WHEATSTONE
Engineering & Consulting, Inc.

United States Environmental Protection Agency
Region 1
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Attention: Mr. Victor Alvarez

RE: Remediation General Permit
Contaminated Groundwater
Dewatering
366 Spring Street
Hanson, MA
MassDEP RTN 4-0022223

Dear Mr. Alvarez:

Wheatstone Engineering & Consulting, Inc. (Wheatstone) is submitting this Notice of Intent (NOI) for a Remediation General Permit (RGP) to dewater contaminated groundwater from the basement of a residence in Hanson, Massachusetts. This NOI is being submitted for remedial actions under the Massachusetts Contingency Plan (MCP) and Massachusetts Department of Environmental Protection (MassDEP) Release Tracking Number (RTN) 4-0022223.

The proposed remedial activities will be conducted in accordance with MCP regulations and under the guidance of a Licensed Site Professional. The contaminated groundwater will be treated before discharging to a nearby wetlands and this NOI provides required information on the general site conditions, proposed treatment system, discharge location and receiving water, and analytical results for the water samples collected from the water pumped from the basement.

The full dewatering program (pump, treat, then discharge) will commence as soon as this NOI is valid since the work at the site is being managed under MCP Immediate Response Actions. Wheatstone's LSP for the site has been on site to review site conditions and develop cleanup strategies.

Site Description

The Site is located at 366 Spring Street in Hanson, Massachusetts in a rural residential neighborhood. The property is approximately 2.5 acres and contains an approximately 1,000 square foot single family residence with areas of the yard used for livestock (sheep, chickens, goat, etc.) and farming. Figure No. 1 through Figure No. 3 present the Locus Plan, Site Plan, and Treatment System Schematic, respectively, that show wetland resources, existing conditions, general layout of the frac tank and treatment system, etc.

220 Forbes Road/Suite 405 Braintree, MA 02184-2705
tel (781) 380-0600 fax (781) 380-0601

The remedial activities are being conducted on the property listed by the Hanson Assessor's Office as Map 109 Parcel 16, owned by Mrs. Frances McKenzie.

Proposed Activities

The residence is heated with natural gas although the complete heating history of the property is currently being researched. On October 8, 2009, the residents of the home smelled fuel oil and it was discovered coming into the sump in the basement. The Hanson Board of Health and MassDEP were contacted and IRA activities include evaluating the accumulating contaminated groundwater from the basement. Currently a frac tank is on-site and being directly disposed to New Stream in Attleboro, Massachusetts. The source of the fuel oil is currently being assessed.

The proposed activities consist of pumping water from the basement and/or sump in the crawl space to a carbon treatment system consisting of settlement and filtration. The proposed wastewater treatment system is comprised of a 20,000 gallon frac (sedimentation) tank that also serves as an oil/water separator to retain free-phase oil. Water from that tank will be discharged through a sediment collection filter into two 55-gallon carbon filters for adsorption of dissolved phase petroleum from the water. Water from the sumps is discharged at an average rate of approximately 1.4 gallons per minute (gpm), during intermittent activation of the sump pumps. A maximum rate of pumping through the carbon filters into the environment is estimated to be 2.8 gpm and the maximum design rate of the system is less than 50 gpm. The design maximum flow is primarily restricted by the filter units including a filter sock and solid phase GAC filters.

The treatment system will have sample ports to collect water samples from the system influent (prior to sediment tank), system midpoint (between carbon units) and system effluent (downstream from carbon units). A schematic of the proposed treatment system has been attached to the NOI form included with this letter.

Following treatment, the effluent water will be discharged to the wetland located immediately northeast of the residence. Due to the relatively low flow rate, energy dissipation measures are not anticipated and will be implemented as needed to prevent erosion of the banks or sediments to the surface water bodies.

Assessment of the source will be ongoing and it is not currently known how long the dewatering activities will occur.

Sincerely,

Wheatstone Engineering & Consulting, Inc.

Robert C. Reynolds
Project Manager

Enclosures: Attachment 1: NOI Form
Attachment 2: Figures
Attachment 3: Tables
Attachment 4: Laboratory Analytical Results
Attachment 5: Streamflow and Dilution Calculations

cc: Julie Hutchinson, MassDEP
Frances McKenzie (Homeowner)

B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General site information. Please provide the following information about the site:

a) Name of **facility/site**: McKenzie Residence		**Facility/site** address:		
Location of **facility/site**: longitude: -70.8890 latitude: 42.083	Facility SIC code(s):	Street: 366 Spring Street		
b) Name of **facility/site owner:** Mrs. Frances McKenzie		Town: Hanson		
Email address of owner:		State: MA	Zip: 02341	County: Plymouth
Telephone no.of facility/site **owner**: 781-447-5599				
Fax no. of facility/site **owner**: Mrs. Frances McKenzie		**Owner** is (check one): 1. Federal____ 2. State/Tribal____ 3. Private__✔___ 4. other, if so, describe:		
Address of **owner** (if different from site): 781-447-5599				
Street: Same as Site				
Town: 781-447-5599	State:	Zip:	County:	
c) Legal name of **operator**: Wheatstone Engineering & Consulting, Inc.		**Operator** telephone no: 781-380-0600		
		Operator fax no.: 781-380-0601	**Operator** email: jblumberg@wheatstonecorp.com	
Operator contact name and title: Jeremy Blumberg, Project Geologist				
Address of **operator** (if different from owner):		Street: 220 Forbes Road, Suite 405		
Town: Braintree	State: MA	Zip: 02184	County: Norfolk	

d) Check "yes" or "no" for the following:
1. Has a prior NPDES permit exclusion been granted for the discharge? Yes___ No✔, if "yes," number:
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Yes___ No✔, if "yes," date and tracking #:
3. Is the discharge a "new discharge"as defined by 40 CFR 122.2? Yes✔ No___
4. For sites in Massachusetts, is the discharge covered under the MA Contingency Plan (MCP) and exempt from state permitting? Yes✔ No__

e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes ✔ No If "yes," please list: 1. site identification # assigned by the state of NH or MA: 4-0022223 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number: MassDEP, Mrs. Julie Hutcheson, 617-292-5500	f) Is the site/facility covered by any other EPA permit, including: 1. multi-sector storm water general permit? Y N ✔, if Y, number: 2. phase I or II construction storm water general permit? Y N ✔, if Y, number: 3. individual NPDES permit? Y N ✔, if Y, number: 4. any other water quality related permit? Y N ✔, if Y, number:

2. Discharge information. Please provide information about the discharge, (attaching additional sheets as needed) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage:

Dewatering of a residential basement during assessment and remediation of a fuel oil release.

b) Provide the following information about each discharge:	1) Number of discharge points: 1	2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft3/s)? Max. flow 0.006189 Average flow 0.003094 Is maximum flow a **design value**? Y ✔ N For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.

3) Latitude and longitude of each discharge within 100 feet: pt.1:long. -70.888901 lat. 42.082951; pt.2: long._____ lat._____; pt.3: long._____ lat._____;
pt.4:long._____ lat._____; pt.5: long._____ lat._____; pt.6:long._____ lat._____; pt.7: long._____ lat._____; pt.8:long._____ lat._____; etc.

4) If hydrostatic testing, total volume of the discharge (gals):	5) Is the discharge intermittent ✔ or seasonal ____? Is discharge ongoing Yes ____ No ✔ ?

c) Expected dates of discharge (mm/dd/yy): start 11/01/09 end 11/01/10

d) Please attach a line drawing or flow schematic showing water flow through the facility including:
1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).

3. Contaminant information. In order to complete this section, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for **all** of the parameters listed in Appendix III. Historical data, (i.e., data taken no more than 2 years prior to the effective date of the permit) may be used if obtained pursuant to: i. Massachusetts' regulations 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E"); ii. New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act; or iii. an EPA permit exclusion letter issued pursuant to 40 CFR 122.3, provided the data was analyzed with test methods that meet the requirements of this permit. Otherwise, a new sample shall be taken and analyzed.

a) Based on the analysis of the sample(s) of the untreated influent, the applicant must check the box of the sub-categories that the potential discharge falls within.

Gasoline Only ☐	VOC Only ☐	Primarily Metals ☐	Urban Fill Sites ☐	Contaminated Sumps ☐	Mixed Contaminants ☐	Aquifer Testing ☐
Fuel Oils (and Other Oils) only ☐	VOC with Other Contaminants ☐	Petroleum with Other Contaminants ☐	Listed Contaminated Sites ☐	Contaminated Dredge Condensates ☐	Hydrostatic Testing of Pipelines/Tanks ☐	Well Development or Rehabilitation ☐

b) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

PARAMETER	**Believe Absent**	**Believe Present**	**# of Samples (1 min-imum)**	**Type of Sample (e.g., grab)**	**Analytical Method Used (method #)**	**Minimum Level (ML) of Test Method**	**Maximum daily value**		**Avg. daily value**	
							concentration (ug/l)	**mass (kg)**	**concentration (ug/l)**	**mass (kg)**
1. Total Suspended Solids	✔		1	grab	sw 2540	25.0 mg/l				
2. Total Residual Chlorine	✔		1	grab	Hach 8167	0.020 mg/l				
3. Total Petroleum Hydrocarbons		✔	1	grab	sw8468100	0.2 mg/l	47,600	3.49	47,600	1.75
4. Cyanide	✔		1	grab	EPA 335.4	0.01 mg/l				
5. Benzene	✔		1	grab	sw8465030	10.0 ug/l				
6. Toluene	✔		1	grab	sw8465030	1.0 ug/l				
7. Ethylbenzene	✔		1	grab	sw8465030	1.0 ug/l				
8. (m,p,o) Xylenes	✔		1	grab	sw8465030	1.0 ug/l				
9. Total BTEX[4]	✔		1	grab	sw8465030	1.0 ug/l				

[4] BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide [5] (1,2- Dibromo-methane)	✔		1	grab	sw846 5030	0.5 ug/l				
11. Methyl-tert-Butyl Ether (MtBE)	✔		1	grab	sw846 5030	1.0 ug/l				
12. tert-Butyl Alcohol (TBA)	✔		1	grab	sw846 5030	10.0 ug/l				
13. tert-Amyl Methyl Ether (TAME)	✔		1	grab	sw846 5030	1.0 ug/l				
14. Naphthalene	✔		1	grab	sw846 5030	14.3 ug/l				
15. Carbon Tetra-chloride	✔		1	grab	sw84682706	1.0 ug/l				
16. 1,4 Dichlorobenzene	✔		1	grab	sw84682706	1.0 ug/l				
17. 1,2 Dichlorobenzene	✔		1	grab	sw84682706	1.0 ug/l				
18. 1,3 Dichlorobenzene	✔		1	grab	sw84682706	1.0 ug/l				
19. 1,1 Dichloroethane	✔		1	grab	sw84682706	1.0 ug/l				
20. 1,2 Dichloroethane	✔		1	grab	sw84682706	1.0 ug/l				
21. 1,1 Dichloroethylene	✔		1	grab	sw84682706	1.0 ug/l				
22. cis-1,2 Dichloro-ethylene	✔		1	grab	sw84682706	1.0 ug/l				
23. Dichloromethane (Methylene Chloride)	✔		1	grab	sw84682706	5.0 ug/l				
24. Tetrachloroethylene	✔		1	grab	sw84682706	1.0 ug/l				

[5] EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane	✔		1	grab	sw846 5030	1.0 ug/l				
26. 1,1,2 Trichloroethane	✔		1	grab	sw846 5030	1.0 ug/l				
27. Trichloroethylene	✔		1	grab	sw846 5030	1.0 ug/l				
28. Vinyl Chloride	✔		1	grab	sw846 5030	1.0 ug/l				
29. Acetone		✔	1	grab	sw846 5030	10.0 ug/l	54.1	0.003971	54.1	0.001485
30. 1,4 Dioxane	✔		1	grab	sw846 5030	20.0 ug/l				
31. Total Phenols	✔		1	grab	sw8468270c	14.3 ug/l				
32. Pentachlorophenol	✔		1	grab	sw8468270c	57.1 ug/l				
33. Total Phthalates [6] (Phthalate esthers)	✔		1	grab	sw8468270c	14.3 ug/l				
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]		✔	1	grab	sw8468270c	14.3 ug/l	32.0	0.002349	32.0	0.001174
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✔		1	grab	sw8468270c	14.3 ug/l				
a. Benzo(a) Anthracene	✔		1	grab	sw8468270c	14.3 ug/l				
b. Benzo(a) Pyrene	✔		1	grab	sw8468270c	14.3 ug/l				
c. Benzo(b)Fluoranthene	✔		1	grab	sw8468270c	14.3 ug/l				
d. Benzo(k) Fluoranthene	✔		1	grab	sw8468270c	14.3 ug/l				
e. Chrysene	✔		1	grab	sw8468270c	14.3 ug/l				

[6] The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	✔		1	Grab	SW8468270	14.3 ug/l				
g. Indeno(1,2,3-cd) Pyrene	✔		1	Grab	SW8468270	14.3 ug/l				
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	✔		1	Grab	SW8468270	14.3 ug/l				
h. Acenaphthene	✔		1	Grab	SW8468270	14.3 ug/l				
i. Acenaphthylene	✔		1	Grab	SW8468270	14.3 ug/l				
j. Anthracene	✔		1	Grab	SW8468270	14.3 ug/l				
k. Benzo(ghi) Perylene	✔		1	Grab	SW8468270	14.3 ug/l				
l. Fluoranthene	✔		1	Grab	SW8468270	14.3 ug/l				
m. Fluorene	✔		1	Grab	SW8468270	14.3 ug/l				
n. Naphthalene-	✔		1	Grab	SW8468270	14.3 ug/l				
o. Phenanthrene	✔		1	Grab	SW8468270	14.3 ug/l				
p. Pyrene	✔		1	Grab	SW8468270	14.3 ug/l				
37. Total Polychlorinated Biphenyls (PCBs)	✔		1	Grab	SW8468082	0.220 ug/l				
***3*8. Antimony**		✔	1	Grab	EPA 200	0.0002 mg/l	0.3	0.000022	0.3	0.000011
39. Arsenic	✔		1	Grab	EPA 200	0.0002 mg/l				
40. Cadmium	✔		1	Grab	EPA 200	0.0002 mg/l				
41. Chromium III	✔		1	Grab	EPA 200	0.0005 mg/l				
42. Chromium VI	✔		1	Grab	EPA 200	0.0005 mg/l				

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper		✔	1	grab	EPA200	0.0050 mg/l	5.0	0.000367	5	0.000183
44. Lead		✔	1	grab	EPA200	0.0002 mg/l	13	0.000954	13	0.000477
45. Mercury	✔		1	grab	EPA200	0.0002 mg/l				
46. Nickel	✔		1	grab	EPA200	0.0050 mg/l				
47. Selenium		✔	1	grab	EPA200	0.0002 mg/l	0.4	0.000029	0.4	0.000015
48. Silver	✔		1	grab	EPA200	0.0002 mg/l				
49. Zinc		✔	1	grab	EPA200	0.0005 mg/l	38.8	0.001424	38.8	0.001424
50. Iron		✔	1	grab	EPA200	0.0150 mg/l	0.08	0.005871	0.08	0.002936
Other (describe):										

c) For discharges where **metals** are believed present, please fill out the following:

Step 1: Do any of the metals in the influent have a **reasonable potential** to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y_✔_ N____	If yes, which metals? Lead
Step 2: For any metals which have **reasonable potential** to exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metals: Lead DF: 1.352	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y_✔_ N____ If "Yes," list which metals: Lead

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system: Sump-frac tank-sock filter- 2 55-gallon carbon filters						
b) Identify each applicable treatment unit (check all that apply):	Frac. tank ✔	Air stripper	Oil/water separator	Equalization tanks	Bag filter ✔	GAC filter ✔
	Chlorination	Dechlorination	Other (please describe):			
c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system: Average flow rate of discharge 1.4 gpm Maximum flow rate of treatment system 2.8 gpm Design flow rate of treatment system 50 gpm						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets): None						

5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:

a) Identify the discharge pathway:	Direct	Within facility	Storm drain	River/brook	Wetlands ✔	Other (describe):
b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters: Discharge is directed to wetlands adjacent to the property that area associated with Factory Pond that conveys to Indian Head River.						
c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water: 1. For multiple discharges, number the discharges sequentially. 2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.						
d) Provide the state water quality classification of the receiving water Class B,						
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 1.352 cfs Please attach any calculation sheets used to support stream flow and dilution calculations.						
f) Is the receiving water a listed 303(d) water quality impaired or limited water? Yes ✔ No If yes, for which pollutant(s)? Metals Is there a TMDL? Yes No ✔ If yes, for which pollutant(s)?						

6. Results of Consultation with Federal Services: Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes____No_✓_
Has any consultation with the federal services been completed ? Yes___ No_✓_ or is consultation underway? Yes _✓__ No____
What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one):
a "no jeopardy" opinion? _✓__or written concurrence____ on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?

b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge?
Yes_____ No_✓_____ Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes_____ No_✓_____

7. Supplemental information. :

Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

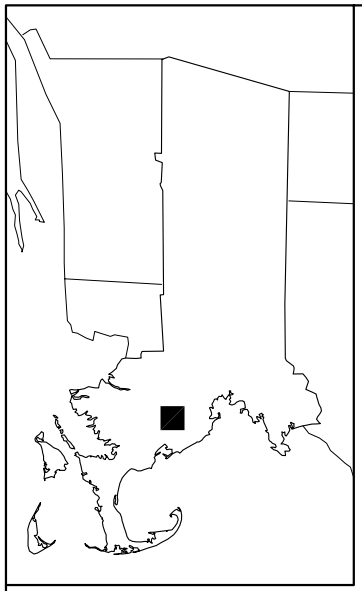
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name: 366 Spring Street, Hanson, MA

Operator signature: 

Title: Project Manager

Date: 10/22/09



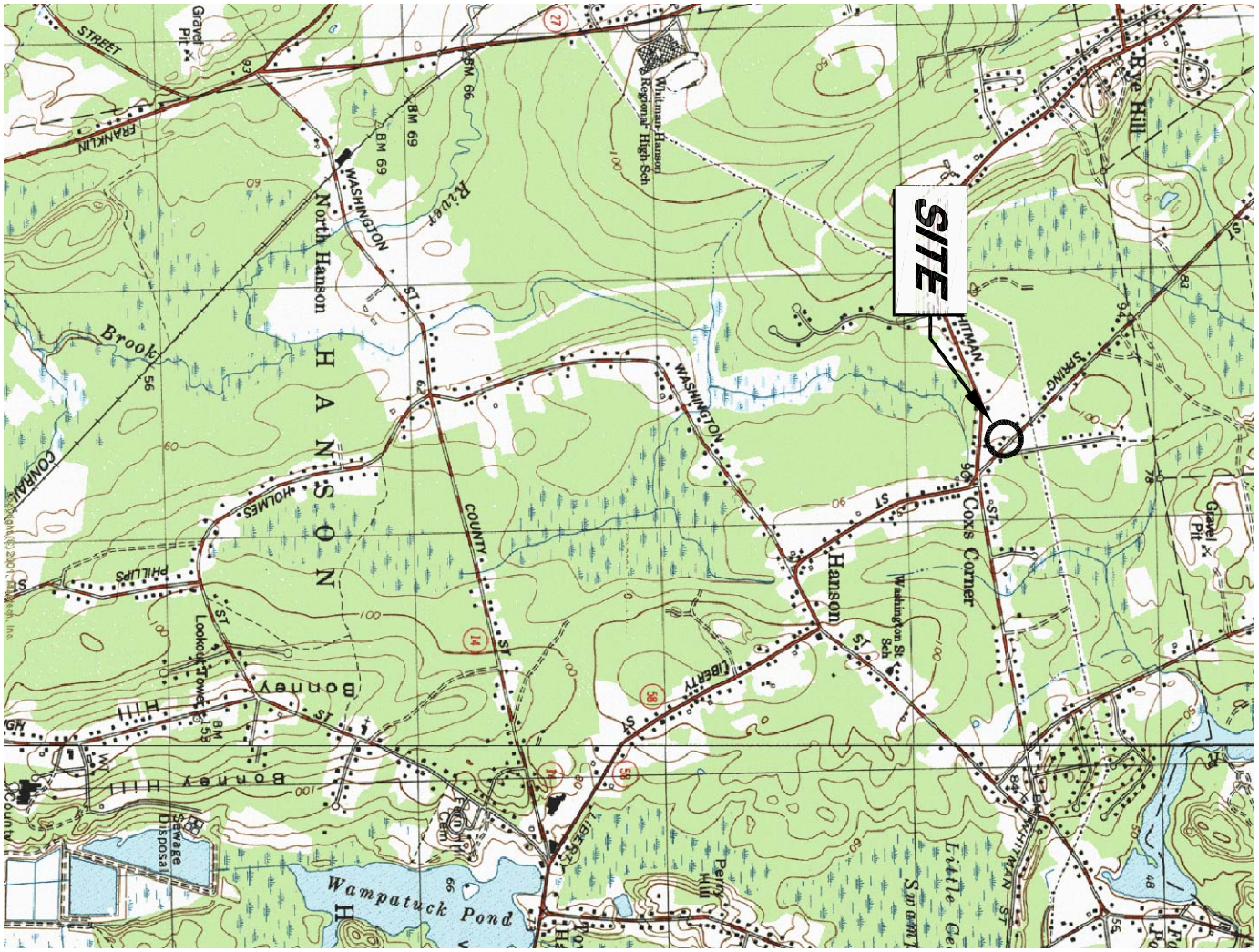


FIGURE No. 1

366 SPRING STREET

HANSON, MASSACHUSETTS

LOCUS PLAN

SOURCE:1977 USGS WHITMAN, MA QUADRANGLE MAP
(NOT TO SCALE)

REV No.	DATE	INT.	- DESCRIPTION -

DRAWN BY: JJP	REVIEWED BY: JB
DATE: 10/20/09	JOB No. S1227

WHEATSTONE
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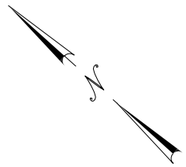
S1227F01

NOTES:

1. BASE MAP DEVELOPED FROM HAND DRAWN SKETCH.

LEGEND:

INDICATES SUBJECT PROPERTY



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Tel: (781) 380-0600

REV No.	DATE	INT.	- DESCRIPTION -

DRAWN BY: JJP
REVIEWED BY: JB
DATE: 10/20/09
SCALE: 1"=20'
JOB No. S1227

365 SPRING STREET
HANSON, MASSACHUSETTS

SITE PLAN

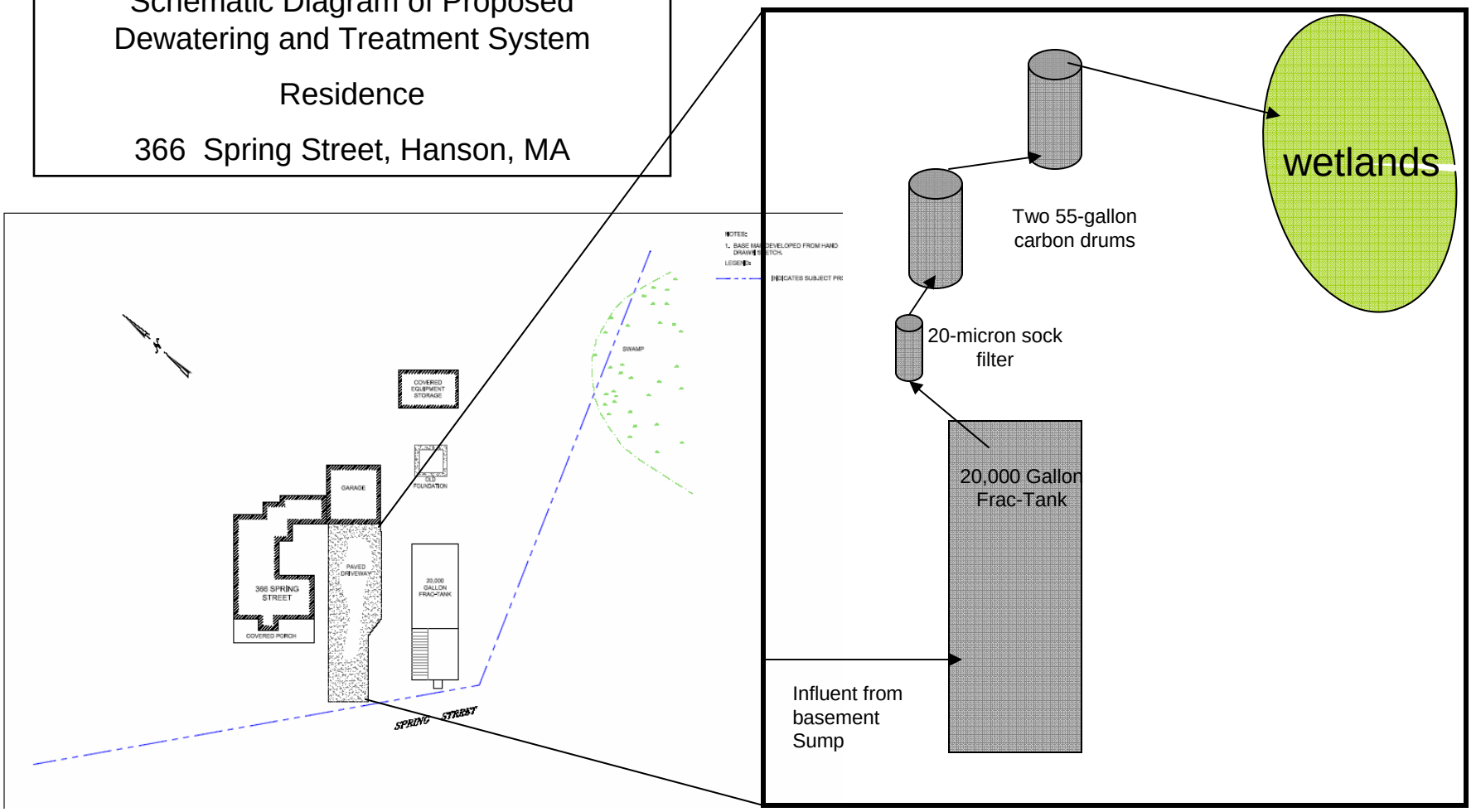
FIGURE No. 2

Figure No. 3

Schematic Diagram of Proposed Dewatering and Treatment System

Residence

366 Spring Street, Hanson, MA



WHEATSTONE
Engineering & Consulting, Inc.
220 Forbes Road/Suite 405 Braintree, MA 02184-2715

Table No. 1
NPDES RGP Groundwater Analytical Results
Hanson, Massachusetts
File No. S12227

Sample Identification	Influent	Reportable Detection Limit	Effluent Limitations	Limit type based on monthly sample	Sample type	Total Recoverable Metal Limits @ H=50 mg/L CaCO312 for dhischarges in Massachusetts mg/L	MCP Groundwater Standards	
Date Sampled	**10/15/2009**						GW-1	GW-2
Volatile Organic Compounds (ug/L)								
Acetone	54.1	10.0	Monitor Only (ug/L)	daily maximum	grab	N/A	6,300	50,000
Benzene	BRL	1.0	5.0 ug/L, 50.0 ug/L-hydrostatic testing only	daily maximum	grab	N/A	5	2,000
Ethylbenzene	BRL	1.0	(limited as ug/L total BTEX)	daily maximum	grab	N/A	700	20,000
Methyl tert-butyl ether	BRL	1.0	70.0 ug/L	daily maximum	grab	N/A	70	50,000
Naphthalene	BRL	1.0	20 ug/L[1]	daily maximum	grab	N/A	140	1,000
Toluene	BRL	1.0	(limited as ug/L total BTEX)	daily maximum	grab	N/A	1,000	50,000
m,p-Xylene	BRL	2.0	(limited as ug/L total BTEX)	daily maximum	grab	N/A	10,000	9,000
o-Xylene	BRL	1.0	(limited as ug/L total BTEX)	daily maximum	grab	N/A	10,000	9,000
Total Petroleum Hydrocarbons (mg/L)								
Unidentified	**47.6**	0.2	5.0 mg/L	daily maximum	grab	N/A	0.2	5.0
Total Petroleum Hydrocarbons	**47.6**	0.2	5.0 mg/L	daily maximum	grab	N/A	0.2	5.0
PCBs by EPA 608 (ug/L)								
PCB 1016	BRL	0.220	0.000064 ug/L[3]	daily maximum	grab	N/A	0.5	5
PCB 1221	BRL	0.220	0.000064 ug/L[3]	daily maximum	grab	N/A	0.5	5
Semivolatile Organic Compounds (ug/L)								
Bis(2-ethylhexyl)phthalate	**32.0**	14.3	6.0 ug/L	daily maximum	grab	N/A	6	N/A
Butyl benzyl phthalate	NT	14.3	N/A	N/A	N/A	N/A	N/A	N/A
Naphthalene	NT	14.3	20 ug/L[1]	daily maximum	grab	N/A	140	1,000
Total Metals (mg/L)								
Barium	0.0282	0.0002	N/A	N/A	N/A	N/A	2	N/A
Copper	0.0050	0.0050	N/A	monthly average	grab	FW=.0052	N/A	N/A
Iron	0.0800	0.0150	N/A	N/A	N/A	N/A	N/A	N/A
Lead	**0.0130**	0.0002	N/A	monthly average	grab	FW=.0013	0.015	N/A
Antimony	0.0003	0.0002	N/A	N/A	N/A	N/A	0.006	N/A
Selenium	0.0004	0.0002	N/A	monthly average	grab	FW=.0050	0.050	N/A
Zinc	0.0388	0.0050	N/A	monthly average	grab	FW=.0666	5	N/A
General Chemistry (ug/L)								
Cyanide	BRL	10.0	FW=5.2 ug/L[2]	monthly average	grab	N/A	200	N/A
Total Residual Chlorine	BRL	20.0	FW[1]=11 ug/L[1]	monthly average	grab	N/A	N/A	N/A
Total Suspended Solids	BRL	25000.0	30 mg/L, 50 mg/L for hydrostatic testing only	monthly average	grab	N/A	N/A	N/A
Phenolics (mg/L)	NT	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

A. BRL indicates compound not detected above Method Detection Limits.
B. Compounds not detected above Method Detection Limits not listed. See Laboratory Report for all parameters tested.
C. N/A indicates no regulatory limits have been issued for this compound.
D. NT indicates compound not tested.

Notations:

1. Although the maximum values for TRC are 11 ug/l and 7.5 ug/l for freshwater and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 20 ug/l)
2. Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).
3. Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).

Report Date:
20-Oct-09 16:58

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Wheatstone Engineering & Consulting, Inc.
220 Forbes Road, Suite 405
Braintree, MA 02184-2705
Attn: Jeremy Blumberg

Project: Hanson, MA
Project #: S 1227

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB02551-01	Influent (10-15)	Ground Water	15-Oct-09 00:00	16-Oct-09 15:41

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
Vermont # VT-11393

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Technical Reviewer's Initial:

Spectrum Analytical holds certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes.
Please note that this report contains 27 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supercedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report is 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 sample temperature upon receipt by Spectrum Analytical courier was recorded as 5.0 degrees Celsius. The samples were transported on ice to the laboratory facility and the temperature was recorded at 2.8 degrees Celsius upon receipt at the laboratory. Please refer to the Chain of Custody for details specific to sample receipt times.

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.

MADEP has published a list of analytical methods (CAM) which provides a series of recommended protocols for the acquisition, analysis and reporting of analytical data in support of MCP decisions. "Presumptive Certainty" can be established only for those methods published by the MADEP in the MCP CAM. The compounds and/or elements reported were specifically requested by the client on the Chain of Custody and in some cases may not include the full analyte list as defined in the method.

According to WSC-CAM 5/2004 Rev.4, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended 70%-130% recovery range, a range has been set based on historical control limits.

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

EPA 245.1/7470A

Spikes:

9101233-MS1 *Source: SB02551-01*

The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Mercury

Hach 8167

Samples:

SB02551-01 *Influent (10-15)*

The Reporting Limit has been raised to account for matrix interference.

Total Residual Chlorine

SM2540D

Samples:

SB02551-01 *Influent (10-15)*

The Reporting Limit has been raised to account for matrix interference.

Total Suspended Solids

SW846 7196A/SM3500CrD

Samples:

SB02551-01 *Influent (10-15)*

The collection time was not indicated on the chain of custody. Therefore, the analysis hold time can not be verified.

Hexavalent Chromium

SW846 8260B

SW846 8260B

Laboratory Control Samples:

9101368-BS1

Analyte out of acceptance range in QC spike but no reportable concentration present in sample.

Acrylonitrile
Ethanol
Tetrahydrofuran

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.

Acetone
Chloromethane
Vinyl chloride

9101368-BSD1

Analyte out of acceptance range in QC spike but no reportable concentration present in sample.

Acrylonitrile
Ethanol
Tetrahydrofuran

Samples:

S909837-CCV1

Analyte percent drift/percent difference is greater than 30%, data is accepted due to all CCC analytes passing within the 20% Drift/Difference criteria

2,2-Dichloropropane
Carbon tetrachloride
trans-1,3-Dichloropropene

S909883-CCV1

Analyte percent drift/percent difference is greater than 30%, data is accepted due to all CCC analytes passing within the 20% Drift/Difference criteria

2,2-Dichloropropane
n-Butylbenzene
trans-1,3-Dichloropropene

This affected the following samples:

Influent (10-15)

SW846 8270C

Laboratory Control Samples:

9101247-BS1

Analyte out of acceptance range in QC spike but no reportable concentration present in sample.

4-Nitrophenol

9101247-BSD1

Analyte out of acceptance range in QC spike but no reportable concentration present in sample.

4-Nitrophenol
Benzidine

SW846 8270C

Samples:

SB02551-01 *Influent (10-15)*

Elevated Reporting Limits due to the presence of high levels of non-target analytes.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent (10-15) SB02551-01	S 1227	Ground Water	15-Oct-09 00:00	16-Oct-09

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Compounds											
Prepared by method SW846 5030 Water MS											
67-64-1	Acetone	54.1		µg/l	10.0	1	SW846 8260B	19-Oct-09	20-Oct-09	9101368	
71-43-2	Benzene	BRL		µg/l	1.0	1	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL		µg/l	1.0	1	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	0.5	1	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL		µg/l	1.0	1	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL		µg/l	1.0	1	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	1.0	1	"	"	"	"	
75-34-3	1,1-Dichloroethane	BRL		µg/l	1.0	1	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	1.0	1	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL		µg/l	1.0	1	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	BRL		µg/l	1.0	1	"	"	"	"	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"	"	"	
75-09-2	Methylene chloride	BRL		µg/l	5.0	1	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	
127-18-4	Tetrachloroethene	BRL		µg/l	1.0	1	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	BRL		µg/l	1.0	1	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	BRL		µg/l	1.0	1	"	"	"	"	
79-01-6	Trichloroethene	BRL		µg/l	1.0	1	"	"	"	"	
75-01-4	Vinyl chloride	BRL		µg/l	1.0	1	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"	"	"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1	"	"	"	"	
994-05-8	Tert-amyl methyl ether	BRL		µg/l	1.0	1	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	BRL		µg/l	10.0	1	"	"	"	"	
123-91-1	1,4-Dioxane	BRL		µg/l	20.0	1	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*90*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*96*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*104*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*107*		*70-130 %*			"	"	"	"	
Semivolatile Organic Compounds by GCMS											
Semivolatile Organic Compounds by SW846 8270C			R05								
Prepared by method SW846 3510C											
83-32-9	Acenaphthene	BRL		µg/l	14.3	1	SW846 8270C	19-Oct-09	20-Oct-09	9101247	
208-96-8	Acenaphthylene	BRL		µg/l	14.3	1	"	"	"	"	
120-12-7	Anthracene	BRL		µg/l	14.3	1	"	"	"	"	
56-55-3	Benzo (a) anthracene	BRL		µg/l	14.3	1	"	"	"	"	
50-32-8	Benzo (a) pyrene	BRL		µg/l	14.3	1	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	BRL		µg/l	14.3	1	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	BRL		µg/l	14.3	1	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	BRL		µg/l	14.3	1	"	"	"	"	
117-81-7	Bis(2-ethylhexyl)phthalate	32.0		µg/l	14.3	1	"	"	"	"	
85-68-7	Butyl benzyl phthalate	BRL		µg/l	14.3	1	"	"	"	"	
59-50-7	4-Chloro-3-methylphenol	BRL		µg/l	14.3	1	"	"	"	"	
95-57-8	2-Chlorophenol	BRL		µg/l	14.3	1	"	"	"	"	
218-01-9	Chrysene	BRL		µg/l	14.3	1	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	BRL		µg/l	14.3	1	"	"	"	"	
120-83-2	2,4-Dichlorophenol	BRL		µg/l	14.3	1	"	"	"	"	
84-66-2	Diethyl phthalate	BRL		µg/l	14.3	1	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent (10-15) SB02551-01	S 1227	Ground Water	15-Oct-09 00:00	16-Oct-09

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Semivolatile Organic Compounds by GCMS											
Semivolatile Organic Compounds by SW846 8270C			R05								
Prepared by method SW846 3510C											
131-11-3	Dimethyl phthalate	BRL		µg/l	14.3	1	SW846 8270C	19-Oct-09	20-Oct-09	9101247	
105-67-9	2,4-Dimethylphenol	BRL		µg/l	14.3	1	"	"	"	"	
84-74-2	Di-n-butyl phthalate	BRL		µg/l	14.3	1	"	"	"	"	
534-52-1	4,6-Dinitro-2-methylphenol	BRL		µg/l	14.3	1	"	"	"	"	
51-28-5	2,4-Dinitrophenol	BRL		µg/l	14.3	1	"	"	"	"	
117-84-0	Di-n-octyl phthalate	BRL		µg/l	14.3	1	"	"	"	"	
206-44-0	Fluoranthene	BRL		µg/l	14.3	1	"	"	"	"	
86-73-7	Fluorene	BRL		µg/l	14.3	1	"	"	"	"	
193-39-5	Indeno (1,2,3-cd) pyrene	BRL		µg/l	14.3	1	"	"	"	"	
91-57-6	2-Methylnaphthalene	BRL		µg/l	14.3	1	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	14.3	1	"	"	"	"	
87-86-5	Pentachlorophenol	BRL		µg/l	57.1	1	"	"	"	"	
85-01-8	Phenanthrene	BRL		µg/l	14.3	1	"	"	"	"	
108-95-2	Phenol	BRL		µg/l	14.3	1	"	"	"	"	
129-00-0	Pyrene	BRL		µg/l	14.3	1	"	"	"	"	
90-12-0	1-Methylnaphthalene	BRL		µg/l	14.3	1	"	"	"	"	
95-95-4	2,4,5-Trichlorophenol	BRL		µg/l	14.3	1	"	"	"	"	
88-06-2	2,4,6-Trichlorophenol	BRL		µg/l	14.3	1	"	"	"	"	
Surrogate recoveries:											
321-60-8	*2-Fluorobiphenyl*	*75*		*30-130 %*			"	"	"	"	
367-12-4	*2-Fluorophenol*	*67*		*15-110 %*			"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*87*		*30-130 %*			"	"	"	"	
4165-62-2	*Phenol-d5*	*42*		*15-110 %*			"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*83*		*30-130 %*			"	"	"	"	
118-79-6	*2,4,6-Tribromophenol*	*95*		*15-110 %*			"	"	"	"	
Semivolatile Organic Compounds by GC											
Polychlorinated Biphenyls by SW846 8082											
Prepared by method SW846 3510C											
12674-11-2	Aroclor-1016	BRL		µg/l	0.220	1	SW846 8082	19-Oct-09	20-Oct-09	9101261	
11104-28-2	Aroclor-1221	BRL		µg/l	0.220	1	"	"	"	"	
11141-16-5	Aroclor-1232	BRL		µg/l	0.220	1	"	"	"	"	
53469-21-9	Aroclor-1242	BRL		µg/l	0.220	1	"	"	"	"	
12672-29-6	Aroclor-1248	BRL		µg/l	0.220	1	"	"	"	"	
11097-69-1	Aroclor-1254	BRL		µg/l	0.220	1	"	"	"	"	
11096-82-5	Aroclor-1260	BRL		µg/l	0.220	1	"	"	"	"	
37324-23-5	Aroclor-1262	BRL		µg/l	0.220	1	"	"	"	"	
11100-14-4	Aroclor-1268	BRL		µg/l	0.220	1	"	"	"	"	
Surrogate recoveries:											
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*55*		*30-150 %*			"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*111*		*30-150 %*			"	"	"	"	
Extractable Petroleum Hydrocarbons											
TPH 8100 by GC											
Prepared by method SW846 3510C											
8006-61-9	Gasoline	BRL		mg/l	0.2	1	+SW846 8100Mod.	19-Oct-09	19-Oct-09	9101245	
68476-30-2	Fuel Oil #2	BRL		mg/l	0.2	1	"	"	"	"	
68476-31-3	Fuel Oil #4	BRL		mg/l	0.2	1	"	"	"	"	
68553-00-4	Fuel Oil #6	BRL		mg/l	0.2	1	"	"	"	"	
M09800000	Motor Oil	BRL		mg/l	0.2	1	"	"	"	"	
8032-32-4	Ligroin	BRL		mg/l	0.2	1	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Influent (10-15) SB02551-01	S 1227	Ground Water	15-Oct-09 00:00	16-Oct-09

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Extractable Petroleum Hydrocarbons											
TPH 8100 by GC											
Prepared by method SW846 3510C											
J00100000	Aviation Fuel	BRL		mg/l	0.2	1	+SW846 8100Mod.	19-Oct-09	19-Oct-09	9101245	
	Hydraulic Oil	BRL		mg/l	0.2	1	"	"	"	"	
	Dielectric Fluid	BRL		mg/l	0.2	1	"	"	"	"	
	Unidentified	47.6		mg/l	0.2	1	"	"	"	"	
	Other Oil	Calculated as		mg/l	0.2	1	"	"	"	"	
	Total Petroleum Hydrocarbons	47.6		mg/l	0.2	1	"	"	"	"	
Surrogate recoveries:											
3386-33-2	*1-Chlorooctadecane*	*61*		*40-140 %*			"	"	"	"	
Total Metals by EPA 200 Series Methods											
7440-22-4	Silver	BRL		mg/l	0.0002	1	EPA 200.8	17-Oct-09	19-Oct-09	9101232	X
7440-38-2	Arsenic	BRL		mg/l	0.0002	1	"	"	"	"	X
7440-39-3	Barium	0.0282		mg/l	0.0002	1	"	"	"	"	
7440-43-9	Cadmium	BRL		mg/l	0.0002	1	"	"	"	"	X
7440-47-3	Chromium	BRL		mg/l	0.0010	1	"	"	"	"	X
7440-50-8	Copper	0.0050		mg/l	0.0050	1	EPA 200.7	"	19-Oct-09	9101231	X
7439-89-6	Iron	0.0800		mg/l	0.0150	1	"	"	"	"	X
7439-97-6	Mercury	BRL		mg/l	0.00020	1	EPA 245.1/7470A	"	19-Oct-09	9101233	X
7440-02-0	Nickel	BRL		mg/l	0.0050	1	EPA 200.7	"	19-Oct-09	9101231	X
7439-92-1	Lead	0.0130		mg/l	0.0002	1	EPA 200.8	"	19-Oct-09	9101232	X
7440-36-0	Antimony	0.0003		mg/l	0.0002	1	"	"	"	"	X
7782-49-2	Selenium	0.0004		mg/l	0.0002	1	"	"	"	"	
7440-66-6	Zinc	0.0388		mg/l	0.0050	1	EPA 200.7	"	19-Oct-09	9101231	X
General Chemistry Parameters											
16065-83-1	Trivalent Chromium	BRL		mg/l	0.0050	1	Calculation	17-Oct-09	19-Oct-09	9101231	
18540-29-9	Hexavalent Chromium	BRL	HT3	mg/l	0.005	1	SW846 7196A/SM3500CrD	16-Oct-09 20:00	16-Oct-09 20:00	9101211	
57-12-5	Cyanide (total)	BRL		mg/l	0.0100	1	EPA 335.4	19-Oct-09	20-Oct-09	9101297	X
7782-50-5	Total Residual Chlorine	BRL	R01,CI HT	mg/l	0.020	1	Hach 8167	16-Oct-09 20:45	16-Oct-09 20:45	9101212	X
	Total Suspended Solids	BRL	R01	mg/l	25.0	5	SM2540D	19-Oct-09	19-Oct-09	9101295	X

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101368 - SW846 5030 Water MS										
Blank (9101368-BLK1)										
Prepared & Analyzed: 20-Oct-09										
1,1,2-Trichlorotrifluoroethane (Freon 113)	BRL		µg/l	1.0						
Acetone	BRL		µg/l	10.0						
Acrylonitrile	BRL		µg/l	0.5						
Benzene	BRL		µg/l	1.0						
Bromobenzene	BRL		µg/l	1.0						
Bromochloromethane	BRL		µg/l	1.0						
Bromodichloromethane	BRL		µg/l	0.5						
Bromoform	BRL		µg/l	1.0						
Bromomethane	BRL		µg/l	2.0						
2-Butanone (MEK)	BRL		µg/l	10.0						
n-Butylbenzene	BRL		µg/l	1.0						
sec-Butylbenzene	BRL		µg/l	1.0						
tert-Butylbenzene	BRL		µg/l	1.0						
Carbon disulfide	BRL		µg/l	5.0						
Carbon tetrachloride	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
Chloroethane	BRL		µg/l	2.0						
Chloroform	BRL		µg/l	1.0						
Chloromethane	BRL		µg/l	2.0						
2-Chlorotoluene	BRL		µg/l	1.0						
4-Chlorotoluene	BRL		µg/l	1.0						
1,2-Dibromo-3-chloropropane	BRL		µg/l	2.0						
Dibromochloromethane	BRL		µg/l	0.5						
1,2-Dibromoethane (EDB)	BRL		µg/l	0.5						
Dibromomethane	BRL		µg/l	1.0						
1,2-Dichlorobenzene	BRL		µg/l	1.0						
1,3-Dichlorobenzene	BRL		µg/l	1.0						
1,4-Dichlorobenzene	BRL		µg/l	1.0						
Dichlorodifluoromethane (Freon12)	BRL		µg/l	2.0						
1,1-Dichloroethane	BRL		µg/l	1.0						
1,2-Dichloroethane	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
cis-1,2-Dichloroethene	BRL		µg/l	1.0						
trans-1,2-Dichloroethene	BRL		µg/l	1.0						
1,2-Dichloropropane	BRL		µg/l	1.0						
1,3-Dichloropropane	BRL		µg/l	1.0						
2,2-Dichloropropane	BRL		µg/l	1.0						
1,1-Dichloropropene	BRL		µg/l	1.0						
cis-1,3-Dichloropropene	BRL		µg/l	0.5						
trans-1,3-Dichloropropene	BRL		µg/l	0.5						
Ethylbenzene	BRL		µg/l	1.0						
Hexachlorobutadiene	BRL		µg/l	0.5						
2-Hexanone (MBK)	BRL		µg/l	10.0						
Isopropylbenzene	BRL		µg/l	1.0						
4-Isopropyltoluene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
4-Methyl-2-pentanone (MIBK)	BRL		µg/l	10.0						
Methylene chloride	BRL		µg/l	5.0						
Naphthalene	BRL		µg/l	1.0						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101368 - SW846 5030 Water MS										
Blank (9101368-BLK1)										
Prepared & Analyzed: 20-Oct-09										
n-Propylbenzene	BRL		µg/l	1.0						
Styrene	BRL		µg/l	1.0						
1,1,1,2-Tetrachloroethane	BRL		µg/l	1.0						
1,1,2,2-Tetrachloroethane	BRL		µg/l	0.5						
Tetrachloroethene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
1,2,3-Trichlorobenzene	BRL		µg/l	1.0						
1,2,4-Trichlorobenzene	BRL		µg/l	1.0						
1,3,5-Trichlorobenzene	BRL		µg/l	1.0						
1,1,1-Trichloroethane	BRL		µg/l	1.0						
1,1,2-Trichloroethane	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Trichlorofluoromethane (Freon 11)	BRL		µg/l	1.0						
1,2,3-Trichloropropane	BRL		µg/l	1.0						
1,2,4-Trimethylbenzene	BRL		µg/l	1.0						
1,3,5-Trimethylbenzene	BRL		µg/l	1.0						
Vinyl chloride	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Tetrahydrofuran	BRL		µg/l	10.0						
Ethyl ether	BRL		µg/l	1.0						
Tert-amyl methyl ether	BRL		µg/l	1.0						
Ethyl tert-butyl ether	BRL		µg/l	1.0						
Di-isopropyl ether	BRL		µg/l	1.0						
Tert-Butanol / butyl alcohol	BRL		µg/l	10.0						
1,4-Dioxane	BRL		µg/l	20.0						
trans-1,4-Dichloro-2-butene	BRL		µg/l	5.0						
Ethanol	BRL		µg/l	400						
Surrogate: 4-Bromofluorobenzene	*45.4*		µg/l		*50.0*		*91*	*70-130*		
Surrogate: Toluene-d8	*49.0*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.5*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: Dibromofluoromethane	*54.0*		µg/l		*50.0*		*108*	*70-130*		
LCS (9101368-BS1)										
Prepared & Analyzed: 20-Oct-09										
1,1,2-Trichlorotrifluoroethane (Freon 113)	23.8		µg/l		20.0		119	70-130		
Acetone	29.7	QM9	µg/l		20.0		149	60.2-138		
Acrylonitrile	29.8	QC2	µg/l		20.0		149	70-130		
Benzene	21.8		µg/l		20.0		109	70-130		
Bromobenzene	16.9		µg/l		20.0		84	70-130		
Bromochloromethane	18.5		µg/l		20.0		93	70-130		
Bromodichloromethane	21.6		µg/l		20.0		108	70-130		
Bromoform	20.2		µg/l		20.0		101	70-130		
Bromomethane	25.5		µg/l		20.0		127	56.4-147		
2-Butanone (MEK)	24.7		µg/l		20.0		123	70-142		
n-Butylbenzene	24.8		µg/l		20.0		124	70-130		
sec-Butylbenzene	19.5		µg/l		20.0		98	70-130		
tert-Butylbenzene	18.3		µg/l		20.0		91	70-130		
Carbon disulfide	21.1		µg/l		20.0		106	70-130		
Carbon tetrachloride	22.7		µg/l		20.0		114	70-130		
Chlorobenzene	18.4		µg/l		20.0		92	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101368 - SW846 5030 Water MS										
LCS (9101368-BS1)										
Prepared & Analyzed: 20-Oct-09										
Chloroethane	21.0		µg/l		20.0		105	67.2-130		
Chloroform	21.3		µg/l		20.0		106	70-130		
Chloromethane	30.0	QM9	µg/l		20.0		150	70-130		
2-Chlorotoluene	20.2		µg/l		20.0		101	70-130		
4-Chlorotoluene	20.4		µg/l		20.0		102	70-130		
1,2-Dibromo-3-chloropropane	22.2		µg/l		20.0		111	70-130		
Dibromochloromethane	19.8		µg/l		20.0		99	68.9-130		
1,2-Dibromoethane (EDB)	20.4		µg/l		20.0		102	70-130		
Dibromomethane	20.3		µg/l		20.0		101	70-130		
1,2-Dichlorobenzene	20.5		µg/l		20.0		102	70-130		
1,3-Dichlorobenzene	17.5		µg/l		20.0		87	70-130		
1,4-Dichlorobenzene	19.4		µg/l		20.0		97	70-130		
Dichlorodifluoromethane (Freon12)	19.1		µg/l		20.0		95	54.2-135		
1,1-Dichloroethane	23.4		µg/l		20.0		117	70-130		
1,2-Dichloroethane	19.6		µg/l		20.0		98	70-130		
1,1-Dichloroethene	20.6		µg/l		20.0		103	70-130		
cis-1,2-Dichloroethene	20.0		µg/l		20.0		100	70-130		
trans-1,2-Dichloroethene	18.7		µg/l		20.0		94	70-130		
1,2-Dichloropropane	22.8		µg/l		20.0		114	70-130		
1,3-Dichloropropane	21.7		µg/l		20.0		108	70-130		
2,2-Dichloropropane	25.8		µg/l		20.0		129	70-130		
1,1-Dichloropropene	20.4		µg/l		20.0		102	70-130		
cis-1,3-Dichloropropene	22.5		µg/l		20.0		112	70-130		
trans-1,3-Dichloropropene	22.9		µg/l		20.0		115	70-130		
Ethylbenzene	19.0		µg/l		20.0		95	70-130		
Hexachlorobutadiene	15.7		µg/l		20.0		79	70-133		
2-Hexanone (MBK)	24.4		µg/l		20.0		122	70-130		
Isopropylbenzene	15.9		µg/l		20.0		79	70-130		
4-Isopropyltoluene	21.5		µg/l		20.0		108	70-130		
Methyl tert-butyl ether	20.3		µg/l		20.0		102	70-130		
4-Methyl-2-pentanone (MIBK)	24.7		µg/l		20.0		124	69.1-130		
Methylene chloride	24.4		µg/l		20.0		122	70-130		
Naphthalene	19.8		µg/l		20.0		99	70-130		
n-Propylbenzene	19.4		µg/l		20.0		97	70-130		
Styrene	18.3		µg/l		20.0		91	70-130		
1,1,1,2-Tetrachloroethane	20.7		µg/l		20.0		103	70-130		
1,1,2,2-Tetrachloroethane	17.6		µg/l		20.0		88	70-130		
Tetrachloroethene	16.6		µg/l		20.0		83	70-130		
Toluene	19.5		µg/l		20.0		98	70-130		
1,2,3-Trichlorobenzene	21.2		µg/l		20.0		106	70-130		
1,2,4-Trichlorobenzene	19.1		µg/l		20.0		95	70-130		
1,3,5-Trichlorobenzene	18.8		µg/l		20.0		94	70-130		
1,1,1-Trichloroethane	19.8		µg/l		20.0		99	70-130		
1,1,2-Trichloroethane	22.2		µg/l		20.0		111	70-130		
Trichloroethene	21.7		µg/l		20.0		109	70-130		
Trichlorofluoromethane (Freon 11)	18.9		µg/l		20.0		94	69.8-161		
1,2,3-Trichloropropane	24.1		µg/l		20.0		120	70-130		
1,2,4-Trimethylbenzene	20.2		µg/l		20.0		101	70-130		
1,3,5-Trimethylbenzene	19.7		µg/l		20.0		98	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101368 - SW846 5030 Water MS										
LCS (9101368-BS1)										
Prepared & Analyzed: 20-Oct-09										
Vinyl chloride	28.4	QM9	µg/l		20.0		142	70-130		
m,p-Xylene	38.1		µg/l		40.0		95	70-130		
o-Xylene	21.0		µg/l		20.0		105	70-130		
Tetrahydrofuran	29.0	QC2	µg/l		20.0		145	70-130		
Ethyl ether	24.1		µg/l		20.0		121	70-130		
Tert-amyl methyl ether	25.5		µg/l		20.0		128	70-130		
Ethyl tert-butyl ether	21.0		µg/l		20.0		105	70-130		
Di-isopropyl ether	21.8		µg/l		20.0		109	70-130		
Tert-Butanol / butyl alcohol	232		µg/l		200		116	70-130		
1,4-Dioxane	223		µg/l		200		111	55.2-158		
trans-1,4-Dichloro-2-butene	22.7		µg/l		20.0		113	70-130		
Ethanol	538	QC2	µg/l		400		135	70-130		
Surrogate: 4-Bromofluorobenzene	*48.4*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: Toluene-d8	*49.0*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*48.8*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: Dibromofluoromethane	*50.4*		µg/l		*50.0*		*101*	*70-130*		
LCS Dup (9101368-BSD1)										
Prepared & Analyzed: 20-Oct-09										
1,1,2-Trichlorotrifluoroethane (Freon 113)	20.2		µg/l		20.0		101	70-130	17	25
Acetone	27.7		µg/l		20.0		138	60.2-138	7	50
Acrylonitrile	26.2	QC2	µg/l		20.0		131	70-130	13	25
Benzene	19.1		µg/l		20.0		95	70-130	13	25
Bromobenzene	16.9		µg/l		20.0		85	70-130	0.06	25
Bromochloromethane	17.0		µg/l		20.0		85	70-130	9	25
Bromodichloromethane	19.5		µg/l		20.0		97	70-130	10	25
Bromoform	19.8		µg/l		20.0		99	70-130	2	25
Bromomethane	21.2		µg/l		20.0		106	56.4-147	18	50
2-Butanone (MEK)	23.1		µg/l		20.0		116	70-142	7	50
n-Butylbenzene	20.9		µg/l		20.0		104	70-130	17	25
sec-Butylbenzene	17.7		µg/l		20.0		88	70-130	10	25
tert-Butylbenzene	17.2		µg/l		20.0		86	70-130	6	25
Carbon disulfide	18.2		µg/l		20.0		91	70-130	15	25
Carbon tetrachloride	20.0		µg/l		20.0		100	70-130	13	25
Chlorobenzene	17.4		µg/l		20.0		87	70-130	6	25
Chloroethane	17.9		µg/l		20.0		89	67.2-130	16	50
Chloroform	19.0		µg/l		20.0		95	70-130	11	25
Chloromethane	24.6		µg/l		20.0		123	70-130	20	25
2-Chlorotoluene	18.6		µg/l		20.0		93	70-130	9	25
4-Chlorotoluene	18.4		µg/l		20.0		92	70-130	10	25
1,2-Dibromo-3-chloropropane	21.4		µg/l		20.0		107	70-130	3	25
Dibromochloromethane	19.0		µg/l		20.0		95	68.9-130	4	50
1,2-Dibromoethane (EDB)	19.5		µg/l		20.0		98	70-130	5	25
Dibromomethane	19.6		µg/l		20.0		98	70-130	4	25
1,2-Dichlorobenzene	19.0		µg/l		20.0		95	70-130	7	25
1,3-Dichlorobenzene	16.8		µg/l		20.0		84	70-130	4	25
1,4-Dichlorobenzene	17.6		µg/l		20.0		88	70-130	10	25
Dichlorodifluoromethane (Freon12)	16.0		µg/l		20.0		80	54.2-135	18	50
1,1-Dichloroethane	20.2		µg/l		20.0		101	70-130	15	25
1,2-Dichloroethane	17.4		µg/l		20.0		87	70-130	12	25
1,1-Dichloroethene	17.6		µg/l		20.0		88	70-130	16	25

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101368 - SW846 5030 Water MS										
LCS Dup (9101368-BSD1)										
Prepared & Analyzed: 20-Oct-09										
cis-1,2-Dichloroethene	18.4		µg/l		20.0		92	70-130	8	25
trans-1,2-Dichloroethene	17.0		µg/l		20.0		85	70-130	10	25
1,2-Dichloropropane	20.0		µg/l		20.0		100	70-130	13	25
1,3-Dichloropropane	20.1		µg/l		20.0		100	70-130	8	25
2,2-Dichloropropane	22.1		µg/l		20.0		110	70-130	15	25
1,1-Dichloropropene	17.2		µg/l		20.0		86	70-130	17	25
cis-1,3-Dichloropropene	20.4		µg/l		20.0		102	70-130	10	25
trans-1,3-Dichloropropene	20.9		µg/l		20.0		104	70-130	9	25
Ethylbenzene	17.3		µg/l		20.0		86	70-130	10	25
Hexachlorobutadiene	14.5		µg/l		20.0		73	70-133	8	50
2-Hexanone (MBK)	22.0		µg/l		20.0		110	70-130	10	25
Isopropylbenzene	14.6		µg/l		20.0		73	70-130	9	25
4-Isopropyltoluene	18.9		µg/l		20.0		94	70-130	13	25
Methyl tert-butyl ether	19.3		µg/l		20.0		96	70-130	5	25
4-Methyl-2-pentanone (MIBK)	22.6		µg/l		20.0		113	69.1-130	9	50
Methylene chloride	20.2		µg/l		20.0		101	70-130	19	25
Naphthalene	18.3		µg/l		20.0		91	70-130	8	25
n-Propylbenzene	17.3		µg/l		20.0		86	70-130	12	25
Styrene	17.4		µg/l		20.0		87	70-130	5	25
1,1,1,2-Tetrachloroethane	20.2		µg/l		20.0		101	70-130	2	25
1,1,2,2-Tetrachloroethane	17.2		µg/l		20.0		86	70-130	2	25
Tetrachloroethene	16.0		µg/l		20.0		80	70-130	4	25
Toluene	17.4		µg/l		20.0		87	70-130	11	25
1,2,3-Trichlorobenzene	19.6		µg/l		20.0		98	70-130	8	25
1,2,4-Trichlorobenzene	17.6		µg/l		20.0		88	70-130	8	25
1,3,5-Trichlorobenzene	17.2		µg/l		20.0		86	70-130	9	25
1,1,1-Trichloroethane	17.3		µg/l		20.0		87	70-130	13	25
1,1,2-Trichloroethane	20.9		µg/l		20.0		104	70-130	6	25
Trichloroethene	18.8		µg/l		20.0		94	70-130	14	25
Trichlorofluoromethane (Freon 11)	16.4		µg/l		20.0		82	69.8-161	14	50
1,2,3-Trichloropropane	23.0		µg/l		20.0		115	70-130	4	25
1,2,4-Trimethylbenzene	18.7		µg/l		20.0		93	70-130	8	25
1,3,5-Trimethylbenzene	18.1		µg/l		20.0		90	70-130	9	25
Vinyl chloride	22.7		µg/l		20.0		113	70-130	22	25
m,p-Xylene	35.5		µg/l		40.0		89	70-130	7	25
o-Xylene	19.6		µg/l		20.0		98	70-130	7	25
Tetrahydrofuran	27.6	QC2	µg/l		20.0		138	70-130	5	25
Ethyl ether	22.2		µg/l		20.0		111	70-130	8	50
Tert-amyl methyl ether	23.4		µg/l		20.0		117	70-130	9	25
Ethyl tert-butyl ether	19.1		µg/l		20.0		96	70-130	10	25
Di-isopropyl ether	19.0		µg/l		20.0		95	70-130	14	25
Tert-Butanol / butyl alcohol	223		µg/l		200		111	70-130	4	25
1,4-Dioxane	243		µg/l		200		121	55.2-158	9	25
trans-1,4-Dichloro-2-butene	21.8		µg/l		20.0		109	70-130	4	25
Ethanol	540	QC2	µg/l		400		135	70-130	0.3	30
Surrogate: 4-Bromofluorobenzene	*49.8*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*48.6*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*47.2*		µg/l		*50.0*		*94*	*70-130*		
Surrogate: Dibromofluoromethane	*50.2*		µg/l		*50.0*		*100*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101247 - SW846 3510C										
Blank (9101247-BLK1)										
Prepared & Analyzed: 19-Oct-09										
Acenaphthene	BRL		µg/l	5.00						
Acenaphthylene	BRL		µg/l	5.00						
Aniline	BRL		µg/l	5.00						
Anthracene	BRL		µg/l	5.00						
Atrazine	BRL		µg/l	5.00						
Azobenzene/Diphenyldiazine	BRL		µg/l	5.00						
Benzidine	BRL		µg/l	5.00						
Benzo (a) anthracene	BRL		µg/l	5.00						
Benzo (a) pyrene	BRL		µg/l	5.00						
Benzo (b) fluoranthene	BRL		µg/l	5.00						
Benzo (g,h,i) perylene	BRL		µg/l	5.00						
Benzo (k) fluoranthene	BRL		µg/l	5.00						
Benzoic acid	BRL		µg/l	5.00						
Benzyl alcohol	BRL		µg/l	5.00						
Bis(2-chloroethoxy)methane	BRL		µg/l	5.00						
Bis(2-chloroethyl)ether	BRL		µg/l	5.00						
Bis(2-chloroisopropyl)ether	BRL		µg/l	5.00						
Bis(2-ethylhexyl)phthalate	BRL		µg/l	5.00						
4-Bromophenyl phenyl ether	BRL		µg/l	5.00						
Butyl benzyl phthalate	BRL		µg/l	5.00						
Carbazole	BRL		µg/l	5.00						
4-Chloro-3-methylphenol	BRL		µg/l	5.00						
4-Chloroaniline	BRL		µg/l	5.00						
2-Chloronaphthalene	BRL		µg/l	5.00						
2-Chlorophenol	BRL		µg/l	5.00						
4-Chlorophenyl phenyl ether	BRL		µg/l	5.00						
Chrysene	BRL		µg/l	5.00						
Dibenzo (a,h) anthracene	BRL		µg/l	5.00						
Dibenzofuran	BRL		µg/l	5.00						
1,2-Dichlorobenzene	BRL		µg/l	5.00						
1,3-Dichlorobenzene	BRL		µg/l	5.00						
1,4-Dichlorobenzene	BRL		µg/l	5.00						
3,3´-Dichlorobenzidine	BRL		µg/l	5.00						
2,4-Dichlorophenol	BRL		µg/l	5.00						
Diethyl phthalate	BRL		µg/l	5.00						
Dimethyl phthalate	BRL		µg/l	5.00						
2,4-Dimethylphenol	BRL		µg/l	5.00						
Di-n-butyl phthalate	BRL		µg/l	5.00						
4,6-Dinitro-2-methylphenol	BRL		µg/l	5.00						
2,4-Dinitrophenol	BRL		µg/l	5.00						
2,4-Dinitrotoluene	BRL		µg/l	5.00						
2,6-Dinitrotoluene	BRL		µg/l	5.00						
Di-n-octyl phthalate	BRL		µg/l	5.00						
Fluoranthene	BRL		µg/l	5.00						
Fluorene	BRL		µg/l	5.00						
Hexachlorobenzene	BRL		µg/l	5.00						
Hexachlorobutadiene	BRL		µg/l	5.00						
Hexachlorocyclopentadiene	BRL		µg/l	5.00						
Hexachloroethane	BRL		µg/l	5.00						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101247 - SW846 3510C										
Blank (9101247-BLK1)										
Prepared & Analyzed: 19-Oct-09										
Indeno (1,2,3-cd) pyrene	BRL		µg/l	5.00						
Isophorone	BRL		µg/l	5.00						
2-Methylnaphthalene	BRL		µg/l	5.00						
2-Methylphenol	BRL		µg/l	5.00						
3 & 4-Methylphenol	BRL		µg/l	10.0						
Naphthalene	BRL		µg/l	5.00						
2-Nitroaniline	BRL		µg/l	5.00						
3-Nitroaniline	BRL		µg/l	5.00						
4-Nitroaniline	BRL		µg/l	20.0						
Nitrobenzene	BRL		µg/l	5.00						
2-Nitrophenol	BRL		µg/l	5.00						
4-Nitrophenol	BRL		µg/l	20.0						
N-Nitrosodimethylamine	BRL		µg/l	5.00						
N-Nitrosodi-n-propylamine	BRL		µg/l	5.00						
N-Nitrosodiphenylamine	BRL		µg/l	5.00						
Pentachlorophenol	BRL		µg/l	20.0						
Phenanthrene	BRL		µg/l	5.00						
Phenol	BRL		µg/l	5.00						
Pyrene	BRL		µg/l	5.00						
Pyridine	BRL		µg/l	5.00						
1,2,4-Trichlorobenzene	BRL		µg/l	5.00						
1-Methylnaphthalene	BRL		µg/l	5.00						
2,4,5-Trichlorophenol	BRL		µg/l	5.00						
2,4,6-Trichlorophenol	BRL		µg/l	5.00						
Pentachloronitrobenzene	BRL		µg/l	5.00						
1,2,4,5-Tetrachlorobenzene	BRL		µg/l	5.00						
Surrogate: 2-Fluorobiphenyl	*32.4*		µg/l		*50.0*		*65*	*30-130*		
Surrogate: 2-Fluorophenol	*26.6*		µg/l		*50.0*		*53*	*15-110*		
Surrogate: Nitrobenzene-d5	*38.7*		µg/l		*50.0*		*77*	*30-130*		
Surrogate: Phenol-d5	*15.8*		µg/l		*50.0*		*32*	*15-110*		
Surrogate: Terphenyl-dl4	*35.5*		µg/l		*50.0*		*71*	*30-130*		
Surrogate: 2,4,6-Tribromophenol	*39.8*		µg/l		*50.0*		*80*	*15-110*		
LCS (9101247-BS1)										
Prepared & Analyzed: 19-Oct-09										
Acenaphthene	35.4		µg/l	5.00	50.0		71	40-130		
Acenaphthylene	36.8		µg/l	5.00	50.0		74	40-130		
Aniline	32.5		µg/l	5.00	50.0		65	40-130		
Anthracene	37.8		µg/l	5.00	50.0		76	40-130		
Atrazine	57.1		µg/l	5.00	50.0		114	40-130		
Azobenzene/Diphenyldiazine	45.4		µg/l	5.00	50.0		91	40-130		
Benzidine	5.16		µg/l	5.00	50.0		10	0-130		
Benzo (a) anthracene	39.1		µg/l	5.00	50.0		78	40-130		
Benzo (a) pyrene	38.1		µg/l	5.00	50.0		76	40-130		
Benzo (b) fluoranthene	41.0		µg/l	5.00	50.0		82	40-130		
Benzo (g,h,i) perylene	44.2		µg/l	5.00	50.0		88	40-130		
Benzo (k) fluoranthene	32.1		µg/l	5.00	50.0		64	40-130		
Benzoic acid	28.0		µg/l	5.00	50.0		56	17.8-130		
Benzyl alcohol	35.9		µg/l	5.00	50.0		72	40-130		
Bis(2-chloroethoxy)methane	37.0		µg/l	5.00	50.0		74	40-130		
Bis(2-chloroethyl)ether	43.2		µg/l	5.00	50.0		86	40-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101247 - SW846 3510C										
LCS (9101247-BS1)										
Prepared & Analyzed: 19-Oct-09										
Bis(2-chloroisopropyl)ether	47.6		µg/l	5.00	50.0		95	40-130		
Bis(2-ethylhexyl)phthalate	48.0		µg/l	5.00	50.0		96	40-130		
4-Bromophenyl phenyl ether	40.0		µg/l	5.00	50.0		80	40-130		
Butyl benzyl phthalate	42.1		µg/l	5.00	50.0		84	40-130		
Carbazole	39.7		µg/l	5.00	50.0		79	40-130		
4-Chloro-3-methylphenol	41.3		µg/l	5.00	50.0		83	40-130		
4-Chloroaniline	32.9		µg/l	5.00	50.0		66	40-130		
2-Chloronaphthalene	33.2		µg/l	5.00	50.0		66	40-130		
2-Chlorophenol	34.4		µg/l	5.00	50.0		69	40-130		
4-Chlorophenyl phenyl ether	33.6		µg/l	5.00	50.0		67	40-130		
Chrysene	36.3		µg/l	5.00	50.0		73	40-130		
Dibenzo (a,h) anthracene	42.7		µg/l	5.00	50.0		85	40-130		
Dibenzofuran	34.2		µg/l	5.00	50.0		68	40-130		
1,2-Dichlorobenzene	29.4		µg/l	5.00	50.0		59	40-130		
1,3-Dichlorobenzene	28.6		µg/l	5.00	50.0		57	40-130		
1,4-Dichlorobenzene	29.1		µg/l	5.00	50.0		58	40-130		
3,3´-Dichlorobenzidine	29.8		µg/l	5.00	50.0		60	40-130		
2,4-Dichlorophenol	33.9		µg/l	5.00	50.0		68	40-130		
Diethyl phthalate	40.8		µg/l	5.00	50.0		82	40-130		
Dimethyl phthalate	39.1		µg/l	5.00	50.0		78	40-130		
2,4-Dimethylphenol	34.0		µg/l	5.00	50.0		68	40-130		
Di-n-butyl phthalate	42.8		µg/l	5.00	50.0		86	40-130		
4,6-Dinitro-2-methylphenol	47.4		µg/l	5.00	50.0		95	40-130		
2,4-Dinitrophenol	49.0		µg/l	5.00	50.0		98	40-130		
2,4-Dinitrotoluene	43.0		µg/l	5.00	50.0		86	40-130		
2,6-Dinitrotoluene	41.2		µg/l	5.00	50.0		82	40-130		
Di-n-octyl phthalate	43.8		µg/l	5.00	50.0		88	40-130		
Fluoranthene	37.2		µg/l	5.00	50.0		74	40-130		
Fluorene	36.7		µg/l	5.00	50.0		73	40-130		
Hexachlorobenzene	33.4		µg/l	5.00	50.0		67	40-130		
Hexachlorobutadiene	22.5		µg/l	5.00	50.0		45	40-130		
Hexachlorocyclopentadiene	25.5		µg/l	5.00	50.0		51	40-130		
Hexachloroethane	31.4		µg/l	5.00	50.0		63	40-130		
Indeno (1,2,3-cd) pyrene	43.1		µg/l	5.00	50.0		86	40-130		
Isophorone	36.5		µg/l	5.00	50.0		73	40-130		
2-Methylnaphthalene	30.0		µg/l	5.00	50.0		60	40-130		
2-Methylphenol	37.0		µg/l	5.00	50.0		74	40-130		
3 & 4-Methylphenol	36.4		µg/l	10.0	50.0		73	40-130		
Naphthalene	32.7		µg/l	5.00	50.0		65	40-130		
2-Nitroaniline	42.9		µg/l	5.00	50.0		86	40-130		
3-Nitroaniline	32.8		µg/l	5.00	50.0		66	40-130		
4-Nitroaniline	42.4		µg/l	20.0	50.0		85	40-130		
Nitrobenzene	38.7		µg/l	5.00	50.0		77	40-130		
2-Nitrophenol	39.3		µg/l	5.00	50.0		79	40-130		
4-Nitrophenol	65.8	QC2	µg/l	20.0	50.0		132	40-130		
N-Nitrosodimethylamine	33.3		µg/l	5.00	50.0		67	40-130		
N-Nitrosodi-n-propylamine	44.6		µg/l	5.00	50.0		89	40-130		
N-Nitrosodiphenylamine	40.9		µg/l	5.00	50.0		82	40-130		
Pentachlorophenol	39.7		µg/l	20.0	50.0		79	40-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101247 - SW846 3510C										
LCS (9101247-BS1)										
Prepared & Analyzed: 19-Oct-09										
Phenanthrene	37.4		µg/l	5.00	50.0		75	40-130		
Phenol	21.6		µg/l	5.00	50.0		43	40-130		
Pyrene	38.0		µg/l	5.00	50.0		76	40-130		
Pyridine	20.6		µg/l	5.00	50.0		41	10-169		
1-Methylnaphthalene	34.9		µg/l	5.00	50.0		70	40-140		
1,2,4-Trichlorobenzene	27.5		µg/l	5.00	50.0		55	40-130		
2,4,5-Trichlorophenol	37.4		µg/l	5.00	50.0		75	40-130		
2,4,6-Trichlorophenol	33.0		µg/l	5.00	50.0		66	40-130		
Pentachloronitrobenzene	34.7		µg/l	5.00	50.0		69	40-140		
1,2,4,5-Tetrachlorobenzene	27.7		µg/l	5.00	50.0		55	40-140		
Surrogate: 2-Fluorobiphenyl	*31.8*		µg/l		*50.0*		*64*	*30-130*		
Surrogate: 2-Fluorophenol	*24.6*		µg/l		*50.0*		*49*	*15-110*		
Surrogate: Nitrobenzene-d5	*38.4*		µg/l		*50.0*		*77*	*30-130*		
Surrogate: Phenol-d5	*15.0*		µg/l		*50.0*		*30*	*15-110*		
Surrogate: Terphenyl-dl4	*34.3*		µg/l		*50.0*		*69*	*30-130*		
Surrogate: 2,4,6-Tribromophenol	*41.2*		µg/l		*50.0*		*82*	*15-110*		
LCS Dup (9101247-BSD1)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
Acenaphthene	38.8		µg/l	5.00	50.0		78	40-130	9	20
Acenaphthylene	39.9		µg/l	5.00	50.0		80	40-130	8	20
Aniline	32.4		µg/l	5.00	50.0		65	40-130	0.2	20
Anthracene	41.8		µg/l	5.00	50.0		84	40-130	10	20
Atrazine	59.0		µg/l	5.00	50.0		118	40-130	3	20
Azobenzene/Diphenyldiazine	49.1		µg/l	5.00	50.0		98	40-130	8	20
Benzidine	9.52	QC2	µg/l	5.00	50.0		19	0-130	59	20
Benzo (a) anthracene	42.6		µg/l	5.00	50.0		85	40-130	9	20
Benzo (a) pyrene	41.4		µg/l	5.00	50.0		83	40-130	8	20
Benzo (b) fluoranthene	44.4		µg/l	5.00	50.0		89	40-130	8	20
Benzo (g,h,i) perylene	47.9		µg/l	5.00	50.0		96	40-130	8	20
Benzo (k) fluoranthene	36.7		µg/l	5.00	50.0		73	40-130	13	20
Benzoic acid	29.9		µg/l	5.00	50.0		60	17.8-130	7	20
Benzyl alcohol	37.2		µg/l	5.00	50.0		74	40-130	4	20
Bis(2-chloroethoxy)methane	39.2		µg/l	5.00	50.0		78	40-130	6	20
Bis(2-chloroethyl)ether	44.8		µg/l	5.00	50.0		90	40-130	4	20
Bis(2-chloroisopropyl)ether	48.5		µg/l	5.00	50.0		97	40-130	2	20
Bis(2-ethylhexyl)phthalate	51.5		µg/l	5.00	50.0		103	40-130	7	20
4-Bromophenyl phenyl ether	44.5		µg/l	5.00	50.0		89	40-130	11	20
Butyl benzyl phthalate	46.3		µg/l	5.00	50.0		93	40-130	9	20
Carbazole	42.6		µg/l	5.00	50.0		85	40-130	7	20
4-Chloro-3-methylphenol	43.4		µg/l	5.00	50.0		87	40-130	5	20
4-Chloroaniline	36.0		µg/l	5.00	50.0		72	40-130	9	20
2-Chloronaphthalene	36.4		µg/l	5.00	50.0		73	40-130	9	20
2-Chlorophenol	35.7		µg/l	5.00	50.0		71	40-130	4	20
4-Chlorophenyl phenyl ether	37.4		µg/l	5.00	50.0		75	40-130	11	20
Chrysene	40.3		µg/l	5.00	50.0		81	40-130	10	20
Dibenzo (a,h) anthracene	46.8		µg/l	5.00	50.0		94	40-130	9	20
Dibenzofuran	36.7		µg/l	5.00	50.0		73	40-130	7	20
1,2-Dichlorobenzene	30.0		µg/l	5.00	50.0		60	40-130	2	20
1,3-Dichlorobenzene	29.8		µg/l	5.00	50.0		60	40-130	4	20
1,4-Dichlorobenzene	32.4		µg/l	5.00	50.0		65	40-130	11	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101247 - SW846 3510C										
LCS Dup (9101247-BSD1)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
3,3´-Dichlorobenzidine	32.3		µg/l	5.00	50.0		65	40-130	8	20
2,4-Dichlorophenol	36.2		µg/l	5.00	50.0		72	40-130	7	20
Diethyl phthalate	43.5		µg/l	5.00	50.0		87	40-130	6	20
Dimethyl phthalate	41.9		µg/l	5.00	50.0		84	40-130	7	20
2,4-Dimethylphenol	36.6		µg/l	5.00	50.0		73	40-130	7	20
Di-n-butyl phthalate	46.9		µg/l	5.00	50.0		94	40-130	9	20
4,6-Dinitro-2-methylphenol	50.4		µg/l	5.00	50.0		101	40-130	6	20
2,4-Dinitrophenol	51.1		µg/l	5.00	50.0		102	40-130	4	20
2,4-Dinitrotoluene	44.9		µg/l	5.00	50.0		90	40-130	4	20
2,6-Dinitrotoluene	43.2		µg/l	5.00	50.0		86	40-130	5	20
Di-n-octyl phthalate	48.6		µg/l	5.00	50.0		97	40-130	10	20
Fluoranthene	40.8		µg/l	5.00	50.0		82	40-130	9	20
Fluorene	39.4		µg/l	5.00	50.0		79	40-130	7	20
Hexachlorobenzene	37.0		µg/l	5.00	50.0		74	40-130	10	20
Hexachlorobutadiene	26.0		µg/l	5.00	50.0		52	40-130	14	20
Hexachlorocyclopentadiene	29.2		µg/l	5.00	50.0		58	40-130	13	20
Hexachloroethane	35.0		µg/l	5.00	50.0		70	40-130	11	20
Indeno (1,2,3-cd) pyrene	47.7		µg/l	5.00	50.0		95	40-130	10	20
Isophorone	39.3		µg/l	5.00	50.0		79	40-130	7	20
2-Methylnaphthalene	33.2		µg/l	5.00	50.0		66	40-130	10	20
2-Methylphenol	38.2		µg/l	5.00	50.0		76	40-130	3	20
3 & 4-Methylphenol	37.6		µg/l	10.0	50.0		75	40-130	3	20
Naphthalene	35.0		µg/l	5.00	50.0		70	40-130	7	20
2-Nitroaniline	45.5		µg/l	5.00	50.0		91	40-130	6	20
3-Nitroaniline	36.3		µg/l	5.00	50.0		73	40-130	10	20
4-Nitroaniline	44.2		µg/l	20.0	50.0		88	40-130	4	20
Nitrobenzene	41.2		µg/l	5.00	50.0		82	40-130	6	20
2-Nitrophenol	42.3		µg/l	5.00	50.0		85	40-130	7	20
4-Nitrophenol	67.4	QC2	µg/l	20.0	50.0		135	40-130	2	20
N-Nitrosodimethylamine	35.3		µg/l	5.00	50.0		71	40-130	6	20
N-Nitrosodi-n-propylamine	45.9		µg/l	5.00	50.0		92	40-130	3	20
N-Nitrosodiphenylamine	44.0		µg/l	5.00	50.0		88	40-130	7	20
Pentachlorophenol	43.0		µg/l	20.0	50.0		86	40-130	8	20
Phenanthrene	40.5		µg/l	5.00	50.0		81	40-130	8	20
Phenol	23.0		µg/l	5.00	50.0		46	40-130	6	20
Pyrene	42.1		µg/l	5.00	50.0		84	40-130	10	20
Pyridine	21.4		µg/l	5.00	50.0		43	10-169	4	20
1-Methylnaphthalene	37.1		µg/l	5.00	50.0		74	40-140	6	20
1,2,4-Trichlorobenzene	30.5		µg/l	5.00	50.0		61	40-130	10	20
2,4,5-Trichlorophenol	40.2		µg/l	5.00	50.0		80	40-130	7	20
2,4,6-Trichlorophenol	34.6		µg/l	5.00	50.0		69	40-130	5	20
Pentachloronitrobenzene	38.3		µg/l	5.00	50.0		77	40-140	10	20
1,2,4,5-Tetrachlorobenzene	31.1		µg/l	5.00	50.0		62	40-140	11	20
Surrogate: 2-Fluorobiphenyl	*35.2*		µg/l		*50.0*		*70*	*30-130*		
Surrogate: 2-Fluorophenol	*26.2*		µg/l		*50.0*		*52*	*15-110*		
Surrogate: Nitrobenzene-d5	*41.5*		µg/l		*50.0*		*83*	*30-130*		
Surrogate: Phenol-d5	*16.3*		µg/l		*50.0*		*33*	*15-110*		
Surrogate: Terphenyl-dl4	*38.0*		µg/l		*50.0*		*76*	*30-130*		
Surrogate: 2,4,6-Tribromophenol	*46.5*		µg/l		*50.0*		*93*	*15-110*		

Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101261 - SW846 3510C										
Blank (9101261-BLK1)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
Aroclor-1016	BRL		µg/l	0.200						
Aroclor-1016 [2C]	BRL		µg/l	0.200						
Aroclor-1221	BRL		µg/l	0.200						
Aroclor-1221 [2C]	BRL		µg/l	0.200						
Aroclor-1232	BRL		µg/l	0.200						
Aroclor-1232 [2C]	BRL		µg/l	0.200						
Aroclor-1242	BRL		µg/l	0.200						
Aroclor-1242 [2C]	BRL		µg/l	0.200						
Aroclor-1248	BRL		µg/l	0.200						
Aroclor-1248 [2C]	BRL		µg/l	0.200						
Aroclor-1254	BRL		µg/l	0.200						
Aroclor-1254 [2C]	BRL		µg/l	0.200						
Aroclor-1260	BRL		µg/l	0.200						
Aroclor-1260 [2C]	BRL		µg/l	0.200						
Aroclor-1262	BRL		µg/l	0.200						
Aroclor-1262 [2C]	BRL		µg/l	0.200						
Aroclor-1268	BRL		µg/l	0.200						
Aroclor-1268 [2C]	BRL		µg/l	0.200						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.147*		µg/l		*0.200*		*74*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2	*0.136*		µg/l		*0.200*		*68*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.168*		µg/l		*0.200*		*84*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.144*		µg/l		*0.200*		*72*	*30-150*		
LCS (9101261-BS1)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
Aroclor-1016	2.34		µg/l	0.200	2.50		94	50-140		
Aroclor-1016 [2C]	2.30		µg/l	0.200	2.50		92	50-140		
Aroclor-1260	2.43		µg/l	0.200	2.50		97	50-140		
Aroclor-1260 [2C]	2.38		µg/l	0.200	2.50		95	50-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.144*		µg/l		*0.200*		*72*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2	*0.133*		µg/l		*0.200*		*66*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.186*		µg/l		*0.200*		*93*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.145*		µg/l		*0.200*		*72*	*30-150*		
LCS Dup (9101261-BSD1)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
Aroclor-1016	2.34		µg/l	0.200	2.50		94	50-140	0.2	30
Aroclor-1016 [2C]	2.32		µg/l	0.200	2.50		93	50-140	1	30
Aroclor-1260	2.42		µg/l	0.200	2.50		97	50-140	0.5	30
Aroclor-1260 [2C]	2.33		µg/l	0.200	2.50		93	50-140	2	30
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.141*		µg/l		*0.200*		*70*	*30-150*		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr) [2	*0.134*		µg/l		*0.200*		*67*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.179*		µg/l		*0.200*		*90*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr) [2C]	*0.152*		µg/l		*0.200*		*76*	*30-150*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101245 - SW846 3510C										
Blank (9101245-BLK1)										
Prepared & Analyzed: 19-Oct-09										
Gasoline	BRL		mg/l	0.1						
Fuel Oil #2	BRL		mg/l	0.1						
Fuel Oil #4	BRL		mg/l	0.1						
Fuel Oil #6	BRL		mg/l	0.1						
Motor Oil	BRL		mg/l	0.1						
Ligroin	BRL		mg/l	0.1						
Aviation Fuel	BRL		mg/l	0.1						
Hydraulic Oil	BRL		mg/l	0.1						
Dielectric Fluid	BRL		mg/l	0.1						
Unidentified	BRL		mg/l	0.1						
Other Oil	BRL		mg/l	0.1						
Total Petroleum Hydrocarbons	BRL		mg/l	0.1						
Surrogate: 1-Chlorooctadecane	*0.0398*		mg/l		*0.0500*		*80*	*40-140*		
LCS (9101245-BS1)										
Prepared & Analyzed: 19-Oct-09										
Fuel Oil #2	10.5		mg/l	0.1	10.0		105	40-140		
Surrogate: 1-Chlorooctadecane	*0.0602*		mg/l		*0.0500*		*120*	*40-140*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101231 - EPA 200 Series										
Blank (9101231-BLK1)										
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Nickel	BRL		mg/l	0.0050						
Iron	BRL		mg/l	0.0150						
Zinc	BRL		mg/l	0.0050						
Copper	BRL		mg/l	0.0050						
LCS (9101231-BS1)										
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Nickel	1.37		mg/l	0.0050	1.25		109	85-115		
Zinc	1.36		mg/l	0.0050	1.25		109	85-115		
Iron	1.33		mg/l	0.0150	1.25		106	85-115		
Copper	1.38		mg/l	0.0050	1.25		110	85-115		
Matrix Spike (9101231-MS2) **Source: SB02551-01**										
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Zinc	1.43		mg/l	0.0050	1.25	0.0388	111	70-130		
Nickel	1.39		mg/l	0.0050	1.25	BRL	111	70-130		
Iron	1.38		mg/l	0.0150	1.25	0.0800	104	70-130		
Copper	1.41		mg/l	0.0050	1.25	0.0050	113	70-130		
Post Spike (9101231-PS2) **Source: SB02551-01**										
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Nickel	1.41		mg/l	0.0050	1.25	BRL	112	85-115		
Zinc	1.44		mg/l	0.0050	1.25	0.0388	112	85-115		
Iron	1.41		mg/l	0.0150	1.25	0.0800	106	85-115		
Copper	1.43		mg/l	0.0050	1.25	0.0050	114	85-115		
Batch 9101232 - EPA 200 Series										
Blank (9101232-BLK1)										
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Selenium	BRL		mg/l	0.0002						
Antimony	BRL		mg/l	0.0002						
Lead	BRL		mg/l	0.0002						
Silver	BRL		mg/l	0.0002						
Arsenic	BRL		mg/l	0.0002						
Barium	BRL		mg/l	0.0002						
Chromium	BRL		mg/l	0.0010						
Cadmium	BRL		mg/l	0.0002						
LCS (9101232-BS1)										
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Antimony	1.38		mg/l	0.0125	1.25		110	85-115		
Lead	1.24		mg/l	0.0125	1.25		99	85-115		
Selenium	1.38		mg/l	0.0125	1.25		110	85-115		
Arsenic	1.37		mg/l	0.0125	1.25		110	85-115		
Cadmium	1.40		mg/l	0.0100	1.25		112	85-115		
Silver	1.36		mg/l	0.0125	1.25		109	85-115		
Chromium	1.30		mg/l	0.0500	1.25		104	85-115		
Barium	1.33		mg/l	0.0125	1.25		106	85-115		
Batch 9101233 - EPA200/SW7000 Series										
Blank (9101233-BLK1)										
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										

Total Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101233 - EPA200/SW7000 Series										
Blank (9101233-BLK1)										
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Mercury	BRL		mg/l	0.00020						
LCS (9101233-BS1)										
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Mercury	0.00466		mg/l	0.00020	0.00500		93	85-115		
Duplicate (9101233-DUP1)	**Source: SB02551-01**									
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Mercury	BRL		mg/l	0.00020		BRL				20
Matrix Spike (9101233-MS1)	**Source: SB02551-01**									
Prepared: 17-Oct-09 Analyzed: 19-Oct-09										
Mercury	0.00356	QM7	mg/l	0.00020	0.00500	BRL	71	75-125		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101211 - General Preparation										
Blank (9101211-BLK1)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	BRL		mg/l	0.005						
Blank (9101211-BLK2)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	BRL		mg/l	0.005						
LCS (9101211-BS1)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.051		mg/l	0.005	0.0500		102	90-110		
LCS (9101211-BS2)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.049		mg/l	0.005	0.0500		98	90-110		
Calibration Blank (9101211-CCB1)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.001		mg/l							
Calibration Blank (9101211-CCB2)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.001		mg/l							
Calibration Blank (9101211-CCB3)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.001		mg/l							
Calibration Check (9101211-CCV1)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.050		mg/l		0.0500		100	90-110		
Calibration Check (9101211-CCV2)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.051		mg/l		0.0500		102	90-110		
Calibration Check (9101211-CCV3)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.049		mg/l		0.0500		98	90-110		
Duplicate (9101211-DUP2)	**Source: SB02551-01**									
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	BRL		mg/l	0.005		BRL				20
Matrix Spike (9101211-MS2)	**Source: SB02551-01**									
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.049		mg/l	0.005	0.0500	BRL	98	80-120		
Matrix Spike Dup (9101211-MSD2)	**Source: SB02551-01**									
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.047		mg/l	0.005	0.0500	BRL	94	80-120	4	20
Reference (9101211-SRM1)										
Prepared & Analyzed: 16-Oct-09										
Hexavalent Chromium	0.025		mg/l	0.005	0.0250		100	85-115		
Batch 9101212 - General Preparation										
Blank (9101212-BLK1)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	BRL		mg/l	0.020						

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101212 - General Preparation										
Blank (9101212-BLK1)										
Prepared & Analyzed: 16-Oct-09										
LCS (9101212-BS1)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.050		mg/l	0.020	0.0500		100	90-110		
Calibration Blank (9101212-CCB1)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.001		mg/l							
Calibration Blank (9101212-CCB2)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.001		mg/l							
Calibration Blank (9101212-CCB3)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.002		mg/l							
Calibration Blank (9101212-CCB4)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.001		mg/l							
Calibration Check (9101212-CCV1)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.051		mg/l		0.0500		102	90-110		
Calibration Check (9101212-CCV2)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.051		mg/l		0.0500		102	90-110		
Calibration Check (9101212-CCV3)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.050		mg/l		0.0500		100	90-110		
Calibration Check (9101212-CCV4)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.051		mg/l		0.0500		102	90-110		
Reference (9101212-SRM1)										
Prepared & Analyzed: 16-Oct-09										
Total Residual Chlorine	0.104		mg/l	0.020	0.109		95	85-115		
Batch 9101295 - General Preparation										
Blank (9101295-BLK1)										
Prepared & Analyzed: 19-Oct-09										
Total Suspended Solids	BRL		mg/l	5.00						
Blank (9101295-BLK2)										
Prepared & Analyzed: 19-Oct-09										
Total Suspended Solids	BRL		mg/l	5.00						
LCS (9101295-BS1)										
Prepared & Analyzed: 19-Oct-09										
Total Suspended Solids	90.0		mg/l	10.0	92.3		98	90-110		
LCS (9101295-BS2)										
Prepared & Analyzed: 19-Oct-09										
Total Suspended Solids	92.0		mg/l	10.0	92.3		100	90-110		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 9101297 - General Preparation										
Blank (9101297-BLK1)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
Cyanide (total)	BRL		mg/l	0.0100						
Blank (9101297-BLK2)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
Cyanide (total)	BRL		mg/l	0.0100						
LCS (9101297-BS1)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
Cyanide (total)	0.301		mg/l	0.0100	0.300		100	90-110		
LCS (9101297-BS2)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
Cyanide (total)	0.292		mg/l	0.0100	0.300		97	90-110		
Reference (9101297-SRM1)										
Prepared: 19-Oct-09 Analyzed: 20-Oct-09										
Cyanide (total)	0.250		mg/l	0.0100	0.287		87	74.9-125.1		

Notes and Definitions

CAL2	Analyte percent drift/percent difference is greater than 30%, data is accepted due to all CCC analytes passing within the 20% Drift/Difference criteria
HT3	The collection time was not indicated on the chain of custody. Therefore, the analysis hold time can not be verified.
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
QM7	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable 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.
R01	The Reporting Limit has been raised to account for matrix interference.
R05	Elevated Reporting Limits due to the presence of high levels of non-target analytes.
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
ClHT	The method for residual chlorine indicates that samples should be analyzed immediately. 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous residual chlorine samples not analyzed in the field are considered out of hold time at the time of sample receipt.

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

Interpretation of Total Petroleum Hydrocarbon Report

Petroleum identification is determined by comparing the GC fingerprint obtained from the sample with a library of GC fingerprints obtained from analyses of various petroleum products. Possible match categories are as follows:

Gasoline - includes regular, unleaded, premium, etc.
Fuel Oil #2 - includes home heating oil, #2 fuel oil, and diesel
Fuel Oil #4 - includes #4 fuel oil
Fuel Oil #6 - includes #6 fuel oil and bunker "C" oil
Motor Oil - includes virgin and waste automobile oil
Ligroin - includes mineral spirits, petroleum naphtha, vm&p naphtha
Aviation Fuel - includes kerosene, Jet A and JP-4
Other Oil - includes lubricating and cutting oil, and silicon oil

At times, the unidentified petroleum product is quantified using a calibration that most closely approximates the distribution of compounds in the sample. When this occurs, the result is qualified as *TPH (Calculated as).

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.

Validated by:
Hanibal C. Tayeh, Ph.D.
June O'Connor
Rebecca Merz

Laboratory Name: Spectrum Analytical, Inc. - Agawam, MA	Project #: S 1227
Project Location: Hanson, MA	MADEP RTN [1]:

This form provides certifications for the following data set:
SB02551-01

Sample matrices:	Ground Water				
MCP SW-846 Methods Used	☑ 8260B	☐ 8151A	☐ 8330	☐ 6010B	☑ 7470A/1A
	☑ 8270C	☐ 8081A	☐ VPH	☐ 6020	☐ 9014M [2]
	☑ 8082	☐ 8021B	☐ EPH	☐ 7000S [3]	☑ 7196A

1 List Release Tracking Number (RTN), if known
2 M - SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method
3 S - SW-846 Methods 7000 Series List individual method and analyte

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status

A	Were all samples received by the laboratory in a condition consistent with that described on the Chain of Custody documentation for the data set?	☑ Yes	☐ No
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	☑ Yes	☐ No
C	Does the data included in this report meet all the analytical requirements for "Presumptive Certainty", as described in Section 2.0 (a), (b), (c) and (d) of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☑ Yes	☐ No
D	***VPH and EPH methods only***: Was the VPH or EPH method conducted without significant modifications (see Section 11.3 of respective methods)?	☐ Yes	☐ No

A response to questions E and F below is required for "Presumptive Certainty" status

E	Were all analytical QC performance standards and recommendations for the specified methods achieved?	☑ Yes	☐ No
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	☐ Yes	☑ No

All negative responses are addressed in a case narrative on the cover page of this report.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Date: 10/20/2009

SB02551 CL

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: 10-20-09
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Jeremy Blumberg
220 Forbes Rd.
Suite 405
Braintree, MA 02184
Project Mgr.: Jeremy Blumberg

Invoice To: SAME
P.O. No.: _____ RQN: _____

Project No.: S 1227
Site Name: Hanson
Location: Hanson State: MA
Sampler(s): J. Blumberg

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	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: TPH 8100 M	TSS	BTEX 8260B	RCRA 8	see attachment			
SB02551-01	Influent (10-15)	10/15/09	8M	G	GW	2,4	3	3		1	X	X	X	X	X			

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

QA/QC Reporting Level
- ☒ Standard ☐ No QC
- ☐ Other _____

State specific reporting standards: _____

☐ Fax results when available to (____) _____
☒ E-mail to JBlumberg@wheatstonecorp.com
EDD Format _____

Condition upon receipt: ☐ Iced ☐ Ambient ☒ °C 5°

Relinquished by:	Date:	Time:
	10/16/09	12:02
	10/16/09	15:41

Received by:	Date:	Time:

11 Almgren Drive • Agawam, Massachusetts 01001 • 413-789-9018 • Fax 413-789-4076 • www.spectrum-analytical.com

2.5°C

Appendix III - Effluent Limitations

Parameter	Effluent Limit	Limit type based on monthly sample	Sample Type
1. Total Suspended Solids (TSS)	30 miligrams/liter (mg/l) 50 mg/l for hydrostatic testing only	monthly average	grab
2. Total Residual Chlorine (TRC)	FW[1] = 11 ug/l[2] SW[3] = 7.5 ug/l[2]	monthly average	grab
3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/l	daily maximum	grab
4. Cyanide (CN)[4]	SW = 1.0 ug/l[5] FW = 5.2 ug/l[5]	monthly average	grab
5. Benzene (B)	5.0 ug/l 50.0 ug/l - hydrostatic testing only	daily maximum	grab
6. Toluene (T)	(limited as ug/L total BTEX)	daily maximum	grab
7. Ethylbenzene (E) - 100414 -	(limited as ug/L total BTEX)	daily maximum	grab
8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX)	daily maximum	grab
9. Total BTEX[6]	100 ug/l	daily maximum	grab
10. Ethylene Dibromide (EDB) (1,2- Dibromo-methane)	0.05 ug/l	daily maximum	grab
11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l	daily maximum	grab
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	Monitor Only (ug/L)	daily maximum	grab
13. tert-Amyl Methyl Ether (TAME)	Monitor Only (ug/L)	daily maximum	grab
14. Naphthalene	20 ug/l[7]	daily maximum	grab
15. Carbon Tetrachloride	4.4 ug/l	daily maximum	grab
16. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/l	daily maximum	grab
17. 1,2 Dichlorobenzene (o-DCB)	600 ug/l	daily maximum	grab
18. 1,3 Dichlorobenzene (m-DCB)	320 ug/l	daily maximum	grab
19. Total dichlorobenzene	763 ug/l in NH only	daily maximum	grab
20. 1,1 Dichloroethane (DCA)	70 ug/l	daily maximum	grab
21. 1,2 Dichloroethane (DCA)	5.0 ug/l	daily maximum	grab
22. 1,1 Dichloroethylene (DCE)	3.2 ug/	daily maximum	grab

23. cis-1,2 Dichloro-ethylene (DCE)	70 ug/l	daily maximum	grab
24. Dichloromethane (Methylene Chloride)	4.6 ug/l	daily maximum	grab
25. Tetrachloroethylene (PCE)	5.0 ug/l	daily maximum	grab
26. 1,1,1 Trichloro-ethane (TCA)	200 ug/l	daily maximum	grab
27. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/l	daily maximum	grab
28. Trichloroethylene (TCE)	5.0 ug/l	daily maximum	grab
29. Vinyl Chloride (Chloroethene)	2.0 ug/l	daily maximum	grab
30. Acetone	Monitor Only (ug/L)	daily maximum	grab
31. 1,4 Dioxane	Monitor Only (ug/L)	daily maximum	grab
32. Total Phenols	300 ug/l	daily maximum	grab
33. Pentachlorophenol (PCP)	1.0 ug/l	daily maximum	grab
34. Total Phthalates [8] (Phthalate esthers)	3.0 ug/L	monthly average	grab
35. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	6.0 ug/l	daily maximum	grab
36. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/l	daily maximum	grab
a. Benzo(a) Anthracene	0.0038 ug/l [9]	daily maximum	grab
b. Benzo(a) Pyrene	0.0038 ug/l[9]	daily maximum	grab
c. Benzo(b)Fluoranthene	0.0038 ug/l[9]	daily maximum	grab
d. Benzo(k)Fluoranthene	0.0038 ug/l[9]	daily maximum	grab
e. Chrysene	0.0038 ug/l[9]	daily maximum	grab
f. Dibenzo(a,h)anthracene	0.0038 ug/l[9]	daily maximum	grab
g. Indeno(1,2,3-cd) Pyrene	0.0038 ug/l[9]	daily maximum	grab
37. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/l	daily maximum	grab
h. Acenaphthene	(limited as total ug/L Group II PAHs)	daily maximum	grab
i. Acenaphthylene	(limited as ug/L total Group II PAHs)	daily maximum	grab
j. Anthracene	(limited as ug/L total Group II PAHs)	daily maximum	grab
k. Benzo(ghi) Perylene	(limited as ug/L total Group II PAHs)	daily maximum	grab

l. Fluoranthene		(limited as ug/L total Group II PAHs)	daily maximum	grab
m. Fluorene		(limited as ug/L total Group II PAHs)	daily maximum	grab
n. Naphthalene		20 ug/l	daily maximum	grab
o. Phenanthrene		(limited as ug/L total Group II PAHs)	daily maximum	grab
p. Pyrene		(limited as ug/L total Group II PAHs)	daily maximum	grab
38. Total Polychlorinated Biphenyls (PCBs)[10]		0.000064 ug/L[11]	daily maximum	grab
Metal parameters	Total Recoverable Metal Limit @ H = 50 mg/l CaCO3[12] for discharges in Massachusetts (ug/l)	Total Recoverable Metal Limit @ H = 25 mg/l CaCO3[13] for Discharges in New Hampshire (ug/l)	Averaging Time	Sample Type
39. Antimony	5.6	5.6	daily maximum	grab
40. Arsenic	FW = 10 SW = 36	FW = 10 SW = 36	monthly average	grab
41. Cadmium	FW = 0.2 SW = 8.9	FW = 0.8 SW = 9.3	monthly average	grab
42. Chromium III (trivalent)	FW = 48.8 SW = 100	FW = 27.7 SW = 100	monthly average	grab
43. Chromium VI (hexavalent)	FW = 11.4 SW = 50.3	FW = 11.4 SW = 50.3	monthly average	grab
44. Copper	FW = 5.2 SW = 3.7	FW = 2.9 SW = 3.7	monthly average	grab
45. Lead	FW = 1.3 SW = 8.5	FW = 0.5 SW = 8.5	monthly average	grab
46. Mercury	FW = 0.9 SW = 1.1	FW = 0.9 SW = 1.1	monthly average	grab
47. Nickel	FW = 29.0 SW = 8.2	FW = 16.1 SW = 8.2	monthly average	grab
48. Selenium	FW = 5.0 SW = 71	FW = 5.0 SW = 71	monthly average	grab
49. Silver	FW = 1.2 SW = 2.2	FW = 0.4 SW = 2.2	daily maximum	grab
50. Zinc	FW = 66.6 SW = 85.6	FW = 37 SW = 85.6	monthly average	grab
51. Iron	1,000	1,000	daily maximum	grab

USGS Massachusetts StreamStats

StreamStats Print Page

Hanson, MA

10/22/2009 9:31:22 AM

USGS Massachusetts StreamStats

Basin Characteristics Report

Date: Thu Oct 22 2009 09:40:50 Mountain Daylight Time
NAD83 Latitude: 42.0854 (42 05 07)
NAD83 Longitude: -70.8836 (-70 53 01)
NAD27 Latitude: 42.0853 (42 05 06)
NAD27 Longitude: -70.8842 (-70 53 02)
ReachCode: 01090002001898
Measure: 48.25

Parameter	Value
Area in square miles	0.3
Average area slope in percent	0.29
Total stream length in miles	0.59
stratified drift per unit stream lenth	0.16
low flow region indicator for Massachusetts	0
Area of forest land (percent)	1.71
Area of sand and gravel deposits (percent)	31.20

USGS Massachusetts StreamStats

Streamstats Ungaged Site Report

Date: Thu Oct 22 2009 09:21:45 Mountain Daylight Time
Site Location: Massachusetts
NAD83 Latitude: 42.0854 (42 05 07)
NAD83 Longitude: -70.8836 (-70 53 01)
NAD27 Latitude: 42.0853 (42 05 06)
NAD27 Longitude: -70.8842 (-70 53 02)
ReachCode: 01090002001898
Measure: 48.25
Drainage Area: 0.3 mi2

Low Flows Basin Characteristics

100% Statewide Low Flow (0.3 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.3 (below min value 1.61)	1.61	149
Mean Basin Slope from 250K DEM (percent)	0.29 (below min value 0.32)	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.16	0	1.29
Massachusetts Region (dimensionless)	0	0	1

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Probability of Perennial Flow Basin Characteristics

100% Perennial Flow Probability (0.3 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.3	0.01	1.99
Percent Underlain By Sand And Gravel (percent)	31.20	0	100
Percent Forest (percent)	1.71	0	100
Massachusetts Region (dimensionless)	0	0	1

Low Flows Streamflow Statistics

Statistic	Flow (ft^3/s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
D50	0.28				
D60	0.18				
D70	0.1				
D75	0.0775				
D80	0.0439				

D85	0.0266				
D90	0.0146				
D95	0.00657				
D98	0.00446				
D99	0.00291				
M7D2Y	0.00998				
AUGD50	0.0336				
M7D10Y	0.00211	= Qs			

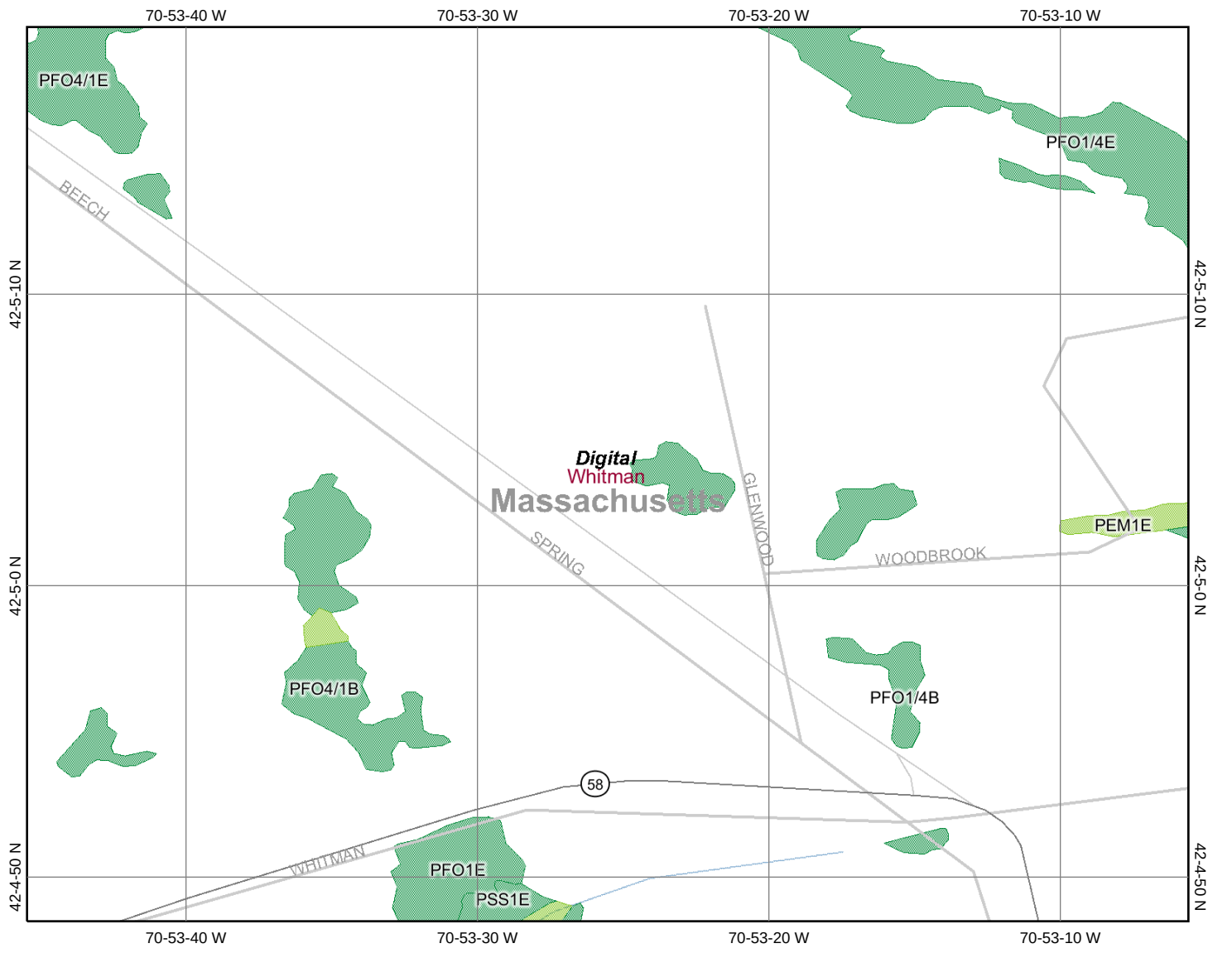
The equation for estimating the probability of perennial flow is applicable for most areas of Massachusetts except eastern Buzzards Bay, Cape Cod, and the Island regions. The estimate obtained from the equation assumes natural flow conditions at the site. The equation also is best used for sites with drainage areas between 0.01 to 1.99 mi2, as errors beyond for basins beyond these bounds are unknown.

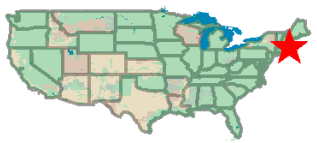
Probability of Perennial Flow Statistics

Statistic	Value	Standard Error (percent)
PROBPEREN	0.87	0.5

DF = [(Qd + Qs) / Qd]
where, •Qd = 0.006 cfs
•Qs = 0.00211 cfs
DF = [(0.006 + 0.00211) / 0.006]
------>•DF = 1.352

366 Spring Street Wetlands Map





Legend

Ohio_wet_scan
- 0
- 1
- Out of range

Interstate

Major Roads
- Other Road
- Interstate
- State highway
- US highway

Roads

Cities

USGS Quad Index 24K

Lower 48 Wetland Polygons
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Lower 48 Available Wetland Data
- Non-Digital
- Digital
- No Data
- Scan

NHD Streams

Counties 100K

States 100K

South America

North America

N

Scale: 1:6,637

Map center: 42° 5' 3.8" N, 70° 53' 25.5" W