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WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

997 Millbury Street, Unit G, Worcester, MA 01607 tel 508.756.0151 fax 508.757.7063 www.ecsconsult.com

May 25, 2012
Project No. 03-203852

Mr. Victor Alvarez
U.S. Environmental Protection Agency
EPA-Region 1
5 Post Office Square
Mail Code OEP06-4
Boston, MA 02109-3912

RE: Remediation General Permit: Notice of Intent
Cumberland Farms #70044
365 Turnpike Road
Southborough, Massachusetts 01772

Dear Mr. Alvarez:

On behalf of Cumberland Farms Inc. (CFI), Environmental Compliance Services, Inc. (ECS) is submitting a Notice of Intent for the Remediation General Permit for the above referenced location.

If you have any questions or require additional information regarding this submittal, feel free to contact me at (508) 756-0151 or Rachel Stevens at (781) 246-8897.

Sincerely,
ENVIRONMENTAL COMPLIANCE SERVICES, INC.

Nicholas O. Murdock
Environmental Scientist

cc: Matthew Young, Cumberland Farms, Inc., 100 Crossing Blvd, Framingham, MA 01702
Robert Kubit, MassDEP, Division of Watershed Management, 627 Main Street, Worcester, MA 01608
Karen Galligan, Highway Superintendent, Town of Southborough, 147 Cordaville Rd, Southborough, MA 01772
MassDOT Highway Division, District 3, 403 Belmont Street, Worcester, MA 01604

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

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

a) Name of **facility/site**: Cumberland Farms #70044		**Facility/site** mailing address:		
Location of **facility/site**: longitude: 42.28939 latitude: -71.56021	Facility SIC code(s): 5541	Street: 365 Turnpike Road		
b) Name of **facility/site owner:** Cumberland Farms, Inc.		Town: Southborough		
Email address of facility/site owner: myoung@cumberlandgulf.com		State: Massachusettts	Zip: 01772	County: Worcester
Telephone no. of facility/site **owner**: 508-270-4477				
Fax no. of facility/site **owner**: 781-459-0454		**Owner** is (check one): 1. Federal__ 2. State/Tribal__ 3. Private ⊙ 4. Other ○ if so, describe:		
Address of **owner** (if different from site):				
Street: 100 Crossing Boulevard				
Town: Framingham	State: MA	Zip: 01702	County: Middlesex	
c) Legal name of **operator**: Cumberland Farms, Inc.	**Operator** telephone no: 508-270-4477			
	Operator fax no.: 781-459-0454	**Operator** email: myoung@cumberlandgulf.co		
Operator contact name and title: Matthew Young, Senior Project Manager				
Address of **operator** (if different from owner):	Street:			
Town:	State:	Zip:	County:	

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

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y___ N___
If Y, please list:
1. site identification # assigned by the state of NH or MA:___
2. permit or license # assigned:___
3. state agency contact information: name, location, and telephone number:

f) Is the site/facility covered by any other EPA permit, including:
1. Multi-Sector General Permit? Y___ N___,
if Y, number:___
2. Final Dewatering General Permit? Y___ N___,
if Y, number:___
3. EPA Construction General Permit? Y___ N___,
if Y, number:___
4. Individual NPDES permit? Y___ N___,
if Y, number:___
5. any other water quality related individual or general permit? Y___ N___, if Y, number:___

g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y___ N___

h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.

Activity Category	**Activity Sub-Category**
I - Petroleum Related Site Remediation	A. Gasoline Only Sites ☒ B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☒ C. Petroleum Sites with Additional Contamination ☐
II - Non Petroleum Site Remediation	A. Volatile Organic Compound (VOC) Only Sites ☐ B. VOC Sites with Additional Contamination ☐ C. Primarily Heavy Metal Sites ☐
III - Contaminated Construction Dewatering	A. General Urban Fill Sites ☐ B. Known Contaminated Sites ☐

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐

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

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

The petroleum station is upgrading their underground fuel storage tanks and dewatering will be necessary to perform the upgrades. The discharge will be associated with the dewatering activities.

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, ft^3/s)?
Max. flow 0.168 Is maximum flow a **design value**? Y ○ N ⊙
Average flow (include units) 0.117 cubic ft/s Is average flow a design value or estimate? Estimate

3) Latitude and longitude of each discharge within 100 feet:

pt.1: lat.	42.289153	long.	-71.560079	pt.2: lat.		long.	;
pt.3: lat.		long.		pt.4: lat.		long.	;
pt.5: lat.		long.		pt.6: lat.		long.	;
pt.7: lat.		long.		pt.8: lat.		long.	; etc.

4) If hydrostatic testing, total volume of the discharge (gals): N/A

5) Is the discharge intermittent ⊙ or seasonal ○ ?
Is discharge ongoing? Y ○ N ⊙

c) Expected dates of discharge (mm/dd/yy): start 06/18/2012 end 08/18/2012

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). Flow Schematic is attached.

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
1. Total Suspended Solids (TSS)		☒	☐	1	Grab	SM 2504D	5,000	139,000	56.86	139,000	37.91
2. Total Residual Chlorine (TRC)		☒	☐	0							
3. Total Petroleum Hydrocarbons (TPH)		☐	☒	1	Grab	SW 846 810	200	4700	1.92	4700	1.28
4. Cyanide (CN)	57125	☒	☐	0							
5. Benzene (B)	71432	☐	☒	1	Grab	8260	1.0	1.4	0	1.4	0
6. Toluene (T)	108883	☒	☐	1	Grab	8260	1.0	<1.0	0	<1.0	0
7. Ethylbenzene (E)	100414	☒	☐	1	Grab	8260	1.0	<1.0	0	<1.0	0
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	1	grab	8260	3.0	<3.0	0	<3.0	0
9. Total BTEX [2]	n/a	☐	☒	1	grab	8260		1.4	0	1.4	0
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐	1	grab	8260	0.5	<0.5	0	<0.5	0
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☐	☒	1	grab	8260	1.0	1.6	0	1.6	0
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☐	☒	1	grab	8260	10.0	77.8	0.03	77.8	0.02

* Numbering system is provided to allow cross-referencing to Effluent Limits and Monitoring Requirements by Sub-Category included in Appendix III, as well as the Test Methods and Minimum Levels associated with each parameter provided in Appendix VI.

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

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

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
14. Naphthalene	91203	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
15. Carbon Tetrachloride	56235	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
18a. Total dichlorobenzene		☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
23. Methylene Chloride	75092	☒	☐	1	grab	8260	2.0	<2.0	0	<2.0	0
24. Tetrachloroethene (PCE)	127184	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
27. Trichloroethene (TCE)	79016	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
28. Vinyl Chloride (Chloroethene)	75014	☒	☐	1	grab	8260	1.0	<1.0	0	<1.0	0
29. Acetone	67641	☒	☐	1	grab	8260	10.0	<10.0	0	<10.0	0
30. 1,4 Dioxane	123911	☒	☐	0							
31. Total Phenols	108952	☒	☐	0							
32. Pentachlorophenol (PCP)	87865	☒	☐	0							
33. Total Phthalates (Phthalate esters) [4]		☒	☐	0							
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	0							
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐					<37.66	0	<37.66	0
a. Benzo(a) Anthracene	56553	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
b. Benzo(a) Pyrene	50328	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
c. Benzo(b)Fluoranthene	205992	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
d. Benzo(k)Fluoranthene	207089	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
e. Chrysene	21801	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐					<48.42	0	<48.42	0

[4] The sum of individual phthalate compounds.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
h. Acenaphthene	83329	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
i. Acenaphthylene	208968	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
j. Anthracene	120127	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
k. Benzo(ghi) Perylene	191242	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
l. Fluoranthene	206440	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
m. Fluorene	86737	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
n. Naphthalene	91203	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
o. Phenanthrene	85018	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
p. Pyrene	129000	☒	☐	1	grab	8270D	5.38	<5.38	0	<5.38	0
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	0							
38. Chloride	16887006	☒	☐	0							
39. Antimony	7440360	☒	☐	0							
40. Arsenic	7440382	☐	☒	1	grab	6010c	4.0	4.0	0	4.0	0
41. Cadmium	7440439	☒	☐	0							
42. Chromium III (trivalent)	16065831	☐	☒	1	grab	6010c	5.0	6.0	0	6.0	0
43. Chromium VI (hexavalent)	18540299	☒	☐	1	grab	7196A	5.0	<5.0	0	<5.0	0
44. Copper	7440508	☒	☐	0							
45. Lead	7439921	☒	☐	1	grab	6010c	7.5	<7.5	0	<7.5	0
46. Mercury	7439976	☒	☐	0							
47. Nickel	7440020	☐	☒	1	grab	6010c	5.0	8.2	0	8.2	0
48. Selenium	7782492	☒	☐	0							
49. Silver	7440224	☒	☐	0							
50. Zinc	7440666	☐	☒	1	grab	6010c	5.0	77.9	0.03	77.9	0.02
51. Iron	7439896	☐	☒	1	grab	6010c	15.0	2720	1.11	2820	0.74
Other (describe):		☐	☐								

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
		☐	☐								
		☐	☐								

b) For discharges where **metals** are believed present, please fill out the following (attach results of any calculations):

Step 1: Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ◉ N ○	If yes, which metals? Iron, Zinc
Step 2: For any metals which 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? Metal: Iron DF: 1.534 Metal: Zinc DF: 1.534 Metal: DF: Metal: DF: Etc.	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 Y, list which metals: Iron

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:

The water from the UST excavation will be pumped into a frac. tank for settling, then through (2) bag filter units in parallel, two (2) 1,000 lb liquid granular activated carbon vessels in series, and a flowmeter prior to discharge. The treated water will be discharged to an on-site manhole which accesses the MassDOT storm water lines which run parallel and below Turnpike Road (MA Rt. 9). These lines discharge to a wetlands located southeast and across Rt. 9 from the site.

b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☒	Air stripper ☐	Oil/water separator ☐	Equalization tanks ☐	Bag filter ☒	GAC filter ☒
	Chlorination ☐	De-chlorination ☐	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 50 gpm Maximum flow rate of treatment system 75 gpm
Design flow rate of treatment system 75 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 to receiving water ☐	Within facility (sewer) ☐	Storm drain ☒	Wetlands ☐	Other (describe):

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:
The on-site storm drain connects to the MassDOT storm water lines in Rt. 9 which discharge to an unnamed wetlands across Rt. 9 from the site.

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 N/A

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.0897 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? Y ○ N ⊙ If yes, for which pollutant(s)?

Is there a final TMDL? Y ○ N ⊙ If yes, for which pollutant(s)?

6. ESA and NHPA Eligibility.
Please provide the following information according to requirements of Permit Parts I.A.4 and I.A.5 Appendices II and VII.

a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?
A ___ B ___ C ___ D ___ E ___ F ___
b) If you selected Criterion D or F, has consultation with the federal services been completed? Y___ N___ Underway___

c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received? Y___ N___

d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.

e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?
1 ___ 2 ___ 3 ___

f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

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.

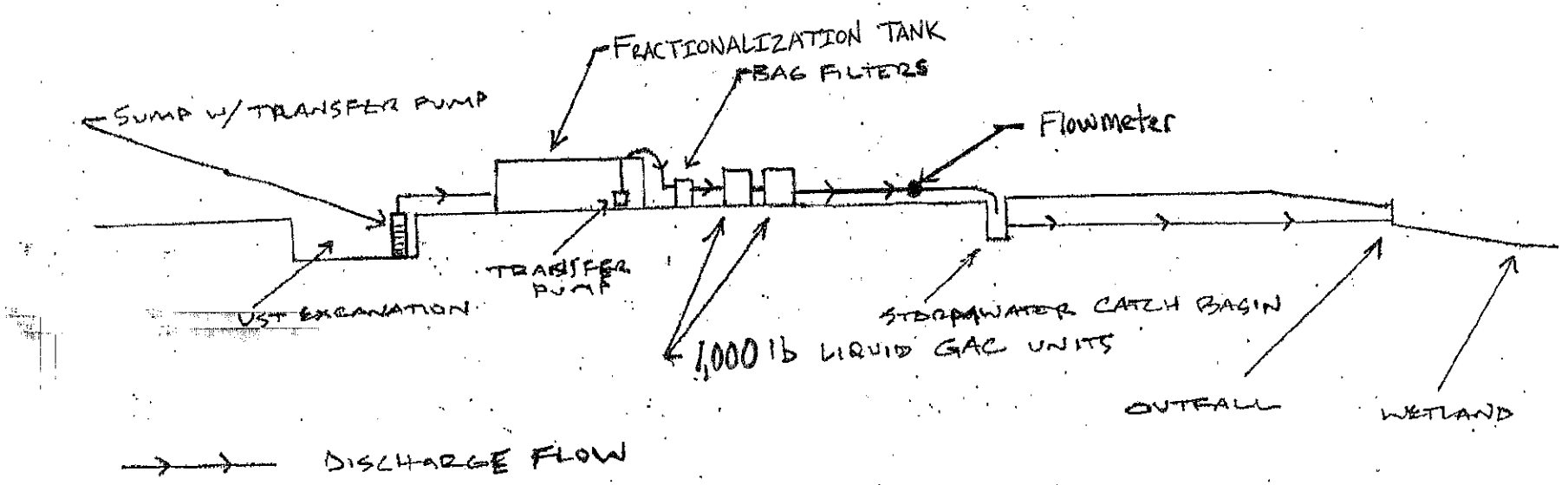
In regards to the ESA eligibility, when consulting the Massachusetts Division of Fisheries & Wildlife website, there are three species of concern listed as being present in Southborough, MA (see attached listing). These species are not listed as threatened or endangered and are not known to inhabit the areas surrounding the Cumberland Farms or the potential discharge. The MassGIS 2008 Priority Habitat and Estimated Habitat Natural Heritage and Endangered Species Program Map was reviewed and there are no areas of priority or estimated habitats of rare species in the areas surrounding the Cumberland Farms property and unnamed wetlands associated with the proposed discharge (see attached maps). Therefore, it was determined that Criterion A in Section 6 (a) was applicable.

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:	Cumberland Farms #70044
Operator signature:	
Printed Name &Title:	Matthew Young, Senior Project Manager
Date:	5/24/12

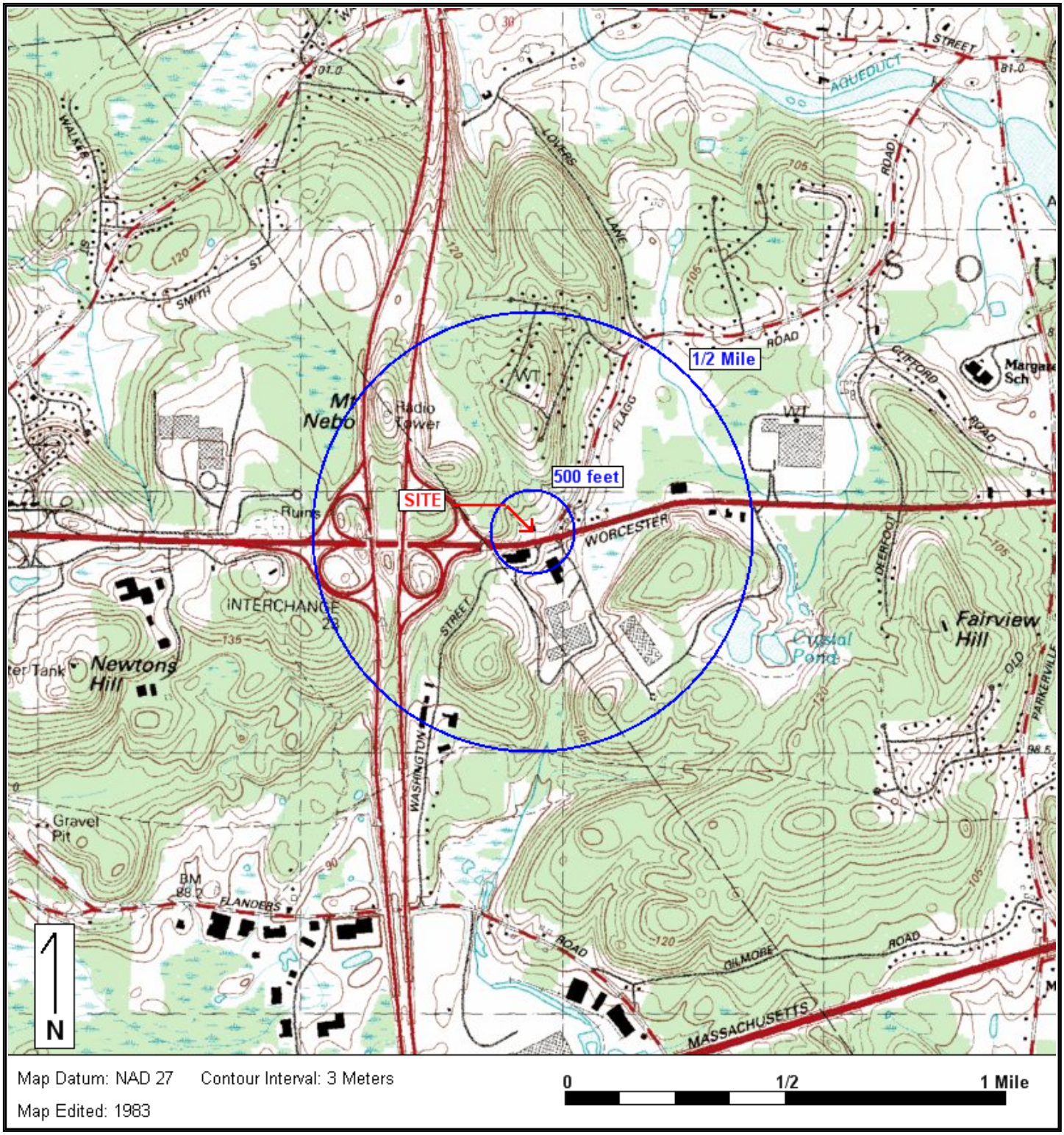
Flow Schematic



Environmental Compliance Services, Inc.
997 Millbury Street, Unit G
Worcester, MA 01607
Phone 508.756.0151 Fax 508.757.7063
www.ecsconsult.com

MA-70044- Southborough-365 Turnpike St.
365 Turnpike Street
Southborough, MA 01772

Figure 1: SITE LOCUS



Base Map: U.S. Geological Survey; Quadrangle Location: Marlborough, MA

Lat/Lon: 42º 17' 22" NORTH, 71º 33' 37" WEST - UTM Coordinates: 19 288928.97 EAST / 4685074.5 NORTH

Generated By: Rick Starodoj

MassDEP - Bureau of Waste Site Cleanup

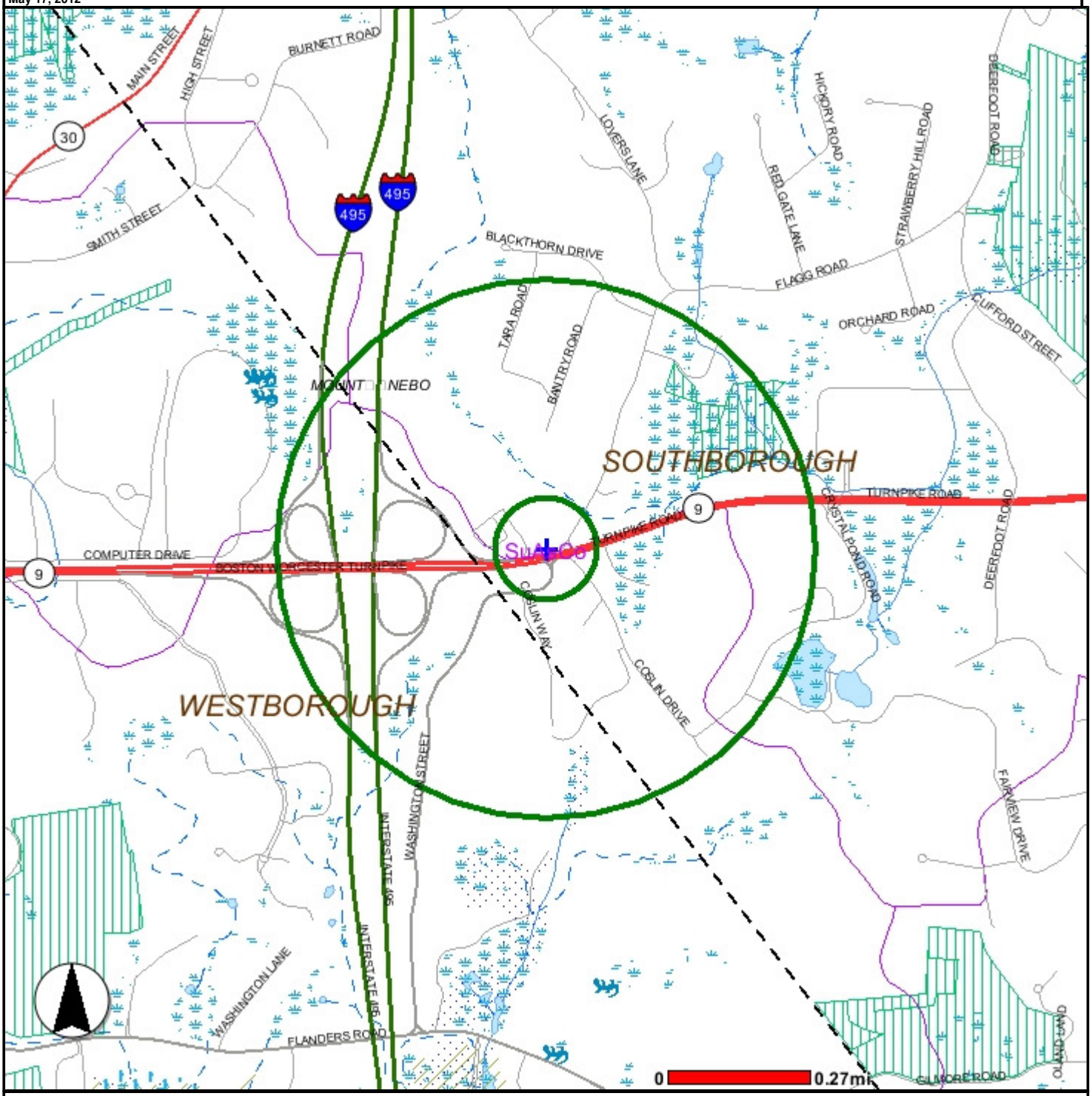
MCP Numerical Ranking System Map: 500 feet & 0.5 Mile Radii

Site Name:
CFI # 70044
365 Turnpike Road
Southborough, MA
RTN:
NAD83 MA Coordinates:
195052mE, 893195mN

May 17, 2012

The information shown on this map is the best available at the date of printing. For more information please refer to www.mass.gov/mgis/massgis.htm

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, Sub; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source

Non Potential Drinking Water Source Area: Medium, High (Yield)

PWS Protection Areas: Zone II, IWPA, Zone A

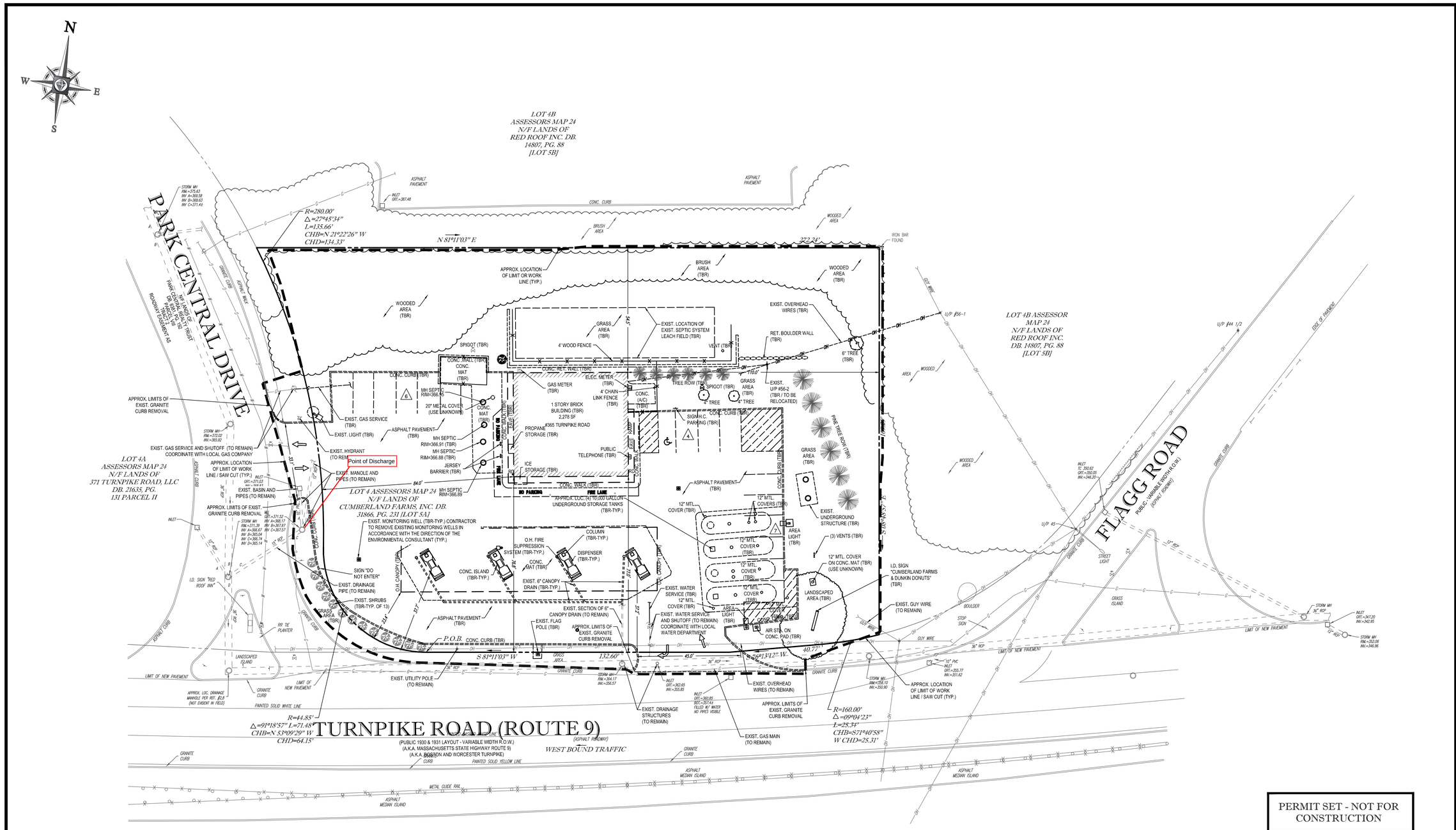
Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

NHESP: Est Rare Weland Habitat, Certified Vernal Pool

DEP Permitted Solid Waste Landfill



PERMIT SET - NOT FOR CONSTRUCTION

ALL EXISTING FEATURES WITHIN THE LIMIT OF WORK SHALL BE CONSIDERED "TO BE REMOVED" UNLESS OTHERWISE NOTED.

REFER TO SHEET 7 (SOIL EROSION & SEDIMENT CONTROL PLAN) FOR MORE INFORMATION.

THIS PLAN TO BE UTILIZED FOR DEMOLITION/ REMOVAL PURPOSES ONLY

20 10 5 0 20

1"= 20'

BOHLER ENGINEERING

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SURVEYORS
PROJECT MANAGERS
ENVIRONMENTAL CONSULTANTS
LANDSCAPE ARCHITECTS

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REVISIONS

REV	DATE	COMMENT	BY
1	1-24-12	PLANNING BOARD COMMENTS	MNB
2			
3			
4			
5			
6			
7			
8			
9			

THE FOLLOWING STATES REQUIRE NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.
(MA, ME, NH, RI, VT 1-888-344-7233)
(CT 1-800-922-4455)
(NY 1-800-962-7962)

PERMIT SET

PROJECT No.:	W101600
DRAWN BY:	CFD/MNB
CHECKED BY:	LMD
DATE:	11/15/2011
SCALE:	AS NOTED
CAD I.D.:	W101600dsd

PROJECT:

SITE PLAN DOCUMENTS

FOR

Cumberland FARMS

LOCATION OF SITE
MAP 24; LOT 4
365 TURNPIKE ROAD
TOWN OF SOUTHBOROUGH
WORCESTER COUNTY
MASSACHUSETTS

BOHLER ENGINEERING

352 TURNPIKE ROAD
SOUTHBOROUGH, MA 01772
Phone: (508) 480-9900
Fax: (508) 480-9080
www.BohlerEngineering.com

S.P. DECOURSEY

PROFESSIONAL ENGINEER
MASSACHUSETTS LICENSE No. 35424
NEW HAMPSHIRE LICENSE No. 9308
MAINE LICENSE No. 8408
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CONNECTICUT LICENSE No. 23962
RHODE ISLAND LICENSE No.-7990

SHEET TITLE:

DEMOLITION PLAN

SHEET NUMBER:

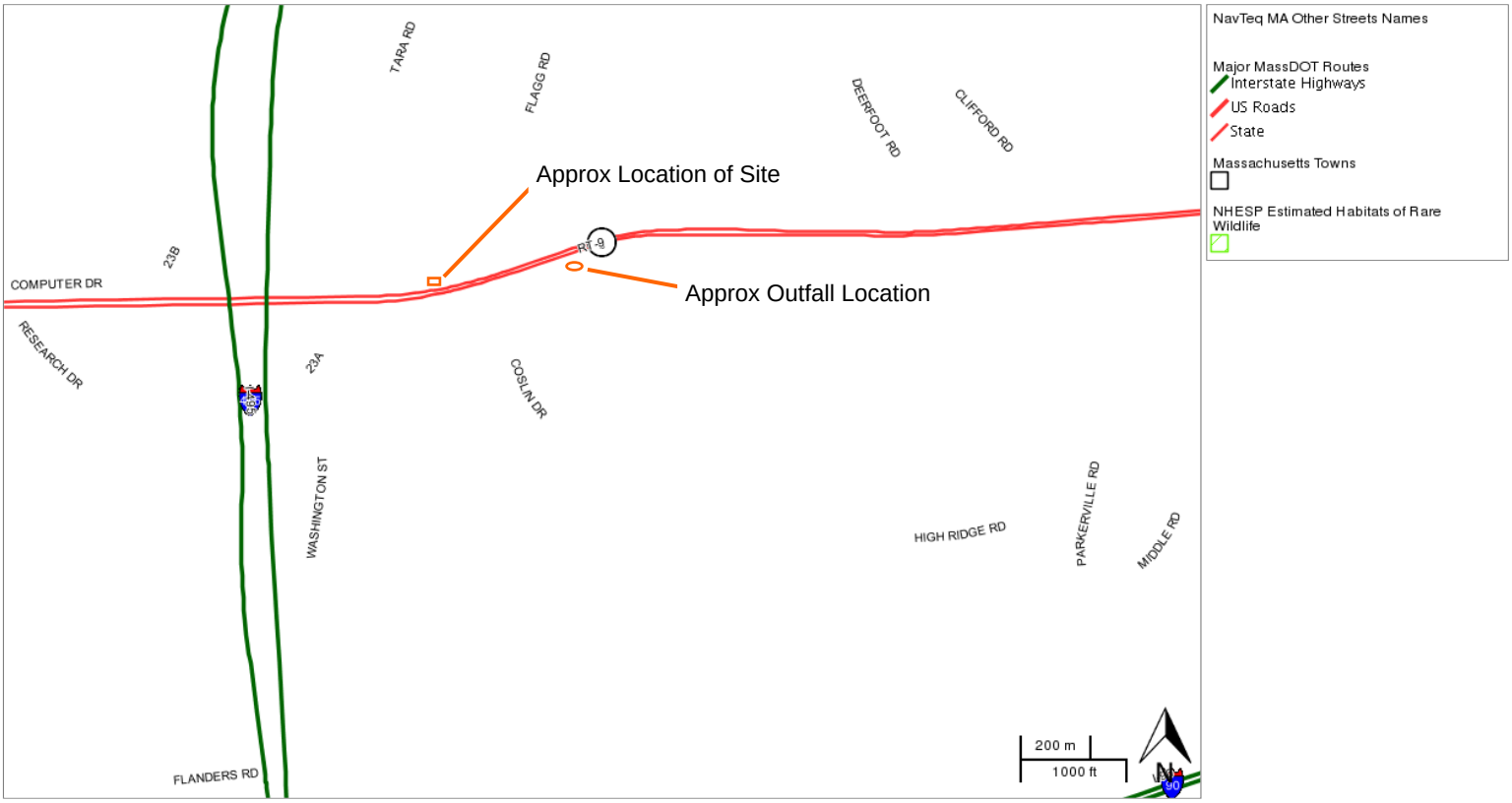
3

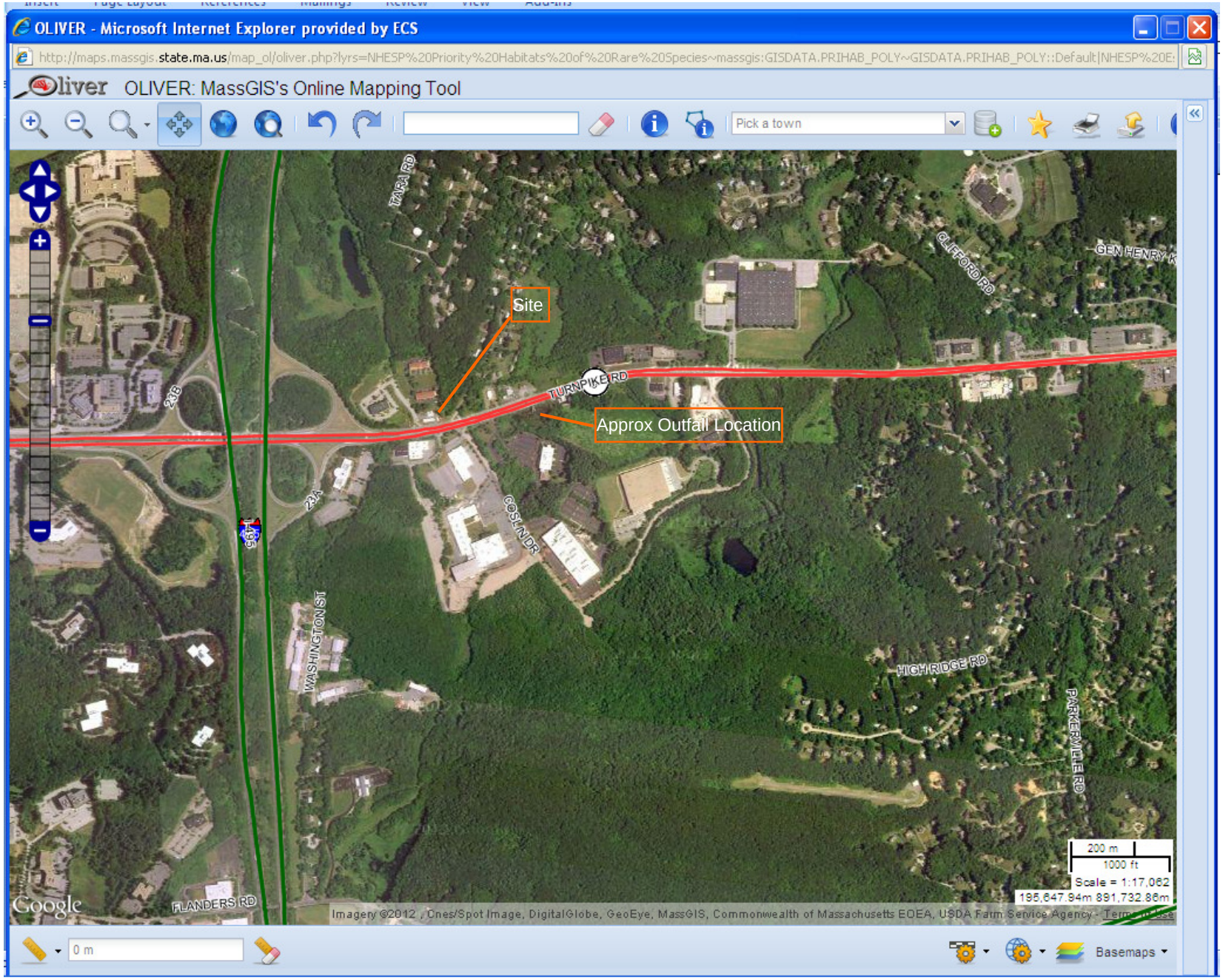
OF 13

REVISION 1 - 1/24/2012

P:\101600\DWG\W101600s1.dwg, 03-Demo, 4/23/2010, 10:17:14 AM, mbalanger, XeroxX51b-1-pc3, User834, 1:1

365 Turnpike Road, Southborough, MA




OLIVER - Microsoft Internet Explorer provided by ECS
http://maps.massgis.state.ma.us/map_ol/oliver.php?lyrs=NHESP%20Priority%20Habitats%20of%20Rare%20Species~massgis:GISDATA.PRIHAB_POLY~GISDATA.PRIHAB_POLY::Default|NHESP%20E
OLIVER: MassGIS's Online Mapping Tool
Pick a town
Site
Approx Outfall Location
TURNPIKE RD
TARA RD
CLIFFORD RD
GEN HENRY K
COSLIN DR
WASHINGTON ST
HIGH RIDGE RD
PARKER MILL RD
FLANDERS RD
I-495
200 m
1000 ft
Scale = 1:17,062
195,647.94m 891,732.86m
Imagery ©2012 , Ones/Spot Image, DigitalGlobe, GeoEye, MassGIS, Commonwealth of Massachusetts EOEA, USDA Farm Service Agency
Basemaps

Town	Taxonomic Group	Scientific Name	Common Name	MESA Status	Federal Status	Most Recent Observation
SOUTHBOROUGH	Mussel	Alasmidonta undulata	Triangle Floater	SC		1999
SOUTHBOROUGH	Reptile	Glyptemys insculpta	Wood Turtle	SC		1985
SOUTHBOROUGH	Reptile	Terrapene carolina	Eastern Box Turtle	SC		2003

Mass Wildlife Search Results of listed species in Southborough, MA. http://www.mass.gov/dfwele/dfw/nhesp/species_info/town_lists/town_s.htm

Report Date:
17-May-12 16:23

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
997 Millbury Street, Unit G
Worcester, MA 01607
Attn: Nicholas Murdock

Project: CFI#2131, 365 Turnpike Rd.-Southboro,MA
Project #: 03-203852

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB48957-01	TP-1	Ground Water	09-May-12 13:45	10-May-12 17:00

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

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

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of 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 19 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.	**Project #:** 03-203852
Project Location: CFI#2131, 365 Turnpike Rd.-Southboro,MA	**RTN:**
This form provides certifications for the following data set:	SB48957-01
Matrices: Ground Water	
CAM Protocol	

✓ 8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	✓ 7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
✓ 6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9012 Total Cyanide/PAC CAM VI A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	Yes ✓ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?	✓ Yes No

Responses to questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	✓ Yes No

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	Yes ✓ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	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.

Nicole Leja

Nicole Leja
Laboratory Director
Date: 5/17/2012

CASE NARRATIVE:

The samples were received 0.9 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

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

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. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

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

SW846 7196A/SM3500CrD

Samples:

SB48957-01 *TP-1*

This sample was received outside the EPA recommended holding time for the analysis specified.

Hexavalent Chromium

SW846 8260C

Calibration:

1205021

Analyte quantified by quadratic equation type calibration.

1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2-Dibromo-3-chloropropane
1,3,5-Trichlorobenzene
Chloroform
Naphthalene
n-Butylbenzene
Styrene
trans-1,3-Dichloropropene

This affected the following samples:

1211502-BLK1
1211502-BS1
1211502-BSD1
S205503-ICV1
S205793-CCV1
TP-1

Laboratory Control Samples:

1211502 BS/BSD

SW846 8260C

Laboratory Control Samples:

1211502 BS/BSD

1,2,3-Trichlorobenzene percent recoveries (72/66) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

TP-1

1,2,4-Trichlorobenzene percent recoveries (74/65) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

TP-1

1,3,5-Trichlorobenzene percent recoveries (81/69) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

TP-1

Dichlorodifluoromethane (Freon12) percent recoveries (93/68) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

TP-1

Naphthalene percent recoveries (72/69) are outside individual acceptance criteria (70-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

TP-1

1211502 BSD

1,1,2-Trichlorotrifluoroethane (Freon 113) RPD 31% (25%) is outside individual acceptance criteria, but within overall method allowances.

1,1-Dichloroethene RPD 29% (25%) is outside individual acceptance criteria, but within overall method allowances.

Carbon disulfide RPD 31% (25%) is outside individual acceptance criteria, but within overall method allowances.

trans-1,2-Dichloroethene RPD 26% (25%) is outside individual acceptance criteria, but within overall method allowances.

Vinyl chloride RPD 35% (25%) is outside individual acceptance criteria, but within overall method allowances.

1211502-BSD1

The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

1,1,2-Trichlorotrifluoroethane (Freon 113)
1,1-Dichloroethene
Carbon disulfide
trans-1,2-Dichloroethene
Vinyl chloride

Samples:

S205793-CCV1

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

Ethyl tert-butyl ether (-21.7%)
Hexachlorobutadiene (-20.5%)
Tetrahydrofuran (-23.4%)

SW846 8260C

Samples:

S205793-CCV1

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

1,2,3-Trichlorobenzene (-28.4%)
1,2,4-Trichlorobenzene (-26.2%)
Naphthalene (-27.6%)

This affected the following samples:

1211502-BLK1
1211502-BS1
1211502-BSD1
TP-1

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TP-1 SB48957-01	03-203852	Ground Water	09-May-12 13:45	10-May-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds													
Volatile Organic Compounds Prepared by method SW846 5030 Water MS													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.0		µg/l	1.0	0.6	1	SW846 8260C	17-May-12	17-May-12	ek/	1211502	
67-64-1	Acetone	< 10.0		µg/l	10.0	2.6	1	"	"	"	"	"	
107-13-1	Acrylonitrile	< 0.5		µg/l	0.5	0.5	1	"	"	"	"	"	
71-43-2	Benzene	**1.4**		µg/l	1.0	0.7	1	"	"	"	"	"	
108-86-1	Bromobenzene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
74-97-5	Bromochloromethane	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	< 0.5		µg/l	0.5	0.5	1	"	"	"	"	"	
75-25-2	Bromoform	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
74-83-9	Bromomethane	< 2.0		µg/l	2.0	1.1	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	< 10.0		µg/l	10.0	1.7	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
75-15-0	Carbon disulfide	< 2.0		µg/l	2.0	0.6	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	< 1.0		µg/l	1.0	0.5	1	"	"	"	"	"	
108-90-7	Chlorobenzene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
75-00-3	Chloroethane	< 2.0		µg/l	2.0	1.0	1	"	"	"	"	"	
67-66-3	Chloroform	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
74-87-3	Chloromethane	< 2.0		µg/l	2.0	1.5	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	< 2.0		µg/l	2.0	0.9	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	< 0.5		µg/l	0.5	0.3	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	< 0.5		µg/l	0.5	0.3	1	"	"	"	"	"	
74-95-3	Dibromomethane	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	< 2.0		µg/l	2.0	0.4	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	< 1.0		µg/l	1.0	0.5	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	< 0.5		µg/l	0.5	0.3	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	< 0.5		µg/l	0.5	0.5	1	"	"	"	"	"	
100-41-4	Ethylbenzene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 0.5		µg/l	0.5	0.4	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	< 10.0		µg/l	10.0	0.5	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TP-1 SB48957-01	03-203852	Ground Water	09-May-12 13:45	10-May-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds													
Volatile Organic Compounds Prepared by method SW846 5030 Water MS													
98-82-8	Isopropylbenzene	< 1.0		µg/l	1.0	0.6	1	SW846 8260C	17-May-12	17-May-12	ek/	1211502	
99-87-6	4-Isopropyltoluene	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	**1.6**		µg/l	1.0	0.7	1	"	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	< 10.0		µg/l	10.0	0.9	1	"	"	"	"	"	
75-09-2	Methylene chloride	< 2.0		µg/l	2.0	0.7	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.0		µg/l	1.0	0.3	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
100-42-5	Styrene	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	< 0.5		µg/l	0.5	0.3	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
108-88-3	Toluene	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	< 1.0		µg/l	1.0	0.4	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 1.0		µg/l	1.0	0.4	1	"	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
79-01-6	Trichloroethene	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	< 1.0		µg/l	1.0	0.6	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.0		µg/l	2.0	1.6	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.0		µg/l	1.0	0.9	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	< 2.0		µg/l	2.0	1.4	1	"	"	"	"	"	
60-29-7	Ethyl ether	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	< 1.0		µg/l	1.0	0.8	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	< 1.0		µg/l	1.0	0.7	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	**77.8**		µg/l	10.0	8.6	1	"	"	"	"	"	
123-91-1	1,4-Dioxane	< 20.0		µg/l	20.0	14.0	1	"	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-buten e	< 5.0		µg/l	5.0	0.8	1	"	"	"	"	"	
64-17-5	Ethanol	< 400		µg/l	400	35.7	1	"	"	"	"	"	
Surrogate recoveries:													
460-00-4	*4-Bromofluorobenzene*	*95*			*70-130 %*			"	"	"	"	"	
2037-26-5	*Toluene-d8*	*102*			*70-130 %*			"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*110*			*70-130 %*			"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*114*			*70-130 %*			"	"	"	"	"	
Microextractable Organic Compounds													
106-93-4	1,2-Dibromoethane (EDB)	< 0.0100		µg/l	0.0100	0.00740	1	EPA 504.1	16-May-12	17-May-12	DS	1211222	

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

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TP-1 SB48957-01	03-203852	Ground Water	09-May-12 13:45	10-May-12

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
Fingerprinting by GC Prepared by method SW846 3510C													
8006-61-9	Gasoline	< 0.2		mg/l	0.2	0.2	1	SW846 8100Mod.	16-May-12	17-May-12	SEW	1211334	
68476-30-2	Fuel Oil #2	**Calculated as**		mg/l	0.2	0.2	1	"	"	"	"	"	
68476-31-3	Fuel Oil #4	< 0.2		mg/l	0.2	0.02	1	"	"	"	"	"	
68553-00-4	Fuel Oil #6	< 0.2		mg/l	0.2	0.2	1	"	"	"	"	"	
M09800000	Motor Oil	< 0.2		mg/l	0.2	0.2	1	"	"	"	"	"	
8032-32-4	Ligroin	< 0.2		mg/l	0.2	0.05	1	"	"	"	"	"	
J00100000	Aviation Fuel	< 0.2		mg/l	0.2	0.05	1	"	"	"	"	"	
	Hydraulic Oil	< 0.2		mg/l	0.2	0.02	1	"	"	"	"	"	
	Dielectric Fluid	< 0.2		mg/l	0.2	0.05	1	"	"	"	"	"	
	Unidentified	**4.7**		mg/l	0.2	0.05	1	"	"	"	"	"	
	Other Oil	**Calculated as**		mg/l	0.2	0.02	1	"	"	"	"	"	
	Total Petroleum Hydrocarbons	**4.7**		mg/l	0.2	0.02	1	"	"	"	"	"	
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*82*			*40-140 %*			"	"	"	"	"	
Total Metals by EPA 200/6000 Series Methods													
	Preservation	**Field Preserved**		N/A			1	EPA 200/6000 methods			JLM	1211066	
Total Metals by EPA 6000/7000 Series Methods													
7440-38-2	Arsenic	**0.0040**		mg/l	0.0040	0.0032	1	SW846 6010C	16-May-12	16-May-12	lr	1211268	
7440-47-3	Chromium	**0.0060**		mg/l	0.0050	0.0034	1	"	"	"	"	"	
7439-89-6	Iron	**2.72**		mg/l	0.0150	0.0046	1	"	"	"	"	"	
7440-02-0	Nickel	**0.0082**		mg/l	0.0050	0.0008	1	"	"	"	"	"	
7439-92-1	Lead	< 0.0075		mg/l	0.0075	0.0045	1	"	"	"	"	"	
7440-66-6	Zinc	**0.0779**		mg/l	0.0050	0.0025	1	"	"	"	"	"	
General Chemistry Parameters													
16065-83-1	Trivalent Chromium	**0.0060**		mg/l	0.0050	0.0034	1	Calculation	16-May-12	16-May-12	lr	1211268	
18540-29-9	Hexavalent Chromium	< 0.005	HT2	mg/l	0.005	0.002	1	SW846 7196A/SM3500CrD	11-May-12 19:20	11-May-12 19:29	TDD/	1211029	
	Total Suspended Solids	**139**		mg/l	5	3	1	SM2540D	14-May-12	14-May-12	BD	1211166	X

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211502 - SW846 5030 Water MS										
Blank (1211502-BLK1)					Prepared & Analyzed: 17-May-12					
1,1,2-Trichlorotrifluoroethane (Freon 113)	< 1.0		µg/l	1.0						
Acetone	< 10.0		µg/l	10.0						
Acrylonitrile	< 0.5		µg/l	0.5						
Benzene	< 1.0		µg/l	1.0						
Bromobenzene	< 1.0		µg/l	1.0						
Bromochloromethane	< 1.0		µg/l	1.0						
Bromodichloromethane	< 0.5		µg/l	0.5						
Bromoform	< 1.0		µg/l	1.0						
Bromomethane	< 2.0		µg/l	2.0						
2-Butanone (MEK)	< 10.0		µg/l	10.0						
n-Butylbenzene	< 1.0		µg/l	1.0						
sec-Butylbenzene	< 1.0		µg/l	1.0						
tert-Butylbenzene	< 1.0		µg/l	1.0						
Carbon disulfide	< 2.0		µg/l	2.0						
Carbon tetrachloride	< 1.0		µg/l	1.0						
Chlorobenzene	< 1.0		µg/l	1.0						
Chloroethane	< 2.0		µg/l	2.0						
Chloroform	< 1.0		µg/l	1.0						
Chloromethane	< 2.0		µg/l	2.0						
2-Chlorotoluene	< 1.0		µg/l	1.0						
4-Chlorotoluene	< 1.0		µg/l	1.0						
1,2-Dibromo-3-chloropropane	< 2.0		µg/l	2.0						
Dibromochloromethane	< 0.5		µg/l	0.5						
1,2-Dibromoethane (EDB)	< 0.5		µg/l	0.5						
Dibromomethane	< 1.0		µg/l	1.0						
1,2-Dichlorobenzene	< 1.0		µg/l	1.0						
1,3-Dichlorobenzene	< 1.0		µg/l	1.0						
1,4-Dichlorobenzene	< 1.0		µg/l	1.0						
Dichlorodifluoromethane (Freon12)	< 2.0		µg/l	2.0						
1,1-Dichloroethane	< 1.0		µg/l	1.0						
1,2-Dichloroethane	< 1.0		µg/l	1.0						
1,1-Dichloroethene	< 1.0		µg/l	1.0						
cis-1,2-Dichloroethene	< 1.0		µg/l	1.0						
trans-1,2-Dichloroethene	< 1.0		µg/l	1.0						
1,2-Dichloropropane	< 1.0		µg/l	1.0						
1,3-Dichloropropane	< 1.0		µg/l	1.0						
2,2-Dichloropropane	< 1.0		µg/l	1.0						
1,1-Dichloropropene	< 1.0		µg/l	1.0						
cis-1,3-Dichloropropene	< 0.5		µg/l	0.5						
trans-1,3-Dichloropropene	< 0.5		µg/l	0.5						
Ethylbenzene	< 1.0		µg/l	1.0						
Hexachlorobutadiene	< 0.5		µg/l	0.5						
2-Hexanone (MBK)	< 10.0		µg/l	10.0						
Isopropylbenzene	< 1.0		µg/l	1.0						
4-Isopropyltoluene	< 1.0		µg/l	1.0						
Methyl tert-butyl ether	< 1.0		µg/l	1.0						
4-Methyl-2-pentanone (MIBK)	< 10.0		µg/l	10.0						
Methylene chloride	< 2.0		µg/l	2.0						
Naphthalene	< 1.0		µg/l	1.0						
n-Propylbenzene	< 1.0		µg/l	1.0						
Styrene	< 1.0		µg/l	1.0						
1,1,1,2-Tetrachloroethane	< 1.0		µg/l	1.0						

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211502 - SW846 5030 Water MS										
Blank (1211502-BLK1)					Prepared & Analyzed: 17-May-12					
1,1,2,2-Tetrachloroethane	< 0.5		µg/l	0.5						
Tetrachloroethene	< 1.0		µg/l	1.0						
Toluene	< 1.0		µg/l	1.0						
1,2,3-Trichlorobenzene	< 1.0		µg/l	1.0						
1,2,4-Trichlorobenzene	< 1.0		µg/l	1.0						
1,3,5-Trichlorobenzene	< 1.0		µg/l	1.0						
1,1,1-Trichloroethane	< 1.0		µg/l	1.0						
1,1,2-Trichloroethane	< 1.0		µg/l	1.0						
Trichloroethene	< 1.0		µg/l	1.0						
Trichlorofluoromethane (Freon 11)	< 1.0		µg/l	1.0						
1,2,3-Trichloropropane	< 1.0		µg/l	1.0						
1,2,4-Trimethylbenzene	< 1.0		µg/l	1.0						
1,3,5-Trimethylbenzene	< 1.0		µg/l	1.0						
Vinyl chloride	< 1.0		µg/l	1.0						
m,p-Xylene	< 2.0		µg/l	2.0						
o-Xylene	< 1.0		µg/l	1.0						
Tetrahydrofuran	< 2.0		µg/l	2.0						
Ethyl ether	< 1.0		µg/l	1.0						
Tert-amyl methyl ether	< 1.0		µg/l	1.0						
Ethyl tert-butyl ether	< 1.0		µg/l	1.0						
Di-isopropyl ether	< 1.0		µg/l	1.0						
Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0						
1,4-Dioxane	< 20.0		µg/l	20.0						
trans-1,4-Dichloro-2-butene	< 5.0		µg/l	5.0						
Ethanol	< 400		µg/l	400						
Surrogate: 4-Bromofluorobenzene	*51.2*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*51.7*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*54.6*		µg/l		*50.0*		*109*	*70-130*		
Surrogate: Dibromofluoromethane	*55.4*		µg/l		*50.0*		*111*	*70-130*		
LCS (1211502-BS1)					Prepared & Analyzed: 17-May-12					
1,1,2-Trichlorotrifluoroethane (Freon 113)	**21.2**		µg/l		20.0		106	70-130		
Acetone	**21.0**		µg/l		20.0		105	70-130		
Acrylonitrile	**23.3**		µg/l		20.0		116	70-130		
Benzene	**17.6**		µg/l		20.0		88	70-130		
Bromobenzene	**19.5**		µg/l		20.0		98	70-130		
Bromochloromethane	**18.7**		µg/l		20.0		93	70-130		
Bromodichloromethane	**18.0**		µg/l		20.0		90	70-130		
Bromoform	**19.8**		µg/l		20.0		99	70-130		
Bromomethane	**23.8**		µg/l		20.0		119	70-130		
2-Butanone (MEK)	**17.5**		µg/l		20.0		88	70-130		
n-Butylbenzene	**19.2**		µg/l		20.0		96	70-130		
sec-Butylbenzene	**18.0**		µg/l		20.0		90	70-130		
tert-Butylbenzene	**19.0**		µg/l		20.0		95	70-130		
Carbon disulfide	**21.0**		µg/l		20.0		105	70-130		
Carbon tetrachloride	**18.2**		µg/l		20.0		91	70-130		
Chlorobenzene	**18.0**		µg/l		20.0		90	70-130		
Chloroethane	**20.4**		µg/l		20.0		102	70-130		
Chloroform	**17.9**		µg/l		20.0		90	70-130		
Chloromethane	**21.8**		µg/l		20.0		109	70-130		
2-Chlorotoluene	**19.8**		µg/l		20.0		99	70-130		
4-Chlorotoluene	**19.5**		µg/l		20.0		97	70-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211502 - SW846 5030 Water MS										
LCS (1211502-BS1)					Prepared & Analyzed: 17-May-12					
1,2-Dibromo-3-chloropropane	**19.4**		µg/l		20.0		97	70-130		
Dibromochloromethane	**19.4**		µg/l		20.0		97	70-130		
1,2-Dibromoethane (EDB)	**18.5**		µg/l		20.0		92	70-130		
Dibromomethane	**17.4**		µg/l		20.0		87	70-130		
1,2-Dichlorobenzene	**18.4**		µg/l		20.0		92	70-130		
1,3-Dichlorobenzene	**20.7**		µg/l		20.0		103	70-130		
1,4-Dichlorobenzene	**16.7**		µg/l		20.0		84	70-130		
Dichlorodifluoromethane (Freon12)	**18.7**		µg/l		20.0		93	70-130		
1,1-Dichloroethane	**19.7**		µg/l		20.0		98	70-130		
1,2-Dichloroethane	**17.2**		µg/l		20.0		86	70-130		
1,1-Dichloroethene	**21.7**		µg/l		20.0		108	70-130		
cis-1,2-Dichloroethene	**18.3**		µg/l		20.0		91	70-130		
trans-1,2-Dichloroethene	**21.4**		µg/l		20.0		107	70-130		
1,2-Dichloropropane	**17.0**		µg/l		20.0		85	70-130		
1,3-Dichloropropane	**17.3**		µg/l		20.0		87	70-130		
2,2-Dichloropropane	**17.8**		µg/l		20.0		89	70-130		
1,1-Dichloropropene	**16.7**		µg/l		20.0		84	70-130		
cis-1,3-Dichloropropene	**17.8**		µg/l		20.0		89	70-130		
trans-1,3-Dichloropropene	**18.0**		µg/l		20.0		90	70-130		
Ethylbenzene	**18.1**		µg/l		20.0		90	70-130		
Hexachlorobutadiene	**15.9**		µg/l		20.0		79	70-130		
2-Hexanone (MBK)	**16.0**		µg/l		20.0		80	70-130		
Isopropylbenzene	**17.9**		µg/l		20.0		89	70-130		
4-Isopropyltoluene	**20.5**		µg/l		20.0		102	70-130		
Methyl tert-butyl ether	**17.8**		µg/l		20.0		89	70-130		
4-Methyl-2-pentanone (MIBK)	**18.8**		µg/l		20.0		94	70-130		
Methylene chloride	**21.8**		µg/l		20.0		109	70-130		
Naphthalene	**14.5**		µg/l		20.0		72	70-130		
n-Propylbenzene	**18.2**		µg/l		20.0		91	70-130		
Styrene	**17.7**		µg/l		20.0		89	70-130		
1,1,1,2-Tetrachloroethane	**18.8**		µg/l		20.0		94	70-130		
1,1,2,2-Tetrachloroethane	**17.4**		µg/l		20.0		87	70-130		
Tetrachloroethene	**18.2**		µg/l		20.0		91	70-130		
Toluene	**17.5**		µg/l		20.0		87	70-130		
1,2,3-Trichlorobenzene	**14.3**		µg/l		20.0		72	70-130		
1,2,4-Trichlorobenzene	**14.8**		µg/l		20.0		74	70-130		
1,3,5-Trichlorobenzene	**16.2**		µg/l		20.0		81	70-130		
1,1,1-Trichloroethane	**18.0**		µg/l		20.0		90	70-130		
1,1,2-Trichloroethane	**17.8**		µg/l		20.0		89	70-130		
Trichloroethene	**18.0**		µg/l		20.0		90	70-130		
Trichlorofluoromethane (Freon 11)	**20.8**		µg/l		20.0		104	70-130		
1,2,3-Trichloropropane	**17.6**		µg/l		20.0		88	70-130		
1,2,4-Trimethylbenzene	**19.1**		µg/l		20.0		96	70-130		
1,3,5-Trimethylbenzene	**20.0**		µg/l		20.0		100	70-130		
Vinyl chloride	**20.2**		µg/l		20.0		101	70-130		
m,p-Xylene	**38.6**		µg/l		40.0		97	70-130		
o-Xylene	**19.5**		µg/l		20.0		98	70-130		
Tetrahydrofuran	**15.3**		µg/l		20.0		77	70-130		
Ethyl ether	**21.8**		µg/l		20.0		109	70-130		
Tert-amyl methyl ether	**16.3**		µg/l		20.0		82	70-130		
Ethyl tert-butyl ether	**15.7**		µg/l		20.0		78	70-130		
Di-isopropyl ether	**16.0**		µg/l		20.0		80	70-130		

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211502 - SW846 5030 Water MS										
LCS (1211502-BS1)						Prepared & Analyzed: 17-May-12				
Tert-Butanol / butyl alcohol	**183**		µg/l		200		91	70-130		
1,4-Dioxane	**166**		µg/l		200		83	70-130		
trans-1,4-Dichloro-2-butene	**17.5**		µg/l		20.0		87	70-130		
Ethanol	**439**		µg/l		400		110	70-130		
Surrogate: 4-Bromofluorobenzene	*54.1*		µg/l		*50.0*		*108*	*70-130*		
Surrogate: Toluene-d8	*51.3*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*49.3*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: Dibromofluoromethane	*50.8*		µg/l		*50.0*		*102*	*70-130*		
LCS Dup (1211502-BSD1)						Prepared & Analyzed: 17-May-12				
1,1,2-Trichlorotrifluoroethane (Freon 113)	**15.5**	QR2	µg/l		20.0		78	70-130	31	25
Acetone	**17.2**		µg/l		20.0		86	70-130	20	50
Acrylonitrile	**19.0**		µg/l		20.0		95	70-130	20	25
Benzene	**17.5**		µg/l		20.0		88	70-130	0.2	25
Bromobenzene	**17.6**		µg/l		20.0		88	70-130	10	25
Bromochloromethane	**17.9**		µg/l		20.0		89	70-130	4	25
Bromodichloromethane	**16.9**		µg/l		20.0		84	70-130	6	25
Bromoform	**18.2**		µg/l		20.0		91	70-130	8	25
Bromomethane	**17.4**		µg/l		20.0		87	70-130	31	50
2-Butanone (MEK)	**19.1**		µg/l		20.0		95	70-130	8	50
n-Butylbenzene	**15.2**		µg/l		20.0		76	70-130	23	25
sec-Butylbenzene	**15.8**		µg/l		20.0		79	70-130	13	25
tert-Butylbenzene	**16.7**		µg/l		20.0		84	70-130	13	25
Carbon disulfide	**15.3**	QR2	µg/l		20.0		77	70-130	31	25
Carbon tetrachloride	**15.4**		µg/l		20.0		77	70-130	17	25
Chlorobenzene	**17.0**		µg/l		20.0		85	70-130	5	25
Chloroethane	**16.5**		µg/l		20.0		83	70-130	21	50
Chloroform	**16.9**		µg/l		20.0		84	70-130	6	25
Chloromethane	**18.0**		µg/l		20.0		90	70-130	19	25
2-Chlorotoluene	**18.2**		µg/l		20.0		91	70-130	8	25
4-Chlorotoluene	**17.9**		µg/l		20.0		89	70-130	9	25
1,2-Dibromo-3-chloropropane	**15.7**		µg/l		20.0		78	70-130	21	25
Dibromochloromethane	**18.3**		µg/l		20.0		92	70-130	6	50
1,2-Dibromoethane (EDB)	**18.1**		µg/l		20.0		91	70-130	2	25
Dibromomethane	**17.2**		µg/l		20.0		86	70-130	1	25
1,2-Dichlorobenzene	**17.2**		µg/l		20.0		86	70-130	7	25
1,3-Dichlorobenzene	**18.4**		µg/l		20.0		92	70-130	12	25
1,4-Dichlorobenzene	**15.8**		µg/l		20.0		79	70-130	6	25
Dichlorodifluoromethane (Freon12)	**13.6**		µg/l		20.0		68	70-130	31	50
1,1-Dichloroethane	**17.2**		µg/l		20.0		86	70-130	13	25
1,2-Dichloroethane	**16.4**		µg/l		20.0		82	70-130	5	25
1,1-Dichloroethene	**16.2**	QR2	µg/l		20.0		81	70-130	29	25
cis-1,2-Dichloroethene	**17.8**		µg/l		20.0		89	70-130	3	25
trans-1,2-Dichloroethene	**16.5**	QR2	µg/l		20.0		83	70-130	26	25
1,2-Dichloropropane	**17.6**		µg/l		20.0		88	70-130	3	25
1,3-Dichloropropane	**17.2**		µg/l		20.0		86	70-130	0.9	25
2,2-Dichloropropane	**15.4**		µg/l		20.0		77	70-130	15	25
1,1-Dichloropropene	**15.6**		µg/l		20.0		78	70-130	7	25
cis-1,3-Dichloropropene	**17.5**		µg/l		20.0		87	70-130	2	25
trans-1,3-Dichloropropene	**16.8**		µg/l		20.0		84	70-130	7	25
Ethylbenzene	**17.1**		µg/l		20.0		86	70-130	6	25
Hexachlorobutadiene	**14.1**		µg/l		20.0		70	70-130	12	50

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211502 - SW846 5030 Water MS										
LCS Dup (1211502-BSD1)					Prepared & Analyzed: 17-May-12					
2-Hexanone (MBK)	**16.7**		µg/l		20.0		83	70-130	4	25
Isopropylbenzene	**16.4**		µg/l		20.0		82	70-130	9	25
4-Isopropyltoluene	**16.1**		µg/l		20.0		81	70-130	24	25
Methyl tert-butyl ether	**16.2**		µg/l		20.0		81	70-130	10	25
4-Methyl-2-pentanone (MIBK)	**16.4**		µg/l		20.0		82	70-130	13	50
Methylene chloride	**17.2**		µg/l		20.0		86	70-130	23	25
Naphthalene	**13.8**	QM9	µg/l		20.0		69	70-130	5	25
n-Propylbenzene	**17.1**		µg/l		20.0		86	70-130	6	25
Styrene	**17.0**		µg/l		20.0		85	70-130	4	25
1,1,1,2-Tetrachloroethane	**17.4**		µg/l		20.0		87	70-130	8	25
1,1,2,2-Tetrachloroethane	**18.1**		µg/l		20.0		91	70-130	4	25
Tetrachloroethene	**15.7**		µg/l		20.0		78	70-130	15	25
Toluene	**17.1**		µg/l		20.0		85	70-130	2	25
1,2,3-Trichlorobenzene	**13.1**	QM9	µg/l		20.0		66	70-130	9	25
1,2,4-Trichlorobenzene	**13.0**	QM9	µg/l		20.0		65	70-130	13	25
1,3,5-Trichlorobenzene	**13.9**	QM9	µg/l		20.0		69	70-130	16	25
1,1,1-Trichloroethane	**15.6**		µg/l		20.0		78	70-130	14	25
1,1,2-Trichloroethane	**18.2**		µg/l		20.0		91	70-130	2	25
Trichloroethene	**16.5**		µg/l		20.0		82	70-130	8	25
Trichlorofluoromethane (Freon 11)	**14.8**		µg/l		20.0		74	70-130	34	50
1,2,3-Trichloropropane	**18.0**		µg/l		20.0		90	70-130	2	25
1,2,4-Trimethylbenzene	**16.8**		µg/l		20.0		84	70-130	13	25
1,3,5-Trimethylbenzene	**17.6**		µg/l		20.0		88	70-130	13	25
Vinyl chloride	**14.1**	QR2	µg/l		20.0		71	70-130	35	25
m,p-Xylene	**37.2**		µg/l		40.0		93	70-130	4	25
o-Xylene	**18.2**		µg/l		20.0		91	70-130	7	25
Tetrahydrofuran	**18.5**		µg/l		20.0		93	70-130	19	25
Ethyl ether	**17.6**		µg/l		20.0		88	70-130	21	50
Tert-amyl methyl ether	**16.6**		µg/l		20.0		83	70-130	2	25
Ethyl tert-butyl ether	**15.6**		µg/l		20.0		78	70-130	0.5	25
Di-isopropyl ether	**17.4**		µg/l		20.0		87	70-130	8	25
Tert-Butanol / butyl alcohol	**146**		µg/l		200		73	70-130	22	25
1,4-Dioxane	**168**		µg/l		200		84	70-130	0.9	25
trans-1,4-Dichloro-2-butene	**17.2**		µg/l		20.0		86	70-130	2	25
Ethanol	**352**		µg/l		400		88	70-130	22	30
Surrogate: 4-Bromofluorobenzene	*53.2*		µg/l		*50.0*		*106*	*70-130*		
Surrogate: Toluene-d8	*50.5*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*47.9*		µg/l		*50.0*		*96*	*70-130*		
Surrogate: Dibromofluoromethane	*50.1*		µg/l		*50.0*		*100*	*70-130*		

Microextractable Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211222 - General Preparation SVOC										
Blank (1211222-BLK1)					Prepared & Analyzed: 16-May-12					
1,2-Dibromoethane (EDB)	< 0.0100		µg/l	0.0100						
LCS (1211222-BS1)					Prepared & Analyzed: 16-May-12					
1,2-Dibromoethane (EDB)	**0.196**		µg/l	0.0100	0.200		98	50-150		
LCS Dup (1211222-BSD1)					Prepared & Analyzed: 16-May-12					
1,2-Dibromoethane (EDB)	**0.189**		µg/l	0.0100	0.200		94	50-150	4	50

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211334 - SW846 3510C										
Blank (1211334-BLK1)						Prepared: 16-May-12 Analyzed: 17-May-12				
Gasoline	< 0.1		mg/l	0.1						
Fuel Oil #2	< 0.1		mg/l	0.1						
Fuel Oil #4	< 0.1		mg/l	0.1						
Fuel Oil #6	< 0.1		mg/l	0.1						
Motor Oil	< 0.1		mg/l	0.1						
Ligroin	< 0.1		mg/l	0.1						
Aviation Fuel	< 0.1		mg/l	0.1						
Hydraulic Oil	< 0.1		mg/l	0.1						
Dielectric Fluid	< 0.1		mg/l	0.1						
Unidentified	< 0.1		mg/l	0.1						
Other Oil	< 0.1		mg/l	0.1						
Total Petroleum Hydrocarbons	< 0.1		mg/l	0.1						
Surrogate: 1-Chlorooctadecane	*0.0444*		mg/l		*0.0500*		*89*	*40-140*		
LCS (1211334-BS2)						Prepared: 16-May-12 Analyzed: 17-May-12				
Fuel Oil #2	**10.8**		mg/l	0.1	10.0		108	40-140		
Surrogate: 1-Chlorooctadecane	*0.0501*		mg/l		*0.0500*		*100*	*40-140*		

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211268 - SW846 3005A										
Blank (1211268-BLK1)					Prepared & Analyzed: 16-May-12					
Nickel	< 0.0050		mg/l	0.0050						
Iron	< 0.0150		mg/l	0.0150						
Lead	< 0.0075		mg/l	0.0075						
Zinc	< 0.0050		mg/l	0.0050						
Arsenic	< 0.0040		mg/l	0.0040						
Chromium	< 0.0050		mg/l	0.0050						
LCS (1211268-BS1)					Prepared & Analyzed: 16-May-12					
Zinc	**1.32**		mg/l	0.0050	1.25		106	85-115		
Lead	**1.26**		mg/l	0.0075	1.25		101	85-115		
Nickel	**1.28**		mg/l	0.0050	1.25		103	85-115		
Iron	**1.36**		mg/l	0.0150	1.25		109	85-115		
Arsenic	**1.30**		mg/l	0.0040	1.25		104	85-115		
Chromium	**1.31**		mg/l	0.0050	1.25		105	85-115		
LCS Dup (1211268-BSD1)					Prepared & Analyzed: 16-May-12					
Nickel	**1.30**		mg/l	0.0050	1.25		104	85-115	1	20
Lead	**1.27**		mg/l	0.0075	1.25		102	85-115	1	20
Zinc	**1.35**		mg/l	0.0050	1.25		108	85-115	2	20
Iron	**1.37**		mg/l	0.0150	1.25		110	85-115	0.8	20
Chromium	**1.33**		mg/l	0.0050	1.25		106	85-115	1	20
Arsenic	**1.33**		mg/l	0.0040	1.25		106	85-115	2	20
Duplicate (1211268-DUP1)			**Source: SB48957-01**		Prepared & Analyzed: 16-May-12					
Zinc	**0.0704**		mg/l	0.0050		0.0779			10	20
Lead	**0.0058**	J	mg/l	0.0075		0.0057			2	20
Iron	**2.36**		mg/l	0.0150		2.72			14	20
Nickel	**0.0078**		mg/l	0.0050		0.0082			6	20
Chromium	**0.0051**		mg/l	0.0050		0.0060			15	20
Arsenic	**0.0036**	J	mg/l	0.0040		0.0040			8	20

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211029 - General Preparation										
Blank (1211029-BLK1)						Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	< 0.005		mg/l	0.005						
LCS (1211029-BS1)						Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	**0.052**		mg/l	0.005	0.0500		104	80-120		
Calibration Blank (1211029-CCB1)						Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	**0.00**		mg/l							
Calibration Blank (1211029-CCB2)						Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	**-0.002**		mg/l							
Calibration Check (1211029-CCV1)						Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	**0.052**		mg/l		0.0500		104	85-115		
Calibration Check (1211029-CCV2)						Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	**0.051**		mg/l		0.0500		102	85-115		
Duplicate (1211029-DUP1)			**Source: SB48957-01**			Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	< 0.005		mg/l	0.005		BRL				20
Matrix Spike (1211029-MS1)			**Source: SB48957-01**			Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	**0.052**		mg/l	0.005	0.0500	BRL	104	85-115		
Matrix Spike Dup (1211029-MSD1)			**Source: SB48957-01**			Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	**0.052**		mg/l	0.005	0.0500	BRL	104	85-115	0	20
Reference (1211029-SRM1)						Prepared & Analyzed: 11-May-12				
Hexavalent Chromium	**0.027**		mg/l	0.005	0.0248		109	85-115		
Batch 1211166 - General Preparation										
Blank (1211166-BLK1)						Prepared & Analyzed: 14-May-12				
Total Suspended Solids	< 5		mg/l	5						
LCS (1211166-BS1)						Prepared & Analyzed: 14-May-12				
Total Suspended Solids	**92**		mg/l	10	90.9		101	90-110		

Notes and Definitions

HT2	This sample was received outside the EPA recommended holding time for the analysis specified.
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.
QR2	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

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 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.

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

Validated by:
Kimberly Wisk
Rebecca Merz

SB 48957 BM

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: 5 Day
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS Worcester

Telephone #: 508-756-0151

Project Mgr. Nick Murdock

Invoice To: CFI

P.O. No.: RQN:

Project No.: 03-203852

Site Name: CFI #2131

Location: 365 Turnpike Rd, Southborough State: MA

Sampler(s): M. Serra

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10= H_3PO_4 11= 12=

List preservative code below: 2 | 1 | / | 2 | 4

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

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		VOCs, 8260	EDB	TSS, Chromium IV	TPH	Total Lead, Freon	Zinc, Nickel, Arsenic, Chromium, EDB		
48957.01	TP-1	5-9-12	13:45	G	GW	9	1		3		X	X	X	X	X	X		

QA/QC Reporting Notes:
* additional charges may apply

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

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

State-specific reporting standards:

~~*Hold All Samples*~~

Run per client request

Relinquished by:	Received by:	Date:	Time:	Temp°C
[illegible]	[illegible]	5/10/12	930	
[illegible]	RH	5/10/12	5:00	0.9

☐ EDD Format
☒ E-mail to NMurdock@ecsconsult.com

Condition upon receipt: ☐ Ambient ☐ Iced ☒ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SB 48957 BM

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
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Report To: ECS Worcester

Telephone #: 508-756-0151

Project Mgr. Nick Murdock

Invoice To: CFI

P.O. No.: RQN:

Project No.: 03-203852

Site Name: CFI #2131

Location: 365 Turnpike Rd. Southboro State: MA

Sampler(s): M. Serra

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10= H_3PO_4 11= 12=

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

G=Grab C=Composite

List preservative code below: 2 | 1 | ✓ | 2 | 4

QA/QC Reporting Notes:
* additional charges may apply

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

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

State-specific reporting standards:

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		8260, 8270	EDB	TSS Chromium EV	TPH 8100	Total Lead, Iron	Zinc, Nickel, Arsenic, Chromium EV			
48957.01	TP-1	5-9-12	13:45	G	GW	9	1		3		X	X	X	X	X	X			~~*Hold All Samples*~~
																			Run per client request
																			TPH 8100 per client request

Relinquished by:	Received by:	Date:	Time:	Temp°C
[illegible]	[illegible]	5/10/12	930	
[illegible]	RH	5/10/12	5:00	0.9

☐ EDD Format
☒ E-mail to NMurdock@ecsconsult.com

Condition upon receipt: ☐ Ambient ☐ Iced ☒ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SB 48957

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: 5 Day
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS Worcester

Telephone #: 508-756-0151

Project Mgr. Nick Murdock

Invoice To: CFI

P.O. No.: L12240 RQN:

Project No.: 03-203852

Site Name: CFI #2131

Location: 365 Turnpike Rd, Southboro State: MA

Sampler(s): M. Sera

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10= H_3PO_4 11= 12=

List preservative code below: 2 | 1 | / | 2 | 4

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

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		8260, 8270	EDB	TSS, Chromium IV	TPH 8100	Total Lead, Iron	Zinc, Nickel, Arsenic, Chromium IV		
48957.01	TP-1	5-9-12	13:45	G	GW	9	1		3		X	X	X	X	X	X		

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

Analyses: 8260, 8270, EDB, TSS, Chromium IV, TPH 8100, Total Lead, Iron, Zinc, Nickel, Arsenic, Chromium IV

QA/QC Reporting Notes:
* additional charges may apply

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

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

State-specific reporting standards:

~~*Hold All Samples*~~

Run per client request

TPH 8100 per client request.

8270 cancelled per email 5/16/12 MB

Relinquished by:	Received by:	Date:	Time:	Temp°C
[illegible]	[illegible]	5/10/12	930	
[illegible]	RH	5/10/12	5:00	0.9

☐ EDD Format

☒ E-mail to NMurdock@ecsconsult.com

Condition upon receipt: ☐ Ambient ☐ Iced ☒ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Report Date:
23-May-12 13:31

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
997 Millbury Street, Unit G
Worcester, MA 01607
Attn: Nicholas Murdock

Project: CFI #70044 - Southboro, MA
Project #: 93-203852

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB49424-01	TP-1	Ground Water	16-May-12 12:00	18-May-12 17:45

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

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

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of 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 10 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

MassDEP Analytical Protocol Certification Form

Laboratory Name: Spectrum Analytical, Inc.	**Project #:** 93-203852
Project Location: CFI #70044 - Southboro, MA	**RTN:**
This form provides certifications for the following data set:	SB49424-01
Matrices: Ground Water	

CAM Protocol

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
✓ 8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9012 Total Cyanide/PAC CAM VI A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain of Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	✓ Yes No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	✓ Yes No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	✓ Yes No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	✓ Yes No
E	a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes No Yes No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to questions A through E)?	✓ Yes No

Responses to questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	✓ Yes No

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	Yes ✓ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	✓ 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.

Nicole Leja

Nicole Leja
Laboratory Director
Date: 5/23/2012

CASE NARRATIVE:

The samples were received 2.6 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

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

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. Regulatory limits may not be achieved if specific method and/or technique was not requested on the Chain of Custody.

According to WSC-CAM 5/2009 Rev.1, Table 11 A-1, recovery for some VOC analytes have been deemed potentially difficult. Although they may still be within the recommended recovery range, a range has been set based on historical control limits.

Some target analytes which are not listed as exceptions in the Summary of CAM Reporting Limits may exceed the recommended RL based on sample initial volume or weight provided, % moisture content, or responsiveness of a particular analyte to purge and trap instrumentation.

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

SW846 8270D

Samples:

S206036-CCV1

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

3,3´-Dichlorobenzidine (-25.3%)
Benzidine (-44.0%)

This affected the following samples:

1211874-BLK1
1211874-BS1
TP-1

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TP-1 SB49424-01	93-203852	Ground Water	16-May-12 12:00	18-May-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Semivolatile Organic Compounds by GCMS													
Semivolatile Organic Compounds Prepared by method SW846 3510C													
83-32-9	Acenaphthene	< 5.38		µg/l	5.38	0.871	1	SW846 8270D	22-May-12	22-May-12	MSL	1211874	
208-96-8	Acenaphthylene	< 5.38		µg/l	5.38	1.09	1	"	"	"	"	"	
62-53-3	Aniline	< 5.38		µg/l	5.38	2.29	1	"	"	"	"	"	
120-12-7	Anthracene	< 5.38		µg/l	5.38	0.796	1	"	"	"	"	"	
103-33-3	Azobenzene/Diphenyldiazine	< 5.38		µg/l	5.38	1.15	1	"	"	"	"	"	
92-87-5	Benzidine	< 5.38		µg/l	5.38	3.19	1	"	"	"	"	"	
56-55-3	Benzo (a) anthracene	< 5.38		µg/l	5.38	0.602	1	"	"	"	"	"	
50-32-8	Benzo (a) pyrene	< 5.38		µg/l	5.38	0.903	1	"	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	< 5.38		µg/l	5.38	1.03	1	"	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	< 5.38		µg/l	5.38	1.56	1	"	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	< 5.38		µg/l	5.38	1.63	1	"	"	"	"	"	
65-85-0	Benzoic acid	< 5.38		µg/l	5.38	1.69	1	"	"	"	"	"	
100-51-6	Benzyl alcohol	< 5.38		µg/l	5.38	1.65	1	"	"	"	"	"	
111-91-1	Bis(2-chloroethoxy)methane	< 5.38		µg/l	5.38	1.14	1	"	"	"	"	"	
111-44-4	Bis(2-chloroethyl)ether	< 5.38		µg/l	5.38	1.20	1	"	"	"	"	"	
108-60-1	Bis(2-chloroisopropyl)ether	< 5.38		µg/l	5.38	1.32	1	"	"	"	"	"	
117-81-7	Bis(2-ethylhexyl)phthalate	< 5.38		µg/l	5.38	1.81	1	"	"	"	"	"	
101-55-3	4-Bromophenyl phenyl ether	< 5.38		µg/l	5.38	1.41	1	"	"	"	"	"	
85-68-7	Butyl benzyl phthalate	< 5.38		µg/l	5.38	0.806	1	"	"	"	"	"	
86-74-8	Carbazole	< 5.38		µg/l	5.38	2.17	1	"	"	"	"	"	
59-50-7	4-Chloro-3-methylphenol	< 5.38		µg/l	5.38	1.56	1	"	"	"	"	"	
106-47-8	4-Chloroaniline	< 5.38		µg/l	5.38	1.27	1	"	"	"	"	"	
91-58-7	2-Chloronaphthalene	< 5.38		µg/l	5.38	0.710	1	"	"	"	"	"	
95-57-8	2-Chlorophenol	< 5.38		µg/l	5.38	0.903	1	"	"	"	"	"	
7005-72-3	4-Chlorophenyl phenyl ether	< 5.38		µg/l	5.38	1.05	1	"	"	"	"	"	
218-01-9	Chrysene	< 5.38		µg/l	5.38	0.710	1	"	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	< 5.38		µg/l	5.38	1.41	1	"	"	"	"	"	
132-64-9	Dibenzofuran	< 5.38		µg/l	5.38	0.710	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	< 5.38		µg/l	5.38	0.914	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	< 5.38		µg/l	5.38	1.45	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	< 5.38		µg/l	5.38	0.774	1	"	"	"	"	"	
91-94-1	3,3´-Dichlorobenzidine	< 5.38		µg/l	5.38	2.17	1	"	"	"	"	"	
120-83-2	2,4-Dichlorophenol	< 5.38		µg/l	5.38	1.43	1	"	"	"	"	"	
84-66-2	Diethyl phthalate	< 5.38		µg/l	5.38	1.32	1	"	"	"	"	"	
131-11-3	Dimethyl phthalate	< 5.38		µg/l	5.38	0.914	1	"	"	"	"	"	
105-67-9	2,4-Dimethylphenol	< 5.38		µg/l	5.38	1.13	1	"	"	"	"	"	
84-74-2	Di-n-butyl phthalate	< 5.38		µg/l	5.38	1.44	1	"	"	"	"	"	
534-52-1	4,6-Dinitro-2-methylphenol	< 5.38		µg/l	5.38	2.06	1	"	"	"	"	"	
51-28-5	2,4-Dinitrophenol	< 5.38		µg/l	5.38	3.45	1	"	"	"	"	"	
121-14-2	2,4-Dinitrotoluene	< 5.38		µg/l	5.38	1.38	1	"	"	"	"	"	
606-20-2	2,6-Dinitrotoluene	< 5.38		µg/l	5.38	1.17	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
TP-1 SB49424-01	93-203852	Ground Water	16-May-12 12:00	18-May-12

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Semivolatile Organic Compounds by GCMS													
Semivolatile Organic Compounds Prepared by method SW846 3510C													
117-84-0	Di-n-octyl phthalate	< 5.38		µg/l	5.38	1.42	1	SW846 8270D	22-May-12	22-May-12	MSL	1211874	
206-44-0	Fluoranthene	< 5.38		µg/l	5.38	2.30	1	"	"	"	"	"	
86-73-7	Fluorene	< 5.38		µg/l	5.38	0.978	1	"	"	"	"	"	
118-74-1	Hexachlorobenzene	< 5.38		µg/l	5.38	1.30	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	< 5.38		µg/l	5.38	1.42	1	"	"	"	"	"	
77-47-4	Hexachlorocyclopentadiene	< 5.38		µg/l	5.38	1.45	1	"	"	"	"	"	
67-72-1	Hexachloroethane	< 5.38		µg/l	5.38	1.20	1	"	"	"	"	"	
193-39-5	Indeno (1,2,3-cd) pyrene	< 5.38		µg/l	5.38	1.44	1	"	"	"	"	"	
78-59-1	Isophorone	< 5.38		µg/l	5.38	1.15	1	"	"	"	"	"	
91-57-6	2-Methylnaphthalene	< 5.38		µg/l	5.38	1.38	1	"	"	"	"	"	
95-48-7	2-Methylphenol	< 5.38		µg/l	5.38	0.914	1	"	"	"	"	"	
108-39-4, 106-44-5	3 & 4-Methylphenol	< 10.8		µg/l	10.8	1.17	1	"	"	"	"	"	
91-20-3	Naphthalene	< 5.38		µg/l	5.38	0.806	1	"	"	"	"	"	
88-74-4	2-Nitroaniline	< 5.38		µg/l	5.38	1.14	1	"	"	"	"	"	
99-09-2	3-Nitroaniline	< 5.38		µg/l	5.38	1.71	1	"	"	"	"	"	
100-01-6	4-Nitroaniline	< 21.5		µg/l	21.5	4.91	1	"	"	"	"	"	
98-95-3	Nitrobenzene	< 5.38		µg/l	5.38	1.03	1	"	"	"	"	"	
88-75-5	2-Nitrophenol	< 5.38		µg/l	5.38	1.41	1	"	"	"	"	"	
100-02-7	4-Nitrophenol	< 21.5		µg/l	21.5	2.76	1	"	"	"	"	"	
62-75-9	N-Nitrosodimethylamine	< 5.38		µg/l	5.38	2.25	1	"	"	"	"	"	
621-64-7	N-Nitrosodi-n-propylamine	< 5.38		µg/l	5.38	1.19	1	"	"	"	"	"	
86-30-6	N-Nitrosodiphenylamine	< 5.38		µg/l	5.38	1.23	1	"	"	"	"	"	
87-86-5	Pentachlorophenol	< 21.5		µg/l	21.5	1.91	1	"	"	"	"	"	
85-01-8	Phenanthrene	< 5.38		µg/l	5.38	0.645	1	"	"	"	"	"	
108-95-2	Phenol	< 5.38		µg/l	5.38	1.13	1	"	"	"	"	"	
129-00-0	Pyrene	< 5.38		µg/l	5.38	2.66	1	"	"	"	"	"	
110-86-1	Pyridine	< 5.38		µg/l	5.38	1.97	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	< 5.38		µg/l	5.38	1.06	1	"	"	"	"	"	
90-12-0	1-Methylnaphthalene	< 5.38		µg/l	5.38	1.18	1	"	"	"	"	"	
95-95-4	2,4,5-Trichlorophenol	< 5.38		µg/l	5.38	1.58	1	"	"	"	"	"	
88-06-2	2,4,6-Trichlorophenol	< 5.38		µg/l	5.38	1.04	1	"	"	"	"	"	
82-68-8	Pentachloronitrobenzene	< 5.38		µg/l	5.38	1.73	1	"	"	"	"	"	
95-94-3	1,2,4,5-Tetrachlorobenzene	< 5.38		µg/l	5.38	0.742	1	"	"	"	"	"	
Surrogate recoveries:													
321-60-8	*2-Fluorobiphenyl*	*71*			*30-130 %*			"	"	"	"	"	
367-12-4	*2-Fluorophenol*	*47*			*15-110 %*			"	"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*69*			*30-130 %*			"	"	"	"	"	
4165-62-2	*Phenol-d5*	*34*			*15-110 %*			"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*87*			*30-130 %*			"	"	"	"	"	
118-79-6	*2,4,6-Tribromophenol*	*82*			*15-110 %*			"	"	"	"	"	

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211874 - SW846 3510C										
Blank (1211874-BLK1)					Prepared & Analyzed: 22-May-12					
Acenaphthene	< 5.00		µg/l	5.00						
Acenaphthylene	< 5.00		µg/l	5.00						
Aniline	< 5.00		µg/l	5.00						
Anthracene	< 5.00		µg/l	5.00						
Azobenzene/Diphenyldiazine	< 5.00		µg/l	5.00						
Benzidine	< 5.00		µg/l	5.00						
Benzo (a) anthracene	< 5.00		µg/l	5.00						
Benzo (a) pyrene	< 5.00		µg/l	5.00						
Benzo (b) fluoranthene	< 5.00		µg/l	5.00						
Benzo (g,h,i) perylene	< 5.00		µg/l	5.00						
Benzo (k) fluoranthene	< 5.00		µg/l	5.00						
Benzoic acid	< 5.00		µg/l	5.00						
Benzyl alcohol	< 5.00		µg/l	5.00						
Bis(2-chloroethoxy)methane	< 5.00		µg/l	5.00						
Bis(2-chloroethyl)ether	< 5.00		µg/l	5.00						
Bis(2-chloroisopropyl)ether	< 5.00		µg/l	5.00						
Bis(2-ethylhexyl)phthalate	< 5.00		µg/l	5.00						
4-Bromophenyl phenyl ether	< 5.00		µg/l	5.00						
Butyl benzyl phthalate	< 5.00		µg/l	5.00						
Carbazole	< 5.00		µg/l	5.00						
4-Chloro-3-methylphenol	< 5.00		µg/l	5.00						
4-Chloroaniline	< 5.00		µg/l	5.00						
2-Chloronaphthalene	< 5.00		µg/l	5.00						
2-Chlorophenol	< 5.00		µg/l	5.00						
4-Chlorophenyl phenyl ether	< 5.00		µg/l	5.00						
Chrysene	< 5.00		µg/l	5.00						
Dibenzo (a,h) anthracene	< 5.00		µg/l	5.00						
Dibenzofuran	< 5.00		µg/l	5.00						
1,2-Dichlorobenzene	< 5.00		µg/l	5.00						
1,3-Dichlorobenzene	< 5.00		µg/l	5.00						
1,4-Dichlorobenzene	< 5.00		µg/l	5.00						
3,3´-Dichlorobenzidine	< 5.00		µg/l	5.00						
2,4-Dichlorophenol	< 5.00		µg/l	5.00						
Diethyl phthalate	< 5.00		µg/l	5.00						
Dimethyl phthalate	< 5.00		µg/l	5.00						
2,4-Dimethylphenol	< 5.00		µg/l	5.00						
Di-n-butyl phthalate	< 5.00		µg/l	5.00						
4,6-Dinitro-2-methylphenol	< 5.00		µg/l	5.00						
2,4-Dinitrophenol	< 5.00		µg/l	5.00						
2,4-Dinitrotoluene	< 5.00		µg/l	5.00						
2,6-Dinitrotoluene	< 5.00		µg/l	5.00						
Di-n-octyl phthalate	< 5.00		µg/l	5.00						
Fluoranthene	< 5.00		µg/l	5.00						
Fluorene	< 5.00		µg/l	5.00						
Hexachlorobenzene	< 5.00		µg/l	5.00						
Hexachlorobutadiene	< 5.00		µg/l	5.00						
Hexachlorocyclopentadiene	< 5.00		µg/l	5.00						
Hexachloroethane	< 5.00		µg/l	5.00						
Indeno (1,2,3-cd) pyrene	< 5.00		µg/l	5.00						
Isophorone	< 5.00		µg/l	5.00						
2-Methylnaphthalene	< 5.00		µg/l	5.00						
2-Methylphenol	< 5.00		µg/l	5.00						

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211874 - SW846 3510C										
Blank (1211874-BLK1)					Prepared & Analyzed: 22-May-12					
3 & 4-Methylphenol	< 10.0		µg/l	10.0						
Naphthalene	< 5.00		µg/l	5.00						
2-Nitroaniline	< 5.00		µg/l	5.00						
3-Nitroaniline	< 5.00		µg/l	5.00						
4-Nitroaniline	< 20.0		µg/l	20.0						
Nitrobenzene	< 5.00		µg/l	5.00						
2-Nitrophenol	< 5.00		µg/l	5.00						
4-Nitrophenol	< 20.0		µg/l	20.0						
N-Nitrosodimethylamine	< 5.00		µg/l	5.00						
N-Nitrosodi-n-propylamine	< 5.00		µg/l	5.00						
N-Nitrosodiphenylamine	< 5.00		µg/l	5.00						
Pentachlorophenol	< 20.0		µg/l	20.0						
Phenanthrene	< 5.00		µg/l	5.00						
Phenol	< 5.00		µg/l	5.00						
Pyrene	< 5.00		µg/l	5.00						
Pyridine	< 5.00		µg/l	5.00						
1,2,4-Trichlorobenzene	< 5.00		µg/l	5.00						
1-Methylnaphthalene	< 5.00		µg/l	5.00						
2,4,5-Trichlorophenol	< 5.00		µg/l	5.00						
2,4,6-Trichlorophenol	< 5.00		µg/l	5.00						
Pentachloronitrobenzene	< 5.00		µg/l	5.00						
1,2,4,5-Tetrachlorobenzene	< 5.00		µg/l	5.00						
Surrogate: 2-Fluorobiphenyl	*31.3*		µg/l		*50.0*		*63*	*30-130*		
Surrogate: 2-Fluorophenol	*24.4*		µg/l		*50.0*		*49*	*15-110*		
Surrogate: Nitrobenzene-d5	*33.0*		µg/l		*50.0*		*66*	*30-130*		
Surrogate: Phenol-d5	*17.4*		µg/l		*50.0*		*35*	*15-110*		
Surrogate: Terphenyl-dl4	*40.7*		µg/l		*50.0*		*81*	*30-130*		
Surrogate: 2,4,6-Tribromophenol	*37.3*		µg/l		*50.0*		*75*	*15-110*		
LCS (1211874-BS1)					Prepared & Analyzed: 22-May-12					
Acenaphthene	**33.8**		µg/l	5.00	50.0		68	40-130		
Acenaphthylene	**33.6**		µg/l	5.00	50.0		67	40-130		
Aniline	**29.5**		µg/l	5.00	50.0		59	40-130		
Anthracene	**34.4**		µg/l	5.00	50.0		69	40-130		
Azobenzene/Diphenyldiazine	**32.6**		µg/l	5.00	50.0		65	40-130		
Benzidine	**8.94**	QC2	µg/l	5.00	50.0		18	40-140		
Benzo (a) anthracene	**35.8**		µg/l	5.00	50.0		72	40-130		
Benzo (a) pyrene	**32.8**		µg/l	5.00	50.0		66	40-130		
Benzo (b) fluoranthene	**33.0**		µg/l	5.00	50.0		66	40-130		
Benzo (g,h,i) perylene	**35.3**		µg/l	5.00	50.0		71	40-130		
Benzo (k) fluoranthene	**32.8**		µg/l	5.00	50.0		66	40-130		
Benzoic acid	**17.5**	QC2	µg/l	5.00	50.0		35	40-130		
Benzyl alcohol	**23.0**		µg/l	5.00	50.0		46	40-130		
Bis(2-chloroethoxy)methane	**26.6**		µg/l	5.00	50.0		53	40-130		
Bis(2-chloroethyl)ether	**27.9**		µg/l	5.00	50.0		56	40-130		
Bis(2-chloroisopropyl)ether	**29.6**		µg/l	5.00	50.0		59	40-130		
Bis(2-ethylhexyl)phthalate	**33.1**		µg/l	5.00	50.0		66	40-130		
4-Bromophenyl phenyl ether	**34.2**		µg/l	5.00	50.0		68	40-130		
Butyl benzyl phthalate	**31.4**		µg/l	5.00	50.0		63	40-130		
Carbazole	**42.4**		µg/l	5.00	50.0		85	40-130		
4-Chloro-3-methylphenol	**34.5**		µg/l	5.00	50.0		69	40-130		
4-Chloroaniline	**33.9**		µg/l	5.00	50.0		68	40-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211874 - SW846 3510C										
LCS (1211874-BS1)					Prepared & Analyzed: 22-May-12					
2-Chloronaphthalene	**33.2**		µg/l	5.00	50.0		66	40-130		
2-Chlorophenol	**33.3**		µg/l	5.00	50.0		67	40-130		
4-Chlorophenyl phenyl ether	**33.4**		µg/l	5.00	50.0		67	40-130		
Chrysene	**32.8**		µg/l	5.00	50.0		66	40-130		
Dibenzo (a,h) anthracene	**35.5**		µg/l	5.00	50.0		71	40-130		
Dibenzofuran	**34.2**		µg/l	5.00	50.0		68	40-130		
1,2-Dichlorobenzene	**30.5**		µg/l	5.00	50.0		61	40-130		
1,3-Dichlorobenzene	**30.5**		µg/l	5.00	50.0		61	40-130		
1,4-Dichlorobenzene	**30.4**		µg/l	5.00	50.0		61	40-130		
3,3´-Dichlorobenzidine	**41.6**		µg/l	5.00	50.0		83	40-130		
2,4-Dichlorophenol	**34.4**		µg/l	5.00	50.0		69	40-130		
Diethyl phthalate	**31.3**		µg/l	5.00	50.0		63	40-130		
Dimethyl phthalate	**32.0**		µg/l	5.00	50.0		64	40-130		
2,4-Dimethylphenol	**32.7**		µg/l	5.00	50.0		65	40-130		
Di-n-butyl phthalate	**33.8**		µg/l	5.00	50.0		68	40-130		
4,6-Dinitro-2-methylphenol	**43.7**		µg/l	5.00	50.0		87	40-130		
2,4-Dinitrophenol	**38.0**		µg/l	5.00	50.0		76	40-130		
2,4-Dinitrotoluene	**42.0**		µg/l	5.00	50.0		84	40-130		
2,6-Dinitrotoluene	**40.5**		µg/l	5.00	50.0		81	40-130		
Di-n-octyl phthalate	**30.6**		µg/l	5.00	50.0		61	40-130		
Fluoranthene	**35.6**		µg/l	5.00	50.0		71	40-130		
Fluorene	**32.5**		µg/l	5.00	50.0		65	40-130		
Hexachlorobenzene	**38.4**		µg/l	5.00	50.0		77	40-130		
Hexachlorobutadiene	**28.4**		µg/l	5.00	50.0		57	40-130		
Hexachlorocyclopentadiene	**32.4**		µg/l	5.00	50.0		65	40-130		
Hexachloroethane	**30.7**		µg/l	5.00	50.0		61	40-130		
Indeno (1,2,3-cd) pyrene	**33.0**		µg/l	5.00	50.0		66	40-130		
Isophorone	**28.8**		µg/l	5.00	50.0		58	40-130		
2-Methylnaphthalene	**33.4**		µg/l	5.00	50.0		67	40-130		
2-Methylphenol	**31.5**		µg/l	5.00	50.0		63	40-130		
3 & 4-Methylphenol	**30.3**		µg/l	10.0	50.0		61	40-130		
Naphthalene	**30.7**		µg/l	5.00	50.0		61	40-130		
2-Nitroaniline	**37.0**		µg/l	5.00	50.0		74	40-130		
3-Nitroaniline	**39.3**		µg/l	5.00	50.0		79	40-130		
4-Nitroaniline	**43.5**		µg/l	20.0	50.0		87	40-130		
Nitrobenzene	**32.5**		µg/l	5.00	50.0		65	40-130		
2-Nitrophenol	**36.5**		µg/l	5.00	50.0		73	40-130		
4-Nitrophenol	**24.2**		µg/l	20.0	50.0		48	40-130		
N-Nitrosodimethylamine	**23.1**		µg/l	5.00	50.0		46	40-130		
N-Nitrosodi-n-propylamine	**30.4**		µg/l	5.00	50.0		61	40-130		
N-Nitrosodiphenylamine	**38.6**		µg/l	5.00	50.0		77	40-130		
Pentachlorophenol	**35.0**		µg/l	20.0	50.0		70	40-130		
Phenanthrene	**34.6**		µg/l	5.00	50.0		69	40-130		
Phenol	**17.9**	QC2	µg/l	5.00	50.0		36	40-130		
Pyrene	**35.0**		µg/l	5.00	50.0		70	40-130		
Pyridine	**13.7**	QC2	µg/l	5.00	50.0		27	40-140		
1,2,4-Trichlorobenzene	**31.2**		µg/l	5.00	50.0		62	40-130		
1-Methylnaphthalene	**34.6**		µg/l	5.00	50.0		69	40-140		
2,4,5-Trichlorophenol	**36.2**		µg/l	5.00	50.0		72	40-130		
2,4,6-Trichlorophenol	**34.0**		µg/l	5.00	50.0		68	40-130		
Pentachloronitrobenzene	**39.8**		µg/l	5.00	50.0		80	40-140		
1,2,4,5-Tetrachlorobenzene	**36.9**		µg/l	5.00	50.0		74	40-140		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1211874 - SW846 3510C										
LCS (1211874-BS1)					Prepared & Analyzed: 22-May-12					
Surrogate: 2-Fluorobiphenyl	*33.8*		µg/l		*50.0*		*68*	*30-130*		
Surrogate: 2-Fluorophenol	*22.8*		µg/l		*50.0*		*46*	*15-110*		
Surrogate: Nitrobenzene-d5	*34.5*		µg/l		*50.0*		*69*	*30-130*		
Surrogate: Phenol-d5	*16.7*		µg/l		*50.0*		*33*	*15-110*		
Surrogate: Terphenyl-dl4	*41.9*		µg/l		*50.0*		*84*	*30-130*		
Surrogate: 2,4,6-Tribromophenol	*41.2*		µg/l		*50.0*		*82*	*15-110*		

Notes and Definitions

QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

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

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

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

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

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

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

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

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

Validated by:
Kimberly Wisk

SB49424

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: 5/23/12
- All TATs subject to laboratory approval.
- Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS-Worcester

Telephone #: 508-756-0151

Project Mgr. Nick Murdock

Invoice To: CFI

RQN: (NM)

~~P.O. No.:~~ CFI

Po.No (NM) ~~RQN:~~ 42240

Project No.: 93-203852

Site Name: CFI # 70044

Location: 365 Turnpike Rd Southboro State: MA

Sampler(s): ~~MA~~ (NM) M. Serra

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10= H_3PO_4 11= _____ 12= _____

List preservative code below:

QA/QC Reporting Notes:
* additional charges may apply

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

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		8270 (NM)	After Composite						
49424-01	TP-1	5-16-12	12:00	G	GW		1				X	X						

Analyses:

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

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

State-specific reporting standards:

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	[signature]	5/18/12	1020	
[signature]	RPI	5/18/12	5:45	2.6

☐ EDD Format _____
☒ E-mail to NMurdock@ecsconsult.com

Condition upon receipt: ☐ Ambient ☐ Iced ☒ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen