18-Jul-11 10:30	19-Jul-11 09:45
SB31711-02	B-6 (19-21)	Soil	18-Jul-11 15:00	19-Jul-11 09:45

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes.
Please note that this report contains 23 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

CASE NARRATIVE:

The samples were received 2.0 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

These samples do not exhibit the characteristics of reactivity as defined in 40 CFR 261.23, sections (1), (2), (4), and (5); however, Spectrum Analytical, Inc. does not test for detonation, explosive reaction or potential, or forbidden explosives as defined in 40 CFR 261.23, sections (3), (6), (7) and (8).

All VOC soils samples submitted and analyzed in methanol will have a minimum dilution factor of 50. This is the minimum amount of solvent allowed on the instrumentation without causing interference. Additional dilution factors may be required to keep analyte concentration within instrument calibration.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 1030

Samples:

SB31711-01 *B-6 (4-7)*

A hold time of 24 hours has been set to expedite the analyses through the laboratory. However, the hold time for Ignitability is not specified within the method other than to state that the samples should be analyzed as soon as possible.

Ignitability by Definition

SW846 1311

Samples:

SB31711-01 *B-6 (4-7)*

Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23° C.+/-2°. The minimum temperature for this batch was low at 19°C.

TCLP Extraction
TCLP Extraction
TCLP Extraction
TCLP Extraction

Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23° C.+/-2°. The minimum temperature for this batch was low at 20°C°C.

TCLP Extraction

SB31711-02 *B-6 (19-21)*

Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23° C.+/-2°. The minimum temperature for this batch was low at 20°C.

TCLP Extraction
TCLP Extraction

SW846 1311/6010C

Laboratory Control Samples:

1114625 BS/BSD

Selenium percent recoveries (117/119) are outside individual acceptance criteria (85-115), but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

B-6 (19-21)

SW846 1311/6010C

Duplicates:

1114456-DUP1 *Source: SB31711-01*

The RPD exceeded the QC control limits; however precision is demonstrated with acceptable RPD values for MS/MSD.

Lead

SW846 1311/8260C

Calibration:

S106527-ICV1

Analyte percent recovery is outside individual acceptance criteria (70-130).

Carbon tetrachloride (132%)

This affected the following samples:

1114742-BLK1
1114742-BLK2
1114742-BS1
1114742-BSD1
B-6 (4-7)
S106569-CCV1

Laboratory Control Samples:

1114742 BS

2-Butanone (MEK) percent recovery 133 (70-130) is outside individual acceptance criteria, but within overall method allowances.
All reported results of the following samples are considered to have a potentially high bias:

B-6 (4-7)

Carbon tetrachloride percent recovery 143 (70-130) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

B-6 (4-7)

Samples:

S106569-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

Carbon tetrachloride (43.7%)

This affected the following samples:

1114742-BLK1
1114742-BLK2
1114742-BS1
1114742-BSD1
B-6 (4-7)

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-6 (4-7)	[none]	Soil	18-Jul-11 10:30	19-Jul-11
SB31711-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
	TCLP Extraction	Completed	ExLb	N/A		1	SW846 1311	20-Jul-11	21-Jul-11	JRF	1114219	X
TCLP Volatile Organic Compounds by 8260B (TCL)												
Prepared by method SW846 5030 Water MS					Initial weight: 5 ml							
71-43-2	Benzene	BRL		µg/l	5.0	5	SW846 1311/8260C	27-Jul-11	27-Jul-11	eq	1114742	
78-93-3	2-Butanone (MEK)	BRL		µg/l	50.0	5	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL		µg/l	5.0	5	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
67-66-3	Chloroform	BRL		µg/l	5.0	5	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
79-01-6	Trichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL		µg/l	5.0	5	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*100*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*96*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*98*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*103*			*70-130 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GCMS												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	22-Jul-11	23-Jul-11	JRF	1114429	X
	TCLP Extraction	Completed	ExL	N/A		1	"	22-Jul-11	23-Jul-11	"	1114427	X
TCLP Semivolatiles by SW846 1311/8270C (TCL)												
Prepared by method SW846 3535												
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	5.00	1	SW846 1311/8270D	25-Jul-11	27-Jul-11	ML	1114498	X
121-14-2	2,4-Dinitrotoluene	BRL		µg/l	5.00	1	"	"	"	"	"	X
118-74-1	Hexachlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-68-3	Hexachlorobutadiene	BRL		µg/l	5.00	1	"	"	"	"	"	X
67-72-1	Hexachloroethane	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-48-7	2-Methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
108-39-4, 106-44-5	3 & 4-Methylphenol	BRL		µg/l	10.0	1	"	"	"	"	"	X
98-95-3	Nitrobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-86-5	Pentachlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
110-86-1	Pyridine	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-95-4	2,4,5-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
88-06-2	2,4,6-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
Surrogate recoveries:												
321-60-8	*2-Fluorobiphenyl*	*89*			*30-130 %*		"	"	"	"	"	
367-12-4	*2-Fluorophenol*	*67*			*30-130 %*		"	"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*62*			*30-130 %*		"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*92*			*30-130 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GC												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	22-Jul-11	23-Jul-11	JRF	1114431	X
TCLP Pesticides by SW846 1311/8081A												
Prepared by method SW846 3535												
58-89-9	gamma-BHC (Lindane)	BRL		µg/l	0.030	1	SW846 1311/8081B	25-Jul-11	26-Jul-11	DS	1114496	X
76-44-8	Heptachlor	BRL		µg/l	0.030	1	"	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-6 (4-7)	[none]	Soil	18-Jul-11 10:30	19-Jul-11
SB31711-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Semivolatile Organic Compounds by GC												
TCLP Pesticides by SW846 1311/8081A												
Prepared by method SW846 3535												
1024-57-3	Heptachlor epoxide	BRL		µg/l	0.030	1	SW846 1311/8081B	25-Jul-11	26-Jul-11	DS	1114496	X
60-57-1	Dieldrin	BRL		µg/l	0.020	1	"	"	"	"	"	X
72-55-9	4,4'-DDE (p,p')	BRL		µg/l	0.030	1	"	"	"	"	"	X
72-20-8	Endrin	BRL		µg/l	0.030	1	"	"	"	"	"	X
72-54-8	4,4'-DDD (p,p')	BRL		µg/l	0.030	1	"	"	"	"	"	X
50-29-3	4,4'-DDT (p,p')	BRL		µg/l	0.030	1	"	"	"	"	"	X
72-43-5	Methoxychlor	BRL		µg/l	0.030	1	"	"	"	"	"	X
53494-70-5	Endrin ketone	BRL		µg/l	0.020	1	"	"	"	"	"	X
7421-93-4	Endrin aldehyde	BRL		µg/l	0.020	1	"	"	"	"	"	X
8001-35-2	Toxaphene	BRL		µg/l	0.350	1	"	"	"	"	"	X
57-74-9	Chlordane	BRL		µg/l	0.070	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*85*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*76*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*95*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*84*			*30-150 %*		"	"	"	"	"	
Polychlorinated Biphenyls by SW846 8082												
Prepared by method SW846 3545A												
12674-11-2	Aroclor-1016	BRL		µg/kg dry	22.9	1	SW846 8082A	20-Jul-11	20-Jul-11	IMR	1114126	X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	22.9	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	22.9	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	22.9	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	22.9	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	BRL		µg/kg dry	22.9	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	BRL		µg/kg dry	22.9	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	22.9	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	22.9	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*105*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*110*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*90*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*80*			*30-150 %*		"	"	"	"	"	
TCLP Herbicides by SW846 1311/8151A												
Prepared by method SW846 3535									Methylation date: 25-Jul-11			
93-72-1	2,4,5-TP (Silvex)	BRL		µg/l	0.100	1	SW846 1311/8151A	25-Jul-11	26-Jul-11	TG	1114497	X
94-75-7	2,4-D	BRL		µg/l	0.100	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*56*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*51*			*30-150 %*		"	"	"	"	"	
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	22-Jul-11	23-Jul-11	JRF	1114433	X
7440-22-4	Silver	BRL		mg/l	0.0100	1	SW846 1311/6010C	23-Jul-11	26-Jul-11	ARF/E	1114456	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-6 (4-7) SB31711-01	[none]	Soil	18-Jul-11 10:30	19-Jul-11

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0080	1	SW846 1311/6010C	23-Jul-11	26-Jul-11	ARF/E	1114456	X
7440-39-3	Barium	0.278		mg/l	0.140	1	"	"	"	"	"	X
7440-43-9	Cadmium	BRL		mg/l	0.0050	1	"	"	"	"	"	X
7440-47-3	Chromium	BRL		mg/l	0.0100	1	"	"	"	"	"	X
7439-97-6	Mercury	BRL		mg/l	0.00020	1	SW846 1311/7470A	"	25-Jul-11	EDT	1114457	X
7439-92-1	Lead	0.0162		mg/l	0.0150	1	SW846 1311/6010C	"	26-Jul-11	EDT	1114456	X
7782-49-2	Selenium	BRL		mg/l	0.0300	1	"	"	26-Jul-11	"	"	X
General Chemistry Parameters												
	% Solids	86.3		%		1	SM2540 G Mod.	19-Jul-11	19-Jul-11	DT	1114035	
Toxicity Characteristics												
	Ignitability by Definition	Negative	IgHT	N/A		1	SW846 1030	22-Jul-11 11:00	22-Jul-11 11:00	BD	1114421	X
	pH	8.03	pH	pH Units		1	SW846 9045C	20-Jul-11 17:30	20-Jul-11 17:30	JLH	1114199	X
Reactivity Cyanide/Sulfide												
Prepared by method General Preparation												
	Reactivity	Nonreactive		mg/kg dry		1	SW846 Ch. 7.3	20-Jul-11	20-Jul-11	BD	1114197	X
	Reactive Cyanide	BRL		mg/kg dry	24.0	1	"	"	"	"	"	X
	Reactive Sulfide	BRL		mg/kg dry	47.9	1	"	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-6 (19-21)	[none]	Soil	18-Jul-11 15:00	19-Jul-11
SB31711-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Semivolatile Organic Compounds by GCMS												
	TCLP Extraction	Completed	ExLa	N/A		1	SW846 1311	25-Jul-11	26-Jul-11	JRF	1114577	X
TCLP Semivolatiles by SW846 1311/8270C (TCL)												
Prepared by method SW846 3535												
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	5.00	1	SW846 1311/8270D	26-Jul-11	27-Jul-11	ML	1114665	X
121-14-2	2,4-Dinitrotoluene	BRL		µg/l	5.00	1	"	"	"	"	"	X
118-74-1	Hexachlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-68-3	Hexachlorobutadiene	BRL		µg/l	5.00	1	"	"	"	"	"	X
67-72-1	Hexachloroethane	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-48-7	2-Methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
108-39-4, 106-44-5	3 & 4-Methylphenol	BRL		µg/l	10.0	1	"	"	"	"	"	X
98-95-3	Nitrobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-86-5	Pentachlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
110-86-1	Pyridine	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-95-4	2,4,5-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
88-06-2	2,4,6-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
Surrogate recoveries:												
321-60-8	*2-Fluorobiphenyl*	*79*			*30-130 %*		"	"	"	"	"	
367-12-4	*2-Fluorophenol*	*58*			*30-130 %*		"	"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*54*			*30-130 %*		"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*79*			*30-130 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GC												
Polychlorinated Biphenyls by SW846 8082												
Prepared by method SW846 3545A												
12674-11-2	Aroclor-1016	BRL		µg/kg dry	22.3	1	SW846 8082A	20-Jul-11	20-Jul-11	IMR	1114126	X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	22.3	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	22.3	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	22.3	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	22.3	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	BRL		µg/kg dry	22.3	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	BRL		µg/kg dry	22.3	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	22.3	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	22.3	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*105*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*115*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*85*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*90*			*30-150 %*		"	"	"	"	"	
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
	TCLP Extraction	Completed	ExLa	N/A		1	SW846 1311	25-Jul-11	26-Jul-11	JRF	1114578	X
7440-22-4	Silver	BRL		mg/l	0.0100	1	SW846 1311/6010C	26-Jul-11	28-Jul-11	ARF	1114625	X
7440-38-2	Arsenic	BRL		mg/l	0.0080	1	"	"	"	"	"	X
7440-39-3	Barium	0.333		mg/l	0.0100	1	"	"	"	"	"	X
7440-43-9	Cadmium	BRL		mg/l	0.0050	1	"	"	"	"	"	X
7440-47-3	Chromium	BRL		mg/l	0.0100	1	"	"	"	"	"	X
7439-97-6	Mercury	BRL		mg/l	0.00020	1	SW846 1311/7470A	"	27-Jul-11	EDT	1114626	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-6 (19-21)	[none]	Soil	18-Jul-11 15:00	19-Jul-11
SB31711-02				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
7439-92-1	Lead	BRL		mg/l	0.0150	1	SW846 1311/6010C	26-Jul-11	28-Jul-11	ARF	1114625	X
7782-49-2	Selenium	BRL		mg/l	0.0300	1	"	"	"	"	"	X
General Chemistry Parameters												
	% Solids	87.0		%		1	SM2540 G Mod.	19-Jul-11	19-Jul-11	DT	1114035	

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114742 - SW846 5030 Water MS										
Blank (1114742-BLK1)						Prepared & Analyzed: 27-Jul-11				
Benzene	BRL		µg/l	1.0						
2-Butanone (MEK)	BRL		µg/l	10.0						
Carbon tetrachloride	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
Chloroform	BRL		µg/l	1.0						
1,2-Dichloroethane	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Tetrachloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Vinyl chloride	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*29.2*		µg/l		*30.0*		*97*	*70-130*		
Surrogate: Toluene-d8	*29.0*		µg/l		*30.0*		*97*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*29.9*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: Dibromofluoromethane	*31.0*		µg/l		*30.0*		*103*	*70-130*		
Blank (1114742-BLK2)						Prepared: 27-Jul-11 Analyzed: 28-Jul-11				
Benzene	BRL		µg/l	5.0						
2-Butanone (MEK)	BRL		µg/l	50.0						
Carbon tetrachloride	BRL		µg/l	5.0						
Chlorobenzene	BRL		µg/l	5.0						
Chloroform	BRL		µg/l	5.0						
1,2-Dichloroethane	BRL		µg/l	5.0						
1,1-Dichloroethene	BRL		µg/l	5.0						
Tetrachloroethene	BRL		µg/l	5.0						
Trichloroethene	BRL		µg/l	5.0						
Vinyl chloride	BRL		µg/l	5.0						
Surrogate: 4-Bromofluorobenzene	*28.7*		µg/l		*30.0*		*96*	*70-130*		
Surrogate: Toluene-d8	*28.5*		µg/l		*30.0*		*95*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*30.9*		µg/l		*30.0*		*103*	*70-130*		
Surrogate: Dibromofluoromethane	*32.0*		µg/l		*30.0*		*107*	*70-130*		
LCS (1114742-BS1)						Prepared & Analyzed: 27-Jul-11				
Benzene	20.4		µg/l		20.0		102	70-130		
2-Butanone (MEK)	26.6		µg/l		20.0		133	70-130		
Carbon tetrachloride	28.6	QC2	µg/l		20.0		143	70-130		
Chlorobenzene	19.3		µg/l		20.0		97	70-130		
Chloroform	19.4		µg/l		20.0		97	70-130		
1,2-Dichloroethane	19.4		µg/l		20.0		97	70-130		
1,1-Dichloroethene	22.2		µg/l		20.0		111	70-130		
Tetrachloroethene	20.9		µg/l		20.0		104	70-130		
Trichloroethene	21.0		µg/l		20.0		105	70-130		
Vinyl chloride	25.0		µg/l		20.0		125	70-130		
Surrogate: 4-Bromofluorobenzene	*30.5*		µg/l		*30.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*29.8*		µg/l		*30.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*28.8*		µg/l		*30.0*		*96*	*70-130*		
Surrogate: Dibromofluoromethane	*31.1*		µg/l		*30.0*		*104*	*70-130*		
LCS Dup (1114742-BSD1)						Prepared & Analyzed: 27-Jul-11				
Benzene	20.4		µg/l		20.0		102	70-130	0.1	30
2-Butanone (MEK)	26.2		µg/l		20.0		131	70-130	2	30
Carbon tetrachloride	27.9	QC2	µg/l		20.0		139	70-130	3	30
Chlorobenzene	19.5		µg/l		20.0		97	70-130	0.8	30
Chloroform	19.3		µg/l		20.0		97	70-130	0.3	30

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114742 - SW846 5030 Water MS										
LCS Dup (1114742-BSD1)					Prepared & Analyzed: 27-Jul-11					
1,2-Dichloroethane	19.7		µg/l		20.0		99	70-130	2	30
1,1-Dichloroethene	22.8		µg/l		20.0		114	70-130	2	30
Tetrachloroethene	20.9		µg/l		20.0		104	70-130	0.1	30
Trichloroethene	21.2		µg/l		20.0		106	70-130	0.6	30
Vinyl chloride	24.1		µg/l		20.0		121	70-130	4	30
Surrogate: 4-Bromofluorobenzene	*30.1*		µg/l		*30.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*29.7*		µg/l		*30.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*28.3*		µg/l		*30.0*		*94*	*70-130*		
Surrogate: Dibromofluoromethane	*30.7*		µg/l		*30.0*		*102*	*70-130*		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114498 - SW846 3535										
Blank (1114498-BLK1)					Prepared: 25-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	BRL		µg/l	5.00						
2,4-Dinitrotoluene	BRL		µg/l	5.00						
Hexachlorobenzene	BRL		µg/l	5.00						
Hexachlorobutadiene	BRL		µg/l	5.00						
Hexachloroethane	BRL		µg/l	5.00						
2-Methylphenol	BRL		µg/l	5.00						
3 & 4-Methylphenol	BRL		µg/l	10.0						
Nitrobenzene	BRL		µg/l	5.00						
Pentachlorophenol	BRL		µg/l	5.00						
Pyridine	BRL		µg/l	5.00						
2,4,5-Trichlorophenol	BRL		µg/l	5.00						
2,4,6-Trichlorophenol	BRL		µg/l	5.00						
Surrogate: 2-Fluorobiphenyl	*44.0*		µg/l		*55.6*		*79*	*30-130*		
Surrogate: 2-Fluorophenol	*32.3*		µg/l		*55.6*		*58*	*30-130*		
Surrogate: Nitrobenzene-d5	*30.4*		µg/l		*55.6*		*55*	*30-130*		
Surrogate: Terphenyl-dl4	*45.9*		µg/l		*55.6*		*83*	*30-130*		
LCS (1114498-BS1)					Prepared: 25-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	37.8		µg/l	5.00	55.6		68	40-140		
2,4-Dinitrotoluene	43.6		µg/l	5.00	55.6		78	40-140		
Hexachlorobenzene	50.3		µg/l	5.00	55.6		91	40-140		
Hexachlorobutadiene	36.6		µg/l	5.00	55.6		66	40-140		
Hexachloroethane	31.3		µg/l	5.00	55.6		56	40-140		
2-Methylphenol	34.9		µg/l	5.00	55.6		63	30-130		
3 & 4-Methylphenol	35.6		µg/l	10.0	55.6		64	40-130		
Nitrobenzene	26.6		µg/l	5.00	55.6		48	40-140		
Pentachlorophenol	44.3		µg/l	5.00	55.6		80	30-130		
Pyridine	25.2		µg/l	5.00	55.6		45	40-140		
2,4,5-Trichlorophenol	44.1		µg/l	5.00	55.6		79	30-130		
2,4,6-Trichlorophenol	41.9		µg/l	5.00	55.6		75	30-130		
Surrogate: 2-Fluorobiphenyl	*47.1*		µg/l		*55.6*		*85*	*30-130*		
Surrogate: 2-Fluorophenol	*40.2*		µg/l		*55.6*		*72*	*15-110*		
Surrogate: Nitrobenzene-d5	*31.4*		µg/l		*55.6*		*57*	*30-130*		
Surrogate: Terphenyl-dl4	*50.7*		µg/l		*55.6*		*91*	*30-130*		
LCS Dup (1114498-BSD1)					Prepared: 25-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	39.4		µg/l	5.00	55.6		71	40-140	4	20
2,4-Dinitrotoluene	47.9		µg/l	5.00	55.6		86	40-140	9	20
Hexachlorobenzene	52.7		µg/l	5.00	55.6		95	40-140	5	20
Hexachlorobutadiene	38.4		µg/l	5.00	55.6		69	40-140	5	20
Hexachloroethane	33.2		µg/l	5.00	55.6		60	40-140	6	20
2-Methylphenol	36.8		µg/l	5.00	55.6		66	30-130	5	20
3 & 4-Methylphenol	36.6		µg/l	10.0	55.6		66	40-130	3	20
Nitrobenzene	28.0		µg/l	5.00	55.6		50	40-140	5	20
Pentachlorophenol	46.9		µg/l	5.00	55.6		84	30-130	6	20
Pyridine	25.8		µg/l	5.00	55.6		46	40-140	2	20
2,4,5-Trichlorophenol	46.9		µg/l	5.00	55.6		84	30-130	6	20
2,4,6-Trichlorophenol	44.4		µg/l	5.00	55.6		80	30-130	6	20
Surrogate: 2-Fluorobiphenyl	*48.7*		µg/l		*55.6*		*88*	*30-130*		
Surrogate: 2-Fluorophenol	*41.3*		µg/l		*55.6*		*74*	*15-110*		
Surrogate: Nitrobenzene-d5	*32.4*		µg/l		*55.6*		*58*	*30-130*		
Surrogate: Terphenyl-dl4	*52.3*		µg/l		*55.6*		*94*	*30-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114498 - SW846 3535										
Duplicate (1114498-DUP1)			**Source: SB31711-01**		Prepared: 25-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	BRL		µg/l	5.00		BRL				50
2,4-Dinitrotoluene	BRL		µg/l	5.00		BRL				50
Hexachlorobenzene	BRL		µg/l	5.00		BRL				50
Hexachlorobutadiene	BRL		µg/l	5.00		BRL				50
Hexachloroethane	BRL		µg/l	5.00		BRL				50
2-Methylphenol	BRL		µg/l	5.00		BRL				50
3 & 4-Methylphenol	BRL		µg/l	10.0		BRL				50
Nitrobenzene	BRL		µg/l	5.00		BRL				50
Pentachlorophenol	BRL		µg/l	5.00		BRL				50
Pyridine	BRL		µg/l	5.00		BRL				50
2,4,5-Trichlorophenol	BRL		µg/l	5.00		BRL				50
2,4,6-Trichlorophenol	BRL		µg/l	5.00		BRL				50
Surrogate: 2-Fluorobiphenyl	*43.2*		µg/l		*52.6*		*82*	*30-130*		
Surrogate: 2-Fluorophenol	*31.4*		µg/l		*52.6*		*60*	*30-130*		
Surrogate: Nitrobenzene-d5	*29.4*		µg/l		*52.6*		*56*	*30-130*		
Surrogate: Terphenyl-dl4	*43.3*		µg/l		*52.6*		*82*	*30-130*		
Batch 1114665 - SW846 3535										
Blank (1114665-BLK1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	BRL		µg/l	5.00						
2,4-Dinitrotoluene	BRL		µg/l	5.00						
Hexachlorobenzene	BRL		µg/l	5.00						
Hexachlorobutadiene	BRL		µg/l	5.00						
Hexachloroethane	BRL		µg/l	5.00						
2-Methylphenol	BRL		µg/l	5.00						
3 & 4-Methylphenol	BRL		µg/l	10.0						
Nitrobenzene	BRL		µg/l	5.00						
Pentachlorophenol	BRL		µg/l	5.00						
Pyridine	BRL		µg/l	5.00						
2,4,5-Trichlorophenol	BRL		µg/l	5.00						
2,4,6-Trichlorophenol	BRL		µg/l	5.00						
Surrogate: 2-Fluorobiphenyl	*52.5*		µg/l		*57.1*		*92*	*30-130*		
Surrogate: 2-Fluorophenol	*39.6*		µg/l		*57.1*		*69*	*30-130*		
Surrogate: Nitrobenzene-d5	*37.0*		µg/l		*57.1*		*65*	*30-130*		
Surrogate: Terphenyl-dl4	*53.2*		µg/l		*57.1*		*93*	*30-130*		
LCS (1114665-BS1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	37.9		µg/l	5.00	55.6		68	40-140		
2,4-Dinitrotoluene	48.8		µg/l	5.00	55.6		88	40-140		
Hexachlorobenzene	51.2		µg/l	5.00	55.6		92	40-140		
Hexachlorobutadiene	37.3		µg/l	5.00	55.6		67	40-140		
Hexachloroethane	31.8		µg/l	5.00	55.6		57	40-140		
2-Methylphenol	34.3		µg/l	5.00	55.6		62	30-130		
3 & 4-Methylphenol	35.2		µg/l	10.0	55.6		63	40-130		
Nitrobenzene	26.2		µg/l	5.00	55.6		47	40-140		
Pentachlorophenol	45.2		µg/l	5.00	55.6		81	30-130		
Pyridine	24.1		µg/l	5.00	55.6		43	40-140		
2,4,5-Trichlorophenol	44.7		µg/l	5.00	55.6		80	30-130		
2,4,6-Trichlorophenol	42.2		µg/l	5.00	55.6		76	30-130		
Surrogate: 2-Fluorobiphenyl	*52.3*		µg/l		*55.6*		*94*	*30-130*		
Surrogate: 2-Fluorophenol	*43.7*		µg/l		*55.6*		*79*	*15-110*		
Surrogate: Nitrobenzene-d5	*33.9*		µg/l		*55.6*		*61*	*30-130*		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114665 - SW846 3535										
LCS (1114665-BS1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
Surrogate: Terphenyl-dl4	*55.9*		µg/l		*55.6*		*101*	*30-130*		
LCS Dup (1114665-BSD1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	40.2		µg/l	5.00	55.6		72	40-140	6	20
2,4-Dinitrotoluene	51.6		µg/l	5.00	55.6		93	40-140	6	20
Hexachlorobenzene	54.2		µg/l	5.00	55.6		98	40-140	6	20
Hexachlorobutadiene	39.6		µg/l	5.00	55.6		71	40-140	6	20
Hexachloroethane	34.0		µg/l	5.00	55.6		61	40-140	7	20
2-Methylphenol	36.6		µg/l	5.00	55.6		66	30-130	6	20
3 & 4-Methylphenol	37.8		µg/l	10.0	55.6		68	40-130	7	20
Nitrobenzene	27.8		µg/l	5.00	55.6		50	40-140	6	20
Pentachlorophenol	47.1		µg/l	5.00	55.6		85	30-130	4	20
Pyridine	27.9		µg/l	5.00	55.6		50	40-140	14	20
2,4,5-Trichlorophenol	48.3		µg/l	5.00	55.6		87	30-130	8	20
2,4,6-Trichlorophenol	44.5		µg/l	5.00	55.6		80	30-130	5	20
Surrogate: 2-Fluorobiphenyl	*48.9*		µg/l		*55.6*		*88*	*30-130*		
Surrogate: 2-Fluorophenol	*41.6*		µg/l		*55.6*		*75*	*15-110*		
Surrogate: Nitrobenzene-d5	*32.1*		µg/l		*55.6*		*58*	*30-130*		
Surrogate: Terphenyl-dl4	*52.3*		µg/l		*55.6*		*94*	*30-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114126 - SW846 3545A										
Blank (1114126-BLK1)					Prepared & Analyzed: 20-Jul-11					
Aroclor-1016	BRL		µg/kg wet	20.0						
Aroclor-1016 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1221	BRL		µg/kg wet	20.0						
Aroclor-1221 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1232	BRL		µg/kg wet	20.0						
Aroclor-1232 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1242	BRL		µg/kg wet	20.0						
Aroclor-1242 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1248	BRL		µg/kg wet	20.0						
Aroclor-1248 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1254	BRL		µg/kg wet	20.0						
Aroclor-1254 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1260	BRL		µg/kg wet	20.0						
Aroclor-1260 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1262	BRL		µg/kg wet	20.0						
Aroclor-1262 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1268	BRL		µg/kg wet	20.0						
Aroclor-1268 [2C]	BRL		µg/kg wet	20.0						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*19.0*		µg/kg wet		*20.0*		*95*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*19.0*		µg/kg wet		*20.0*		*95*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*23.0*		µg/kg wet		*20.0*		*115*	*30-150*		
LCS (1114126-BS1)					Prepared & Analyzed: 20-Jul-11					
Aroclor-1016	261		µg/kg wet	20.0	250		104	50-140		
Aroclor-1016 [2C]	270		µg/kg wet	20.0	250		108	50-140		
Aroclor-1260	242		µg/kg wet	20.0	250		97	50-140		
Aroclor-1260 [2C]	257		µg/kg wet	20.0	250		103	50-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*24.0*		µg/kg wet		*20.0*		*120*	*30-150*		
LCS Dup (1114126-BSD1)					Prepared & Analyzed: 20-Jul-11					
Aroclor-1016	266		µg/kg wet	20.0	250		106	50-140	2	30
Aroclor-1016 [2C]	265		µg/kg wet	20.0	250		106	50-140	2	30
Aroclor-1260	242		µg/kg wet	20.0	250		97	50-140	0	30
Aroclor-1260 [2C]	267		µg/kg wet	20.0	250		107	50-140	4	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*25.0*		µg/kg wet		*20.0*		*125*	*30-150*		
Batch 1114496 - SW846 3535										
Blank (1114496-BLK1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
gamma-BHC (Lindane)	BRL		µg/l	0.033						
gamma-BHC (Lindane) [2C]	BRL		µg/l	0.033						
Heptachlor	BRL		µg/l	0.033						
Heptachlor [2C]	BRL		µg/l	0.033						
Heptachlor epoxide	BRL		µg/l	0.033						
Heptachlor epoxide [2C]	BRL		µg/l	0.033						
Dieldrin	BRL		µg/l	0.022						
Dieldrin [2C]	BRL		µg/l	0.022						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114496 - SW846 3535										
Blank (1114496-BLK1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
4,4'-DDE (p,p')	BRL		µg/l	0.033						
4,4'-DDE (p,p') [2C]	BRL		µg/l	0.033						
Endrin	BRL		µg/l	0.033						
Endrin [2C]	BRL		µg/l	0.033						
4,4'-DDD (p,p')	BRL		µg/l	0.033						
4,4'-DDD (p,p') [2C]	BRL		µg/l	0.033						
4,4'-DDT (p,p')	BRL		µg/l	0.033						
4,4'-DDT (p,p') [2C]	BRL		µg/l	0.033						
Methoxychlor	BRL		µg/l	0.033						
Methoxychlor [2C]	BRL		µg/l	0.033						
Endrin ketone	BRL		µg/l	0.022						
Endrin ketone [2C]	BRL		µg/l	0.022						
Endrin aldehyde	BRL		µg/l	0.022						
Endrin aldehyde [2C]	BRL		µg/l	0.022						
Toxaphene	BRL		µg/l	0.389						
Toxaphene [2C]	BRL		µg/l	0.389						
Chlordane	BRL		µg/l	0.078						
Chlordane [2C]	BRL		µg/l	0.078						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.203*		µg/l		*0.222*		*91*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.209*		µg/l		*0.222*		*94*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.211*		µg/l		*0.222*		*95*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.233*		µg/l		*0.222*		*105*	*30-150*		
LCS (1114496-BS1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
gamma-BHC (Lindane)	0.420		µg/l	0.030	0.500		84	50-120		
gamma-BHC (Lindane) [2C]	0.405		µg/l	0.030	0.500		81	50-120		
Heptachlor	0.451		µg/l	0.030	0.500		90	40-140		
Heptachlor [2C]	0.430		µg/l	0.030	0.500		86	40-140		
Heptachlor epoxide	0.425		µg/l	0.030	0.500		85	50-140		
Heptachlor epoxide [2C]	0.415		µg/l	0.030	0.500		83	50-140		
Dieldrin	0.446		µg/l	0.020	0.500		89	40-130		
Dieldrin [2C]	0.447		µg/l	0.020	0.500		89	40-130		
4,4'-DDE (p,p')	0.434		µg/l	0.030	0.500		87	50-140		
4,4'-DDE (p,p') [2C]	0.388		µg/l	0.030	0.500		78	50-140		
Endrin	0.534		µg/l	0.030	0.500		107	50-120		
Endrin [2C]	0.524		µg/l	0.030	0.500		105	50-120		
4,4'-DDD (p,p')	0.429		µg/l	0.030	0.500		86	40-140		
4,4'-DDD (p,p') [2C]	0.393		µg/l	0.030	0.500		79	40-140		
4,4'-DDT (p,p')	0.463		µg/l	0.030	0.500		93	40-140		
4,4'-DDT (p,p') [2C]	0.477		µg/l	0.030	0.500		95	40-140		
Methoxychlor	0.487		µg/l	0.030	0.500		97	40-140		
Methoxychlor [2C]	0.490		µg/l	0.030	0.500		98	40-140		
Endrin ketone	0.408		µg/l	0.020	0.500		82	40-140		
Endrin ketone [2C]	0.437		µg/l	0.020	0.500		87	40-140		
Endrin aldehyde	0.305		µg/l	0.020	0.500		61	40-140		
Endrin aldehyde [2C]	0.350		µg/l	0.020	0.500		70	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.153*		µg/l		*0.200*		*77*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.149*		µg/l		*0.200*		*74*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.170*		µg/l		*0.200*		*85*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.170*		µg/l		*0.200*		*85*	*30-150*		
LCS Dup (1114496-BSD1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
gamma-BHC (Lindane)	0.429		µg/l	0.030	0.500		86	50-120	2	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114496 - SW846 3535										
LCS Dup (1114496-BSD1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
gamma-BHC (Lindane) [2C]	0.434		µg/l	0.030	0.500		87	50-120	7	20
Heptachlor	0.449		µg/l	0.030	0.500		90	40-140	0.3	20
Heptachlor [2C]	0.461		µg/l	0.030	0.500		92	40-140	7	20
Heptachlor epoxide	0.427		µg/l	0.030	0.500		85	50-140	0.4	20
Heptachlor epoxide [2C]	0.443		µg/l	0.030	0.500		89	50-140	7	20
Dieldrin	0.447		µg/l	0.020	0.500		89	40-130	0.3	20
Dieldrin [2C]	0.439		µg/l	0.020	0.500		88	40-130	2	20
4,4'-DDE (p,p')	0.436		µg/l	0.030	0.500		87	50-140	0.6	20
4,4'-DDE (p,p') [2C]	0.411		µg/l	0.030	0.500		82	50-140	6	20
Endrin	0.513		µg/l	0.030	0.500		103	50-120	4	20
Endrin [2C]	0.553		µg/l	0.030	0.500		111	50-120	5	20
4,4'-DDD (p,p')	0.434		µg/l	0.030	0.500		87	40-140	1	20
4,4'-DDD (p,p') [2C]	0.412		µg/l	0.030	0.500		82	40-140	5	20
4,4'-DDT (p,p')	0.468		µg/l	0.030	0.500		94	40-140	1	20
4,4'-DDT (p,p') [2C]	0.487		µg/l	0.030	0.500		97	40-140	2	20
Methoxychlor	0.479		µg/l	0.030	0.500		96	40-140	2	20
Methoxychlor [2C]	0.507		µg/l	0.030	0.500		101	40-140	3	20
Endrin ketone	0.412		µg/l	0.020	0.500		82	40-140	1	20
Endrin ketone [2C]	0.459		µg/l	0.020	0.500		92	40-140	5	20
Endrin aldehyde	0.303		µg/l	0.020	0.500		61	40-140	0.7	20
Endrin aldehyde [2C]	0.368		µg/l	0.020	0.500		74	40-140	5	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.155*		µg/l		*0.200*		*78*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.157*		µg/l		*0.200*		*79*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.174*		µg/l		*0.200*		*87*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.195*		µg/l		*0.200*		*98*	*30-150*		
Duplicate (1114496-DUP1)			**Source: SB31711-01**		Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
gamma-BHC (Lindane)	BRL		µg/l	0.033		BRL				30
gamma-BHC (Lindane) [2C]	BRL		µg/l	0.033		BRL				30
Heptachlor	BRL		µg/l	0.033		BRL				30
Heptachlor [2C]	BRL		µg/l	0.033		BRL				30
Heptachlor epoxide	BRL		µg/l	0.033		BRL				30
Heptachlor epoxide [2C]	BRL		µg/l	0.033		BRL				30
Dieldrin	BRL		µg/l	0.022		BRL				30
Dieldrin [2C]	BRL		µg/l	0.022		BRL				30
4,4'-DDE (p,p')	BRL		µg/l	0.033		BRL				30
4,4'-DDE (p,p') [2C]	BRL		µg/l	0.033		BRL				30
Endrin	BRL		µg/l	0.033		BRL				30
Endrin [2C]	BRL		µg/l	0.033		BRL				30
4,4'-DDD (p,p')	BRL		µg/l	0.033		BRL				30
4,4'-DDD (p,p') [2C]	BRL		µg/l	0.033		BRL				30
4,4'-DDT (p,p')	BRL		µg/l	0.033		BRL				30
4,4'-DDT (p,p') [2C]	BRL		µg/l	0.033		BRL				30
Methoxychlor	BRL		µg/l	0.033		BRL				30
Methoxychlor [2C]	BRL		µg/l	0.033		BRL				30
Endrin ketone	BRL		µg/l	0.022		BRL				30
Endrin ketone [2C]	BRL		µg/l	0.022		BRL				30
Endrin aldehyde	BRL		µg/l	0.022		BRL				30
Endrin aldehyde [2C]	BRL		µg/l	0.022		BRL				30
Toxaphene	BRL		µg/l	0.389		BRL				30
Toxaphene [2C]	BRL		µg/l	0.389		BRL				30
Chlordane	BRL		µg/l	0.078		BRL				30

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114496 - SW846 3535										
Duplicate (1114496-DUP1)			**Source: SB31711-01**		Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
Chlordane [2C]	BRL		µg/l	0.078		BRL				30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.193*		µg/l		*0.222*		*87*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.185*		µg/l		*0.222*		*83*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.204*		µg/l		*0.222*		*92*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.211*		µg/l		*0.222*		*95*	*30-150*		
Batch 1114497 - SW846 3535										
Blank (1114497-BLK1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
2,4,5-TP (Silvex)	BRL		µg/l	0.100						
2,4,5-TP (Silvex) [2C]	BRL		µg/l	0.100						
2,4-D	BRL		µg/l	0.100						
2,4-D [2C]	BRL		µg/l	0.100						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.130*		µg/l		*0.222*		*59*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.114*		µg/l		*0.222*		*51*	*30-150*		
LCS (1114497-BS1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
2,4,5-TP (Silvex)	0.281		µg/l	0.100	0.500		56	40-140		
2,4,5-TP (Silvex) [2C]	0.277		µg/l	0.100	0.500		55	40-140		
2,4-D	0.269		µg/l	0.100	0.500		54	40-140		
2,4-D [2C]	0.297		µg/l	0.100	0.500		59	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.140*		µg/l		*0.200*		*70*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.138*		µg/l		*0.200*		*69*	*30-150*		
LCS Dup (1114497-BSD1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
2,4,5-TP (Silvex)	0.290		µg/l	0.100	0.500		58	40-140	3	20
2,4,5-TP (Silvex) [2C]	0.255		µg/l	0.100	0.500		51	40-140	8	20
2,4-D	0.276		µg/l	0.100	0.500		55	40-140	3	20
2,4-D [2C]	0.276		µg/l	0.100	0.500		55	40-140	7	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.134*		µg/l		*0.200*		*67*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.122*		µg/l		*0.200*		*61*	*30-150*		
Duplicate (1114497-DUP1)			**Source: SB31711-01**		Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
2,4,5-TP (Silvex)	BRL		µg/l	0.100		BRL				30
2,4,5-TP (Silvex) [2C]	BRL		µg/l	0.100		BRL				30
2,4-D	BRL		µg/l	0.100		BRL				30
2,4-D [2C]	BRL		µg/l	0.100		BRL				30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.126*		µg/l		*0.204*		*62*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.106*		µg/l		*0.204*		*52*	*30-150*		

TCLP Metals by EPA 1311 & 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114456 - SW846 3010A										
Blank (1114456-BLK1)					Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Selenium	BRL		mg/l	0.0300						
Lead	BRL		mg/l	0.0150						
Silver	BRL		mg/l	0.0100						
Chromium	BRL		mg/l	0.0100						
Cadmium	BRL		mg/l	0.0050						
Arsenic	BRL		mg/l	0.0080						
Barium	BRL		mg/l	0.140						
LCS (1114456-BS1)					Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Selenium	2.64		mg/l	0.0300	2.50		105	85-115		
Lead	2.51		mg/l	0.0150	2.50		100	85-115		
Silver	2.72		mg/l	0.0100	2.50		109	85-115		
Arsenic	2.61		mg/l	0.0080	2.50		104	85-115		
Cadmium	2.86		mg/l	0.0050	2.50		115	85-115		
Chromium	2.68		mg/l	0.0100	2.50		107	85-115		
Barium	2.65		mg/l	0.140	2.50		106	85-115		
LCS Dup (1114456-BSD1)					Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Lead	2.51		mg/l	0.0150	2.50		100	85-115	0.2	20
Selenium	2.62		mg/l	0.0300	2.50		105	85-115	0.7	20
Chromium	2.69		mg/l	0.0100	2.50		108	85-115	0.4	20
Cadmium	2.86		mg/l	0.0050	2.50		114	85-115	0.2	20
Arsenic	2.59		mg/l	0.0080	2.50		103	85-115	0.8	20
Silver	2.72		mg/l	0.0100	2.50		109	85-115	0.1	104
Barium	2.65		mg/l	0.140	2.50		106	85-115	0.1	20
Duplicate (1114456-DUP1)			**Source: SB31711-01**		Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Lead	0.0266	QR6	mg/l	0.0150		0.0162			49	20
Selenium	BRL		mg/l	0.0300		BRL				20
Silver	BRL		mg/l	0.0100		BRL				20
Arsenic	BRL		mg/l	0.0080		BRL				20
Cadmium	BRL		mg/l	0.0050		BRL				20
Chromium	0.0073	J	mg/l	0.0100		0.0084			14	20
Barium	0.291		mg/l	0.140		0.278			5	20
Batch 1114457 - EPA200/SW7000 Series										
Blank (1114457-BLK1)					Prepared: 23-Jul-11 Analyzed: 25-Jul-11					
Mercury	BRL		mg/l	0.00020						
LCS (1114457-BS1)					Prepared: 23-Jul-11 Analyzed: 25-Jul-11					
Mercury	0.00431		mg/l	0.00020	0.00500		86	85-115		
Duplicate (1114457-DUP1)			**Source: SB31711-01**		Prepared: 23-Jul-11 Analyzed: 25-Jul-11					
Mercury	BRL		mg/l	0.00020		BRL				20
Batch 1114625 - SW846 3010A										
Blank (1114625-BLK1)					Prepared: 26-Jul-11 Analyzed: 28-Jul-11					
Lead	BRL		mg/l	0.0150						
Selenium	BRL		mg/l	0.0300						
Silver	BRL		mg/l	0.0100						
Chromium	BRL		mg/l	0.0100						
Cadmium	BRL		mg/l	0.0050						
Arsenic	BRL		mg/l	0.0080						
Barium	BRL		mg/l	0.0100						
LCS (1114625-BS1)					Prepared: 26-Jul-11 Analyzed: 28-Jul-11					
Selenium	2.93	QM9	mg/l	0.0300	2.50		117	85-115		
Lead	2.42		mg/l	0.0150	2.50		97	85-115		

TCLP Metals by EPA 1311 & 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114625 - SW846 3010A										
LCS (1114625-BS1)					Prepared: 26-Jul-11 Analyzed: 28-Jul-11					
Chromium	2.53		mg/l	0.0100	2.50		101	85-115		
Silver	2.65		mg/l	0.0100	2.50		106	85-115		
Arsenic	2.82		mg/l	0.0080	2.50		113	85-115		
Cadmium	2.66		mg/l	0.0050	2.50		106	85-115		
Barium	2.66		mg/l	0.0100	2.50		106	85-115		
LCS Dup (1114625-BSD1)					Prepared: 26-Jul-11 Analyzed: 28-Jul-11					
Selenium	2.97	QM9	mg/l	0.0300	2.50		119	85-115	1	20
Lead	2.38		mg/l	0.0150	2.50		95	85-115	2	20
Silver	2.65		mg/l	0.0100	2.50		106	85-115	0	104
Arsenic	2.85		mg/l	0.0080	2.50		114	85-115	1	20
Cadmium	2.60		mg/l	0.0050	2.50		104	85-115	2	20
Chromium	2.45		mg/l	0.0100	2.50		98	85-115	3	20
Barium	2.66		mg/l	0.0100	2.50		107	85-115	0.2	20
Batch 1114626 - EPA200/SW7000 Series										
Blank (1114626-BLK1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
Mercury	BRL		mg/l	0.00020						
LCS (1114626-BS1)					Prepared: 26-Jul-11 Analyzed: 27-Jul-11					
Mercury	0.00489		mg/l	0.00020	0.00500		98	85-115		

Toxicity Characteristics - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114197 - General Preparation										
Blank (1114197-BLK1)						Prepared & Analyzed: 20-Jul-11				
Reactivity	Nonreactive		mg/kg wet							
Reactive Cyanide	BRL		mg/kg wet	25.0						
Reactive Sulfide	BRL		mg/kg wet	50.0						
Reference (1114197-SRM1)						Prepared & Analyzed: 20-Jul-11				
Reactive Cyanide	2.93		mg/kg wet	25.0	100		3	0-200		
Reference (1114197-SRM2)						Prepared & Analyzed: 20-Jul-11				
Reactive Sulfide	116		mg/kg wet	50.0	6700		2	0-200		
Batch 1114199 - General Preparation										
Reference (1114199-SRM1)						Prepared & Analyzed: 20-Jul-11				
pH	5.97		pH Units		6.00		100	97.5-102.5		
Reference (1114199-SRM2)						Prepared & Analyzed: 20-Jul-11				
pH	5.48		pH Units		5.51		99	92-108		

Semivolatile Organic Compounds by GC - Pesticide Breakdown Report

Analyte(s)	Column	% Breakdown	Limit
Batch S106593			
Performance Mix (S106593-PEM1)			
4,4'-DDT (p,p')	1	0.6	15.0
Endrin	1	1.6	15.0
4,4'-DDT (p,p')	2	0.4	15.0
Endrin	2	1.6	15.0
Performance Mix (S106593-PEM2)			
4,4'-DDT (p,p')	1	3.5	15.0
Endrin	1	3.4	15.0
4,4'-DDT (p,p')	2	3.0	15.0
Endrin	2	3.6	15.0

Notes and Definitions

ExL	Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23°C.+/-2°. The minimum temperature for this batch was low at 19°C.
ExLa	Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23°C.+/-2°. The minimum temperature for this batch was low at 20°C.
ExLb	Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23°C.+/-2°. The minimum temperature for this batch was low at 20°C°C.
IgHT	A hold time of 24 hours has been set to expedite the analyses through the laboratory. However, the hold time for Ignitability is not specified within the method other than to state that the samples should be analyzed as soon as possible.
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
QR6	The RPD exceeded the QC control limits; however precision is demonstrated with acceptable RPD values for MS/MSD.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
pH	The method for pH does not stipulate a specific holding time other than to state that the samples should be analyzed as soon as possible. For aqueous samples the 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous pH samples not analyzed in the field are considered out of hold time at the time of sample receipt. All soil samples are analyzed as soon as possible after sample receipt.

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
June O'Connor
Kimberly Wisk

SB31711

SPECTRUM ANALYTICAL, INC.
Featuring
HANNIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Dave Allwine
STANTEC
5 Dartmouth Dr
Auburn NH 03032
Telephone #: 603-498-4674
Project Mgr. Dave Allwine

Invoice To: STANTEC
5 Dartmouth Dr
Auburn NH 03032
P.O. No.: _____ RQN: _____

Project No.: _____
Site Name: NHDOT memorial Bridge
Location: Badger Island ~~Portsmouth~~ Kittery State: ME
Sampler(s): JJW

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10= _____ 11= _____

List preservative code below:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	TCLP-VOC 8260B	TCLP-SVOC 8270	TCLP-RCRA 8	TCLP Herbicides 8151 Pest 8081	PCBs-8082	Corrosivity Reactivity Flammability			
31711-01	B-6(4-7)	7-18-11	1030	G	SO		3			X	X	X	X	X	X			
-02	B-6(19-21)	7-18-11	1500	G	SO		1			X	X	X	X	X	X			

Containers: # of VOA Vials, # of Amber Glass, # of Clear Glass, # of Plastic
Analyses: TCLP-VOC 8260B, TCLP-SVOC 8270, TCLP-RCRA 8, TCLP Herbicides 8151 Pest 8081, PCBs-8082, Corrosivity Reactivity Flammability

QA/QC Reporting Notes:
* additional charges may apply

MA DEP MCP CAM Report: Yes☐ No☐
CT DPH RCP Report: Yes☐ No☐

QA/QC Reporting Level
☐ Standard ☐ No QC ☐ DQA*
☐ NY ASP A* ☐ NY ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ TIER II* ☐ TIER V*
☐ Other _____

State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	Fed Ex 8603 2959 2630	7-18-11	1630	
[signature]	[signature]	7/19/11	945	2.0

☐ EDD Format _____
☒ E-mail to DAVE.ALLWINE@STANTEC.COM

☐ Ambient ☑ Iced ☐ Refrigerated ☐ Fridge temp ____ °C ☐ Freezer temp ____ °C

Report Date:
30-Jul-11 12:25

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Stantec Consulting Services
5 Dartmouth Drive, Suite 101
Auburn, NH 03032
Attn: Dave Allwine

Project: NHDOT Memorial Bridge - Portsmouth, NH
Project #: [none]

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB31659-01	B-1 (14-16)	Soil	15-Jul-11 11:10	16-Jul-11 10:50

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes.
Please note that this report contains 18 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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CASE NARRATIVE:

The samples were received 9.2 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

These samples do not exhibit the characteristics of reactivity as defined in 40 CFR 261.23, sections (1), (2), (4), and (5); however, Spectrum Analytical, Inc. does not test for detonation, explosive reaction or potential, or forbidden explosives as defined in 40 CFR 261.23, sections (3), (6), (7) and (8).

All VOC soils samples submitted and analyzed in methanol will have a minimum dilution factor of 50. This is the minimum amount of solvent allowed on the instrumentation without causing interference. Additional dilution factors may be required to keep analyte concentration within instrument calibration.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 1030

Samples:

SB31659-01 *B-1 (14-16)*

A hold time of 24 hours has been set to expedite the analyses through the laboratory. However, the hold time for Ignitability is not specified within the method other than to state that the samples should be analyzed as soon as possible.

Ignitability by Definition

SW846 1311

Samples:

SB31659-01 *B-1 (14-16)*

Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23° C.+/-2°. The minimum temperature for this batch was low at 19°C.

TCLP Extraction
TCLP Extraction
TCLP Extraction
TCLP Extraction

Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23° C.+/-2°. The minimum temperature for this batch was low at 20°C°C.

TCLP Extraction

SW846 1311/7470A

Spikes:

1114457-MS1 *Source: SB31659-01*

The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.

Mercury

1114457-MSD1 *Source: SB31659-01*

The RPD exceeded the QC control limits; however precision is demonstrated with acceptable RPD values for batch duplicate.

Mercury

SW846 1311/8260C

SW846 1311/8260C

Calibration:

S106527-ICV1

Analyte percent recovery is outside individual acceptance criteria (70-130).

Carbon tetrachloride (132%)

This affected the following samples:

1114631-BLK1
1114631-BLK2
1114631-BS1
1114631-BSD1
B-1 (14-16)
S106532-CCV1

Samples:

S106532-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

Carbon tetrachloride (37.4%)

This affected the following samples:

1114631-BLK1
1114631-BLK2
1114631-BS1
1114631-BSD1
B-1 (14-16)

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-1 (14-16)	[none]	Soil	15-Jul-11 11:10	16-Jul-11
SB31659-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
	TCLP Extraction	Completed	ExLa	N/A		1	SW846 1311	20-Jul-11	21-Jul-11	JRF	1114219	X
TCLP Volatile Organic Compounds by 8260B (TCL)												
Prepared by method SW846 5030 Water MS					Initial weight: 5 ml							
71-43-2	Benzene	BRL		µg/l	5.0	5	SW846 1311/8260C	26-Jul-11	26-Jul-11	eq	1114631	
78-93-3	2-Butanone (MEK)	BRL		µg/l	50.0	5	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL		µg/l	5.0	5	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
67-66-3	Chloroform	BRL		µg/l	5.0	5	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
79-01-6	Trichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL		µg/l	5.0	5	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*96*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*98*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*106*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*101*			*70-130 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GCMS												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	22-Jul-11	23-Jul-11	JRF	1114429	X
	TCLP Extraction	Completed	ExL	N/A		1	"	22-Jul-11	23-Jul-11	"	1114427	X
TCLP Semivolatiles by SW846 1311/8270C (TCL)												
Prepared by method SW846 3535												
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	5.00	1	SW846 1311/8270D	25-Jul-11	27-Jul-11	ML	1114498	X
121-14-2	2,4-Dinitrotoluene	BRL		µg/l	5.00	1	"	"	"	"	"	X
118-74-1	Hexachlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-68-3	Hexachlorobutadiene	BRL		µg/l	5.00	1	"	"	"	"	"	X
67-72-1	Hexachloroethane	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-48-7	2-Methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
108-39-4, 106-44-5	3 & 4-Methylphenol	BRL		µg/l	10.0	1	"	"	"	"	"	X
98-95-3	Nitrobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-86-5	Pentachlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
110-86-1	Pyridine	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-95-4	2,4,5-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
88-06-2	2,4,6-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
Surrogate recoveries:												
321-60-8	*2-Fluorobiphenyl*	*82*			*30-130 %*		"	"	"	"	"	
367-12-4	*2-Fluorophenol*	*60*			*30-130 %*		"	"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*57*			*30-130 %*		"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*80*			*30-130 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GC												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	22-Jul-11	23-Jul-11	JRF	1114431	X
TCLP Pesticides by SW846 1311/8081A												
Prepared by method SW846 3535												
58-89-9	gamma-BHC (Lindane)	BRL		µg/l	0.032	1	SW846 1311/8081B	25-Jul-11	26-Jul-11	DS	1114496	X
76-44-8	Heptachlor	BRL		µg/l	0.032	1	"	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-1 (14-16)	[none]	Soil	15-Jul-11 11:10	16-Jul-11
SB31659-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Semivolatile Organic Compounds by GC												
TCLP Pesticides by SW846 1311/8081A												
Prepared by method SW846 3535												
1024-57-3	Heptachlor epoxide	BRL		µg/l	0.032	1	SW846 1311/8081B	25-Jul-11	26-Jul-11	DS	1114496	X
60-57-1	Dieldrin	BRL		µg/l	0.021	1	"	"	"	"	"	X
72-55-9	4,4'-DDE (p,p')	BRL		µg/l	0.032	1	"	"	"	"	"	X
72-20-8	Endrin	BRL		µg/l	0.032	1	"	"	"	"	"	X
72-54-8	4,4'-DDD (p,p')	BRL		µg/l	0.032	1	"	"	"	"	"	X
50-29-3	4,4'-DDT (p,p')	BRL		µg/l	0.032	1	"	"	"	"	"	X
72-43-5	Methoxychlor	BRL		µg/l	0.032	1	"	"	"	"	"	X
53494-70-5	Endrin ketone	BRL		µg/l	0.021	1	"	"	"	"	"	X
7421-93-4	Endrin aldehyde	BRL		µg/l	0.021	1	"	"	"	"	"	X
8001-35-2	Toxaphene	BRL		µg/l	0.368	1	"	"	"	"	"	X
57-74-9	Chlordane	BRL		µg/l	0.074	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*79*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*87*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*75*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*87*			*30-150 %*		"	"	"	"	"	
Polychlorinated Biphenyls by SW846 8082												
Prepared by method SW846 3545A												
12674-11-2	Aroclor-1016	BRL		µg/kg dry	25.0	1	SW846 8082A	19-Jul-11	19-Jul-11	IMR	1114008	X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	25.0	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	25.0	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	25.0	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	25.0	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	BRL		µg/kg dry	25.0	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	BRL		µg/kg dry	25.0	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	25.0	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	25.0	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*95*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*110*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*135*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*105*			*30-150 %*		"	"	"	"	"	
TCLP Herbicides by SW846 1311/8151A												
Prepared by method SW846 3535									Methylation date: 25-Jul-11			
93-72-1	2,4,5-TP (Silvex)	BRL		µg/l	0.100	1	SW846 1311/8151A	25-Jul-11	26-Jul-11	TG	1114497	X
94-75-7	2,4-D	BRL		µg/l	0.100	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*61*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*60*			*30-150 %*		"	"	"	"	"	
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	22-Jul-11	23-Jul-11	JRF	1114433	X
7440-22-4	Silver	BRL		mg/l	0.0100	1	SW846 1311/6010C	23-Jul-11	26-Jul-11	ARF/E	1114456	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-1 (14-16)	[none]	Soil	15-Jul-11 11:10	16-Jul-11
SB31659-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0080	1	SW846 1311/6010C	23-Jul-11	26-Jul-11	ARF/E	1114456	X
7440-39-3	Barium	BRL		mg/l	0.140	1	"	"	"	"	"	X
7440-43-9	Cadmium	BRL		mg/l	0.0050	1	"	"	"	"	"	X
7440-47-3	Chromium	BRL		mg/l	0.0100	1	"	"	"	"	"	X
7439-97-6	Mercury	BRL		mg/l	0.00020	1	SW846 1311/7470A	"	25-Jul-11	EDT	1114457	X
7439-92-1	Lead	0.246		mg/l	0.0150	1	SW846 1311/6010C	"	26-Jul-11	LR	1114456	X
7782-49-2	Selenium	BRL		mg/l	0.0300	1	"	"	26-Jul-11	"	"	X
General Chemistry Parameters												
	% Solids	74.7		%		1	SM2540 G Mod.	18-Jul-11	18-Jul-11	DT	1113964	
Toxicity Characteristics												
	Ignitability by Definition	Negative	IgHT	N/A		1	SW846 1030	22-Jul-11 11:00	22-Jul-11 11:00	BD	1114421	X
	pH	7.91	pH	pH Units		1	SW846 9045C	18-Jul-11 13:45	18-Jul-11 13:45	BD	1113930	X
Reactivity Cyanide/Sulfide												
Prepared by method General Preparation												
	Reactivity	Nonreactive		mg/kg dry		1	SW846 Ch. 7.3	20-Jul-11	20-Jul-11	BD	1114197	X
	Reactive Cyanide	BRL		mg/kg dry	24.7	1	"	"	"	"	"	X
	Reactive Sulfide	BRL		mg/kg dry	49.4	1	"	"	"	"	"	X

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114631 - SW846 5030 Water MS										
Blank (1114631-BLK1)						Prepared & Analyzed: 26-Jul-11				
Benzene	BRL		µg/l	1.0						
2-Butanone (MEK)	BRL		µg/l	10.0						
Carbon tetrachloride	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
Chloroform	BRL		µg/l	1.0						
1,2-Dichloroethane	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Tetrachloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Vinyl chloride	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*29.5*		µg/l		*30.0*		*98*	*70-130*		
Surrogate: Toluene-d8	*29.0*		µg/l		*30.0*		*97*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*29.2*		µg/l		*30.0*		*97*	*70-130*		
Surrogate: Dibromofluoromethane	*30.2*		µg/l		*30.0*		*101*	*70-130*		
Blank (1114631-BLK2)						Prepared & Analyzed: 26-Jul-11				
Benzene	BRL		µg/l	5.0						
2-Butanone (MEK)	BRL		µg/l	50.0						
Carbon tetrachloride	BRL		µg/l	5.0						
Chlorobenzene	BRL		µg/l	5.0						
Chloroform	BRL		µg/l	5.0						
1,2-Dichloroethane	BRL		µg/l	5.0						
1,1-Dichloroethene	BRL		µg/l	5.0						
Tetrachloroethene	BRL		µg/l	5.0						
Trichloroethene	BRL		µg/l	5.0						
Vinyl chloride	BRL		µg/l	5.0						
Surrogate: 4-Bromofluorobenzene	*30.3*		µg/l		*30.0*		*101*	*70-130*		
Surrogate: Toluene-d8	*30.2*		µg/l		*30.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*32.2*		µg/l		*30.0*		*107*	*70-130*		
Surrogate: Dibromofluoromethane	*30.5*		µg/l		*30.0*		*102*	*70-130*		
LCS (1114631-BS1)						Prepared & Analyzed: 26-Jul-11				
Benzene	20.4		µg/l		20.0		102	70-130		
2-Butanone (MEK)	23.2		µg/l		20.0		116	70-130		
Carbon tetrachloride	25.8		µg/l		20.0		129	70-130		
Chlorobenzene	19.6		µg/l		20.0		98	70-130		
Chloroform	19.3		µg/l		20.0		96	70-130		
1,2-Dichloroethane	18.6		µg/l		20.0		93	70-130		
1,1-Dichloroethene	21.2		µg/l		20.0		106	70-130		
Tetrachloroethene	20.4		µg/l		20.0		102	70-130		
Trichloroethene	19.5		µg/l		20.0		97	70-130		
Vinyl chloride	21.8		µg/l		20.0		109	70-130		
Surrogate: 4-Bromofluorobenzene	*29.4*		µg/l		*30.0*		*98*	*70-130*		
Surrogate: Toluene-d8	*29.0*		µg/l		*30.0*		*97*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*27.7*		µg/l		*30.0*		*92*	*70-130*		
Surrogate: Dibromofluoromethane	*29.5*		µg/l		*30.0*		*98*	*70-130*		
LCS Dup (1114631-BSD1)						Prepared & Analyzed: 26-Jul-11				
Benzene	19.6		µg/l		20.0		98	70-130	4	30
2-Butanone (MEK)	25.4		µg/l		20.0		127	70-130	9	30
Carbon tetrachloride	26.3	QM9	µg/l		20.0		131	70-130	2	30
Chlorobenzene	20.0		µg/l		20.0		100	70-130	2	30
Chloroform	19.0		µg/l		20.0		95	70-130	2	30

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114631 - SW846 5030 Water MS										
LCS Dup (1114631-BSD1)					Prepared & Analyzed: 26-Jul-11					
1,2-Dichloroethane	18.8		µg/l		20.0		94	70-130	0.9	30
1,1-Dichloroethene	21.0		µg/l		20.0		105	70-130	0.8	30
Tetrachloroethene	20.6		µg/l		20.0		103	70-130	1	30
Trichloroethene	20.4		µg/l		20.0		102	70-130	5	30
Vinyl chloride	21.1		µg/l		20.0		106	70-130	3	30
Surrogate: 4-Bromofluorobenzene	*29.6*		µg/l		*30.0*		*99*	*70-130*		
Surrogate: Toluene-d8	*29.3*		µg/l		*30.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*28.6*		µg/l		*30.0*		*95*	*70-130*		
Surrogate: Dibromofluoromethane	*30.3*		µg/l		*30.0*		*101*	*70-130*		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114498 - SW846 3535										
Blank (1114498-BLK1)					Prepared: 25-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	BRL		µg/l	5.00						
2,4-Dinitrotoluene	BRL		µg/l	5.00						
Hexachlorobenzene	BRL		µg/l	5.00						
Hexachlorobutadiene	BRL		µg/l	5.00						
Hexachloroethane	BRL		µg/l	5.00						
2-Methylphenol	BRL		µg/l	5.00						
3 & 4-Methylphenol	BRL		µg/l	10.0						
Nitrobenzene	BRL		µg/l	5.00						
Pentachlorophenol	BRL		µg/l	5.00						
Pyridine	BRL		µg/l	5.00						
2,4,5-Trichlorophenol	BRL		µg/l	5.00						
2,4,6-Trichlorophenol	BRL		µg/l	5.00						
Surrogate: 2-Fluorobiphenyl	*44.0*		µg/l		*55.6*		*79*	*30-130*		
Surrogate: 2-Fluorophenol	*32.3*		µg/l		*55.6*		*58*	*30-130*		
Surrogate: Nitrobenzene-d5	*30.4*		µg/l		*55.6*		*55*	*30-130*		
Surrogate: Terphenyl-dl4	*45.9*		µg/l		*55.6*		*83*	*30-130*		
LCS (1114498-BS1)					Prepared: 25-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	37.8		µg/l	5.00	55.6		68	40-140		
2,4-Dinitrotoluene	43.6		µg/l	5.00	55.6		78	40-140		
Hexachlorobenzene	50.3		µg/l	5.00	55.6		91	40-140		
Hexachlorobutadiene	36.6		µg/l	5.00	55.6		66	40-140		
Hexachloroethane	31.3		µg/l	5.00	55.6		56	40-140		
2-Methylphenol	34.9		µg/l	5.00	55.6		63	30-130		
3 & 4-Methylphenol	35.6		µg/l	10.0	55.6		64	40-130		
Nitrobenzene	26.6		µg/l	5.00	55.6		48	40-140		
Pentachlorophenol	44.3		µg/l	5.00	55.6		80	30-130		
Pyridine	25.2		µg/l	5.00	55.6		45	40-140		
2,4,5-Trichlorophenol	44.1		µg/l	5.00	55.6		79	30-130		
2,4,6-Trichlorophenol	41.9		µg/l	5.00	55.6		75	30-130		
Surrogate: 2-Fluorobiphenyl	*47.1*		µg/l		*55.6*		*85*	*30-130*		
Surrogate: 2-Fluorophenol	*40.2*		µg/l		*55.6*		*72*	*15-110*		
Surrogate: Nitrobenzene-d5	*31.4*		µg/l		*55.6*		*57*	*30-130*		
Surrogate: Terphenyl-dl4	*50.7*		µg/l		*55.6*		*91*	*30-130*		
LCS Dup (1114498-BSD1)					Prepared: 25-Jul-11 Analyzed: 27-Jul-11					
1,4-Dichlorobenzene	39.4		µg/l	5.00	55.6		71	40-140	4	20
2,4-Dinitrotoluene	47.9		µg/l	5.00	55.6		86	40-140	9	20
Hexachlorobenzene	52.7		µg/l	5.00	55.6		95	40-140	5	20
Hexachlorobutadiene	38.4		µg/l	5.00	55.6		69	40-140	5	20
Hexachloroethane	33.2		µg/l	5.00	55.6		60	40-140	6	20
2-Methylphenol	36.8		µg/l	5.00	55.6		66	30-130	5	20
3 & 4-Methylphenol	36.6		µg/l	10.0	55.6		66	40-130	3	20
Nitrobenzene	28.0		µg/l	5.00	55.6		50	40-140	5	20
Pentachlorophenol	46.9		µg/l	5.00	55.6		84	30-130	6	20
Pyridine	25.8		µg/l	5.00	55.6		46	40-140	2	20
2,4,5-Trichlorophenol	46.9		µg/l	5.00	55.6		84	30-130	6	20
2,4,6-Trichlorophenol	44.4		µg/l	5.00	55.6		80	30-130	6	20
Surrogate: 2-Fluorobiphenyl	*48.7*		µg/l		*55.6*		*88*	*30-130*		
Surrogate: 2-Fluorophenol	*41.3*		µg/l		*55.6*		*74*	*15-110*		
Surrogate: Nitrobenzene-d5	*32.4*		µg/l		*55.6*		*58*	*30-130*		
Surrogate: Terphenyl-dl4	*52.3*		µg/l		*55.6*		*94*	*30-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114008 - SW846 3545A										
Blank (1114008-BLK1)					Prepared & Analyzed: 19-Jul-11					
Aroclor-1016	BRL		µg/kg wet	20.0						
Aroclor-1016 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1221	BRL		µg/kg wet	20.0						
Aroclor-1221 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1232	BRL		µg/kg wet	20.0						
Aroclor-1232 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1242	BRL		µg/kg wet	20.0						
Aroclor-1242 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1248	BRL		µg/kg wet	20.0						
Aroclor-1248 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1254	BRL		µg/kg wet	20.0						
Aroclor-1254 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1260	BRL		µg/kg wet	20.0						
Aroclor-1260 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1262	BRL		µg/kg wet	20.0						
Aroclor-1262 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1268	BRL		µg/kg wet	20.0						
Aroclor-1268 [2C]	BRL		µg/kg wet	20.0						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*20.0*		µg/kg wet		*20.0*		*100*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*20.0*		µg/kg wet		*20.0*		*100*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*23.0*		µg/kg wet		*20.0*		*115*	*30-150*		
LCS (1114008-BS1)					Prepared & Analyzed: 19-Jul-11					
Aroclor-1016	263		µg/kg wet	20.0	250		105	50-140		
Aroclor-1016 [2C]	251		µg/kg wet	20.0	250		100	50-140		
Aroclor-1260	248		µg/kg wet	20.0	250		99	50-140		
Aroclor-1260 [2C]	252		µg/kg wet	20.0	250		101	50-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*24.0*		µg/kg wet		*20.0*		*120*	*30-150*		
LCS Dup (1114008-BSD1)					Prepared & Analyzed: 19-Jul-11					
Aroclor-1016	263		µg/kg wet	20.0	250		105	50-140	0	30
Aroclor-1016 [2C]	262		µg/kg wet	20.0	250		105	50-140	4	30
Aroclor-1260	237		µg/kg wet	20.0	250		95	50-140	5	30
Aroclor-1260 [2C]	262		µg/kg wet	20.0	250		105	50-140	4	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*22.0*		µg/kg wet		*20.0*		*110*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*21.0*		µg/kg wet		*20.0*		*105*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*25.0*		µg/kg wet		*20.0*		*125*	*30-150*		
Matrix Spike (1114008-MS1)			**Source: SB31659-01**		Prepared & Analyzed: 19-Jul-11					
Aroclor-1016	335		µg/kg dry	25.7	321	BRL	104	40-135		
Aroclor-1016 [2C]	271		µg/kg dry	25.7	321	BRL	84	40-135		
Aroclor-1260	278		µg/kg dry	25.7	321	BRL	87	40-135		
Aroclor-1260 [2C]	289		µg/kg dry	25.7	321	BRL	90	40-135		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*23.1*		µg/kg dry		*25.7*		*90*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*28.2*		µg/kg dry		*25.7*		*110*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*32.1*		µg/kg dry		*25.7*		*125*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*29.5*		µg/kg dry		*25.7*		*115*	*30-150*		
Matrix Spike Dup (1114008-MSD1)			**Source: SB31659-01**		Prepared & Analyzed: 19-Jul-11					

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114008 - SW846 3545A										
Matrix Spike Dup (1114008-MSD1)			**Source: SB31659-01**		Prepared & Analyzed: 19-Jul-11					
Aroclor-1016	322		µg/kg dry	25.9	324	BRL	99	40-135	5	30
Aroclor-1016 [2C]	276		µg/kg dry	25.9	324	BRL	85	40-135	0.9	30
Aroclor-1260	316		µg/kg dry	25.9	324	BRL	98	40-135	12	30
Aroclor-1260 [2C]	346		µg/kg dry	25.9	324	BRL	107	40-135	17	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*23.3*		µg/kg dry		*25.9*		*90*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*37.6*		µg/kg dry		*25.9*		*145*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*33.7*		µg/kg dry		*25.9*		*130*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*32.4*		µg/kg dry		*25.9*		*125*	*30-150*		
Batch 1114496 - SW846 3535										
Blank (1114496-BLK1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
gamma-BHC (Lindane)	BRL		µg/l	0.033						
gamma-BHC (Lindane) [2C]	BRL		µg/l	0.033						
Heptachlor	BRL		µg/l	0.033						
Heptachlor [2C]	BRL		µg/l	0.033						
Heptachlor epoxide	BRL		µg/l	0.033						
Heptachlor epoxide [2C]	BRL		µg/l	0.033						
Dieldrin	BRL		µg/l	0.022						
Dieldrin [2C]	BRL		µg/l	0.022						
4,4'-DDE (p,p')	BRL		µg/l	0.033						
4,4'-DDE (p,p') [2C]	BRL		µg/l	0.033						
Endrin	BRL		µg/l	0.033						
Endrin [2C]	BRL		µg/l	0.033						
4,4'-DDD (p,p')	BRL		µg/l	0.033						
4,4'-DDD (p,p') [2C]	BRL		µg/l	0.033						
4,4'-DDT (p,p')	BRL		µg/l	0.033						
4,4'-DDT (p,p') [2C]	BRL		µg/l	0.033						
Methoxychlor	BRL		µg/l	0.033						
Methoxychlor [2C]	BRL		µg/l	0.033						
Endrin ketone	BRL		µg/l	0.022						
Endrin ketone [2C]	BRL		µg/l	0.022						
Endrin aldehyde	BRL		µg/l	0.022						
Endrin aldehyde [2C]	BRL		µg/l	0.022						
Toxaphene	BRL		µg/l	0.389						
Toxaphene [2C]	BRL		µg/l	0.389						
Chlordane	BRL		µg/l	0.078						
Chlordane [2C]	BRL		µg/l	0.078						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.203*		µg/l		*0.222*		*91*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.209*		µg/l		*0.222*		*94*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.211*		µg/l		*0.222*		*95*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.233*		µg/l		*0.222*		*105*	*30-150*		
LCS (1114496-BS1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
gamma-BHC (Lindane)	0.420		µg/l	0.030	0.500		84	50-120		
gamma-BHC (Lindane) [2C]	0.405		µg/l	0.030	0.500		81	50-120		
Heptachlor	0.451		µg/l	0.030	0.500		90	40-140		
Heptachlor [2C]	0.430		µg/l	0.030	0.500		86	40-140		
Heptachlor epoxide	0.425		µg/l	0.030	0.500		85	50-140		
Heptachlor epoxide [2C]	0.415		µg/l	0.030	0.500		83	50-140		
Dieldrin	0.446		µg/l	0.020	0.500		89	40-130		
Dieldrin [2C]	0.447		µg/l	0.020	0.500		89	40-130		
4,4'-DDE (p,p')	0.434		µg/l	0.030	0.500		87	50-140		
4,4'-DDE (p,p') [2C]	0.388		µg/l	0.030	0.500		78	50-140		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114496 - SW846 3535										
LCS (1114496-BS1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
Endrin	0.534		µg/l	0.030	0.500		107	50-120		
Endrin [2C]	0.524		µg/l	0.030	0.500		105	50-120		
4,4'-DDD (p,p')	0.429		µg/l	0.030	0.500		86	40-140		
4,4'-DDD (p,p') [2C]	0.393		µg/l	0.030	0.500		79	40-140		
4,4'-DDT (p,p')	0.463		µg/l	0.030	0.500		93	40-140		
4,4'-DDT (p,p') [2C]	0.477		µg/l	0.030	0.500		95	40-140		
Methoxychlor	0.487		µg/l	0.030	0.500		97	40-140		
Methoxychlor [2C]	0.490		µg/l	0.030	0.500		98	40-140		
Endrin ketone	0.408		µg/l	0.020	0.500		82	40-140		
Endrin ketone [2C]	0.437		µg/l	0.020	0.500		87	40-140		
Endrin aldehyde	0.305		µg/l	0.020	0.500		61	40-140		
Endrin aldehyde [2C]	0.350		µg/l	0.020	0.500		70	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.153*		µg/l		*0.200*		*77*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.149*		µg/l		*0.200*		*74*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.170*		µg/l		*0.200*		*85*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.170*		µg/l		*0.200*		*85*	*30-150*		
LCS Dup (1114496-BSD1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
gamma-BHC (Lindane)	0.429		µg/l	0.030	0.500		86	50-120	2	20
gamma-BHC (Lindane) [2C]	0.434		µg/l	0.030	0.500		87	50-120	7	20
Heptachlor	0.449		µg/l	0.030	0.500		90	40-140	0.3	20
Heptachlor [2C]	0.461		µg/l	0.030	0.500		92	40-140	7	20
Heptachlor epoxide	0.427		µg/l	0.030	0.500		85	50-140	0.4	20
Heptachlor epoxide [2C]	0.443		µg/l	0.030	0.500		89	50-140	7	20
Dieldrin	0.447		µg/l	0.020	0.500		89	40-130	0.3	20
Dieldrin [2C]	0.439		µg/l	0.020	0.500		88	40-130	2	20
4,4'-DDE (p,p')	0.436		µg/l	0.030	0.500		87	50-140	0.6	20
4,4'-DDE (p,p') [2C]	0.411		µg/l	0.030	0.500		82	50-140	6	20
Endrin	0.513		µg/l	0.030	0.500		103	50-120	4	20
Endrin [2C]	0.553		µg/l	0.030	0.500		111	50-120	5	20
4,4'-DDD (p,p')	0.434		µg/l	0.030	0.500		87	40-140	1	20
4,4'-DDD (p,p') [2C]	0.412		µg/l	0.030	0.500		82	40-140	5	20
4,4'-DDT (p,p')	0.468		µg/l	0.030	0.500		94	40-140	1	20
4,4'-DDT (p,p') [2C]	0.487		µg/l	0.030	0.500		97	40-140	2	20
Methoxychlor	0.479		µg/l	0.030	0.500		96	40-140	2	20
Methoxychlor [2C]	0.507		µg/l	0.030	0.500		101	40-140	3	20
Endrin ketone	0.412		µg/l	0.020	0.500		82	40-140	1	20
Endrin ketone [2C]	0.459		µg/l	0.020	0.500		92	40-140	5	20
Endrin aldehyde	0.303		µg/l	0.020	0.500		61	40-140	0.7	20
Endrin aldehyde [2C]	0.368		µg/l	0.020	0.500		74	40-140	5	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.155*		µg/l		*0.200*		*78*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.157*		µg/l		*0.200*		*79*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.174*		µg/l		*0.200*		*87*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.195*		µg/l		*0.200*		*98*	*30-150*		
Batch 1114497 - SW846 3535										
Blank (1114497-BLK1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
2,4,5-TP (Silvex)	BRL		µg/l	0.100						
2,4,5-TP (Silvex) [2C]	BRL		µg/l	0.100						
2,4-D	BRL		µg/l	0.100						
2,4-D [2C]	BRL		µg/l	0.100						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.130*		µg/l		*0.222*		*59*	*30-150*		

Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114497 - SW846 3535										
Blank (1114497-BLK1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.114*		µg/l		*0.222*		*51*	*30-150*		
LCS (1114497-BS1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
2,4,5-TP (Silvex)	0.281		µg/l	0.100	0.500		56	40-140		
2,4,5-TP (Silvex) [2C]	0.277		µg/l	0.100	0.500		55	40-140		
2,4-D	0.269		µg/l	0.100	0.500		54	40-140		
2,4-D [2C]	0.297		µg/l	0.100	0.500		59	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.140*		µg/l		*0.200*		*70*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.138*		µg/l		*0.200*		*69*	*30-150*		
LCS Dup (1114497-BSD1)					Prepared: 25-Jul-11 Analyzed: 26-Jul-11					
2,4,5-TP (Silvex)	0.290		µg/l	0.100	0.500		58	40-140	3	20
2,4,5-TP (Silvex) [2C]	0.255		µg/l	0.100	0.500		51	40-140	8	20
2,4-D	0.276		µg/l	0.100	0.500		55	40-140	3	20
2,4-D [2C]	0.276		µg/l	0.100	0.500		55	40-140	7	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.134*		µg/l		*0.200*		*67*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.122*		µg/l		*0.200*		*61*	*30-150*		

TCLP Metals by EPA 1311 & 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114456 - SW846 3010A										
Blank (1114456-BLK1)					Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Selenium	BRL		mg/l	0.0300						
Lead	BRL		mg/l	0.0150						
Chromium	BRL		mg/l	0.0100						
Silver	BRL		mg/l	0.0100						
Arsenic	BRL		mg/l	0.0080						
Cadmium	BRL		mg/l	0.0050						
Barium	BRL		mg/l	0.140						
LCS (1114456-BS1)					Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Selenium	2.64		mg/l	0.0300	2.50		105	85-115		
Lead	2.51		mg/l	0.0150	2.50		100	85-115		
Cadmium	2.86		mg/l	0.0050	2.50		115	85-115		
Arsenic	2.61		mg/l	0.0080	2.50		104	85-115		
Silver	2.72		mg/l	0.0100	2.50		109	85-115		
Chromium	2.68		mg/l	0.0100	2.50		107	85-115		
Barium	2.65		mg/l	0.140	2.50		106	85-115		
LCS Dup (1114456-BSD1)					Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Selenium	2.62		mg/l	0.0300	2.50		105	85-115	0.7	20
Lead	2.51		mg/l	0.0150	2.50		100	85-115	0.2	20
Silver	2.72		mg/l	0.0100	2.50		109	85-115	0.1	104
Arsenic	2.59		mg/l	0.0080	2.50		103	85-115	0.8	20
Cadmium	2.86		mg/l	0.0050	2.50		114	85-115	0.2	20
Chromium	2.69		mg/l	0.0100	2.50		108	85-115	0.4	20
Barium	2.65		mg/l	0.140	2.50		106	85-115	0.1	20
Matrix Spike (1114456-MS1)			**Source: SB31659-01**		Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Lead	2.72		mg/l	0.0150	2.50	0.246	99	75-125		
Selenium	2.62		mg/l	0.0300	2.50	BRL	105	75-125		
Arsenic	2.61		mg/l	0.0080	2.50	0.0050	104	75-125		
Cadmium	2.79		mg/l	0.0050	2.50	BRL	112	75-125		
Chromium	2.95		mg/l	0.0100	2.50	BRL	118	75-125		
Silver	2.30		mg/l	0.0100	2.50	BRL	92	75-125		
Barium	2.74		mg/l	0.140	2.50	0.137	104	75-125		
Matrix Spike Dup (1114456-MSD1)			**Source: SB31659-01**		Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Selenium	2.54		mg/l	0.0300	2.50	BRL	102	75-125	3	20
Lead	2.71		mg/l	0.0150	2.50	0.246	98	75-125	0.5	20
Arsenic	2.57		mg/l	0.0080	2.50	0.0050	103	75-125	1	20
Silver	2.05		mg/l	0.0100	2.50	BRL	82	75-125	12	20
Chromium	2.95		mg/l	0.0100	2.50	BRL	118	75-125	0.2	20
Cadmium	2.78		mg/l	0.0050	2.50	BRL	111	75-125	0.6	20
Barium	2.70		mg/l	0.140	2.50	0.137	103	75-125	1	20
Post Spike (1114456-PS1)			**Source: SB31659-01**		Prepared: 23-Jul-11 Analyzed: 26-Jul-11					
Lead	2.74		mg/l	0.0150	2.50	0.246	100	75-125		
Selenium	2.70		mg/l	0.0300	2.50	BRL	108	75-125		
Silver	2.82		mg/l	0.0100	2.50	BRL	113	75-125		
Arsenic	2.67		mg/l	0.0080	2.50	0.0050	107	75-125		
Cadmium	2.85		mg/l	0.0050	2.50	BRL	114	75-125		
Chromium	3.02		mg/l	0.0100	2.50	BRL	121	75-125		
Barium	2.76		mg/l	0.140	2.50	0.137	105	75-125		
Batch 1114457 - EPA200/SW7000 Series										
Blank (1114457-BLK1)					Prepared: 23-Jul-11 Analyzed: 25-Jul-11					
Mercury	BRL		mg/l	0.00020						
LCS (1114457-BS1)					Prepared: 23-Jul-11 Analyzed: 25-Jul-11					

TCLP Metals by EPA 1311 & 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114457 - EPA200/SW7000 Series										
LCS (1114457-BS1)					Prepared: 23-Jul-11 Analyzed: 25-Jul-11					
Mercury	0.00431		mg/l	0.00020	0.00500		86	85-115		
Matrix Spike (1114457-MS1)			**Source: SB31659-01**		Prepared: 23-Jul-11 Analyzed: 25-Jul-11					
Mercury	0.00349	QM8	mg/l	0.00020	0.00500	0.00014	67	75-125		
Matrix Spike Dup (1114457-MSD1)			**Source: SB31659-01**		Prepared: 23-Jul-11 Analyzed: 25-Jul-11					
Mercury	0.00512	QR7	mg/l	0.00020	0.00500	0.00014	100	75-125	38	20
Post Spike (1114457-PS1)			**Source: SB31659-01**		Prepared: 23-Jul-11 Analyzed: 25-Jul-11					
Mercury	0.00517		mg/l	0.00020	0.00500	0.00014	101	80-120		

Toxicity Characteristics - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1113930 - General Preparation										
Reference (1113930-SRM1)						Prepared & Analyzed: 18-Jul-11				
pH	6.02		pH Units		6.00		100	97.5-102.5		
Reference (1113930-SRM2)						Prepared & Analyzed: 18-Jul-11				
pH	5.57		pH Units		5.51		101	92-108		
Batch 1114197 - General Preparation										
Blank (1114197-BLK1)						Prepared & Analyzed: 20-Jul-11				
Reactivity	Nonreactive		mg/kg wet							
Reactive Cyanide	BRL		mg/kg wet	25.0						
Reactive Sulfide	BRL		mg/kg wet	50.0						
Reference (1114197-SRM1)						Prepared & Analyzed: 20-Jul-11				
Reactive Cyanide	2.93		mg/kg wet	25.0	100		3	0-200		
Reference (1114197-SRM2)						Prepared & Analyzed: 20-Jul-11				
Reactive Sulfide	116		mg/kg wet	50.0	6700		2	0-200		

Semivolatile Organic Compounds by GC - Pesticide Breakdown Report

Analyte(s)	Column	% Breakdown	Limit
Batch S106593			
Performance Mix (S106593-PEM1)			
4,4'-DDT (p,p')	1	0.6	15.0
Endrin	1	1.6	15.0
4,4'-DDT (p,p')	2	0.4	15.0
Endrin	2	1.6	15.0
Performance Mix (S106593-PEM2)			
4,4'-DDT (p,p')	1	3.5	15.0
Endrin	1	3.4	15.0
4,4'-DDT (p,p')	2	3.0	15.0
Endrin	2	3.6	15.0

Notes and Definitions

ExL	Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23°C.+/-2°. The minimum temperature for this batch was low at 19°C.
ExLa	Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23°C.+/-2°. The minimum temperature for this batch was low at 20°C°C.
IgHT	A hold time of 24 hours has been set to expedite the analyses through the laboratory. However, the hold time for Ignitability is not specified within the method other than to state that the samples should be analyzed as soon as possible.
QM8	The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
QR7	The RPD exceeded the QC control limits; however precision is demonstrated with acceptable RPD values for batch duplicate.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
pH	The method for pH does not stipulate a specific holding time other than to state that the samples should be analyzed as soon as possible. For aqueous samples the 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous pH samples not analyzed in the field are considered out of hold time at the time of sample receipt. All soil samples are analyzed as soon as possible after sample receipt.

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Nicole Leja

SB31659 (dj)

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Dave Allwin, STANTEC, 5 Dartmouth Dr, Auburn NH 03032

Project Mgr.: DAVE ALLWIN

Invoice To: STANTEC, 5 Dartmouth Dr, Auburn NH 03032

P.O. No.: _____ RQN: _____

Project No.: _____

Site Name: NHDOT memorial Bridge

Location: Portsmouth State: NH

Sampler(s): JW

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		Full TCLP	PCBs	Corrosivity	reactivity	ignitability				QA Reporting Notes:
31659 01	B-1 (14-16)	7-15-11	1110	G	SO	–		2				X	X	X	X	X				added analysis / client req. 7/18/11 dj

QA Reporting Notes: (check if needed)
- [ ] Provide MA DEP MCP CAM Report
- [ ] Provide CT DPH RCP Report

QA/QC Reporting Level
- [x] Standard
- [ ] No QC
- [ ] Other _____

State specific reporting standards: _____

- [ ] Fax results when available to (_____) _____
- [x] E-mail to DAVE.ALLWIN@STANTEC.COM
- EDD Format _____

Condition upon receipt: [x] Iced [ ] Ambient [ ] °C 9.2

Relinquished by:	Received by:	Date:	Time:
[signature]	Fed ex 8683 2959 2662	7-15-11	1650
Fed ex	[signature]	7/16/11	1050

Report Date:
05-Aug-11 15:29

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Stantec Consulting Services
5 Dartmouth Drive, Suite 101
Auburn, NH 03032
Attn: Dave Allwine

Project: NHDOT Memorial Bridge - Kittery, ME
Project #: 191710867/200

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB31993-01	B-3 (0-2)	Soil	21-Jul-11 11:30	22-Jul-11 09:45

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes.
Please note that this report contains 17 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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CASE NARRATIVE:

The samples were received 16.6 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

These samples do not exhibit the characteristics of reactivity as defined in 40 CFR 261.23, sections (1), (2), (4), and (5); however, Spectrum Analytical, Inc. does not test for detonation, explosive reaction or potential, or forbidden explosives as defined in 40 CFR 261.23, sections (3), (6), (7) and (8).

All VOC soils samples submitted and analyzed in methanol will have a minimum dilution factor of 50. This is the minimum amount of solvent allowed on the instrumentation without causing interference. Additional dilution factors may be required to keep analyte concentration within instrument calibration.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 1030

Samples:

SB31993-01 *B-3 (0-2)*

A hold time of 24 hours has been set to expedite the analyses through the laboratory. However, the hold time for Ignitability is not specified within the method other than to state that the samples should be analyzed as soon as possible.

Ignitability by Definition

SW846 1311

Samples:

SB31993-01 *B-3 (0-2)*

Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23° C.+/-2°. The minimum temperature for this batch was low at 20°C.

TCLP Extraction
TCLP Extraction
TCLP Extraction
TCLP Extraction
TCLP Extraction

SW846 1311/8260C

Calibration:

1107019

Analyte quantified by quadratic equation type calibration.

Vinyl chloride

This affected the following samples:

1115201-BLK1
1115201-BLK2
1115201-BS1
1115201-BSD1
B-3 (0-2)
S106282-ICV1
S106752-CCV1

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-3 (0-2)	191710867/200	Soil	21-Jul-11 11:30	22-Jul-11
SB31993-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	26-Jul-11	27-Jul-11	JRF	1114679	X
TCLP Volatile Organic Compounds by 8260B (TCL)												
Prepared by method SW846 5030 Water MS					Initial weight: 5 ml							
71-43-2	Benzene	BRL		µg/l	5.0	5	SW846 1311/8260C	02-Aug-11	02-Aug-11	naa	1115201	
78-93-3	2-Butanone (MEK)	BRL		µg/l	50.0	5	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL		µg/l	5.0	5	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL		µg/l	5.0	5	"	"	"	"	"	
67-66-3	Chloroform	BRL		µg/l	5.0	5	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	5.0	5	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
79-01-6	Trichloroethene	BRL		µg/l	5.0	5	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL		µg/l	5.0	5	"	"	"	"	"	
Surrogate recoveries:												
460-00-4	*4-Bromofluorobenzene*	*95*			*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*101*			*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*111*			*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*95*			*70-130 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GCMS												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	26-Jul-11	27-Jul-11	JRF	1114687	X
	TCLP Extraction	Completed	ExL	N/A		1	"	26-Jul-11	27-Jul-11	"	1114684	X
TCLP Semivolatiles by SW846 1311/8270C (TCL)												
Prepared by method SW846 3535												
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	5.00	1	SW846 1311/8270D	27-Jul-11	31-Jul-11	MSL	1114775	X
121-14-2	2,4-Dinitrotoluene	BRL		µg/l	5.00	1	"	"	"	"	"	X
118-74-1	Hexachlorobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-68-3	Hexachlorobutadiene	BRL		µg/l	5.00	1	"	"	"	"	"	X
67-72-1	Hexachloroethane	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-48-7	2-Methylphenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
108-39-4, 106-44-5	3 & 4-Methylphenol	BRL		µg/l	10.0	1	"	"	"	"	"	X
98-95-3	Nitrobenzene	BRL		µg/l	5.00	1	"	"	"	"	"	X
87-86-5	Pentachlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
110-86-1	Pyridine	BRL		µg/l	5.00	1	"	"	"	"	"	X
95-95-4	2,4,5-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
88-06-2	2,4,6-Trichlorophenol	BRL		µg/l	5.00	1	"	"	"	"	"	X
Surrogate recoveries:												
321-60-8	*2-Fluorobiphenyl*	*66*			*30-130 %*		"	"	"	"	"	
367-12-4	*2-Fluorophenol*	*81*			*30-130 %*		"	"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*65*			*30-130 %*		"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*70*			*30-130 %*		"	"	"	"	"	
Semivolatile Organic Compounds by GC												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	26-Jul-11	27-Jul-11	JRF	1114686	X
TCLP Pesticides by SW846 1311/8081A												
Prepared by method SW846 3535												
58-89-9	gamma-BHC (Lindane)	BRL		µg/l	0.032	1	SW846 1311/8081B	27-Jul-11	28-Jul-11	DS	1114774	X
76-44-8	Heptachlor	BRL		µg/l	0.032	1	"	"	"	"	"	X

This laboratory report is not valid without an authorized signature on the cover page.

* Reportable Detection Limit BRL = Below Reporting Limit

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-3 (0-2)	191710867/200	Soil	21-Jul-11 11:30	22-Jul-11
SB31993-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Semivolatile Organic Compounds by GC												
TCLP Pesticides by SW846 1311/8081A												
Prepared by method SW846 3535												
1024-57-3	Heptachlor epoxide	BRL		µg/l	0.032	1	SW846 1311/8081B	27-Jul-11	28-Jul-11	DS	1114774	X
60-57-1	Dieldrin	BRL		µg/l	0.021	1	"	"	"	"	"	X
72-55-9	4,4'-DDE (p,p')	BRL		µg/l	0.032	1	"	"	"	"	"	X
72-20-8	Endrin	BRL		µg/l	0.032	1	"	"	"	"	"	X
72-54-8	4,4'-DDD (p,p')	BRL		µg/l	0.032	1	"	"	"	"	"	X
50-29-3	4,4'-DDT (p,p')	BRL		µg/l	0.032	1	"	"	"	"	"	X
72-43-5	Methoxychlor	BRL		µg/l	0.032	1	"	"	"	"	"	X
53494-70-5	Endrin ketone	BRL		µg/l	0.021	1	"	"	"	"	"	X
7421-93-4	Endrin aldehyde	BRL		µg/l	0.021	1	"	"	"	"	"	X
8001-35-2	Toxaphene	BRL		µg/l	0.368	1	"	"	"	"	"	X
57-74-9	Chlordane	BRL		µg/l	0.074	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*80*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*86*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*79*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*81*			*30-150 %*		"	"	"	"	"	
Polychlorinated Biphenyls by SW846 8082												
Prepared by method SW846 3545A												
12674-11-2	Aroclor-1016	BRL		µg/kg dry	28.5	1	SW846 8082A	25-Jul-11	25-Jul-11	SM	1114492	X
11104-28-2	Aroclor-1221	BRL		µg/kg dry	28.5	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	BRL		µg/kg dry	28.5	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	BRL		µg/kg dry	28.5	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	BRL		µg/kg dry	28.5	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	BRL		µg/kg dry	28.5	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	BRL		µg/kg dry	28.5	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	BRL		µg/kg dry	28.5	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	BRL		µg/kg dry	28.5	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*115*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*85*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*95*			*30-150 %*		"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*105*			*30-150 %*		"	"	"	"	"	
TCLP Herbicides by SW846 1311/8151A												
Prepared by method SW846 3535									Methylation date: 27-Jul-11			
93-72-1	2,4,5-TP (Silvex)	BRL		µg/l	0.100	1	SW846 1311/8151A	27-Jul-11	03-Aug-11	TG	1114777	X
94-75-7	2,4-D	BRL		µg/l	0.100	1	"	"	"	"	"	X
Surrogate recoveries:												
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*44*			*30-150 %*		"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*36*			*30-150 %*		"	"	"	"	"	
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
	TCLP Extraction	Completed	ExL	N/A		1	SW846 1311	26-Jul-11	27-Jul-11	JRF	1114681	X
7440-22-4	Silver	BRL		mg/l	0.0100	1	SW846 1311/6010C	27-Jul-11	27-Jul-11	ARF	1114714	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
B-3 (0-2)	191710867/200	Soil	21-Jul-11 11:30	22-Jul-11
SB31993-01				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
TCLP Metals by EPA 1311 & 6000/7000 Series Methods												
7440-38-2	Arsenic	BRL		mg/l	0.0080	1	SW846 1311/6010C	27-Jul-11	27-Jul-11	ARF	1114714	X
7440-39-3	Barium	BRL		mg/l	0.0420	1	"	"	27-Jul-11	"	"	X
7440-43-9	Cadmium	BRL		mg/l	0.0050	1	"	"	"	"	"	X
7440-47-3	Chromium	BRL		mg/l	0.0100	1	"	"	27-Jul-11	"	"	X
7439-97-6	Mercury	BRL		mg/l	0.00020	1	SW846 1311/7470A	02-Aug-11	04-Aug-11	EDT	1114715	X
7439-92-1	Lead	BRL		mg/l	0.0150	1	SW846 1311/6010C	27-Jul-11	27-Jul-11	ARF/L	1114714	X
7782-49-2	Selenium	0.0300		mg/l	0.0300	1	"	"	"	"	"	X
General Chemistry Parameters												
	% Solids	66.6		%		1	SM2540 G Mod.	22-Jul-11	22-Jul-11	DT	1114432	
Toxicity Characteristics												
	Ignitability by Definition	Negative	IgHT	N/A		1	SW846 1030	22-Jul-11 12:00	22-Jul-11 12:00	BD	1114421	X
	pH	6.99	pH	pH Units		1	SW846 9045C	25-Jul-11 12:17	25-Jul-11 13:13	BD	1114549	X
Reactivity Cyanide/Sulfide Prepared by method General Preparation												
	Reactivity	Nonreactive		mg/kg dry		1	SW846 Ch. 7.3	23-Jul-11	25-Jul-11	BD	1114483	X
	Reactive Cyanide	BRL		mg/kg dry	22.8	1	"	"	"	"	"	X
	Reactive Sulfide	164		mg/kg dry	45.6	1	"	"	"	"	"	X

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1115201 - SW846 5030 Water MS										
Blank (1115201-BLK1)					Prepared & Analyzed: 02-Aug-11					
Benzene	BRL		µg/l	1.0						
2-Butanone (MEK)	BRL		µg/l	10.0						
Carbon tetrachloride	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
Chloroform	BRL		µg/l	1.0						
1,2-Dichloroethane	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
Tetrachloroethene	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Vinyl chloride	BRL		µg/l	1.0						
Surrogate: 4-Bromofluorobenzene	*49.0*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: Toluene-d8	*50.8*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*56.0*		µg/l		*50.0*		*112*	*70-130*		
Surrogate: Dibromofluoromethane	*47.5*		µg/l		*50.0*		*95*	*70-130*		
Blank (1115201-BLK2)					Prepared & Analyzed: 02-Aug-11					
Benzene	BRL		µg/l	5.0						
2-Butanone (MEK)	BRL		µg/l	50.0						
Carbon tetrachloride	BRL		µg/l	5.0						
Chlorobenzene	BRL		µg/l	5.0						
Chloroform	BRL		µg/l	5.0						
1,2-Dichloroethane	BRL		µg/l	5.0						
1,1-Dichloroethene	BRL		µg/l	5.0						
Tetrachloroethene	BRL		µg/l	5.0						
Trichloroethene	BRL		µg/l	5.0						
Vinyl chloride	BRL		µg/l	5.0						
Surrogate: 4-Bromofluorobenzene	*48.7*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: Toluene-d8	*50.6*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*55.2*		µg/l		*50.0*		*110*	*70-130*		
Surrogate: Dibromofluoromethane	*47.3*		µg/l		*50.0*		*95*	*70-130*		
LCS (1115201-BS1)					Prepared & Analyzed: 02-Aug-11					
Benzene	20.9		µg/l		20.0		105	70-130		
2-Butanone (MEK)	17.4		µg/l		20.0		87	70-130		
Carbon tetrachloride	17.5		µg/l		20.0		88	70-130		
Chlorobenzene	18.9		µg/l		20.0		95	70-130		
Chloroform	21.4		µg/l		20.0		107	70-130		
1,2-Dichloroethane	22.6		µg/l		20.0		113	70-130		
1,1-Dichloroethene	18.5		µg/l		20.0		92	70-130		
Tetrachloroethene	18.8		µg/l		20.0		94	70-130		
Trichloroethene	19.5		µg/l		20.0		98	70-130		
Vinyl chloride	20.3		µg/l		20.0		102	70-130		
Surrogate: 4-Bromofluorobenzene	*50.9*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*50.6*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*55.1*		µg/l		*50.0*		*110*	*70-130*		
Surrogate: Dibromofluoromethane	*49.5*		µg/l		*50.0*		*99*	*70-130*		
LCS Dup (1115201-BSD1)					Prepared & Analyzed: 02-Aug-11					
Benzene	20.0		µg/l		20.0		100	70-130	4	30
2-Butanone (MEK)	18.0		µg/l		20.0		90	70-130	3	30
Carbon tetrachloride	16.5		µg/l		20.0		82	70-130	6	30
Chlorobenzene	19.0		µg/l		20.0		95	70-130	0.3	30
Chloroform	21.0		µg/l		20.0		105	70-130	2	30

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1115201 - SW846 5030 Water MS										
LCS Dup (1115201-BSD1)					Prepared & Analyzed: 02-Aug-11					
1,2-Dichloroethane	22.4		µg/l		20.0		112	70-130	0.9	30
1,1-Dichloroethene	17.2		µg/l		20.0		86	70-130	7	30
Tetrachloroethene	18.1		µg/l		20.0		90	70-130	4	30
Trichloroethene	18.8		µg/l		20.0		94	70-130	4	30
Vinyl chloride	19.0		µg/l		20.0		95	70-130	7	30
Surrogate: 4-Bromofluorobenzene	*50.5*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: Toluene-d8	*50.5*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*55.2*		µg/l		*50.0*		*110*	*70-130*		
Surrogate: Dibromofluoromethane	*49.8*		µg/l		*50.0*		*100*	*70-130*		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114775 - SW846 3535										
Blank (1114775-BLK1)					Prepared: 27-Jul-11 Analyzed: 31-Jul-11					
1,4-Dichlorobenzene	BRL		µg/l	5.00						
2,4-Dinitrotoluene	BRL		µg/l	5.00						
Hexachlorobenzene	BRL		µg/l	5.00						
Hexachlorobutadiene	BRL		µg/l	5.00						
Hexachloroethane	BRL		µg/l	5.00						
2-Methylphenol	BRL		µg/l	5.00						
3 & 4-Methylphenol	BRL		µg/l	10.0						
Nitrobenzene	BRL		µg/l	5.00						
Pentachlorophenol	BRL		µg/l	5.00						
Pyridine	BRL		µg/l	5.00						
2,4,5-Trichlorophenol	BRL		µg/l	5.00						
2,4,6-Trichlorophenol	BRL		µg/l	5.00						
Surrogate: 2-Fluorobiphenyl	*38.4*		µg/l		*52.6*		*73*	*30-130*		
Surrogate: 2-Fluorophenol	*48.7*		µg/l		*52.6*		*92*	*30-130*		
Surrogate: Nitrobenzene-d5	*36.2*		µg/l		*52.6*		*69*	*30-130*		
Surrogate: Terphenyl-dl4	*37.7*		µg/l		*52.6*		*72*	*30-130*		
LCS (1114775-BS1)					Prepared: 27-Jul-11 Analyzed: 31-Jul-11					
1,4-Dichlorobenzene	143		µg/l	5.00	200		72	40-140		
2,4-Dinitrotoluene	168		µg/l	5.00	200		84	40-140		
Hexachlorobenzene	157		µg/l	5.00	200		78	40-140		
Hexachlorobutadiene	123		µg/l	5.00	200		61	40-140		
Hexachloroethane	148		µg/l	5.00	200		74	40-140		
2-Methylphenol	163		µg/l	5.00	200		82	30-130		
3 & 4-Methylphenol	168		µg/l	10.0	200		84	40-130		
Nitrobenzene	258		µg/l	5.00	200		129	40-140		
Pentachlorophenol	119		µg/l	5.00	200		59	30-130		
Pyridine	152		µg/l	5.00	200		76	40-140		
2,4,5-Trichlorophenol	139		µg/l	5.00	200		70	30-130		
2,4,6-Trichlorophenol	140		µg/l	5.00	200		70	30-130		
Surrogate: 2-Fluorobiphenyl	*159*		µg/l		*200*		*80*	*30-130*		
Surrogate: 2-Fluorophenol	*169*		µg/l		*200*		*85*	*15-110*		
Surrogate: Nitrobenzene-d5	*159*		µg/l		*200*		*79*	*30-130*		
Surrogate: Terphenyl-dl4	*150*		µg/l		*200*		*75*	*30-130*		
LCS Dup (1114775-BSD1)					Prepared: 27-Jul-11 Analyzed: 31-Jul-11					
1,4-Dichlorobenzene	141		µg/l	5.00	200		70	40-140	2	20
2,4-Dinitrotoluene	160		µg/l	5.00	200		80	40-140	5	20
Hexachlorobenzene	142		µg/l	5.00	200		71	40-140	10	20
Hexachlorobutadiene	117		µg/l	5.00	200		58	40-140	5	20
Hexachloroethane	144		µg/l	5.00	200		72	40-140	3	20
2-Methylphenol	155		µg/l	5.00	200		77	30-130	5	20
3 & 4-Methylphenol	160		µg/l	10.0	200		80	40-130	5	20
Nitrobenzene	248		µg/l	5.00	200		124	40-140	4	20
Pentachlorophenol	111		µg/l	5.00	200		56	30-130	7	20
Pyridine	145		µg/l	5.00	200		72	40-140	5	20
2,4,5-Trichlorophenol	137		µg/l	5.00	200		69	30-130	2	20
2,4,6-Trichlorophenol	133		µg/l	5.00	200		67	30-130	5	20
Surrogate: 2-Fluorobiphenyl	*147*		µg/l		*200*		*74*	*30-130*		
Surrogate: 2-Fluorophenol	*164*		µg/l		*200*		*82*	*15-110*		
Surrogate: Nitrobenzene-d5	*153*		µg/l		*200*		*77*	*30-130*		
Surrogate: Terphenyl-dl4	*137*		µg/l		*200*		*69*	*30-130*		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114775 - SW846 3535										
Duplicate (1114775-DUP1)			**Source: SB31993-01**		Prepared: 27-Jul-11 Analyzed: 01-Aug-11					
1,4-Dichlorobenzene	BRL		µg/l	5.00		BRL				50
2,4-Dinitrotoluene	BRL		µg/l	5.00		BRL				50
Hexachlorobenzene	BRL		µg/l	5.00		BRL				50
Hexachlorobutadiene	BRL		µg/l	5.00		BRL				50
Hexachloroethane	BRL		µg/l	5.00		BRL				50
2-Methylphenol	BRL		µg/l	5.00		BRL				50
3 & 4-Methylphenol	BRL		µg/l	10.0		BRL				50
Nitrobenzene	BRL		µg/l	5.00		BRL				50
Pentachlorophenol	BRL		µg/l	5.00		BRL				50
Pyridine	BRL		µg/l	5.00		BRL				50
2,4,5-Trichlorophenol	BRL		µg/l	5.00		BRL				50
2,4,6-Trichlorophenol	BRL		µg/l	5.00		BRL				50
Surrogate: 2-Fluorobiphenyl	*32.5*		µg/l		*52.6*		*62*	*30-130*		
Surrogate: 2-Fluorophenol	*40.3*		µg/l		*52.6*		*77*	*30-130*		
Surrogate: Nitrobenzene-d5	*32.1*		µg/l		*52.6*		*61*	*30-130*		
Surrogate: Terphenyl-dl4	*34.5*		µg/l		*52.6*		*66*	*30-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114492 - SW846 3545A										
Blank (1114492-BLK1)					Prepared & Analyzed: 25-Jul-11					
Aroclor-1016	BRL		µg/kg wet	20.0						
Aroclor-1016 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1221	BRL		µg/kg wet	20.0						
Aroclor-1221 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1232	BRL		µg/kg wet	20.0						
Aroclor-1232 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1242	BRL		µg/kg wet	20.0						
Aroclor-1242 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1248	BRL		µg/kg wet	20.0						
Aroclor-1248 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1254	BRL		µg/kg wet	20.0						
Aroclor-1254 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1260	BRL		µg/kg wet	20.0						
Aroclor-1260 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1262	BRL		µg/kg wet	20.0						
Aroclor-1262 [2C]	BRL		µg/kg wet	20.0						
Aroclor-1268	BRL		µg/kg wet	20.0						
Aroclor-1268 [2C]	BRL		µg/kg wet	20.0						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*16.0*		µg/kg wet		*20.0*		*80*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*18.0*		µg/kg wet		*20.0*		*90*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*15.0*		µg/kg wet		*20.0*		*75*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*17.0*		µg/kg wet		*20.0*		*85*	*30-150*		
LCS (1114492-BS1)					Prepared & Analyzed: 25-Jul-11					
Aroclor-1016	213		µg/kg wet	20.0	250		85	50-140		
Aroclor-1016 [2C]	229		µg/kg wet	20.0	250		92	50-140		
Aroclor-1260	191		µg/kg wet	20.0	250		76	50-140		
Aroclor-1260 [2C]	212		µg/kg wet	20.0	250		85	50-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*17.0*		µg/kg wet		*20.0*		*85*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*17.0*		µg/kg wet		*20.0*		*85*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*16.0*		µg/kg wet		*20.0*		*80*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*19.0*		µg/kg wet		*20.0*		*95*	*30-150*		
LCS Dup (1114492-BSD1)					Prepared & Analyzed: 25-Jul-11					
Aroclor-1016	211		µg/kg wet	20.0	250		84	50-140	0.9	30
Aroclor-1016 [2C]	240		µg/kg wet	20.0	250		96	50-140	5	30
Aroclor-1260	190		µg/kg wet	20.0	250		76	50-140	0.5	30
Aroclor-1260 [2C]	210		µg/kg wet	20.0	250		84	50-140	0.9	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*17.0*		µg/kg wet		*20.0*		*85*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*18.0*		µg/kg wet		*20.0*		*90*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*16.0*		µg/kg wet		*20.0*		*80*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*19.0*		µg/kg wet		*20.0*		*95*	*30-150*		
Batch 1114774 - SW846 3535										
Blank (1114774-BLK1)					Prepared: 27-Jul-11 Analyzed: 28-Jul-11					
gamma-BHC (Lindane)	BRL		µg/l	0.033						
gamma-BHC (Lindane) [2C]	BRL		µg/l	0.033						
Heptachlor	BRL		µg/l	0.033						
Heptachlor [2C]	BRL		µg/l	0.033						
Heptachlor epoxide	BRL		µg/l	0.033						
Heptachlor epoxide [2C]	BRL		µg/l	0.033						
Dieldrin	BRL		µg/l	0.022						
Dieldrin [2C]	BRL		µg/l	0.022						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114774 - SW846 3535										
Blank (1114774-BLK1)						Prepared: 27-Jul-11 Analyzed: 28-Jul-11				
4,4'-DDE (p,p')	BRL		µg/l	0.033						
4,4'-DDE (p,p') [2C]	BRL		µg/l	0.033						
Endrin	BRL		µg/l	0.033						
Endrin [2C]	BRL		µg/l	0.033						
4,4'-DDD (p,p')	BRL		µg/l	0.033						
4,4'-DDD (p,p') [2C]	BRL		µg/l	0.033						
4,4'-DDT (p,p')	BRL		µg/l	0.033						
4,4'-DDT (p,p') [2C]	BRL		µg/l	0.033						
Methoxychlor	BRL		µg/l	0.033						
Methoxychlor [2C]	BRL		µg/l	0.033						
Endrin ketone	BRL		µg/l	0.022						
Endrin ketone [2C]	BRL		µg/l	0.022						
Endrin aldehyde	BRL		µg/l	0.022						
Endrin aldehyde [2C]	BRL		µg/l	0.022						
Toxaphene	BRL		µg/l	0.389						
Toxaphene [2C]	BRL		µg/l	0.389						
Chlordane	BRL		µg/l	0.078						
Chlordane [2C]	BRL		µg/l	0.078						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.246*		µg/l		*0.222*		*111*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.273*		µg/l		*0.222*		*123*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.227*		µg/l		*0.222*		*102*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.251*		µg/l		*0.222*		*113*	*30-150*		
LCS (1114774-BS1)						Prepared: 27-Jul-11 Analyzed: 28-Jul-11				
gamma-BHC (Lindane)	0.477		µg/l	0.030	0.500		95	50-120		
gamma-BHC (Lindane) [2C]	0.475		µg/l	0.030	0.500		95	50-120		
Heptachlor	0.485		µg/l	0.030	0.500		97	40-140		
Heptachlor [2C]	0.458		µg/l	0.030	0.500		92	40-140		
Heptachlor epoxide	0.478		µg/l	0.030	0.500		96	50-140		
Heptachlor epoxide [2C]	0.479		µg/l	0.030	0.500		96	50-140		
Dieldrin	0.490		µg/l	0.020	0.500		98	40-130		
Dieldrin [2C]	0.491		µg/l	0.020	0.500		98	40-130		
4,4'-DDE (p,p')	0.486		µg/l	0.030	0.500		97	50-140		
4,4'-DDE (p,p') [2C]	0.503		µg/l	0.030	0.500		101	50-140		
Endrin	0.579		µg/l	0.030	0.500		116	50-120		
Endrin [2C]	0.589		µg/l	0.030	0.500		118	50-120		
4,4'-DDD (p,p')	0.558		µg/l	0.030	0.500		112	40-140		
4,4'-DDD (p,p') [2C]	0.560		µg/l	0.030	0.500		112	40-140		
4,4'-DDT (p,p')	0.328		µg/l	0.030	0.500		66	40-140		
4,4'-DDT (p,p') [2C]	0.346		µg/l	0.030	0.500		69	40-140		
Methoxychlor	0.406		µg/l	0.030	0.500		81	40-140		
Methoxychlor [2C]	0.399		µg/l	0.030	0.500		80	40-140		
Endrin ketone	0.429		µg/l	0.020	0.500		86	40-140		
Endrin ketone [2C]	0.426		µg/l	0.020	0.500		85	40-140		
Endrin aldehyde	0.329		µg/l	0.020	0.500		66	40-140		
Endrin aldehyde [2C]	0.348		µg/l	0.020	0.500		70	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.189*		µg/l		*0.200*		*95*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.179*		µg/l		*0.200*		*89*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.167*		µg/l		*0.200*		*84*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.169*		µg/l		*0.200*		*85*	*30-150*		
LCS Dup (1114774-BSD1)						Prepared: 27-Jul-11 Analyzed: 28-Jul-11				
gamma-BHC (Lindane)	0.476		µg/l	0.030	0.500		95	50-120	0.3	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114774 - SW846 3535										
LCS Dup (1114774-BSD1)					Prepared: 27-Jul-11 Analyzed: 28-Jul-11					
gamma-BHC (Lindane) [2C]	0.473		µg/l	0.030	0.500		95	50-120	0.3	20
Heptachlor	0.493		µg/l	0.030	0.500		99	40-140	2	20
Heptachlor [2C]	0.481		µg/l	0.030	0.500		96	40-140	5	20
Heptachlor epoxide	0.494		µg/l	0.030	0.500		99	50-140	3	20
Heptachlor epoxide [2C]	0.468		µg/l	0.030	0.500		94	50-140	2	20
Dieldrin	0.496		µg/l	0.020	0.500		99	40-130	1	20
Dieldrin [2C]	0.438		µg/l	0.020	0.500		88	40-130	11	20
4,4'-DDE (p,p')	0.498		µg/l	0.030	0.500		100	50-140	3	20
4,4'-DDE (p,p') [2C]	0.488		µg/l	0.030	0.500		98	50-140	3	20
Endrin	0.578		µg/l	0.030	0.500		116	50-120	0.08	20
Endrin [2C]	0.591		µg/l	0.030	0.500		118	50-120	0.4	20
4,4'-DDD (p,p')	0.562		µg/l	0.030	0.500		112	40-140	0.8	20
4,4'-DDD (p,p') [2C]	0.527		µg/l	0.030	0.500		105	40-140	6	20
4,4'-DDT (p,p')	0.372		µg/l	0.030	0.500		74	40-140	13	20
4,4'-DDT (p,p') [2C]	0.409		µg/l	0.030	0.500		82	40-140	17	20
Methoxychlor	0.436		µg/l	0.030	0.500		87	40-140	7	20
Methoxychlor [2C]	0.468		µg/l	0.030	0.500		94	40-140	16	20
Endrin ketone	0.441		µg/l	0.020	0.500		88	40-140	3	20
Endrin ketone [2C]	0.446		µg/l	0.020	0.500		89	40-140	4	20
Endrin aldehyde	0.338		µg/l	0.020	0.500		68	40-140	3	20
Endrin aldehyde [2C]	0.335		µg/l	0.020	0.500		67	40-140	4	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.189*		µg/l		*0.200*		*95*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.174*		µg/l		*0.200*		*87*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.184*		µg/l		*0.200*		*92*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.170*		µg/l		*0.200*		*85*	*30-150*		
Duplicate (1114774-DUP1)			**Source: SB31993-01**		Prepared: 27-Jul-11 Analyzed: 28-Jul-11					
gamma-BHC (Lindane)	BRL		µg/l	0.032		BRL				30
gamma-BHC (Lindane) [2C]	BRL		µg/l	0.032		BRL				30
Heptachlor	BRL		µg/l	0.032		BRL				30
Heptachlor [2C]	BRL		µg/l	0.032		BRL				30
Heptachlor epoxide	BRL		µg/l	0.032		BRL				30
Heptachlor epoxide [2C]	BRL		µg/l	0.032		BRL				30
Dieldrin	BRL		µg/l	0.021		BRL				30
Dieldrin [2C]	BRL		µg/l	0.021		BRL				30
4,4'-DDE (p,p')	BRL		µg/l	0.032		BRL				30
4,4'-DDE (p,p') [2C]	BRL		µg/l	0.032		BRL				30
Endrin	BRL		µg/l	0.032		BRL				30
Endrin [2C]	BRL		µg/l	0.032		BRL				30
4,4'-DDD (p,p')	BRL		µg/l	0.032		BRL				30
4,4'-DDD (p,p') [2C]	BRL		µg/l	0.032		BRL				30
4,4'-DDT (p,p')	BRL		µg/l	0.032		BRL				30
4,4'-DDT (p,p') [2C]	BRL		µg/l	0.032		BRL				30
Methoxychlor	BRL		µg/l	0.032		BRL				30
Methoxychlor [2C]	BRL		µg/l	0.032		BRL				30
Endrin ketone	BRL		µg/l	0.021		BRL				30
Endrin ketone [2C]	BRL		µg/l	0.021		BRL				30
Endrin aldehyde	BRL		µg/l	0.021		BRL				30
Endrin aldehyde [2C]	BRL		µg/l	0.021		BRL				30
Toxaphene	BRL		µg/l	0.368		BRL				30
Toxaphene [2C]	BRL		µg/l	0.368		BRL				30
Chlordane	BRL		µg/l	0.074		BRL				30

Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114774 - SW846 3535										
Duplicate (1114774-DUP1)			**Source: SB31993-01**		Prepared: 27-Jul-11 Analyzed: 28-Jul-11					
Chlordane [2C]	BRL		µg/l	0.074		BRL				30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.151*		µg/l		*0.211*		*72*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.154*		µg/l		*0.211*		*73*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.143*		µg/l		*0.211*		*68*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.148*		µg/l		*0.211*		*70*	*30-150*		
Batch 1114777 - SW846 3535										
Blank (1114777-BLK1)					Prepared: 27-Jul-11 Analyzed: 03-Aug-11					
2,4,5-TP (Silvex)	BRL		µg/l	0.100						
2,4,5-TP (Silvex) [2C]	BRL		µg/l	0.100						
2,4-D	BRL		µg/l	0.100						
2,4-D [2C]	BRL		µg/l	0.100						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.166*		µg/l		*0.200*		*83*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.187*		µg/l		*0.200*		*94*	*30-150*		
LCS (1114777-BS1)					Prepared: 27-Jul-11 Analyzed: 03-Aug-11					
2,4,5-TP (Silvex)	0.393		µg/l	0.100	0.500		79	40-140		
2,4,5-TP (Silvex) [2C]	0.379		µg/l	0.100	0.500		76	40-140		
2,4-D	0.357		µg/l	0.100	0.500		71	40-140		
2,4-D [2C]	0.360		µg/l	0.100	0.500		72	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.176*		µg/l		*0.200*		*88*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.177*		µg/l		*0.200*		*88*	*30-150*		
LCS Dup (1114777-BSD1)					Prepared: 27-Jul-11 Analyzed: 03-Aug-11					
2,4,5-TP (Silvex)	0.432		µg/l	0.100	0.500		86	40-140	9	20
2,4,5-TP (Silvex) [2C]	0.368		µg/l	0.100	0.500		74	40-140	3	20
2,4-D	0.379		µg/l	0.100	0.500		76	40-140	6	20
2,4-D [2C]	0.350		µg/l	0.100	0.500		70	40-140	3	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.194*		µg/l		*0.200*		*97*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.175*		µg/l		*0.200*		*88*	*30-150*		
Duplicate (1114777-DUP1)			**Source: SB31993-01**		Prepared: 27-Jul-11 Analyzed: 03-Aug-11					
2,4,5-TP (Silvex)	BRL		µg/l	0.100		BRL				30
2,4,5-TP (Silvex) [2C]	BRL		µg/l	0.100		BRL				30
2,4-D	BRL		µg/l	0.100		BRL				30
2,4-D [2C]	BRL		µg/l	0.100		BRL				30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.0888*		µg/l		*0.204*		*44*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2C]	*0.0776*		µg/l		*0.204*		*38*	*30-150*		

TCLP Metals by EPA 1311 & 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114714 - SW846 3010A										
Blank (1114714-BLK1)					Prepared & Analyzed: 27-Jul-11					
Lead	BRL		mg/l	0.0150						
Selenium	BRL		mg/l	0.0300						
Cadmium	BRL		mg/l	0.0050						
Silver	BRL		mg/l	0.0100						
Arsenic	BRL		mg/l	0.0080						
Chromium	BRL		mg/l	0.0100						
Barium	BRL		mg/l	0.0420						
LCS (1114714-BS1)					Prepared & Analyzed: 27-Jul-11					
Lead	2.74		mg/l	0.0150	2.50		109	85-115		
Selenium	2.71		mg/l	0.0300	2.50		108	85-115		
Silver	2.64		mg/l	0.0100	2.50		105	85-115		
Arsenic	2.76		mg/l	0.0080	2.50		110	85-115		
Cadmium	2.64		mg/l	0.0050	2.50		106	85-115		
Chromium	2.52		mg/l	0.0100	2.50		101	85-115		
Barium	2.70		mg/l	0.0420	2.50		108	85-115		
LCS Dup (1114714-BSD1)					Prepared & Analyzed: 27-Jul-11					
Selenium	2.70		mg/l	0.0300	2.50		108	85-115	0.4	20
Lead	2.71		mg/l	0.0150	2.50		108	85-115	1	20
Arsenic	2.75		mg/l	0.0080	2.50		110	85-115	0.2	20
Cadmium	2.64		mg/l	0.0050	2.50		106	85-115	0.1	20
Chromium	2.56		mg/l	0.0100	2.50		103	85-115	2	20
Silver	2.66		mg/l	0.0100	2.50		107	85-115	1	104
Barium	2.68		mg/l	0.0420	2.50		107	85-115	0.6	20
Duplicate (1114714-DUP1)			**Source: SB31993-01**		Prepared & Analyzed: 27-Jul-11					
Lead	BRL		mg/l	0.0150		BRL				20
Selenium	0.0308		mg/l	0.0300		0.0300			3	20
Chromium	BRL		mg/l	0.0100		BRL				20
Cadmium	BRL		mg/l	0.0050		BRL				20
Silver	BRL		mg/l	0.0100		BRL				20
Arsenic	0.0066	J	mg/l	0.0080		0.0061			8	20
Barium	0.0504		mg/l	0.0420		0.0416			19	20
Batch 1114715 - EPA200/SW7000 Series										
Blank (1114715-BLK1)					Prepared: 02-Aug-11 Analyzed: 04-Aug-11					
Mercury	BRL		mg/l	0.00020						
LCS (1114715-BS1)					Prepared: 02-Aug-11 Analyzed: 04-Aug-11					
Mercury	0.00482		mg/l	0.00020	0.00500		96	85-115		
Duplicate (1114715-DUP1)			**Source: SB31993-01**		Prepared: 02-Aug-11 Analyzed: 04-Aug-11					
Mercury	BRL		mg/l	0.00020		BRL				20
Matrix Spike (1114715-MS1)			**Source: SB31993-01**		Prepared: 02-Aug-11 Analyzed: 04-Aug-11					
Mercury	0.00508		mg/l	0.00020	0.00500	BRL	102	75-125		
Matrix Spike Dup (1114715-MSD1)			**Source: SB31993-01**		Prepared: 02-Aug-11 Analyzed: 04-Aug-11					
Mercury	0.00502		mg/l	0.00020	0.00500	BRL	100	75-125	1	20
Post Spike (1114715-PS1)			**Source: SB31993-01**		Prepared: 02-Aug-11 Analyzed: 04-Aug-11					
Mercury	0.00503		mg/l	0.00020	0.00500	BRL	101	80-120		

Toxicity Characteristics - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1114421 - General Preparation										
Duplicate (1114421-DUP1)			**Source: SB31993-01**			Prepared & Analyzed: 22-Jul-11				
Ignitability by Definition	Negative		N/A			Negative				35
Batch 1114483 - General Preparation										
Blank (1114483-BLK1)						Prepared: 23-Jul-11 Analyzed: 25-Jul-11				
Reactivity	Nonreactive		mg/kg wet							
Reactive Cyanide	BRL		mg/kg wet	25.0						
Reactive Sulfide	BRL		mg/kg wet	50.0						
Duplicate (1114483-DUP1)			**Source: SB31993-01**			Prepared: 23-Jul-11 Analyzed: 25-Jul-11				
Reactivity	Nonreactive		mg/kg dry			Nonreactive				200
Reactive Cyanide	3.48	J	mg/kg dry	24.7		BRL				35
Reactive Sulfide	190		mg/kg dry	49.4		164			15	35
Reference (1114483-SRM1)						Prepared: 23-Jul-11 Analyzed: 25-Jul-11				
Reactive Cyanide	2.93		mg/kg wet	25.0	100		3	0-200		
Reference (1114483-SRM2)						Prepared: 23-Jul-11 Analyzed: 25-Jul-11				
Reactive Sulfide	120		mg/kg wet	50.0	6700		2	0-200		
Batch 1114549 - General Preparation										
Reference (1114549-SRM1)						Prepared & Analyzed: 25-Jul-11				
pH	6.03		pH Units		6.00		100	97.5-102.5		
Reference (1114549-SRM2)						Prepared & Analyzed: 25-Jul-11				
pH	5.54		pH Units		5.51		101	92-108		

Semivolatile Organic Compounds by GC - Pesticide Breakdown Report

Analyte(s)	Column	% Breakdown	Limit
Batch S106626			
Performance Mix (S106626-PEM1)			
4,4'-DDT (p,p')	1	9.4	15.0
Endrin	1	1.9	15.0
4,4'-DDT (p,p')	2	7.2	15.0
Endrin	2	2.0	15.0
Performance Mix (S106626-PEM2)			
4,4'-DDT (p,p')	1	9.5	15.0
Endrin	1	3.1	15.0
4,4'-DDT (p,p')	2	14.0	15.0
Endrin	2	4.1	15.0

Notes and Definitions

ExL	Per SW846 TCLP/SPLP requirements, the ambient temp of the extraction room during the extraction shall be maintained at 23°C.+/-2°. The minimum temperature for this batch was low at 20°C.
IgHT	A hold time of 24 hours has been set to expedite the analyses through the laboratory. However, the hold time for Ignitability is not specified within the method other than to state that the samples should be analyzed as soon as possible.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
pH	The method for pH does not stipulate a specific holding time other than to state that the samples should be analyzed as soon as possible. For aqueous samples the 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous pH samples not analyzed in the field are considered out of hold time at the time of sample receipt. All soil samples are analyzed as soon as possible after sample receipt.

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Kimberly Wisk

SB31993 @

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- [x] Standard TAT - 7 to 10 business days
- [ ] Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Dave Allwine
STANTEC
5 Dartmouth Dr
Auburn NH 03032
Telephone #: 603-498-4074
Project Mgr. Dave Allwine

Invoice To: STANTEC
5 Dartmouth Dr
Auburn NH 03032
P.O. No.: _____ RQN: _____

Project No.: 191710867 / 200
Site Name: NHDOT Memorial Bridge
Location: Badger Island Kittery State: ME
Sampler(s): JN

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10= _____ 11= _____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

List preservative code below:

QA/QC Reporting Notes:
* additional charges may apply

MA DEP MCP CAM Report: Yes ☐ No ☐
CT DPH RCP Report: Yes ☐ No ☐

QA/QC Reporting Level
- [x] Standard ☐ No QC ☐ DQA*
- ☐ NY ASP A* ☐ NY ASP B*
- ☐ NJ Reduced* ☐ NJ Full*
- ☐ TIER II* ☐ TIER V*
- ☐ Other _____

State-specific reporting standards:

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass (Containers)	# of Clear Glass	# of Plastic	TCLP-VOC 8260B	TCLP-SVOC 8270	TCLP RCRA-8	TCLP-Herbicides 8151 Pest-8081	PCBs-8082	Corrosivity by Electricity Flammability			
31993-01	B-3(0-2)	7-21-11	1130	G	SO		3			X	X	X	X	X	X			

Relinquished by:	Received by:	Date:	Time:	Temp°C
JM	Fed Ex 8683 2959 2651	7-21-11	1230	
Fed Ex	Tanya K	7/22/11	9:45	16.6

☐ EDD Format _____
[x] E-mail to Dave.Allwine@stantec.com

☐ Ambient [x] Iced ☐ Refrigerated ☐ Fridge temp ____°C ☐ Freezer temp ____°C

BOREHOLE LOG

B-1

Stantec

CLIENT **New Hampshire Department of Transportation**

PROJECT No. **191710867**

LOCATION **Memorial Bridge, Portsmouth, New Hampshire and Kittery, Maine**

EXPLORATION No. **B-1**

EXPLORATION DATE **7/15/2011 to 7/15/2011**

WATER LEVEL

DATUM

DEPTH (ft)	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	NUMBER	RECOVERY (in.)	SPT blows / 6"	SPT N-Value	PID Reading (PPM)
0					SS	1				0.0
5					SS	2				0.0
10					SS	3				0.0
15		Collect sample B-1 (14-16) for laboratory analysis			SS	4				11.1
20					SS	5				0.0
25					SS	6				0.0
30					COREC-1					
35					COREC-2					
40		Bottom of boring.								

Undrained Shear Strength - tsf: 1 2 3 4

Water Content & Atterberg Limits: W_P W W_L

Dynamic Penetration Test, blows/foot ★

Standard Penetration Test, blows/foot ●

10 20 30 40 50 60 70 80 90

Driller: New Hampshire Boring; Supervisor: Jason Ward

△ Unconfined Compression Test

☐ Field Vane Test ■ Remolded

✖ Pocket Penetrometer / Torvane

BOREHOLE LOG

B-3

Stantec

CLIENT **New Hampshire Department of Transportation**

PROJECT No. **191710867**

LOCATION **Memorial Bridge, Portsmouth, New Hampshire and Kittery, Maine**

EXPLORATION No. **B-3**

EXPLORATION DATE **7/21/2011 to 7/21/2011**

WATER LEVEL

DATUM

DEPTH (ft)	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in.)	SAMPLES SPT blows / 6"	SAMPLES SPT N-Value	PID Reading (PPM)
0		Collect sample B-3 (0-2) for laboratory analysis			SS	1				0.0
5					CORE	2				
10		Bottom of boring.								
15										
20										
25										
30										
35										
40										

Undrained Shear Strength - tsf: 1 2 3 4

Water Content & Atterberg Limits: W_P W W_L

Dynamic Penetration Test, blows/foot ★

Standard Penetration Test, blows/foot ●

10 20 30 40 50 60 70 80 90

Driller: New Hampshire Boring; Supervisor: Jason Ward

△ Unconfined Compression Test

☐ Field Vane Test ■ Remolded

✖ Pocket Penetrometer / Torvane

BOREHOLE LOG

B-5

Stantec

CLIENT **New Hampshire Department of Transportation**

PROJECT No. **191710867**

LOCATION **Memorial Bridge, Portsmouth, New Hampshire and Kittery, Maine**

EXPLORATION No. **B-5**

EXPLORATION DATE **7/19/2011 to 7/19/2011**

WATER LEVEL

DATUM

DEPTH (ft)	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY (in.)	SAMPLES SPT blows / 6"	SAMPLES SPT N-Value	PID Reading (PPM)
0					SS	1				0.0
		Collect sample B-5 (4-6) for laboratory analysis			SS	2				0.0
5										
		Collect sample B-5 (9-11) for laboratory analysis			SS	3				0.0
10										
15					CORE	C-1				
20					CORE	C-2				
		Bottom of boring.								
25										
30										
35										
40										

Undrained Shear Strength - tsf: 1 2 3 4

Water Content & Atterberg Limits: W_P W W_L

Dynamic Penetration Test, blows/foot ★

Standard Penetration Test, blows/foot ●

10 20 30 40 50 60 70 80 90

Driller: New Hampshire Boring; Supervisor: Jason Ward

△ Unconfined Compression Test

□ Field Vane Test ■ Remolded

✖ Pocket Penetrometer / Torvane

BOREHOLE LOG

B-6

Stantec

CLIENT **New Hampshire Department of Transportation**

PROJECT No. **191710867**

LOCATION **Memorial Bridge, Portsmouth, New Hampshire and Kittery, Maine**

EXPLORATION No. **B-6**

EXPLORATION DATE **7/18/2011 to 7/18/2011**

WATER LEVEL

DATUM

DEPTH (ft)	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	NUMBER	RECOVERY (in.)	SPT blows / 6"	SPT N-Value	PID Reading (PPM)
0										
					SS	1				0.0
		Collect sample B-6 (4-7) for laboratory analysis			SS	2				0.0
5										
10					SS	3				0.0
15					SS	4				0.0
		Collect sample B-6 (19-21) for laboratory analysis			SS	5				0.0
20										
25					COREC-1					
30					COREC-2					
35										
		Bottom of boring.								
40										

Driller: New Hampshire Boring; Supervisor: Jason Ward

Undrained Shear Strength - tsf: 1 2 3 4

Water Content & Atterberg Limits: W_P W W_L

Dynamic Penetration Test, blows/foot ★

Standard Penetration Test, blows/foot ●

10 20 30 40 50 60 70 80 90

△ Unconfined Compression Test

☐ Field Vane Test ■ Remolded

✖ Pocket Penetrometer / Torvane

DESMARAIS ENVIRONMENTAL, INC.
320 Hemlock Lane Barrington, NH 03825
(603) 664-5500

ASBESTOS SURVEY REPORT
STRUCTURES
MEMORIAL BRIDGE

PORTSMOUTH, NEW HAMPSHIRE

August 2011

Prepared by: Desmarais Environmental, Inc.
320 Hemlock Lane
Barrington, NH 03825
(603) 664-5500

August 16, 2011

David A. Allwine, P.G.
Stantec
5 Dartmouth Drive Suite 101
Auburn NH 03032

Re: Asbestos Survey – Memorial Bridge Structures

On August 13, 2011, Desmarais Environmental, Inc. conducted a non-destructive asbestos survey of the Structures located on the Memorial Bridge in Portsmouth, New Hampshire.

The scope of work was limited to the structures. The purpose of this survey was to determine the presence of asbestos-containing materials in order to ensure compliance with the regulatory requirements to demolish the buildings.

Reasonable efforts have been made by Desmarais Environmental, Inc personnel to locate and sample suspect asbestos-containing materials (ACM). However, for any facility, the existence of unique or concealed ACMs and debris is a possibility. In addition, sampling and laboratory analysis constraints typically hinder the investigation. Desmarais Environmental, Inc. does not warrant, guarantee or profess to have the ability to located or identify all asbestos containing materials within the area surveyed.

BACKGROUND INFORMATION

Asbestos is a term to describe six naturally occurring mineral fibers that are commonly found in a wide array of building construction materials due to the fiber strength and heat resistant properties. When asbestos containing materials become damaged or are disturbed during repair, remodeling or demolition activities; microscopic fibers become airborne. Asbestos fibers are so tiny and light that they can remain airborne for many hours. When inhaled, they can cause health problems. The three (3) most common types of asbestos are chrysotile, amosite and crocidolite. The lesser common types are tremolite, anthophyllite, and actinolite. Nearly 95% of all asbestos in the United States is chrysotile.

The Environmental Protection Agency classifies asbestos-containing building materials (ACBM) into three (3) general categories.

1. Surfacing Materials
    a. Any material that has been sprayed-on or troweled-on, or otherwise applied to surfaces. Textured ceilings, joint compound, and fireproofing are some examples of surfacing materials.
2. Thermal System Insulation (TSI)
    a. Any material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior mechanical components designed to prevent heat loss or water condensation.
3. MiscStructuresaneous Materials
    a. Any material that is not surfacing or thermal system insulation. Floor tiles, ceiling tiles, and transite board are some examples of miscStructuresaneous materials.

The condition of asbestos containing materials is classified according to its friability, the current state of condition and its potential for disturbance. Friability is determined by the ability, when dry, to be crumbled, pulverized, or reduced to powder by hand pressure. The current state of condition is broken up into three categories

1. Significantly Damaged
    a. Over 10% evenly distributed damage or over 25% of the localized damage.
2. Damaged
    a. Less than 10% evenly distributed damage or less than 25% of the localized damage.
3. Good
    a. No visible damage or very little damage.

The potential for disturbance is categorized by answering three (3) questions with high, moderate or low. The three questions are as follows,

1. The potential for contact with the material?
2. The influence of vibration on the material?
3. The potential for air erosion on the material?

Any question with a high answer shows potential for significant damage, any question answered with moderate shows potential for damage and all questions answered with low shows low potential.

The Environmental Protection Agency established the National Emission Standards for Hazardous Air Pollutants, 40 CFR 61, regulation to require the owner of a demolition or renovation activity and prior to commencement of the demolition or renovation, to thoroughly inspect the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos. EPA defines a facility as any institutional, commercial, public, industrial, or residential structure, installation or building. It includes any structure, installation, or building containing condominiums or individual dwStructuresing units operated as a residential cooperative, but excludes residential buildings having four or fewer dwStructuresing units.

The State of New Hampshire established Env-A 1800 (Asbestos Management and Control) to better deal with asbestos within residential buildings. Under Env-A 1804.01, the State of New Hampshire requires that the owner/operator of a facility has an asbestos survey completed on the affected portion(s) prior to undertaking any demolition or renovation activity. According to Env-A 1802.31, the State of New Hampshire defines a facility as any institutional, commercial, public, or private building or structure, work place, ship, installation, active waste disposal site, inactive waste disposal site operated after July 9, 1981, or rental dwStructuresing.

Asbestos samples of suspect materials were collected as described below according to type and quantity of material per homogeneous area. A homogeneous area is defined as a suspect material of similar age, appearance, function and texture.

Material	Samples
MiscStructuresaneous materials	One sample per homogeneous area
Surfacing materials	Three samples per homogeneous area
Thermal system insulation	One sample per homogeneous area

LABORATORY ANALYTICAL METHOD

All bulk samples collected were forwarded to ProScience Analytical, Inc. located in Woburn, Massachusetts. ProScience is a NIST/NVLAP and AIHA-accredited laboratory.

Analyses were performed using standard optical microscopy and petrographic techniques. A representative portion of the bulk sample was placed on a glass slide, immersed and macerated in the appropriate index oils. This was then examined under plane and fully polarized light on the petrographic microscope. The following features were used to identify unknown particles and fibers: Morphology, index of refraction, birefringence, size, color, etc.

Analytical results (compositions and percentages) are listed on the bulk report form attached. For the purpose of these analyses, asbestos determination and identification is based on definitions as set forth in the US. EPA Environmental Monitoring Systems Laboratory TEST METHOD "Interim Method for the Determination of Asbestos in Bulk Insulation Samples," EPA-600/M4-82-020.

Polarized-light microscopy is not consistently reliable in detecting asbestos in floor tiles. Confirmation by Transmission Electron Microscopy is recommended for negative floor tile samples.

RESULTS

The results of the analysis of the samples taken from the three shacks and Control Room at Memorial Bridge reveal that the transite wall panels and double cover roofing on the control shack contains asbestos. And roofing on the two gate shacks and center shack contain asbestos. Two of the three troweled on roofing samples were found to contain asbestos, therefore all troweled on roofing should be considered asbestos which will include the two gate shacks and center shack.

Note: Some wiring may contain suspect materials in the control shack but could not be sampled or thoroughly investigated due to the systems still being energized.

TABLE OF ASBESTOS BULK SAMPLING RESULTS

Sample #		Description	Location	Results
1		12X12 Floor Tile	Control Shack	None
2		Mastic	Control Shack	None
3		Wall Panel	Control Shack	**20% Chrysotile Asbestos**
4		Floor Paint	Control Shack	None
5		12X12 Fissured CT	Control Shack	None
6		Grey Paint	Control Shack	None
7		12X12 Wormy CT	Control Shack	None
8		12X12 Smooth CT	Control Shack	None
9		Double Cover Roofing	Control Shack	**5% Chrysotile Asbestos**
10		Corrugated Roofing	Control Shack	None
11		Sealant on Corrugated	Control Shack	None
12		Stair tread	Control Shack	None
13		Generator Exhaust Insulation	Control Shack	None
14		Roofing	Center Shack	None
15		Troweled on roofing	Center shack	None
16		Roofing black	Gate Shack North	**5% Chrysotile Asbestos**
17		Troweled on roofing	Gate Shack North	**5% Chrysotile Asbestos**
18		Roofing Grey	Gate Shack North	**5% Chrysotile Asbestos**
19		Troweled on roofing	Gate Shack North	**5% Chrysotile Asbestos**
20		Roofing black	Gate Shack South	None
21		Troweled on roofing	Gate Shack South	None

None = No Asbestos Structures Detected

QUANTITY OF ASBESTOS CONTAINING MATERIALS

Description	Location	Quantity
Transite Wall Panel	Control Shack	300 SF
Double Cover Roofing	Control Shack	200 SF
Troweled on Roofing	Center shack	40 SF
Troweled on Roofing	Gate shack North	40 SF
Troweled on Roofing	Gate shack South	40 SF

The laboratory reports are presented in Appendix 1.

If you have any questions regarding this report or require additional services, please do not hesitate to contact our office at (603) 664-5500.

Respectively submitted,
Desmarais Environmental, Inc.

Raymond G. Desmarais, CIH, CSP
New Hampshire Licensed Inspector, Management Planner & Designer
New Hampshire License #024-IMD

Appendix 1
Laboratory Reports

ProScience Analytical Services, Inc.

PLM Asbestos Chain of Custody Record

LABORATORY/HEADQUARTERS
22 Cummings Park, Woburn, MA 01801
T:781-935-3212 F:781-932-4857

www.proscience.net
general@proscience.net

☐ RUSH

Page 1 Of 4

Turn Around Time Requested

☐ Same day ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 5 Days

Client: Desmarais Environmental
Address: 62 Alwood Dr., Barrington, NH
Project Site & Number: Memorial Bridge Portsmouth
Phone / FAX Number: 603-664-5500 / 603-664-5600
Contact: Ray & Tim no Fax

Relinquished by/date:
Received by/date: 8-15-11
Samples received: 21 Analyzed:
Faxed, E-mailed, Verbal by/date:
Stop on first positive: Yes No

For Lab Use> Batch Number B76820 Analyzed by/date: QC by/date:

Lab ID	Field ID Sampled date	Description / Location	Stereo Scope: % Asbestos	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Circle Type: Crocidolite	Tremolite	Anthophylite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
	1		0	[illegible]																							100
	2		0	B [illegible]																			5				95
	3		2	G [illegible]				up	[illegible]				[illegible]	[illegible]	20												80
	4		0	M [illegible]																							100
	5		0	[illegible]																		P	5				100
	6		0	M [illegible]																							100

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663

Laboratory uses the EPA or ELAP point count method as appropriate

For complete information about our services and locations please visit us at www.proscience.net or call the numbers above.

Revised on 4/7/09

ProScience Analytical Services, Inc.

PLM Asbestos Chain of Custody Record

LABORATORY/HEADQUARTERS
22 Cummings Park, Woburn, MA 01801
T:781-935-3212 F:781-932-4857

www.proscience.net
general@proscience.net

☐ RUSH

Page 2 Of 4

Turn Around Time Requested

☐ Same day ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 5 Days

Client: Desmarais Environmental
Address: 62 Alwood Dr., Barrington, NH
Project Site & Number: memorial Bridge Portsmouth
Phone / FAX Number: 603-664-5500 / 603-664-5600
Contact: Ray & Tim no Fax

Relinquished by/date:
Received by/date: SB 8-15-11
Samples received: 21 Analyzed:
Faxed, E-mailed, Verbal by/date:
Stop on first positive: Yes No

For Lab Use> Batch Number B76820 Analyzed by/date: SB 8-15-11 *QC by/date:*

Lab ID	Field ID Sampled date	Description / Location	Stereo Scope: % Asbestos	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Circle Type: Crocidolite	Tremolite	Anthophylite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
	7		0	TN		py																F	HB 4				10
	8		0	TN		Cy																	HB 90				10
	9		0	B Brw				Lup	Dul	Sq			550	550	5								HB 5				95
	10		0	M Cru																			HB 10				90
	11	SB 8-15-11	0 mc	B Brw																			HB 5				95
	12		0	B Brn																	Pe 20		HB 10				70

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663

Laboratory uses the EPA or ELAP point count method as appropriate

For complete information about our services and locations please visit us at www.proscience.net or call the numbers above.

Revised on 4/7/09

ProScience Analytical Services, Inc.

PLM Asbestos Chain of Custody Record

LABORATORY/HEADQUARTERS
22 Cummings Park, Woburn, MA 01801
T:781-935-3212 F:781-932-4857

www.proscience.net
general@proscience.net

☐ RUSH

Turn Around Time Requested

☐ Same day ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 5 Days

Client: Desmarais Environmental
Address: 62 Alwood Dr., Barrington, NH
Project Site & Number: Memorial Bridge Portsmouth
Phone / FAX Number: 603-664-5500 / 603-664-5600
Contact: Ray & Tim no Fax

Relinquished by/date:
Received by/date: SB 8-15-11
Samples received: 21 Analyzed:
Faxed, E-mailed, Verbal by/date:
Stop on first positive: Yes No

For Lab Use> Batch Number BM682d Analyzed by/date: SB 8-15-11 *QC by/date:*

Lab ID	Field ID Sampled date	Description / Location	Stereo Scope: % Asbestos	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Circle Type: Crocidolite	Tremolite	Anthophylite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
	13		0	W		Py																					100
	14		0	B Br		Br																	tr3 10				90
	15	REC TEM	0	B Br		Br		SP	T	M	1/4	1/4		M												5	95
	16		0	B Br		Br		up	T	M	1/50	1/50	5										tr3 5				95
	17		0	B Br		Br		up	T	M	1/50	1/50	5										tr3 5				90
	18		0	G W		Br		up	T	M	1/50	1/50	3										tr3 10				87

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663

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Revised on 4/7/09

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PLM Asbestos Chain of Custody Record

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general@proscience.net

☐ RUSH

Turn Around Time Requested

☐ Same day ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 5 Days

Client: Desmarais Environmental
Address: 62 Alwood Dr., Barrington, NH
Project Site & Number: Memorial Bridge Portsmouth
Phone / FAX Number: 603-664-5500 / 603-664-5600
Contact: Ray & Tim no Fax

Relinquished by/date:
Received by/date: SB 8-15-11
Samples received: 21 Analyzed:
Faxed, E-mailed, Verbal by/date:
Stop on first positive: Yes No

For Lab Use> Batch Number B76820 Analyzed by/date: SB 8-15-11 *QC by/date:*

Lab ID	Field ID Sampled date	Description / Location	Stereo Scope: % Asbestos	Color	Homogeneity	Texture	Friable	Optical Properties: Morphology	Extinction	Sign of Elongation	Birefringence	Pleochroism	RI: ∥	⊥	Asbestos Percentage (%): Chrysotile	Amosite	Circle Type: Crocidolite	Tremolite	Anthophyllite	Actinolite	Non Asbestos Percentage (%): Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other	Non Fibrous
	19		0	B Kfsw				Lyp	Tw				553	550	5												95
	20		0	B Kfsw																			HB 10				90
	21		0	B Kfsw																			HB 10				90

Comments: Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 242277, 229027, 235000, 230663

Laboratory uses the EPA or ELAP point count method as appropriate

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Revised on 4/7/09

B76820

Sample Log and Chain of Custody Record

Project:	Memorial Bridge Portsmouth, NH

RUSH Turnaround Please

Sample #		Description	Location	Analysis
1		12X12 Floor Tile	Control Shack	PLM ASB
2		Mastic	Control Shack	PLM ASB
3		Wall Panel	Control Shack	PLM ASB
4		Floor Paint	Control Shack	PLM ASB
5		12X12 Fissured CT	Control Shack	PLM ASB
6		Grey Paint	Control Shack	PLM ASB
7		12X12 Wormy CT	Control Shack	PLM ASB
8		12X12 Smooth CT	Control Shack	PLM ASB
9		Double Cover Roofing	Control Shack	PLM ASB
10		Corrugated Roofing	Control Shack	PLM ASB
11		Sealant on Corrugated	Control Shack	PLM ASB
12		Stair tread	Control Shack	PLM ASB
13		Generator Exhaust Insulation	Control Shack	PLM ASB
14		Roofing	Center Shack	PLM ASB
15		Troweled on roofing	Center shack	PLM ASB
16		Roofing black	Gate Shack North	PLM ASB
17		Troweled on roofing	Gate Shack North	PLM ASB
18		Roofing Grey	Gate Shack North	PLM ASB
19		Troweled on roofing	Gate Shack North	PLM ASB
20		Roofing black	Gate Shack South	PLM ASB
21		Troweled on roofing	Gate Shack South	PLM ASB

Sampled By:	**Ray Desmarais**
Relinquished By:	**Ray Desmarais**
Date Sampled:	**August 13, 2011**
Date Shipped:	**August 13, 2011**
Shipped By:	**Federal Express**
Shipped To:	**Proscience Analytical Services, Inc.**
Received By:	8/15/11 8:20 A

Desmarais Environmental, Inc. 62 Al Wood Dr Barrington, NH 03825
Office: 603-664-5500 Fax: 603-664-5600