

Operation, Maintenance and Monitoring Report October 2012

**NOW Corporation
Site 3-14-008**

**Work Assignment No.
D007626-25**

Prepared for:

SUPERFUND STANDBY PROGRAM
New York State
Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Prepared by:

AECOM Technical Services Northeast, Inc.
40 British American Boulevard
Latham, New York 12110

December 2012

December 20 , 2012

Mr. Carl Hoffman, P.E.
NYSDEC Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7013

**Re: NOW Corporation - Site #3-14-008
O&M Summary Report: "October" 2012**

Dear Mr. Hoffman:

This monthly summary report describes the operation, monitoring and maintenance (OM&M) of the remedial system at the NOW Corporation site in the Town of Clinton, New York, for a 36-day period (**September 20 – October 26, 2012**).

With the exceptions noted below, if any, the P&T system was online and operational throughout the reporting period. Approximately 604,400 gallons of water were treated during the period. Discharge from the treatment system averaged approximately 16,789 gallons per day (gpd), compared to 24,845 gpd in the prior reporting period.

As of the last day of the reporting period, a total of 89,304,000 gallons of groundwater had been recovered and treated by the system since it became operational in February 1998.

Table 1 summarizes influent and effluent analytical data for water samples collected on October 26. **Effluent limitations were not exceeded this reporting period.** A copy of the analytical laboratory report is attached. Table 2 summarizes selected operational data recorded on the sampling date. The effluent samples were collected while the VFD was operating at 60 Hz.

AECOM made two site visits during the period to conduct the required system inspection, perform scheduled and unscheduled maintenance, and to collect water samples. The September service visit was described in the previous report. Details for the current period follow:

October 26 – AECOM was onsite to complete monthly influent, effluent, and recovery well sampling. The flow rate in TW-3 was increased from 2 gpm to 4 gpm. The propane tank was at 65% capacity.

The system efficiency and runtime was evaluated over the month. The system was down for approximately one day, when a low pressure alarm triggered a shutdown on October 29. The system was successfully restarted remotely on October 30. The system operated without incident for the remainder of the period. Downtime was approximately 4% of the reporting period.

Please feel free to contact me at (518) 951-2262 if you have any questions regarding this report or the operation of the treatment system.

Sincerely,
AECOM Technical Services Northeast, Inc.



Stephen R. Choiniere
Project Manager

Table 1
Summary of Influent and Effluent Data
Sampling Date: October 26, 2012
NOW Corporation Site
Town of Clinton, New York

Analytes/ Parameters	Total Influent	Effluent	Recovery Wells			Effluent Limitations	
			TW-1	TW-2A	TW-3		(units)
Quantity treated, per day		16,789				Monitor	gallons
pH	6.8	7.2				6.5 to 8.5	standard units
Oil and Grease	<1	<1	NA	NA	NA	15	mg/L
Total Cyanide	<10	<10	NA	NA	NA	10	ug/L
TDS	300	470	NA	NA	NA	1000	mg/L
TSS	<10	<10	NA	NA	NA	50	mg/L
Aluminum, Total	<200	<200	NA	NA	NA	Monitor	ug/L
Arsenic, Total	<20	<20	NA	NA	NA	100	ug/L
Barium, Total	91 J	92	NA	NA	NA	Monitor	ug/L
Chromium	<20	<20	NA	NA	NA	400	ug/L
Copper	<25	<25	NA	NA	NA	24	ug/L
Iron	<200	<200	NA	NA	NA	600	ug/L
Mercury	0.046 J	<0.20	NA	NA	NA	0.8	ug/L
Manganese	120	91	NA	NA	NA	Monitor	ug/L
Nickel	1.5 J	1.5 J	NA	NA	NA	200	ug/L
Zinc	<5	<50	NA	NA	NA	150	ug/L
1,1,1-Trichloroethane	410	<0.5	<2	510	14	10	ug/L
1,1,2-Trichloroethane	<10	<0.5	<2	<20	<0.5	1.2	ug/L
1,1-Dichloroethane	190	<0.5	33	200	20	10	ug/L
1,1-Dichloroethene	33	<0.5	10	43	1.9	0.5	ug/L
1,2-Dichloroethane	<10	<0.5	<2	<20	<0.5	1.6	ug/L
Benzene	<10	<0.5	<2	<20	<0.5	1.4	ug/L
Chlorobenzene	<10	<0.5	<2	<20	<0.5	10	ug/L
Chloroethane	<10	<0.5	<2	<20	<0.5	10	ug/L
cis -1,2-Dichloroethene	15	<0.5	3.2	<20	0.91	5	ug/L
Ethylbenzene	<10	<0.5	<2	<20	<0.5	10	ug/L
o-Xylene	<10	<0.5	<2	<20	<0.5	5	ug/L
m,p-Xylene	<10	<0.5	<2	<20	<0.5	10	ug/L
Tetrachloroethene	<10	<0.5	<2	<20	<0.5	1.4	ug/L
Toluene	<10	<0.5	<2	<20	<0.5	10	ug/L
trans -1,2-Dichloroethene	<10	<0.5	<2	<20	<0.5	5	ug/L
Trichloroethene	410	<0.5	40	480	30	6	ug/L
Vinyl Chloride	<10	<0.5	<2	<20	<0.5	0.6	ug/L

Notes:

- 1) Detected concentrations are presented in **bold** typeface, and are expressed in the units shown in far right column.
- 2) Effluent concentration boxed in **bold** denotes exceedance of effluent limitations.
- 3) NA indicates not analyzed.
- 4) "J" indicates an estimated concentration below the reporting limit (RL).
- 5) "B" denotes metal detected in method blank at concentration below the RL, but above the method detection limit.

Table 2
Summary of October 2012 O&M Data

NOW Corporation Site
Town of Clinton, New York

Instrumentation/Readings:		10/26/12	Units
<i>TW-1</i>			
	Pumping Rate	1	GPM
	Water Level Above Transducer	30.63	feet
	Flow Meter Reading	6,350,700	gallons
	Pump Pressure	80	psi
<i>TW-2A</i>			
	Pumping Rate	~14	GPM
	Water Level Above Transducer	13.12	feet
	Flow Meter Reading	24,702,800	gallons
	Pump Pressure	80	psi
<i>TW-3</i>			
	Pumping Rate	4	GPM
	Water Level Above Transducer	63.02	feet
	Flow Meter Reading	9,846,900	gallons
	Pump Pressure	70	psi
<i>Air Stripper</i>			
	Stripper Blower Pressure	17.5	inches H ₂ O
	Air Temperature in Stripper	54	°F
<i>Effluent Flow</i>			
	Effluent Flow this period (calculated)	604,400	gallons
	Total Effluent Flow (calculated)	89,304,000	gallons

Report Date:
20-Nov-12 13:03



- ☒ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

AECOM Technical Services, Inc.
40 British American Boulevard
Latham, NY 12110

Work Order: L2311
Project : NOW Corp. Site
Project #:

Attn: Stephen Choiniere

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
L2311-01	EFF 102612	Aqueous	26-Oct-12 11:15	29-Oct-12 08:34
L2311-02	INF 102612	Aqueous	26-Oct-12 11:35	29-Oct-12 08:34
L2311-03	TW-1 102612	Aqueous	26-Oct-12 11:45	29-Oct-12 08:34
L2311-04	TW-2A 102612	Aqueous	26-Oct-12 11:50	29-Oct-12 08:34
L2311-05	TW-3 102612	Aqueous	26-Oct-12 12:00	29-Oct-12 08:34
L2311-06	TB 102612	Aqueous	26-Oct-12 00:00	29-Oct-12 08:34

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the sample(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirements have been met.

Spectrum Analytical (Rhode Island) is accredited under the National Environmental Laboratory Approval Program (NELAP) and DoD Environmental Laboratory Accreditation Program (ELAP), holds Organic and Inorganic contracts under the USEPA CLP Program and is certified under several states. The current list of our laboratory approvals and certifications is available on the Certifications page on our web site at www.spectrum-analytical.com.

Please contact the Laboratory or Technical Director at 401-732-3400 with any questions regarding the data contained in the laboratory report.

Department of Defense	N/A
Connecticut	PH-0153
Delaware	N/A
Florida	E87664
Maine	2007037
Massachusetts	M-RI907
New Hampshire	2631
New Jersey	RI001
New York	11522
North Carolina	581
Rhode Island	LAI00301
USDA	P330-08-00023
USEPA - ISM	EP-W-09-039
USEPA - SOM	EP-W-11-033



Authorized by:

Yihai Ding
Laboratory Director

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : AECOM Technical Services, Inc.

Project: NOW Corp. Site

Laboratory Workorder / SDG #: L2311

SW846 8260C, VOC by GC-MS (25 mL Purge)

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code:
SW846 8260C

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW5030

V. INSTRUMENTATION

The following instrumentation was used

Instrument Code: V5
Instrument Type: GCMS-VOA
Description: HP6890 / HP6890
Manufacturer: Hewlett-Packard
Model: 6890 / 6890

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Surrogates:

Surrogate standard percent recoveries were within the QC limits.

D. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No client-requested MS/MSD analyses were included in this SDG.

E. Internal Standards:

Internal standard peak areas were within the QC limits.

F. Dilutions:

The following samples were analyzed at dilution:

INF 102612 (L2311-02A) : Dilution Factor: 20
TW-1 102612 (L2311-03A) : Dilution Factor: 4
TW-2A 102612 (L2311-04A) : Dilution Factor: 40

G. Samples:

No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

A handwritten signature in black ink, appearing to be 'J. H. R.', written over a horizontal line.

Signed: _____

Date: _____ 11/17/2012 _____

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : AECOM Technical Services, Inc.

Project: NOW Corp. Site

Laboratory Workorder / SDG #: L2311

SW846 6010C, SW846 7470A

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code:
SW846 6010C, SW846 7470A

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SW3005A
Aqueous Samples were prepared following procedures in laboratory test code: SW7470A

V. INSTRUMENTATION

The following instrumentation was used to perform analysis:

Instrument Code: FIMS2
Instrument Type: CVAA
Description: FIMS
Manufacturer: Perkin-Elmer
Model: FIMS100

Instrument Code: OPTIMA3
Instrument Type: ICP
Description: Optima ICP-OES
Manufacturer: Perkin-Elmer
Model: 4300 DV

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for laboratory control samples were within the QC limits.

2. Matrix spike (MS):

A matrix spike was not performed on any sample in this SDG.

D. Post Digestion Spike (PDS):

A post-digestion spike was not performed on any sample in this SDG.

E. Duplicate sample:

A duplicate analysis was not performed on any sample in this SDG.

F. Serial Dilution (SD):

A serial dilution was not performed on any sample in this SDG.

G. Samples:

No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:  _____

Date: 11/20/12

REPORT NARRATIVE

Spectrum Analytical, Inc. Featuring Hanibal Technology, RI Division.

Client : AECOM Technical Services, Inc.

Project: NOW Corp. Site

Laboratory Workorder / SDG #: L2311

SM 2540C, SM 2540D, SW846 9012B

I. SAMPLE RECEIPT

No exceptions or unusual conditions were encountered unless a Sample Condition Notification Form, or other record of communication is included with the Sample Receipt Documentation.

II. HOLDING TIMES

A. Sample Preparation:

All samples were prepared within the method-specified holding times.

B. Sample Analysis:

All samples were analyzed within the method-specified holding times.

III. METHODS

Samples were analyzed following procedures in laboratory test code: SM 2540C, SM 2540D, SW846 9012B

IV. PREPARATION

Aqueous Samples were prepared following procedures in laboratory test code: SM 2540C, SM 2540D, SW846 9012B

V. INSTRUMENTATION

The following instrumentation was used to perform analysis:

Instrument Code: LACHAT1
Instrument Type: WC
Description: Flow Injection Analyzer
Manufacturer: Zellweger Analytics
Model: Quik-Chem 8000

VI. ANALYSIS

A. Calibration:

Calibrations met the method/SOP acceptance criteria.

B. Blanks:

All method blanks were within the acceptance criteria.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Percent recoveries for lab control samples were within the QC limits.

2. Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No client-requested MS/MSD analyses were included in this SDG.

D. Duplicate sample:

Relative percent differences were within the QC limits.

E. Dilutions:

No sample required dilution in this SDG.

F. Samples:

No other unusual occurrences were noted during sample analysis.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Signed:  _____

Date: 11/20/12

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/15/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: EFF 102612

Lab ID: L2311-01

Project: NOW Corp. Site

Collection Date: 10/26/12 11:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		0.50	ug/L	1	11/07/2012 17:47	69152
Chloroethane	ND		0.50	ug/L	1	11/07/2012 17:47	69152
1,1-Dichloroethene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
trans-1,2-Dichloroethene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
Methyl tert-butyl ether	ND		0.50	ug/L	1	11/07/2012 17:47	69152
1,1-Dichloroethane	ND		0.50	ug/L	1	11/07/2012 17:47	69152
cis-1,2-Dichloroethene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
1,1,1-Trichloroethane	ND		0.50	ug/L	1	11/07/2012 17:47	69152
1,2-Dichloroethane	ND		0.50	ug/L	1	11/07/2012 17:47	69152
Benzene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
Trichloroethene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
Toluene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
1,1,2-Trichloroethane	ND		0.50	ug/L	1	11/07/2012 17:47	69152
Tetrachloroethene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
Chlorobenzene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
Ethylbenzene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
m,p-Xylene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
o-Xylene	ND		0.50	ug/L	1	11/07/2012 17:47	69152
Surrogate: Dibromofluoromethane	99.4		88-124	%REC	1	11/07/2012 17:47	69152
Surrogate: 1,2-Dichloroethane-d4	88.1		79-115	%REC	1	11/07/2012 17:47	69152
Surrogate: Toluene-d8	100		80-114	%REC	1	11/07/2012 17:47	69152
Surrogate: Bromofluorobenzene	101		60-123	%REC	1	11/07/2012 17:47	69152

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/15/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: INF 102612

Lab ID: L2311-02

Project: NOW Corp. Site

Collection Date: 10/26/12 11:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		10	ug/L		20 11/07/2012 18:13	69152
Chloroethane	ND		10	ug/L		20 11/07/2012 18:13	69152
1,1-Dichloroethene	33		10	ug/L		20 11/07/2012 18:13	69152
trans-1,2-Dichloroethene	ND		10	ug/L		20 11/07/2012 18:13	69152
Methyl tert-butyl ether	ND		10	ug/L		20 11/07/2012 18:13	69152
1,1-Dichloroethane	190		10	ug/L		20 11/07/2012 18:13	69152
cis-1,2-Dichloroethene	15		10	ug/L		20 11/07/2012 18:13	69152
1,1,1-Trichloroethane	410		10	ug/L		20 11/07/2012 18:13	69152
1,2-Dichloroethane	ND		10	ug/L		20 11/07/2012 18:13	69152
Benzene	ND		10	ug/L		20 11/07/2012 18:13	69152
Trichloroethene	410		10	ug/L		20 11/07/2012 18:13	69152
Toluene	ND		10	ug/L		20 11/07/2012 18:13	69152
1,1,2-Trichloroethane	ND		10	ug/L		20 11/07/2012 18:13	69152
Tetrachloroethene	ND		10	ug/L		20 11/07/2012 18:13	69152
Chlorobenzene	ND		10	ug/L		20 11/07/2012 18:13	69152
Ethylbenzene	ND		10	ug/L		20 11/07/2012 18:13	69152
m,p-Xylene	ND		10	ug/L		20 11/07/2012 18:13	69152
o-Xylene	ND		10	ug/L		20 11/07/2012 18:13	69152
Surrogate: Dibromofluoromethane	99.7		88-124	%REC		20 11/07/2012 18:13	69152
Surrogate: 1,2-Dichloroethane-d4	84.4		79-115	%REC		20 11/07/2012 18:13	69152
Surrogate: Toluene-d8	100		80-114	%REC		20 11/07/2012 18:13	69152
Surrogate: Bromofluorobenzene	104		60-123	%REC		20 11/07/2012 18:13	69152

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/15/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: TW-1 102612

Lab ID: L2311-03

Project: NOW Corp. Site

Collection Date: 10/26/12 11:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		2.0	ug/L	4	11/07/2012 18:41	69152
Chloroethane	ND		2.0	ug/L	4	11/07/2012 18:41	69152
1,1-Dichloroethene	10		2.0	ug/L	4	11/07/2012 18:41	69152
trans-1,2-Dichloroethene	ND		2.0	ug/L	4	11/07/2012 18:41	69152
Methyl tert-butyl ether	ND		2.0	ug/L	4	11/07/2012 18:41	69152
1,1-Dichloroethane	33		2.0	ug/L	4	11/07/2012 18:41	69152
cis-1,2-Dichloroethene	3.2		2.0	ug/L	4	11/07/2012 18:41	69152
1,1,1-Trichloroethane	ND		2.0	ug/L	4	11/07/2012 18:41	69152
1,2-Dichloroethane	ND		2.0	ug/L	4	11/07/2012 18:41	69152
Benzene	ND		2.0	ug/L	4	11/07/2012 18:41	69152
Trichloroethene	40		2.0	ug/L	4	11/07/2012 18:41	69152
Toluene	ND		2.0	ug/L	4	11/07/2012 18:41	69152
1,1,2-Trichloroethane	ND		2.0	ug/L	4	11/07/2012 18:41	69152
Tetrachloroethene	ND		2.0	ug/L	4	11/07/2012 18:41	69152
Chlorobenzene	ND		2.0	ug/L	4	11/07/2012 18:41	69152
Ethylbenzene	ND		2.0	ug/L	4	11/07/2012 18:41	69152
m,p-Xylene	ND		2.0	ug/L	4	11/07/2012 18:41	69152
o-Xylene	ND		2.0	ug/L	4	11/07/2012 18:41	69152
Surrogate: Dibromofluoromethane	101		88-124	%REC	4	11/07/2012 18:41	69152
Surrogate: 1,2-Dichloroethane-d4	79.7		79-115	%REC	4	11/07/2012 18:41	69152
Surrogate: Toluene-d8	101		80-114	%REC	4	11/07/2012 18:41	69152
Surrogate: Bromofluorobenzene	103		60-123	%REC	4	11/07/2012 18:41	69152

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/15/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: TW-2A 102612

Lab ID: L2311-04

Project: NOW Corp. Site

Collection Date: 10/26/12 11:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		20	ug/L	40	11/07/2012 19:08	69152
Chloroethane	ND		20	ug/L	40	11/07/2012 19:08	69152
1,1-Dichloroethene	43		20	ug/L	40	11/07/2012 19:08	69152
trans-1,2-Dichloroethene	ND		20	ug/L	40	11/07/2012 19:08	69152
Methyl tert-butyl ether	ND		20	ug/L	40	11/07/2012 19:08	69152
1,1-Dichloroethane	200		20	ug/L	40	11/07/2012 19:08	69152
cis-1,2-Dichloroethene	ND		20	ug/L	40	11/07/2012 19:08	69152
1,1,1-Trichloroethane	510		20	ug/L	40	11/07/2012 19:08	69152
1,2-Dichloroethane	ND		20	ug/L	40	11/07/2012 19:08	69152
Benzene	ND		20	ug/L	40	11/07/2012 19:08	69152
Trichloroethene	480		20	ug/L	40	11/07/2012 19:08	69152
Toluene	ND		20	ug/L	40	11/07/2012 19:08	69152
1,1,2-Trichloroethane	ND		20	ug/L	40	11/07/2012 19:08	69152
Tetrachloroethene	ND		20	ug/L	40	11/07/2012 19:08	69152
Chlorobenzene	ND		20	ug/L	40	11/07/2012 19:08	69152
Ethylbenzene	ND		20	ug/L	40	11/07/2012 19:08	69152
m,p-Xylene	ND		20	ug/L	40	11/07/2012 19:08	69152
o-Xylene	ND		20	ug/L	40	11/07/2012 19:08	69152
Surrogate: Dibromofluoromethane	99.8		88-124	%REC	40	11/07/2012 19:08	69152
Surrogate: 1,2-Dichloroethane-d4	83.6		79-115	%REC	40	11/07/2012 19:08	69152
Surrogate: Toluene-d8	100		80-114	%REC	40	11/07/2012 19:08	69152
Surrogate: Bromofluorobenzene	102		60-123	%REC	40	11/07/2012 19:08	69152

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/15/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: TW-3 102612

Lab ID: L2311-05

Project: NOW Corp. Site

Collection Date: 10/26/12 12:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)							SW8260_25_W
Vinyl chloride	ND		0.50	ug/L	1	11/07/2012 19:34	69152
Chloroethane	ND		0.50	ug/L	1	11/07/2012 19:34	69152
1,1-Dichloroethene	1.9		0.50	ug/L	1	11/07/2012 19:34	69152
trans-1,2-Dichloroethene	ND		0.50	ug/L	1	11/07/2012 19:34	69152
Methyl tert-butyl ether	ND		0.50	ug/L	1	11/07/2012 19:34	69152
1,1-Dichloroethane	20		0.50	ug/L	1	11/07/2012 19:34	69152
cis-1,2-Dichloroethene	0.91		0.50	ug/L	1	11/07/2012 19:34	69152
1,1,1-Trichloroethane	14		0.50	ug/L	1	11/07/2012 19:34	69152
1,2-Dichloroethane	ND		0.50	ug/L	1	11/07/2012 19:34	69152
Benzene	ND		0.50	ug/L	1	11/07/2012 19:34	69152
Trichloroethene	30		0.50	ug/L	1	11/07/2012 19:34	69152
Toluene	ND		0.50	ug/L	1	11/07/2012 19:34	69152
1,1,2-Trichloroethane	ND		0.50	ug/L	1	11/07/2012 19:34	69152
Tetrachloroethene	ND		0.50	ug/L	1	11/07/2012 19:34	69152
Chlorobenzene	ND		0.50	ug/L	1	11/07/2012 19:34	69152
Ethylbenzene	ND		0.50	ug/L	1	11/07/2012 19:34	69152
m,p-Xylene	ND		0.50	ug/L	1	11/07/2012 19:34	69152
o-Xylene	ND		0.50	ug/L	1	11/07/2012 19:34	69152
Surrogate: Dibromofluoromethane	99.6		88-124	%REC	1	11/07/2012 19:34	69152
Surrogate: 1,2-Dichloroethane-d4	84.5		79-115	%REC	1	11/07/2012 19:34	69152
Surrogate: Toluene-d8	101		80-114	%REC	1	11/07/2012 19:34	69152
Surrogate: Bromofluorobenzene	101		60-123	%REC	1	11/07/2012 19:34	69152

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/15/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: TB 102612

Lab ID: L2311-06

Project: NOW Corp. Site

Collection Date: 10/26/12 0:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 8260C -- VOC by GC-MS (25 mL Purge)						SW8260_25_W	
Vinyl chloride	ND		0.50	ug/L	1	11/07/2012 20:02	69152
Chloroethane	ND		0.50	ug/L	1	11/07/2012 20:02	69152
1,1-Dichloroethene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
trans-1,2-Dichloroethene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
Methyl tert-butyl ether	ND		0.50	ug/L	1	11/07/2012 20:02	69152
1,1-Dichloroethane	ND		0.50	ug/L	1	11/07/2012 20:02	69152
cis-1,2-Dichloroethene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
1,1,1-Trichloroethane	ND		0.50	ug/L	1	11/07/2012 20:02	69152
1,2-Dichloroethane	ND		0.50	ug/L	1	11/07/2012 20:02	69152
Benzene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
Trichloroethene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
Toluene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
1,1,2-Trichloroethane	ND		0.50	ug/L	1	11/07/2012 20:02	69152
Tetrachloroethene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
Chlorobenzene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
Ethylbenzene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
m,p-Xylene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
o-Xylene	ND		0.50	ug/L	1	11/07/2012 20:02	69152
Surrogate: Dibromofluoromethane	101		88-124	%REC	1	11/07/2012 20:02	69152
Surrogate: 1,2-Dichloroethane-d4	87.7		79-115	%REC	1	11/07/2012 20:02	69152
Surrogate: Toluene-d8	102		80-114	%REC	1	11/07/2012 20:02	69152
Surrogate: Bromofluorobenzene	101		60-123	%REC	1	11/07/2012 20:02	69152

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

CLIENT: AECOM Technical Services, Inc.

Work Order: L2311

Project: NOW Corp. Site

ANALYTICAL QC SUMMARY REPORT

SW8260_25_W

SW846 8260C -- VOC by GC-MS (25 mL Purge)

Sample ID: MB-69152	SampType: MBLK	TestCode: SW8260_25_W	Prep Date: 11/07/12 9:20	Run ID: V5_121107B							
Client ID: MB-69152	Batch ID: 69152	Units: ug/L	Analysis Date: 11/07/12 17:20	SeqNo: 1826910							
Analyte	Result	MDL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.15									
Chloroethane	ND	0.24									
1,1-Dichloroethene	ND	0.19									
trans-1,2-Dichloroethene	ND	0.14									
Methyl tert-butyl ether	ND	0.13									
1,1-Dichloroethane	ND	0.18									
cis-1,2-Dichloroethene	ND	0.19									
1,1,1-Trichloroethane	ND	0.11									
1,2-Dichloroethane	ND	0.16									
Benzene	ND	0.12									
Trichloroethene	ND	0.13									
Toluene	ND	0.14									
1,1,2-Trichloroethane	ND	0.20									
Tetrachloroethene	ND	0.17									
Chlorobenzene	ND	0.13									
Ethylbenzene	ND	0.13									
m,p-Xylene	ND	0.22									
o-Xylene	ND	0.17									
Surrogate:	10.08		10.00	0	101	88	124		0		
Dibromofluoromethane											
Surrogate: 1,2-	8.810		10.00	0	88.1	79	115		0		
Dichloroethane-d4											
Surrogate: Toluene-d8	10.05		10.00	0	101	80	114		0		
Surrogate:	10.27		10.00	0	103	60	123		0		
Bromofluorobenzene											

CLIENT: AECOM Technical Services, Inc.
Work Order: L2311
Project: NOW Corp. Site

ANALYTICAL QC SUMMARY REPORT
SW8260_25_W
SW846 8260C -- VOC by GC-MS (25 mL Purge)

Sample ID: LCS-69152	SampType: LCS	TestCode: SW8260_25_W	Prep Date: 11/07/12 9:20	Run ID: V5_121107B								
Client ID: LCS-69152	Batch ID: 69152	Units: ug/L	Analysis Date: 11/07/12 16:00	SeqNo: 1826908								
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	9.757	0.15	0.50	10.00	0	97.6	77	120	0			
Chloroethane	9.880	0.24	0.50	10.00	0	98.8	75	135	0			
1,1-Dichloroethene	10.22	0.19	0.50	10.00	0	102	81	125	0			
trans-1,2-Dichloroethene	9.785	0.14	0.50	10.00	0	97.9	60	137	0			
Methyl tert-butyl ether	10.03	0.13	0.50	10.00	0	100	61	134	0			
1,1-Dichloroethane	9.743	0.18	0.50	10.00	0	97.4	82	120	0			
cis-1,2-Dichloroethene	9.917	0.19	0.50	10.00	0	99.2	84	116	0			
1,1,1-Trichloroethane	9.955	0.11	0.50	10.00	0	99.6	80	124	0			
1,2-Dichloroethane	9.994	0.16	0.50	10.00	0	99.9	86	117	0			
Benzene	9.921	0.12	0.50	10.00	0	99.2	81	121	0			
Trichloroethene	10.08	0.13	0.50	10.00	0	101	74	123	0			
Toluene	10.09	0.14	0.50	10.00	0	101	88	117	0			
1,1,2-Trichloroethane	9.936	0.20	0.50	10.00	0	99.4	83	121	0			
Tetrachloroethene	9.947	0.17	0.50	10.00	0	99.5	74	115	0			
Chlorobenzene	9.944	0.13	0.50	10.00	0	99.4	83	112	0			
Ethylbenzene	9.973	0.13	0.50	10.00	0	99.7	87	110	0			
m,p-Xylene	19.87	0.22	0.50	20.00	0	99.4	87	114	0			
o-Xylene	9.872	0.17	0.50	10.00	0	98.7	84	114	0			
Surrogate:	9.883		0.50	10.00	0	98.8	88	124	0			
Dibromofluoromethane												
Surrogate: 1,2-	9.739		0.50	10.00	0	97.4	79	115	0			
Dichloroethane-d4												
Surrogate: Toluene-d8	10.05		0.50	10.00	0	101	80	114	0			
Surrogate:	9.991		0.50	10.00	0	99.9	60	123	0			
Bromofluorobenzene												

CLIENT: AECOM Technical Services, Inc.
Work Order: L2311
Project: NOW Corp. Site

ANALYTICAL QC SUMMARY REPORT
SW8260_25_W
SW846 8260C -- VOC by GC-MS (25 mL Purge)

Sample ID: LCSD-69152	SampType: LCSD	TestCode: SW8260_25_W			Prep Date: 11/07/12 9:20		Run ID: V5_121107B					
Client ID: LCSD-69152	Batch ID: 69152	Units: ug/L			Analysis Date: 11/07/12 16:27		SeqNo: 1826909					
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	9.755	0.15	0.50	10.00	0	97.6	77	120	9.757	0.0128	40	
Chloroethane	9.805	0.24	0.50	10.00	0	98.1	75	135	9.880	0.767	40	
1,1-Dichloroethene	10.23	0.19	0.50	10.00	0	102	81	125	10.22	0.152	40	
trans-1,2-Dichloroethene	9.686	0.14	0.50	10.00	0	96.9	60	137	9.785	1.02	40	
Methyl tert-butyl ether	9.753	0.13	0.50	10.00	0	97.5	61	134	10.03	2.77	40	
1,1,1-Dichloroethane	9.625	0.18	0.50	10.00	0	96.3	82	120	9.743	1.22	40	
cis-1,2-Dichloroethene	9.788	0.19	0.50	10.00	0	97.9	84	116	9.917	1.31	40	
1,1,1-Trichloroethane	10.03	0.11	0.50	10.00	0	100	80	124	9.955	0.767	40	
1,2-Dichloroethane	9.774	0.16	0.50	10.00	0	97.7	86	117	9.994	2.23	40	
Benzene	9.867	0.12	0.50	10.00	0	98.7	81	121	9.921	0.541	40	
Trichloroethene	9.792	0.13	0.50	10.00	0	97.9	74	123	10.08	2.91	40	
Toluene	9.842	0.14	0.50	10.00	0	98.4	88	117	10.09	2.47	40	
1,1,2-Trichloroethane	9.670	0.20	0.50	10.00	0	96.7	83	121	9.936	2.72	40	
Tetrachloroethene	9.972	0.17	0.50	10.00	0	99.7	74	115	9.947	0.25	40	
Chlorobenzene	9.896	0.13	0.50	10.00	0	99.0	83	112	9.944	0.476	40	
Ethylbenzene	9.990	0.13	0.50	10.00	0	99.9	87	110	9.973	0.176	40	
m,p-Xylene	19.86	0.22	0.50	20.00	0	99.3	87	114	19.87	0.0362	40	
o-Xylene	9.883	0.17	0.50	10.00	0	98.8	84	114	9.872	0.115	40	
Surrogate:	9.914		0.50	10.00	0	99.1	88	124	0			
Dibromofluoromethane												
Surrogate: 1,2-	9.484		0.50	10.00	0	94.8	79	115	0			
Dichloroethane-d4												
Surrogate: Toluene-d8	9.991		0.50	10.00	0	99.9	80	114	0			
Surrogate:	9.900		0.50	10.00	0	99.0	60	123	0			
Bromofluorobenzene												

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/19/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: EFF 102612

Lab ID: L2311-01

Project: NOW Corp. Site

Collection Date: 10/26/12 11:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6010C -- Metals by ICP							SW6010_W
Aluminum	ND		200	ug/L	1	11/14/2012 11:14	69228
Arsenic	ND		20	ug/L	1	11/14/2012 11:14	69228
Barium	92	J	200	ug/L	1	11/14/2012 11:14	69228
Chromium	ND		20	ug/L	1	11/14/2012 11:14	69228
Copper	ND		25	ug/L	1	11/14/2012 11:14	69228
Iron	ND		200	ug/L	1	11/14/2012 11:14	69228
Manganese	91		50	ug/L	1	11/14/2012 11:14	69228
Nickel	1.5	J	50	ug/L	1	11/14/2012 11:14	69228
Zinc	ND		50	ug/L	1	11/14/2012 11:14	69228
SW846 7470A -- Mercury by FIA							SW7470
Mercury	ND		0.20	µg/L	1	11/15/2012 10:51	69247

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/19/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: INF 102612

Lab ID: L2311-02

Project: NOW Corp. Site

Collection Date: 10/26/12 11:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SW846 6010C -- Metals by ICP							SW6010_W
Aluminum	ND		200	ug/L	1	11/14/2012 11:18	69228
Arsenic	ND		20	ug/L	1	11/14/2012 11:18	69228
Barium	91	J	200	ug/L	1	11/14/2012 11:18	69228
Chromium	ND		20	ug/L	1	11/14/2012 11:18	69228
Copper	ND		25	ug/L	1	11/14/2012 11:18	69228
Iron	ND		200	ug/L	1	11/14/2012 11:18	69228
Manganese	120		50	ug/L	1	11/14/2012 11:18	69228
Nickel	1.5	J	50	ug/L	1	11/14/2012 11:18	69228
Zinc	ND		50	ug/L	1	11/14/2012 11:18	69228
SW846 7470A -- Mercury by FIA							SW7470
Mercury	0.046	J	0.20	µg/L	1	11/15/2012 10:53	69247

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

CLIENT: AECOM Technical Services, Inc.

Work Order: L2311

Project: NOW Corp. Site

ANALYTICAL QC SUMMARY REPORT

SW6010_W

SW846 6010C -- Metals by ICP

Sample ID: MB-69228	SampType: MBLK	TestCode: SW6010_W	Prep Date: 11/13/12 10:30	Run ID: OPTIMA3_121114A								
Client ID: MB-69228	Batch ID: 69228	Units: ug/L	Analysis Date: 11/14/12 9:30	SeqNo: 1828691								
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	66	200									
Arsenic	ND	4.3	20									
Barium	ND	1.1	200									
Chromium	ND	0.64	20									
Copper	ND	3.6	30									
Iron	ND	31	200									
Manganese	ND	10	50									
Nickel	ND	0.85	50									
Zinc	ND	4.9	50									

Sample ID: LCS-69228		SampType: LCS		TestCode: SW6010_W		Prep Date: 11/13/12 10:30		Run ID: OPTIMA3_121114A				
Client ID: LCS-69228		Batch ID: 69228		Units: ug/L		Analysis Date: 11/14/12 9:34		SeqNo: 1828692				
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	9339	66	200	9100	0	103	80	120	0			
Arsenic	477.7	4.3	20	455.0	0	105	80	120	0			
Barium	9602	1.1	200	9100	0	106	80	120	0			
Chromium	940.9	0.64	20	910.0	0	103	80	120	0			
Copper	1184	3.6	30	1130	0	105	80	120	0			
Iron	4622	31	200	4550	0	102	80	120	0			
Manganese	2363	10	50	2270	0	104	80	120	0			
Nickel	2378	0.85	50	2270	0	105	80	120	0			
Zinc	2380	4.9	50	2270	0	105	80	120	0			

Sample ID: MB-69247	SampType: MBLK	TestCode: SW7470	Prep Date: 11/14/12 13:00	Run ID: FIMS2_121115A							
Client ID: MB-69247	Batch ID: 69247	Units: µg/L	Analysis Date: 11/15/12 10:41	SeqNo: 1829862							
Analyte	Result	MDL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

MercuryND0.0280.20

Sample ID: LCS-69247	SampType: LCS	TestCode: SW7470	Prep Date: 11/14/12 13:00	Run ID: FIMS2_121115A							
Client ID: LCS-69247	Batch ID: 69247	Units: µg/L	Analysis Date: 11/15/12 10:43	SeqNo: 1829864							
Analyte	Result	MDL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury4.9480.0280.204.5500109801200

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/19/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: EFF 102612

Lab ID: L2311-01

Project: NOW Corp. Site

Collection Date: 10/26/12 11:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 2540C -- TOTAL DISSOLVED SOLIDS							SM2540_TDS
Total Dissolved Solids	470		10	mg/L	1	10/30/2012 22:54	69126
SM 2540D -- TOTAL SUSPENDED SOLIDS							SM2540_TSS
Total Suspended Solids	ND		10	mg/L	1	10/30/2012 22:54	69127
SW846 9012B -- Total Cyanide							SW9012_W
Cyanide	ND		10	ug/L	1	11/08/2012 14:31	69192

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

11/19/2012

Client: AECOM Technical Services, Inc.

Client Sample ID: INF 102612

Lab ID: L2311-02

Project: NOW Corp. Site

Collection Date: 10/26/12 11:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SM 2540C -- TOTAL DISSOLVED SOLIDS							SM2540_TDS
Total Dissolved Solids	300		10	mg/L	1	10/31/2012 2:06	69126
SM 2540D -- TOTAL SUSPENDED SOLIDS							SM2540_TSS
Total Suspended Solids	ND		10	mg/L	1	10/31/2012 2:06	69127
SW846 9012B -- Total Cyanide							SW9012_W
Cyanide	ND		10	ug/L	1	11/08/2012 14:33	69192

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

CLIENT: AECOM Technical Services, Inc.

Work Order: L2311

Project: NOW Corp. Site

ANALYTICAL QC SUMMARY REPORT

SM2540_TDS

SM 2540C -- TOTAL DISSOLVED SOLIDS

Sample ID: MB-69126	SampType: MBLK	TestCode: SM2540_TDS	Prep Date: 10/30/12 16:30	Run ID: MANUAL_121030B						
Client ID: MB-69126	Batch ID: 69126	Units: mg/L	Analysis Date: 10/30/12 16:30	SeqNo: 1827193						
Analyte	Result	MDL	SPK value	SPK Ref Val	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids		ND	10							

Sample ID: LCS-69126	SampType: LCS	TestCode: SM2540_TDS	Prep Date: 10/30/12 16:30	Run ID: MANUAL_121030B							
Client ID: LCS-69126	Batch ID: 69126	Units: mg/L	Analysis Date: 10/30/12 19:42	SeqNo: 1827194							
Analyte	Result	MDL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	416.0	10	10	418.0	0	99.5	80	120	0		

Sample ID: L2311-02CDUP	SampType: DUP	TestCode: SM2540_TDS	Prep Date: 10/30/12 16:30	Run ID: MANUAL_121030B							
Client ID: INF 102612	Batch ID: 69126	Units: mg/L	Analysis Date: 10/31/12 5:18	SeqNo: 1827197							
Analyte	Result	MDL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	298.0	10	0	0	0	0	0	301.0	1.0	5.0	

Sample ID: MB-69127	SampType: MBLK	TestCode: SM2540_TSS	Prep Date: 10/30/12 16:30	Run ID: MANUAL_121030C
Client ID: MB-69127	Batch ID: 69127	Units: mg/L	Analysis Date: 10/30/12 16:30	SeqNo: 1827218
Analyte	Result	MDL	SPK value	SPK Ref Val
	ND	10	49.30	0
Total Suspended Solids		10		

Sample ID: LCS-69127	SampType: LCS	TestCode: SM2540_TSS	Prep Date: 10/30/12 16:30	Run ID: MANUAL_121030C
Client ID: LCS-69127	Batch ID: 69127	Units: mg/L	Analysis Date: 10/30/12 19:42	SeqNo: 1827219
Analyte	Result	MDL	SPK value	SPK Ref Val
	51.00	10	49.30	0
Total Suspended Solids		10		

Sample ID: L2311-02CDUP	SampType: DUP	TestCode: SM2540_TSS	Prep Date: 10/30/12 16:30	Run ID: MANUAL_121030C
Client ID: INF 102612	Batch ID: 69127	Units: mg/L	Analysis Date: 10/31/12 5:18	SeqNo: 1827222
Analyte	Result	MDL	SPK value	SPK Ref Val
	ND	10	0	0
Total Suspended Solids		10		

ANALYTICAL QC SUMMARY REPORT

CLIENT: AECOM Technical Services, Inc.

Work Order: L2311

SW9012 W

Project: NOW Corp. Site

SW846 9012B -- Total Cyanide

Sample ID: MB-69192	SampType: MBLK	TestCode: SW9012_W	Prep Date: 11/08/12 9:45	Run ID: LACHAT1_121108A						
Client ID: MB-69192	Batch ID: 69192	Units: ug/L	Analysis Date: 11/08/12 14:18	SeqNo: 1825789						
Analyte	Result	MDL	RL	SPK value	SPK Ref Val	%REC LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit	Qual
Cyanide	ND	7.5	20							

Sample ID: LCS-69192	SampType: LCS	TestCode: SW9012_W	Prep Date: 11/08/12 9:45	Run ID: LACHAT1_121108A							
Client ID: LCS-69192	Batch ID: 69192	Units: ug/L	Analysis Date: 11/08/12 14:21	SeqNo: 1825790							
Analyte	Result	MDL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide	95.83	7.5	20	100.0	0	95.8	80	120	0		

Qualifiers:	NID - Not Detected at the MDL	S - Recovery outside accepted recovery limits	MDL - Method Detection Limit	B - Analyte detected in the associated Method Blank
mm1.1.2.11.A	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	RL - Reporting Limit	

Report Date:
09-Nov-12 12:43



SPECTRUM ANALYTICAL, INC.

Featuring

HANIBAL TECHNOLOGY

Laboratory Report

Spectrum Analytical, Inc.
646 Camp Ave.
North Kingstown, RI 02852
Attn: Edward Lawler

Project: See Chain of Custody
Project #: L2311

- ☒ Final Report
☐ Re-Issued Report
☐ Revised Report

<u>Laboratory ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Sampled</u>	<u>Date Received</u>
SB59200-01	EFF 102612	Aqueous	26-Oct-12 11:15	01-Nov-12 15:10
SB59200-02	INF 102612	Aqueous	26-Oct-12 11:35	01-Nov-12 15:10

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 refer to our website for specific certification holdings in each state.

Please note that this report contains 6 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).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

The samples were received 0.5 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 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.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

Sample Identification

EFF 102612
SB59200-01

Client Project #
L2311

Matrix
Aqueous

Collection Date/Time
26-Oct-12 11:15

Received
01-Nov-12

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
	Oil & Grease	< 1.00	OG	mg/l	1.00	0.619	1	EPA 1664A	06-Nov-12	07-Nov-12	JK	1227226	X

<u>Sample Identification</u>				<u>Client Project #</u>	<u>Matrix</u>	<u>Collection Date/Time</u>	<u>Received</u>						
INF 102612				L2311	Aqueous	26-Oct-12 11:35	01-Nov-12						
SB59200-02													
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
	Oil & Grease	< 1.00	OG	mg/l	1.00	0.619	1	EPA 1664A	06-Nov-12	07-Nov-12	JK	1227226	X

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1227226 - SW846 3510C										
<u>Blank (1227226-BLK1)</u>								<u>Prepared: 06-Nov-12 Analyzed: 07-Nov-12</u>		
Oil & Grease	< 1.00		mg/l	1.00						
<u>LCS (1227226-BS1)</u>								<u>Prepared: 06-Nov-12 Analyzed: 07-Nov-12</u>		
Oil & Grease	36.7		mg/l		41.6		88	83-101		

Notes and Definitions

dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
OG	The required Matrix Spike and Matrix Spike Duplicate (MS/MSD) for Oil & Grease method 1664A can only be analyzed when the client has submitted sufficient sample volume. An extra liter per MS/MSD is required to fulfill the method QC criteria. Please refer to Chain of Custody and QC Summary (MS/MSD) of the Laboratory Report to verify ample sample volume was submitted to fulfill the requirement.

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



CHAIN-OF-CUSTODY RECORD

8059200 JB

Requested Test

WorkOrder : L2311
Report Type : LEVEL 2

Due Date : 11/15/2012

FAX Due Date :

Report To : Edward A Lawler

Purchase Order : L2311

EDD Type :

Agawam, Massachusetts 01001

Phone: (413) 789-9018

EquipFacilityCode: N/A

Client Sample ID	Collection Date	Matrix	DUP/MS/MSD	Milkem Sample ID										
EFF 102612	10/26/2012 11:15:00 AM	Aqueous		L2311-01E	X									
INF 102612	10/26/2012 11:35:00 AM	Aqueous		L2311-02E	X									

1) E1664, OIL, GREASE, HEM

Use 'Client Sample IDs' when reporting data. If needed, truncate 'Client Sample IDs' to fit on reports. Use full 'Client Sample ID' when generating EDD.

Comments: PEL EDD is required for this sub-contracted work instead of the EDD listed above.

Relinquished by:		Date/Time	10/31/12 10:26
Received by:		Date/Time	11/12/2012
Relinquished by:		Date/Time	11/12/2012

175 Metro Center Blvd * Warwick * RI * 02886-1755 * 401-732-3400 * 401-732-3499*
www.spectrum-analytical.com

DoS. ice

Spectrum Analytical, Inc. Featuring Hanibal Technology -- Rhode Island Division

WorkOrder: L2311

Client ID: EARTH_NY

Project: NOW Corp. Site

WO Name: NOW Corp. Site

Location: NOW_CORP,

Comments: N/A

Case:

SDG:

PO: 6027 6639 I

HC Due: 11/15/12

Fax Due:

Fax Report: ☐

Report Level: LEVEL 2

Special Program:

EDD:

Lab Samp ID	Client Sample ID	Collection Date	Date Recv'd	Matrix	Test Code	Samp / Lab Test Comments	HF	HT	MS	SEL	Storage
L2311-01A	EFF 102612	10/26/2012 11:15	10/29/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2311-01B	EFF 102612	10/26/2012 11:15	10/29/2012	Aqueous	SW6010_W	/ See SEL list				Y	M3
L2311-01B	EFF 102612	10/26/2012 11:15	10/29/2012	Aqueous	SW7470	/ See SEL list					M3
L2311-01C	EFF 102612	10/26/2012 11:15	10/29/2012	Aqueous	SM2540_TDS	/					F1
L2311-01C	EFF 102612	10/26/2012 11:15	10/29/2012	Aqueous	SM2540_TSS	/					F1
L2311-01D	EFF 102612	10/26/2012 11:15	10/29/2012	Aqueous	SW9012_W	/				Y	F1
L2311-01E	EFF 102612	10/26/2012 11:15	10/29/2012	Aqueous	E1664	/ SPECTRUM					SUB
L2311-02A	INF 102612	10/26/2012 11:35	10/29/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2311-02B	INF 102612	10/26/2012 11:35	10/29/2012	Aqueous	SW6010_W	/ See SEL list				Y	M3
L2311-02B	INF 102612	10/26/2012 11:35	10/29/2012	Aqueous	SW7470	/ See SEL list					M3
L2311-02C	INF 102612	10/26/2012 11:35	10/29/2012	Aqueous	SM2540_TDS	/					F1
L2311-02C	INF 102612	10/26/2012 11:35	10/29/2012	Aqueous	SM2540_TSS	/					F1
L2311-02D	INF 102612	10/26/2012 11:35	10/29/2012	Aqueous	SW9012_W	/				Y	F1
L2311-02E	INF 102612	10/26/2012 11:35	10/29/2012	Aqueous	E1664	/ SPECTRUM					SUB
L2311-03A	TW-1 102612	10/26/2012 11:45	10/29/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2311-04A	TW-2A 102612	10/26/2012 11:50	10/29/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2311-05A	TW-3 102612	10/26/2012 12:00	10/29/2012	Aqueous	SW8260_25_W	/				Y	VOA
L2311-06A	TB 102612	10/26/2012 00:00	10/29/2012	Aqueous	SW8260_25_W	/				Y	VOA

HF = Fraction logged in but all tests have been placed on hold

HT = Test logged in but has been placed on hold

Received By: <u>VER</u>		Page 01 of 00	
Reviewed By: <u>VER</u>		Log-in Date 10/29/2012	
Work Order: <u>L2311</u>		Client Name: AECOM Technical Services, Inc.	
Project Name/Event: NOW Corp. Site			
Remarks: (1/2) Please see associated sample/extract transfer logbook pages submitted with this data package.			

Lab Sample ID	Preservation (pH)					VOA Matrix	Soil HeadSpace or Air Bubble > or equal to 1/4"
	HNO3	H2SO4	HCl	NaOH	H3PO4		
L2311-01	<2		<2	>12		H	
L2311-02	<2		<2	>12		H	
L2311-03						H	
L2311-04						H	
L2311-05						H	
L2311-06						H	

1. Custody Seal(s)	Present / Absent
	Intact / Broken
2. Custody Seal Nos.	N/A
3. Traffic Reports/ Chain of Custody Records (TR/COCs) or Packing Lists	Present / Absent
4. Airbill	AirBill / Sticker
	Present / Absent
5. Airbill No.	FedEx 8996 2349 5896
6. Sample Tags	Present / Absent
Sample Tag Numbers	Listed /
	Not Listed on Chain-of-Custody
7. Sample Condition	Intact / Broken / Leaking
8. Cooler Temperature Indicator Bottle	Present / Absent
9. Cooler Temperature	8 °C
10. Does information on TR/COCs and sample tags agree?	Yes / No
11. Date Received at Laboratory	10/29/2012
12. Time Received	08:34
Sample Transfer	
Fraction (1) TVOA/VOA	Fraction (2) SVOA/PEST/ARO
Area #	Area #
By	By
On	On
IR Temp Gun ID: MT-1	
Coolant Condition: ICE	
Preservative Name/Lot No:	

VOA Matrix Key:

US = Unpreserved Soil A = Air

UA = Unpreserved Aqueous H = HCl

M = MeOH E = Encore

N = NaHSO4 F = Freeze

See Sample Condition Notification/Corrective Action Form Yes / No

Rad OK Yes / No

Edward Lawler [Warwick]

From: Choiniere, Stephen R. [Stephen.Choiniere@aecom.com]
Sent: Monday, October 29, 2012 10:58 AM
To: Edward Lawler [Warwick]
Cc: Gray, Steve; Kindlon, Tracy
Subject: RE: NOW corp samples arrived today

That was an error. Do the requested analyses anyway, please.

From: Edward Lawler [Warwick] [mailto:elawler@spectrum-analytical.com]
Sent: Monday, October 29, 2012 10:52 AM
To: Choiniere, Stephen R.
Subject: RE: NOW corp samples arrived today

No, the cooler was shipped Priority Overnight, but not Saturday Delivery (both options need to be selected for Sat delivery).

-_Ed

From: Choiniere, Stephen R. [mailto:Stephen.Choiniere@aecom.com]
Sent: Monday, October 29, 2012 10:23 AM
To: Edward Lawler [Warwick]
Subject: RE: NOW corp samples arrived today

Wasn't the cooler marked for Saturday delivery, in which case they'd have been checked in on Saturday?

From: Edward Lawler [Warwick] [mailto:elawler@spectrum-analytical.com]
Sent: Monday, October 29, 2012 8:58 AM
To: Choiniere, Stephen R.
Subject: NOW corp samples arrived today

Hi Steve—

We have a set of samples from the NOW Corp site that we just received today, but the cooler is a bit warm, at 8.6 degrees. Our normal acceptance criteria go up to 6 degrees C. but if this were under our EPA CLP contract, we'd have no issue if the temp was up to 10 degrees C.

Can you let me know whether to proceed with these?

Thanks.

--Ed

Edward A. Lawler
 Senior Project Manager/Business Development, Spectrum Analytical, RI Division, featuring Hanibal Technology (formerly Mitkem)
 401-732-3400 x315 401-732-3499 (fax)

We will be MOVING! The RI Division of Spectrum Analytical is moving to a new laboratory facility at 646 Camp Avenue, North Kingstown, RI 02852. Our phone numbers will not change. After November 21, all sample shipments must be sent to the new address.

Due to rising cost of rush shipments, Spectrum Analytical requests that you allow sufficient time for all sample bottle kit requests, 3 days notice at a minimum. If you need an expedited kit request Spectrum Analytical will provide the kit but will request that you pay for the shipping. Spectrum Analytical will continue to pay for all shipping previously agreed to, given proper notification. Thank you for your

Last Page of Data Report