UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

CERTIFIED MAI L RETURN RECEIPT REQUESTED

APR 25 2014

Martin Hillfinger
Senior Project Manger
Cumberland Farms, Inc.
100 Crossing Boulevard
Framingham, MA 01702

Re: Authorization to discharge under the Remediation General Permit (RGP) –NHG 910000. Cumberland Farms new store/gas retailer site located at 382 South Broadway, Salem, NH 03079, Rockingham County, Authorization # NHG910066

Dear Mr. Hillfinger:

Based on the review of a Notice of Intent (NOI) submitted by AECOM Inc., on behalf of Cumberland Farms, Inc., for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named Owner and Operator, to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

The checklist enclosed with this RGP authorization indicates the pollutants which you are required to monitor. Also indicated on the checklist are the effluent limits, test methods and minimum levels (MLs) for each pollutant. Please note that the check list does not represent the complete requirements of the RGP. Operators must comply with all of the applicable requirements of this permit, including influent and effluent monitoring, narrative water quality standards, record keeping, and reporting requirements, found in Parts I and II, and Appendices I – VIII of the RGP. See EPA's website for the complete RGP and other information at: http://www.epa.gov/region1/npdes/mass.html#dgp.

Please note the enclosed checklist includes parameters total suspended solids, methyl-ter-butyl ether (MBtE), tert-amyl methyl ether (TAME), trivalent chromium and iron which your consultant has marked "Believed Present". EPA has selected also, total petroleum hydrocarbons (TPH) and benzene, toluene, ethyl benzene and xylenes (BTX) to be monitored at your site to prevent potential contamination to World End Brook. The checklist also includes total group 1 polycyclic aromatic hydrocarbons (PAHs) which your laboratory reports indicated there was insufficient sensitivity to detect this parameter at the minimum level established in Appendix VI of the RGP.

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on selected dilution ranges and technology-based ceiling limitations. For these parameters the dilution factor 0.96 for this site which for purposes of this permit authorization is within a dilution range one to five (1-5) established in the RGP. (See the RGP Appendix IV for New Hampshire facilities). Therefore, the limits for trivalent chromium of 27.7 ug/L and iron of 1,000 ug/L, are required to achieve permit compliance at your site.

This general permit and authorization to discharge will expire on September 9, 2015. This project reportedly will terminate on May 28, 2014.You are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

Thank you in advance for your cooperation in this matter. Please contact Victor Alvarez at 617-918-1572 or Alvarez.Victor@epa.gov, if you have any questions.

Sincerely,

Thelma Murphy

Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Jeff Andrews, NHDES
Everett McBride, Salem BOS
Sean Crowell, AECOM

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Permit Number:	**NHG910066**
Authorization Issued:	Month, 2014
Facility/Site Name:	Cumberland Farms new store/gas retailer site
Facility/Site Address:	382 South Broadway, Salem, NH 03079, Rockingham County
	Email address of owner: mhillfinger@cumberlandgulf.com; Phone n: 5082704484.
Legal Name of Operator:	Same as the Owner
Operator contact name, title, and Address:	Same as the Owner
	Email Same as the Owner
Estimated Date of Completion:	May 28,2014
Category and Sub-Category:	Petroleum Related Siete Remediation. Sub-category A. Gasoline only sites
Receiving Water:	World End Brook to Spicket River

Monitoring & Limits are applicable if checked. All samples are to be collected as grab samples

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/l) **, 50 mg/l for hydrostatic testing **, Me#60.2/5mL
	2. Total Residual Chlorine (TRC) [1]	Freshwater = 11 ug/l ** Saltwater = 7.5 ug/l **/ Me#330.5/ML 20ug/L
√	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/l/ Me# 1664A/5.0mg/LmL
	4. Cyanide (CN) [2, 3]	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/l **/ Me#335.4/ML 5ug/L
	5. Benzene (B)	5ug/L /50.0 ug/l for hydrostatic testing only/ Me#8260C/ML 2 ug/L
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX))/ Me#8260C/ ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX))/ Me#8260C/ ML 2ug/L
√	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) [4]	100 ug/l)/ Me#8260C/ ML 2ug/L
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l /Me#8260C/ ML 10ug/L
	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only (ug/L)/ Me#8260C/ ML 10ug/L
√	13. tert-Amyl Methyl Ether (TAME)	Monitor Only (ug/L) /Me#8260C/ ML 10ug/L
	14. Naphthalene [5]	20 ug/l /Me#8260C/ ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/l /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/l /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/l /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/l /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/l - NH only /Me#8260C/ ML5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/l /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/l /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/l/Me#8260C/ ML 5ug/L
	22. cis-1,2 Dichloroethene (DCE)	70 ug/l /Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/l/Me#8260C/ ML 5ug/L
	24. Tetrachloroethene (PCE)	5.0 ug/l /Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/l/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/l /Me#8260C/ ML 5ug/L
	27. Trichloroethene (TCE)	5.0 ug/l /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/l /Me#8260C/ ML 5ug/L
	29. Acetone	Monitor Only (ug/L) /Me#8260C/ ML 50ug/L
	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML50 ug/L
	31. Total Phenols	300 ug/l Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML50 ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/l /Me#8270D/ML5ug/L,Me#604 &625/ML10ug/L
	33. Total Phthalates (Phthalate esters) [6]	3.0 ug/L ** /Me#8270D/ML5ug/L,Me#606/ML10ug/L& Me#625/ML5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/l /Me#8270D/ML5ug/L,Me#606/ML10ug/L& Me#625/ML5ug/L
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/l
√	a. Benzo(a) Anthracene [7]	0.0038 ug/l /Me#8270D/ ML5ug/L, Me#610/ML5ug/L& Me#625/ML5ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	b. Benzo(a) Pyrene [7]	0.0038 ug/l /Me#8270D/ ML5ug/L, Me#610/ML5ug/L& Me#625/ML5ug/L
√	c. Benzo(b)Fluoranthene [7]	0.0038 ug/l /Me#8270D/ ML5ug/L, Me#610/ML5ug/L& Me#625/ML5ug/L
√	d. Benzo(k)Fluoranthene [7]	0.0038 ug/l /Me#8270D/ ML5ug/L, Me#610/ML5ug/L& Me#625/ML5ug/L
√	e. Chrysene [7]	0.0038 ug/l /Me#8270D/ ML5ug/L, Me#610/ML5ug/L& Me#625/ML5ug/L
√	f. Dibenzo(a,h)anthracene [7]	0.0038 ug/l /Me#8270D/ ML5ug/L, Me#610/ML5ug/L& Me#625/ML5ug/L
√	g. Indeno(1,2,3-cd) Pyrene [7]	0.0038 ug/l /Me#8270D/ ML5ug/L, Me#610/ML5ug/L& Me#625/ML5ug/L
	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/l
	h. Acenaphthene	X/Me#8270D/ML5ug/L,Me#610/ML5ug /L & Me#625/ML5ug/L
	i. Acenaphthylene	X/Me#8270D/ML5ug/L,Me#610/ML5ug/L & Me#625/ML5ug/L
	j. Anthracene	X/Me#8270D/ML5ug/L,Me#610/ML5ug/L & Me#625/ML5ug/L
	k. Benzo(ghi) Perylene	X/Me#8270D/ML5ug/L,Me#610/ML5ug/L & Me#625/ML5ug/L
	l. Fluoranthene	X/Me#8270D/ML5ug/L,Me#610/ML5ug/L & Me#625/ML5ug/L
	m. Fluorene	X/Me#8270D/ML5ug/L,Me#610/ML5ug/L & Me#625/ML5ug/L
	n. Naphthalene [5]	20 ug/l / Me#8270D/ ML5ug/L, Me#610/ML5ug/L & Me#625/ML5ug/L
	o. Phenanthrene	X/Me#8270D/ML5ug/L,Me#610/ML5ug/L & Me#625/ML5ug/L
	p. Pyrene	X/Me#8270D/ML5ug/L,Me#610/ML5ug/L & Me#625/ML5ug/L
	37. Total Polychlorinated Biphenyls (PCBs) [8, 9]	0.000064 ug/L / Me# 608/ ML 0.5 ug/L
√	38. Chloride	Monitor only/Me# 300.0/ ML 0.1ug/L

	Metal parameter	Total Recoverable NH/Metal Limit H [10] = 25 mg/l CaCO3, Units = ug/l (11/12)		Minimum level=ML	
		Freshwater Limts	2206 dilution		
	39. Antimony	141		ML	10
	40. Arsenic **		540	ML	20

	Metal parameter	Total Recoverable NH/Metal Limit H [10] = 25 mg/l CaCO3, Units = ug/l (11/12)		Minimum level=ML	
		Freshwater Limts	2206 dilution		
	41. Cadmium **	0.8		ML	10
√	42. Chromium III (trivalent) **	27.7		ML	15
	43. Chromium VI (hexavalent) **	11.4		ML	10
	44. Copper **	2.9		ML	15
	45. Lead **	0.5		ML	20
	46. Mercury **	0.9		ML	02
	47. Nickel **	16.1		ML	20
	48. Selenium **	5		ML	20
	49. Silver	0.4		ML	10
	50. Zinc **	37		ML	15
√	51. Iron	1,000		ML	20

	Other Parameters	Limit
√	52. Instantaneous Flow	Site specific in CFS
√	53. Total Flow	Site specific in CFS
√	54. pH Range for Class B Waters in NH	6.5-8.3; 1/Month/Grab[13]
	55. pH Range for Class SB Waters in NH	6.5-8; 1/Month/Grab[13]
	56.	
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab[14]
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab[14]
	59.	
	60. Maximum Change in Temperature in NH- Any Class B water body- Warm Water	5°F; 1/Month/Grab[14]
	61. Maximum Change in Temperature in NH– Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab[14]

Footnotes:

[1] Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).
[2] Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.
[3] Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).
[4] BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.

[5] Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.

[6] The sum of individual phthalate compounds(not including the #34, Bis (2-Ethylhexyl) Phthalate . The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.

[7] Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

[8] In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses."Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.

[9]Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).

[10] Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.

[11] For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using DF x 1,000ug/L (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit =1,000 x 2 =2,000 ug/L., etc. not to exceed the DF=5.

[12] Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).

[13] pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.

[14] Temperature sampling per Method 170.1

	Metal parameter	Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11]		Total Recoverable Metal Limit @ H [10] = 25 mg/l CaCO3 for Discharges in New Hampshire (ug/l) [11]	
		Freshwater	Saltwater	Freshwater	Saltwater
	39. Antimony	5.6/10mL		5.6/10mL	

Remediation General Permit
Appendix V

Notice of Intent (NOI)
Suggested Forms & Instructions

I. Notice of Intent (NOI) Suggested Form and Instructions

In order to be covered by the remediation general permit (RGP), applicants must submit a completed Notice of Intent (NOI) to EPA Region I and the appropriate state agency. The owner or operator, as defined by 40 CFR § 122.2, means the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

The following are three general "**operator"** scenarios (variations on any of these three are possible, especially as the number of owners and contractors increases):

▸ ***"****Owner" as "Operator" - sole permittee.* The property owner designs the structures and control systems for the site, develops and implements the BMPP, and serves as general contractor (or has an on-site representative with full authority to direct day-to-day operations). Under the definition of operator, in this case, the "Owner" would be considered the "operator" and therefore the only party that needs permit coverage. Everyone else working on the site may be considered subcontractors and do not need to apply for permit coverage.

▸ *"Contractor" as "Operator" - sole permittee.* The property owner hires a company (e.g., a contractor) to design the project and oversee all aspects, including preparation and implementation of the BMPP and compliance with the permit (e.g., a "turnkey" project). Here, the contractor would likely be the only party needing a permit. Similarly, EPA expects that property owners hiring a contractor or consultant to perform groundwater remediation work (e.g., due to a leaking fuel oil tank) would come under this type of scenario. EPA believes that the contractor, being a professional in the industry, should be the responsible entity rather than the individual. The contractor is better equipped to meet the requirements of both applying for permit coverage and developing and properly implementing the plans needed to comply with the permit. However, property owners would also meet the definition of "operator" and require permit coverage in instances where they perform any of the required tasks on their personal properties.

▸ *"Owner" and "Contractor" as "Operators" - co-permittees.* The owner retains control over any changes to site plans, BMPPs, or wastewater conveyance or control designs, but the contractor is responsible for conducting and overseeing the actual activities (e.g., excavation, installation and operation of treatment train, etc.) and daily implementation of BMPP and other permit conditions. In this case, both parties need to apply for coverage.

Generally, a person would not be considered an "operator," and subsequently would not need permit coverage, if: 1) that person is a subcontractor hired by, and under the supervision of, the owner or a general contractor (e.g., if the contractor directs the

subcontractor's activities on-site, it is probably not an operator); or 2) the person's activities would otherwise result in the need for coverage under the RGP but another operator has legally assumed responsibility for the impacts of project activities.

A. Instructions for the Suggested Notice of Intent (NOI) - At a minimum, the Notice of Intent must include the following for each individual facility or site. Additional information may be attached as needed.

1. General facility/site information.

a) Provide the facility/site name, mailing address, and telephone and fax numbers. Provide the facility Standard Industrial Classification (SIC) code(s), which can be found online at http://www.osha.gov/pls/imis/sic_manual.html. Provide the site location, including longitude and latitude.

b) Provide the facility/site owner's name, address, email address, telephone and fax numbers, if different from the site information. Indicate whether the owner is a Federal, State/Tribal, private, or other entity.

c) Provide the site operator's (e.g., contractor's) name, mailing address, telephone and fax numbers, and email address if different from the owner's information.

d) For the site for which the application is being submitted, indicate whether:

1) a prior NPDES permit exclusion has been granted for the discharge (if so, provide the tracking number of the exclusion letter);

2) a prior NPDES application (Form 1 & 2C – for reference, please visit http://www.epa.gov/region1/npdes/epa_attach.html) has ever been filed for the discharge (if so, provide the tracking number and date that the application was submitted to EPA);

3) the discharge is a "new discharge" as defined by 40 CFR 122.2; and

4) for sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000 and exempt from state permitting.

e) Indicate whether there is any ongoing state permitting, licensing, or other action regarding the facility or site which is generating the discharge. If "yes," provide any site identification number assigned by the state of NH or MA, any permit or license number assigned, and the state agency contact information (e.g. name, location, telephone no.).

f) Indicate whether or not the facility is covered by other EPA permits including:

1) the Multi-Sector General Permit (MSGP) http://cfpub.epa.gov/npdes/stormwater/msgp.cfm;
2) the Final NPDES General Permit for Dewatering Activity Discharges in Massachusetts and New Hampshire http://www.epa.gov/region1/npdes/dewatering.html;
3) the EPA Construction General Permit http://cfpub.epa.gov/npdes/stormwater/cgp.cfm;
4) an individual NPDES permit; or
5) any other water quality-related individual or general permit.

If so, provide permit tracking number(s).

g) Indicate if the site/facility discharge(s) to an Area of Critical Environmental Concern (ACEC), as shown on the tables and maps in Appendix I.

h) Based on the nature of the facility/site and any historical sampling data, the applicant must indicate which of the sub-categories within which the potential discharge falls.

2. Discharge information.

a) Describe the discharge activities to be covered by the permit. Attach additional sheets as needed.

b) Provide the following information about each discharge:

1) the number of discharge points;
2) the maximum and average flow rate of the discharge in cubic feet per second. For the average flow magnitude, include the units and appropriate notation if this value is a calculated design value or estimate if technical/design information is not available;
3) the latitude and longitude of each discharge with an accuracy of 100 feet (see EPA's siting tool at: http://www.epa.gov/tri/report/siting_tool);
4) the total volume of potential discharge (gal), only if hydrostatic testing;
5) whether the discharge(s) is intermittent or seasonal and if ongoing.

c) Provide the expected start and end dates of discharge (month/day/year).

d) Attach a line drawing or flow schematic showing water flow through the facility including:

1) sources of intake water;
2) contributing flow from the operation;
3) treatment units; and
4) discharge points and receiving waters(s).

3. Contaminant information.

In order to complete the NOI, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for the parameters applicable to the sub-category into which the discharge falls, as listed in Appendix III of the permit and selected in Part 1 of the NOI form, except as noted below.

Permittees shall provide additional sampling results with the NOI if such sampling already exists, or if the permittee has reason to believe the site contains additional contaminants not listed in Appendix III for that sub-category or contains additional contaminants not included in Appendix III.

The applicant may use historical data as a substitute for the new sample if the data was collected no more than 2 years prior to the "Submittal of the NOI" and if collected pursuant to:

i. for sites in Massachusetts, 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E");

ii. for sites in New Hampshire, New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act;

a) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is believed present or believed absent in the potential discharge.

Based on the required sampling and analysis, the applicant must fill in the table, or provide a narrative description, with the following additional information for each chemical that is believed present (chemical that violate EPA's criteria limitations):

1) the number of samples taken (minimum of one sample for applicable parameters per Appendix III);
2) the type of sample (e.g. grab, composite, etc.);
3) the analytical method used, including the method number;
4) the minimum level (ML) of the method used (based on Appendix VI);
5) the maximum daily amount (concentration (ug/l) and mass (kg)) of each pollutant, based on the sampling data

lb/day (pounds per day) equals flow (in million gallons per day, MGD) times concentration in milligrams per liter (mg/l) times 8.34.
Example: 2.5 MGD x 30 mg/l TSS x 8.34 = 625.5 lb TSS/day
MGD = gallons per minute (gpm) x 0.00144
1 kg = 2.2 lbs

And;
6) the average daily amount (concentration and mass) of each pollutant, based on the sampling data.

If the results of any sampling indicate that pollutants exist in addition to those listed in Appendix III of the RGP of the permit, the applicant must also describe those contaminants on the NOI in boxes in section I.3.c.)on the line marked "Other," or use additional sheets as needed. Subsequently, EPA may require monitoring for such parameters or will decide if an individual permit is necessary.

c) Determination of Reasonable Potential and Allowable Dilution for Discharges of Metals:

If any *metals* are believed present in the potential discharge to freshwater[1], the applicant must follow the procedures below to determine the dilution factor for each metal.

Step 1: Initial Evaluation

1) The applicant must evaluate all metals believed present in the discharge subject to this permit, including "naturally occurring" metals such as dissolved and/or total Iron. Applicants must enter the highest detected concentration of the metal at zero dilution in the "Maximum value" column of the NOI.

2) Based on the maximum concentration of each metal, the applicant must perform an initial evaluation assuming zero dilution in the receiving water. The applicant must compare the metals concentrations in the untreated (intake) waters to the effluent limits contained in Appendix III.

[1]Dilution factors may be available for discharges to saline waters but only with approval of the flow modeling information from the State prior to the submission of the NOI.

i. If potential discharges (untreated influent) with metals contain concentrations above the concentration limits listed in Appendix III, applicant must proceed to step 2.
ii. If potential discharges (untreated influent) with metals contain concentrations below the concentrations listed in Appendix III, the applicant may skip step 2 and those metals will **not** be subject to permit limitations or monitoring requirements.

Step 2: Calculation of Dilution Factor

1) **For applicants in NH**: If a metal concentration in a potential discharge (untreated influent) to **freshwater** exceeds the limits in Appendix III with zero dilution, the applicant shall evaluate the potential concentration considering a dilution factor (DF) using the formula below. **For sites in New Hampshire, the applicant must contact NH DES to determine the 7Q10 and dilution factor.**

DF = [(Qd + Qs)/Qd] x 0.9

Where:

DF	**=**	**Dilution Factor**
Qd	**=**	**Maximum flow rate of the discharge in cubic feet per second (cfs) (1.0 gpm = .00223 cfs)**
Qs	**=**	**Receiving water 7Q10 flow, in cfs, where 7Q10 is the annual minimum flow for 7 consecutive days with a recurrence interval of 10 years**
0.9	=	**Allowance for reserving 10% of the assets in the receiving stream as per Chapter ENV-Wq 1700, Surface Water Quality Regulations**

i. Using the DF calculated from the formula above, the applicant must refer to the corresponding dilution range column in Appendix IV. The applicant then compares the maximum concentration of the metal entered on the NOI to the corresponding total recoverable metals limits listed in Appendix IV. Please note that for this reissuance the applicant will be permitted to determine a limit using any fraction within the 1-5 dilution factor range times the metal limit (for all regulated metals). For example: if the DF is 1.5, the Iron limit is 1,500 ug/L; if the DF is 1.5, the antimony limit is 8.4, etc. All limits above a dilution factor of 5 are maintained.

1. If a metal concentration in the potential discharge (untreated influent) is less than the corresponding limit in Appendix IV, the metal will **not** be subject to permit limitations or monitoring requirements.
2. If a metal concentration in the potential discharge (untreated influent) is equal to or exceeds the corresponding limit in Appendix IV, the applicant must reduce it in the effluent to a concentration below the applicable total recoverable metals limit in Appendix IV prior to discharge.

ii. In either case, the applicant must submit the results of this calculation as part of the NOI. EPA and NH DES will review the proposed effluent limitations for each metal and approve or disapprove the limits in the notification of coverage letter to the applicant.

2) **For applicants in MA**: If a metal concentration in a potential discharge (untreated influent) to **freshwater** exceeds the limits in Appendix III with zero dilution, the applicant must evaluate the potential concentration considering a dilution factor (DF) using the formula below.

DF = (Qd + Qs)/Qd

Where:
DF = Dilution Factor
Qd = Maximum flow rate of the discharge in cubic feet per second (cfs) (1.0 gpm = .00223 cfs)
Qs = Receiving water 7Q10 flow (cfs) where 7Q10 is the minimum flow (cfs) for 7 consecutive days with a recurrence interval of 10 years

i. The applicant may estimate the 7Q10 for receiving water by using available information such as nearby USGS stream gauging stations directly or by application of certain "flow factors," using historic streamflow publication information, calculations based on drainage area, information from state water quality offices, or other means. In many cases Massachusetts has calculated 7Q10 information using "flow factors" for a number of streams in the state. The source of the low flow value(s) used by the applicant must be included on NOI application form. Flow data can also be obtained from web applications such as the one located at: http://ma.water.usgs.gov/streamstats/.

ii. Using the DF calculated from the formula above, the applicant must refer to the corresponding dilution range column in Appendix IV. The applicant then shall compare the maximum concentration of each metal entered on the NOI to the corresponding total recoverable metals limit listed in Appendix IV. Please note that for this reissuance the applicant will be permitted to determine a limit using any fraction of the 0-5 of DF times the metal limit (for all regulated metals). For example: if the DF is 1.5, the Iron limit is 1,500 ug/L; if the DF is 1.5, the antimony limit is 8.4, etc. Not to exceed DF of 5.

1. If a metal concentration in the potential discharge (untreated influent) is less than the corresponding limit in Appendix IV, the metal will **not** be subject to permit limitations or monitoring requirements.
2. If a metal concentration in a potential discharge (untreated influent) is equal to or exceeds the corresponding limit in Appendix IV, the applicant must reduce it in the effluent to a concentration below the applicable total recoverable metals limit in Appendix IV prior to discharge.

iii. The applicant must submit the results of this calculation as part of the NOI. EPA (and MassDEP where the discharge is not covered by 310 CMR 40.0000) will review the proposed effluent limitations for each metal and approve or disapprove the limits in the notification of coverage letter to the applicant.

4. Treatment system information.

a) Provide a written description of the treatment train and how the system will be set up for each discharge and attach a schematic of the proposed or existing treatment system(s).
b) Identify each major treatment unit (e.g. frac tanks, filters, air stripper, liquid phase/vapor phase activated carbon, oil/water separators, etc.) by checking all that apply and describing any additional equipment not listed. Attach additional sheets as needed.
c) Provide the proposed average and maximum flow rates (in gallons per minute, gpm) for the discharge and the design flow rates (in gpm) of the treatment system. Clearly identify the component of the treatment with the most limited flow, i.e., the part of the treatment train that establishes the design flow.
d) Describe any chemical additives being used, or planned to be used, and attach MSDS sheets for each. EPA may request further information regarding the chemical composition of the additive, potential toxic effects, or other information to insure that approval of the use of the additive will not cause or contribute to a violation of State water quality standards. Approval of coverage under the RGP will constitute approval of the use of the chemical additive(s). If coverage of the discharge under the RGP has already been granted and the use of a chemical additive becomes necessary, the permittee must submit a Notice of Change (NOC).

5. Receiving surface water(s) information.

a) Identify the discharge pathway by checking whether it is discharged: directly to the receiving water (river, stream, or brook), within the facility (e.g., through a sewer drain), to a storm drain, to a wetland, or other receiving body.
b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters into which discharge will occur.
c) Provide a detailed map(s) indicating the location of the site and outfall(s) to the receiving water(s):

1) For multiple discharges, the discharges should be numbered sequentially.
2) In the case of indirect dischargers (to municipal storm sewer, etc) the map(s) must be sufficient to indicate the location of the discharge to the indirect conveyance and the discharge to the state classified 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 and the basin (for Massachusetts, the Surface Water Quality Standards (314 CMR 4.00) are available at http://www.mass.gov/dep/water/laws/regulati.htm#wqual) (for New Hampshire, contact the NH DES at (603) 271-2984).
e) Specify the reported seven day-ten year low flow (7Q10) of the receiving water (see Section I.A.3) c. above). In New Hampshire, the 7Q10 must be provided by to the applicant by the New Hampshire Department of Environmental Services**.**

f) Indicate whether the receiving water is a listed 303(d) water quality impaired or limited water and if so, for which pollutants (see Section IX of the Fact Sheet for additional information).
For MA, the most updated integrated list of waters (CWA 303(d) and 305(b)) is available at http://www.mass.gov/dep/water/resources/tmdls.htm#info.
For NH, the most updated integrated list of waters (CWA 303(d) and 305(b)) is available at http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm.
Also, indicate if there is a final TMDL for any of the listed pollutants. For MA, final TMDLs can be found at: http://www.mass.gov/dep/water/resources/tmdls.htm and for NH, final TMDLs can be found at http://des.nh.gov/organization/divisions/water/wmb/tmdl/index.htm. For more information, contact the states at: New Hampshire Department of Environmental Services, Watershed Management Bureau at 603-271-3503 or the Massachusetts Department of Environmental Protection at 508-767-2796 or 508-767-2873.

6. ESA and NHPA Eligibility.
As required in Parts I.A.4 and Appendix VII the operator of a site/facility must ensure that the potential discharge will not adversely affect endangered species, designated critical habitat, or national historic places that are in proximity to the potential discharge. If the potential discharge is to certain water bodies, the applicant must also submit a formal certification with the NOI that indicates the consultation, with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (the Services), resulted in either a no jeopardy opinion or a written concurrence on a finding that the discharge is not likely to adversely affect any endangered species or critical habitat. Facilities should begin the consultation as early in the process as possible.
a) Using the instructions in Appendix VII and information in Appendix II, indicate under which criterion listed you are eligible for coverage under this general permit.
b) If you selected criterion D or F, indicate if consultation with the federal services has been completed or if it is underway.
c) If consultation with the U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, indicate if a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat was received.
d) Attach documentation of ESA eligibility as described below and required in Appendix VII, Part I.C, Step 4.

Criterion A - No federally-listed threatened or endangered species or federally-designated critical habitat are present: A copy of the most current county species list pages for the county(ies) where your site or facility and discharges are located. You must also include a statement on how you determined that no listed species or critical habitat are in proximity to your site or facility or discharge locations.

Criterion B – Section 7 consultation completed with the Service(s) on a prior project: A copy of the USFWS and/or NOAA Fisheries, as appropriate, biological opinion or concurrence on a finding of "unlikely to adversely effect" regarding the ESA Section 7 consultation.

Criterion C – Activities are covered by a Section 10 Permit: A copy of the USFWS and/or the NOAA Fisheries, as appropriate, letter transmitting the ESA Section 10 authorization.

Criterion D - Concurrence from the Service(s) that the discharge is "not likely to adversely affect" federally-listed species or federally-designated critical habitat (not including the four species of concern identified in Section I of Appendix I): A copy of the USFWS and/or the NOAA Fisheries, as appropriate, letter or memorandum concluding that the discharge is consistent with the general permit's "not likely to adversely affect" determination.

Criterion E – Activities are covered by certification of eligibility: A copy of the documents originally used by the other operator of your site or facility (or area including your site) to satisfy the documentation requirement of Criteria A, B, C or D.

Criterion F - Concurrence from the Service(s) that the discharge is "not likely to adversely affect" species of concern, as identified in Section I of Appendix I: A copy of the USFWS and/or the NOAA Fisheries, as appropriate, concurrence with the applicant's determination that the discharge is "not likely to adversely affect" listed species.

e) Using the instructions in Appendix VII, identify which criterion listed in Part C makes you eligible for coverage under this general permit.

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. Applicants should provide any supplemental information needed to meet the requirements of the permit, including any analytical data used to support the application, and any certification(s) required.

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.*

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**: 382 South Broadway		**Facility/site** mailing address:		
Location of **facility/site**: longitude: -71.205439 latitude: 42.750801	Facility SIC code(s): 5441	Street: 382 South Broadway		
b) Name of **facility/site owner:**		Town: Salem		
Email address of facility/site owner: mhilfinger@cumberlandgulf.com		State: NH	Zip: 03079	County: Rockingham
Telephone no. of facility/site **owner**: 508-270-4484				
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**:		**Operator** telephone no: 508-270-4484		
Cumberland Farms Inc.		**Operator** fax no.: 781-4959-0454	**Operator** email: mhilfinger@cumberlandgulf.co	
Operator contact name and title: Martin Hilfinger, Senior Project Manager				
Address of **operator** (if different from owner):	Street: 100 Crossing Boulevard			
Town: Framingham	State: MA	Zip: 01702	County: Middlesex	

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:

CFI is purchasing the property to build a gas station. Excavation will occur for the installment of Underground Drainage System (12ft x 80ft x 7ft deep) and Underground Storage Tanks (50ft x 50ft x 15ft deep). Dewatering will occur during excavation and groundwater discharge will occur at this point.

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 0.42 fs Is maximum flow a **design value**? Y ◉ N ○
Average flow (include units) 0.21 cfs Is average flow a design value or estimate? Design

3) Latitude and longitude of each discharge within 100 feet:
pt.1: lat. 42.750325 long. -71.205170 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):

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

c) Expected dates of discharge (mm/dd/yy): start Apr 28, 2014 end May 28, 2014

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

3. Contaminant information.

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	SM2540D	5	26000	28.39	26000	14.20
2. Total Residual Chlorine (TRC)		☒	☐	1	Grab	SM2540D	200	<200	0	<200	0
3. Total Petroleum Hydrocarbons (TPH)		☒	☐	1	Grab	8015MD	0.2	<0.2	0	<0.2	0
4. Cyanide (CN)	57125	☒	☐	1	Grab	SW846 CH. 7.3	25000	25000	0	25000	0
5. Benzene (B)	71432	☒	☐	1	Grab	SW846 8260 C	5	<5	0	<5	0
6. Toluene (T)	108883	☒	☐	1	Grab	SW846 8260 C	5	<5	0	<5	0
7. Ethylbenzene (E)	100414	☒	☐	1	Grab	SW846 8260 C	5	<5	0	<5	0
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	1	Grab	SW846 8260 C	15	<15	0	<15	0
9. Total BTEX [2]	n/a	☒	☐	1	Grab	SW846 8260 C	30	<30	0	<30	0
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐	1	Grab	SW846 8260 C	0.01	<0.01	0	<0.01	0
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☐	☒	1	Grab	SW846 8260 C	5	111	0.12	111	0.06
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1	Grab	SW846 8260 C	50	<50	0	<50	0

***** 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	SW846 8260C	5	<5	0	10.2	0.005
14. Naphthalene	91203	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
15. Carbon Tetrachloride	56235	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
18a. Total dichlorobenzene		☒	☐	1	GRAB	SW846 8260C	15	<15	0	<15	0
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
23. Methylene Chloride	75092	☒	☐	1	GRAB	SW846 8260C	10	<10	0	<10	0
24. Tetrachloroethene (PCE)	127184	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	0
27. Trichloroethene (TCE)	79016	☒	☐	1	GRAB	SW846 8260C	5	<5	0	<5	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	SW846 8260C	5	<5	0	<5	0
29. Acetone	67641	☒	☐	1	GRAB	SW846 8260C	50	<50	0	<50	0
30. 1,4 Dioxane	123911	☒	☐	1	GRAB	SW846 8260C	100	<100	0	<100	0
31. Total Phenols	108952	☒	☐	1	GRAB	SW846 8260D	113	<113	0	<113	0
32. Pentachlorophenol (PCP)	87865	☒	☐	1	GRAB	SW846 8260D	21.5	<21.5	0	<21.5	0
33. Total Phthalates (Phthalate esters) [4]		☒	☐	1	GRAB	SW846 8260D	32.08	<32.08	0	<32.08	0
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	GRAB	SW846 8260D	37.46	<37.46	0	<37.46	0
a. Benzo(a) Anthracene	56553	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
b. Benzo(a) Pyrene	50328	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
c. Benzo(b)Fluoranthene	205992	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
d. Benzo(k)Fluoranthene	207089	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
e. Chrysene	21801	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	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	SW846 8260D	5.38	<5.38	0	<5.38	0
i. Acenaphthylene	208968	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
j. Anthracene	120127	☐	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
k. Benzo(ghi) Perylene	191242	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
l. Fluoranthene	206440	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
m. Fluorene	86737	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
n. Naphthalene	91203	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
o. Phenanthrene	85018	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
p. Pyrene	129000	☒	☐	1	GRAB	SW846 8260D	5.38	<5.38	0	<5.38	0
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1	GRAB		0	0	0	0	0
38. Chloride	16887006	☒	☐	1	GRAB	SW846 6010C	1000	<1000	0	<1000	0
39. Antimony	7440360	☒	☐	1	GRAB	SW846 6010C	5	<5	0	<5	0
40. Arsenic	7440382	☒	☐	1	GRAB	SW846 6010C	8	<8	0	<8	0
41. Cadmium	7440439	☒	☐	1	GRAB	SW846 6010C	5	<5	0	<5	0
42. Chromium III (trivalent)	16065831	☐	☒	1	GRAB	SW846 6010C	10	19.7	0.02	19.7	0.01
43. Chromium VI (hexavalent)	18540299	☒	☐	1	GRAB	SW846 6010C	0	0	0	0	0
44. Copper	7440508	☒	☐	1	GRAB	SW846 6010C	5	<5	0	<5	0
45. Lead	7439921	☐	☐	1	GRAB	SW846 6010C	0.5	<0.5	0	<0.5	0
46. Mercury	7439976	☒	☐	1	GRAB	SW846 6010C	0.2	<0.2	0	<0.2	0
47. Nickel	7440020	☒	☐	1	GRAB	SW846 6010C	5	<5	0	<5	0
48. Selenium	7782492	☒	☐	1	GRAB	SW846 6010C	30	<30	0	<30	0
49. Silver	7440224	☒	☐	1	GRAB	SW846 6010C	10	<10	0	<10	0
50. Zinc	7440666	☒	☐	1	GRAB	SW846 6010C	35	<35	0	<35	0
51. Iron	7439896	☐	☒	1	GRAB	SW846 6010C	30	7460	8.14	7460	4.07
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
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: 0.96 Metal: DF: 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:

Water will be pumped from the excavation through 4 gel floc socks in parallel. Then, it will pass through a 20,000 gallon weir tank, a frac tank for settling, then through six bag filters (20 microns). An aeration blower will be used in the weir tanks if necessary for better removal efficiency. The final process will be 6 carbon vessels with adequate contact time to remove MtBE. Water will be discharged into a catch basin on site. On train is proposed but a second equivalent train can be added as necessary to support the permit flow rate.

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):	Weir tank, Aeration Blower, Carbon Vessels, Gel floc socks		

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 100 gpm Maximum flow rate of treatment system 200 gpm
Design flow rate of treatment system 100 gpm

d) A description of chemical additives being used or planned to be used (attach MSDS sheets):

Brand name HaloKlear: Gel-Floc and HaloKlear: DBP-2100 will be used as a flocculant to increase settling potential of iron in the water.

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 water will flow into a catch basin with an outflow at World End Brook which connects to the Spicket River.

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:
1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water B

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.028 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.

Discharge will be completed during the duration of construction activities.

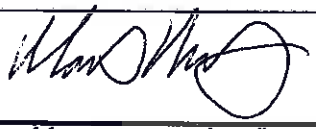
Discharge will follow one of two proposed routes

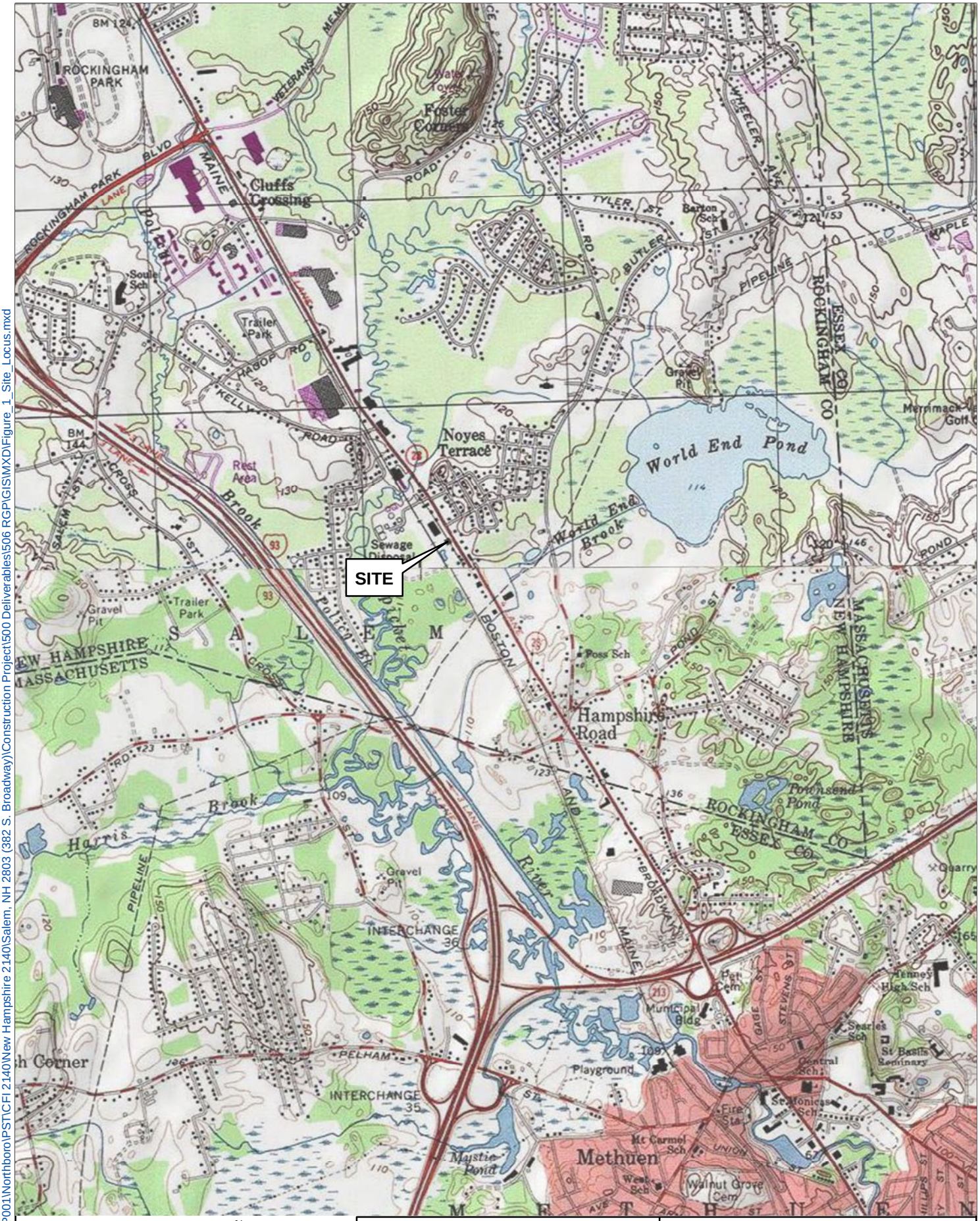
1. Dewartering will take place in the excavation and the treatment system will discharge from a hose to the existing catch basin in front of the adjacent vacant property, 392 South Broadway. Access would have to be granted to run the hose over this property and if that is not possible, option 2 will be used.
2. A new catch basin will be installed by the underground detention system which will be connected to the existing drain lines that are located in front of the vacant property, 392 South Broadway. A hose would run from the treatment system to the catch basin.

According to the direction found on the New England Field Office of US Fish and Wildlife Service website, the site was found to be free of any endangered or threatened species. Additional endangered species GIS maps of the area were also consulted and it was found that no other endangered species were found in the area. Due to these reasons, it was determined that Criterion B 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:	
Operator signature:	
Printed Name &Title:	Martin F. Kitzinger, Cumberland Farms, Inc.
Date:	



AECOM

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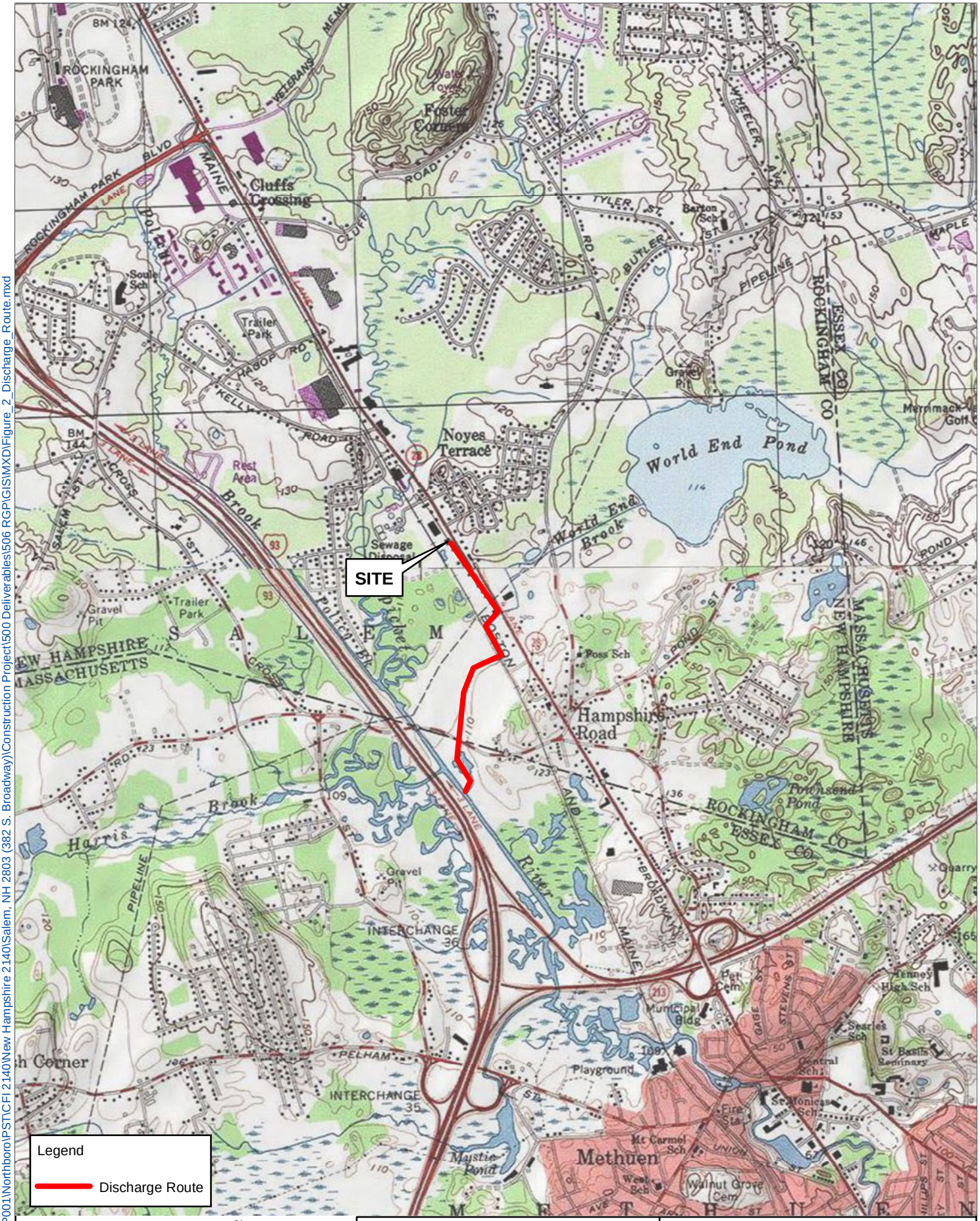
0 0.25 0.5 Miles

CUMBERLAND FARMS, INC.
382 SOUTH BROADWAY RTE 28
SALEM, NEW HAMPSHIRE
60318232.107

DATE: 04/11/2014 | DRWN: J.E.B.

FIGURE 1
SITE LOCUS

Path: \\USWTF1FP001\Northboro\PST\CFI 2140\New Hampshire 2140\Salem, NH 2803 (382 S. Broadway)\Construction Project\500 Deliverables\506 RGP\GIS\MXD\Figure_1_Site_Locus.mxd



AECOM

N W E S

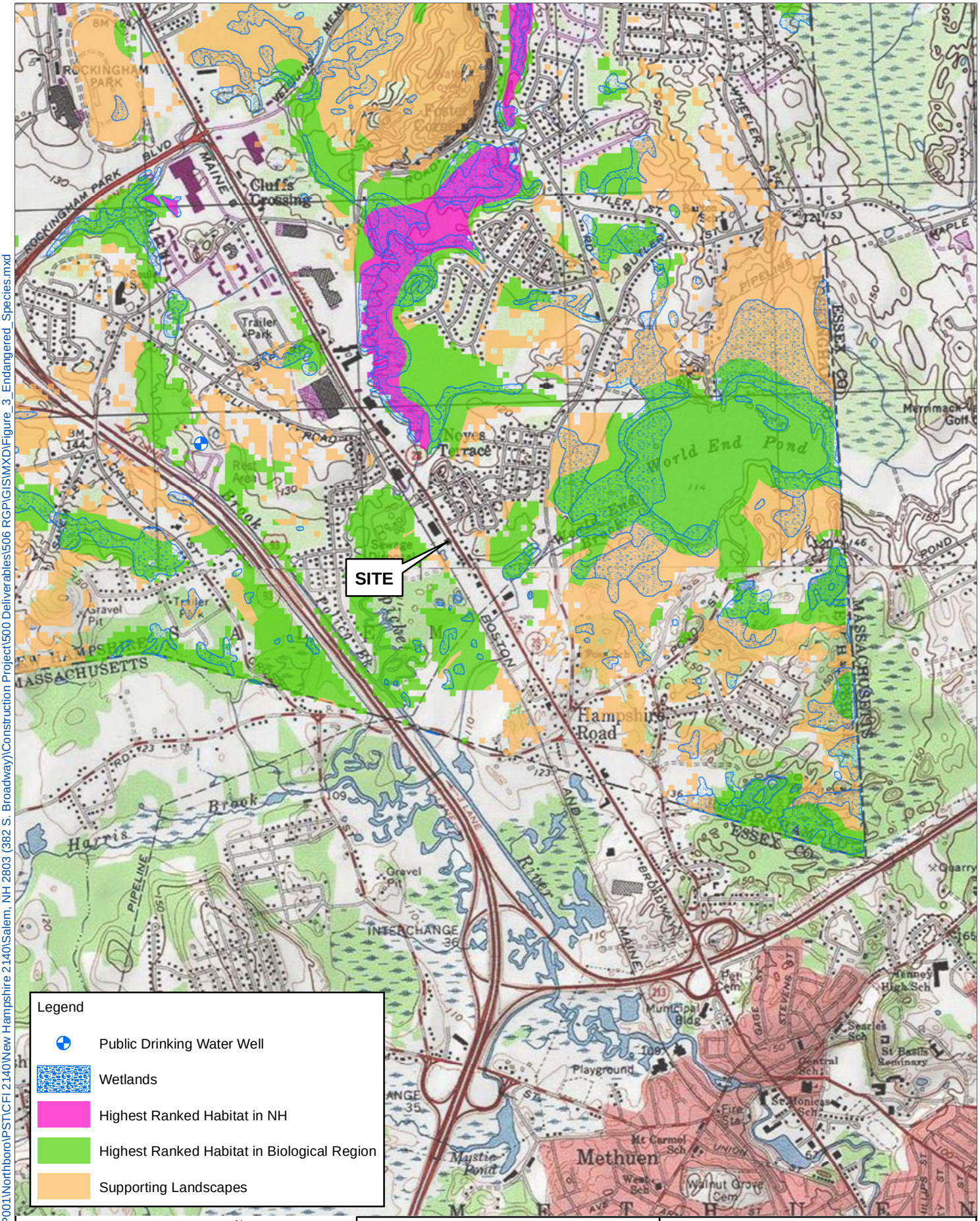
0 0.25 0.5 Miles

CUMBERLAND FARMS, INC.
382 SOUTH BROADWAY RTE 28
SALEM, NEW HAMPSHIRE
60318232.107

DATE: 04/11/2014 | DRWN: J.E.B.

FIGURE 2
DISCHARGE ROUTE

Path: \\USWTF1FP001\Northboro\PST\CFI 2140\New Hampshire 2140\Salem, NH 2803 (382 S. Broadway)\Construction Project\500 Deliverables\506 RGP\GIS\MXD\Figure_2_Discharge_Route.mxd



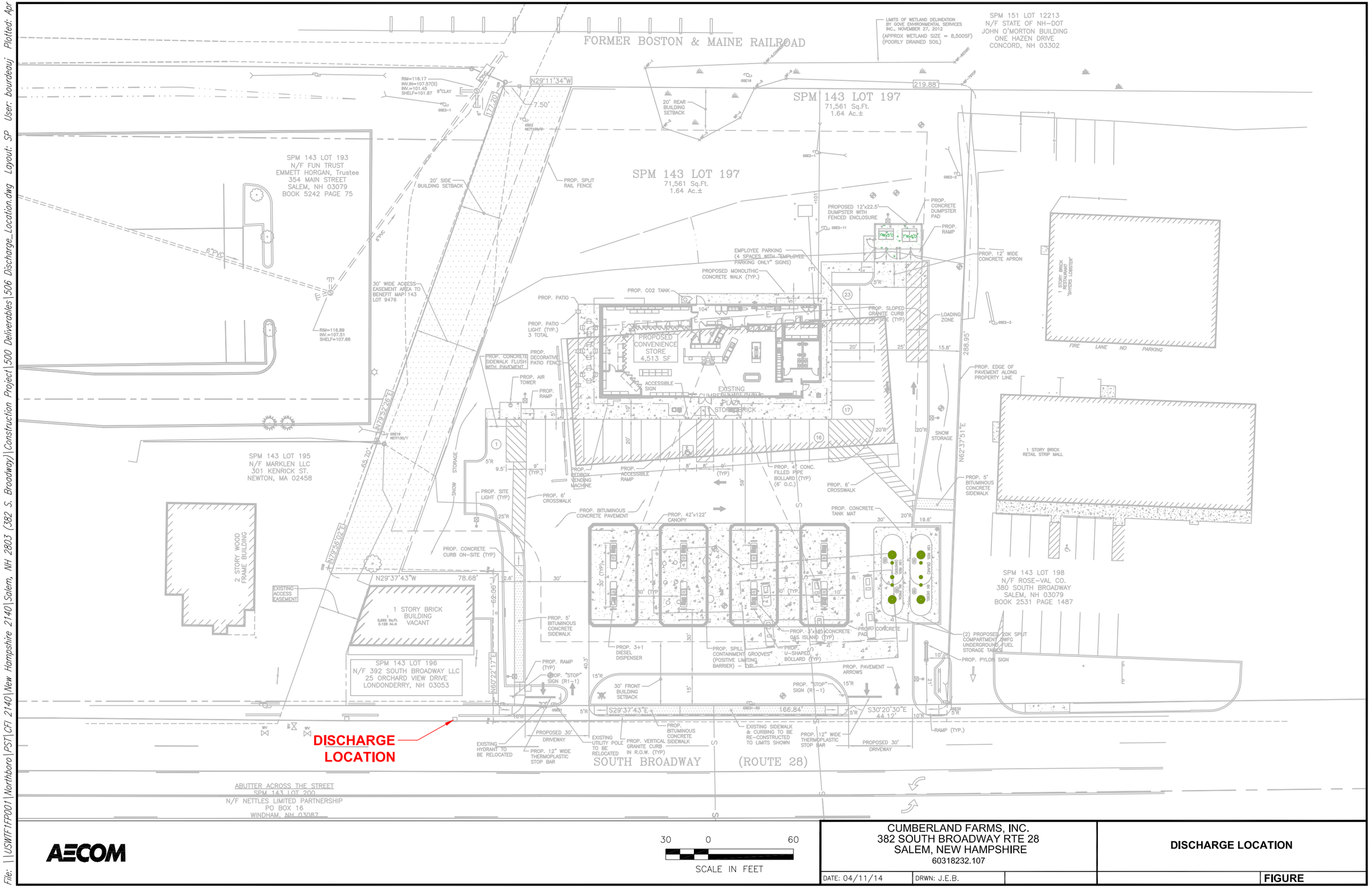
AECOM

CUMBERLAND FARMS, INC.
382 SOUTH BROADWAY RTE 28
SALEM, NEW HAMPSHIRE
60318232.107

DATE: 04/11/2014 | DRWN: J.E.B.

FIGURE 3
ENDANGERED SPECIES

Path: \\USWTF1FP001\Northboro\PST\CFI 2140\New Hampshire 2140\Salem, NH 2803 (382 S. Broadway)\Construction Project\500 Deliverables\506 RGP\GIS\MXD\Figure_3_Endangered_Species.mxd



AECOM

CUMBERLAND FARMS, INC.
382 SOUTH BROADWAY RTE 28
SALEM, NEW HAMPSHIRE
60318232.107

DISCHARGE LOCATION

DATE: 04/11/14 | DRWN: J.E.B. | **FIGURE**

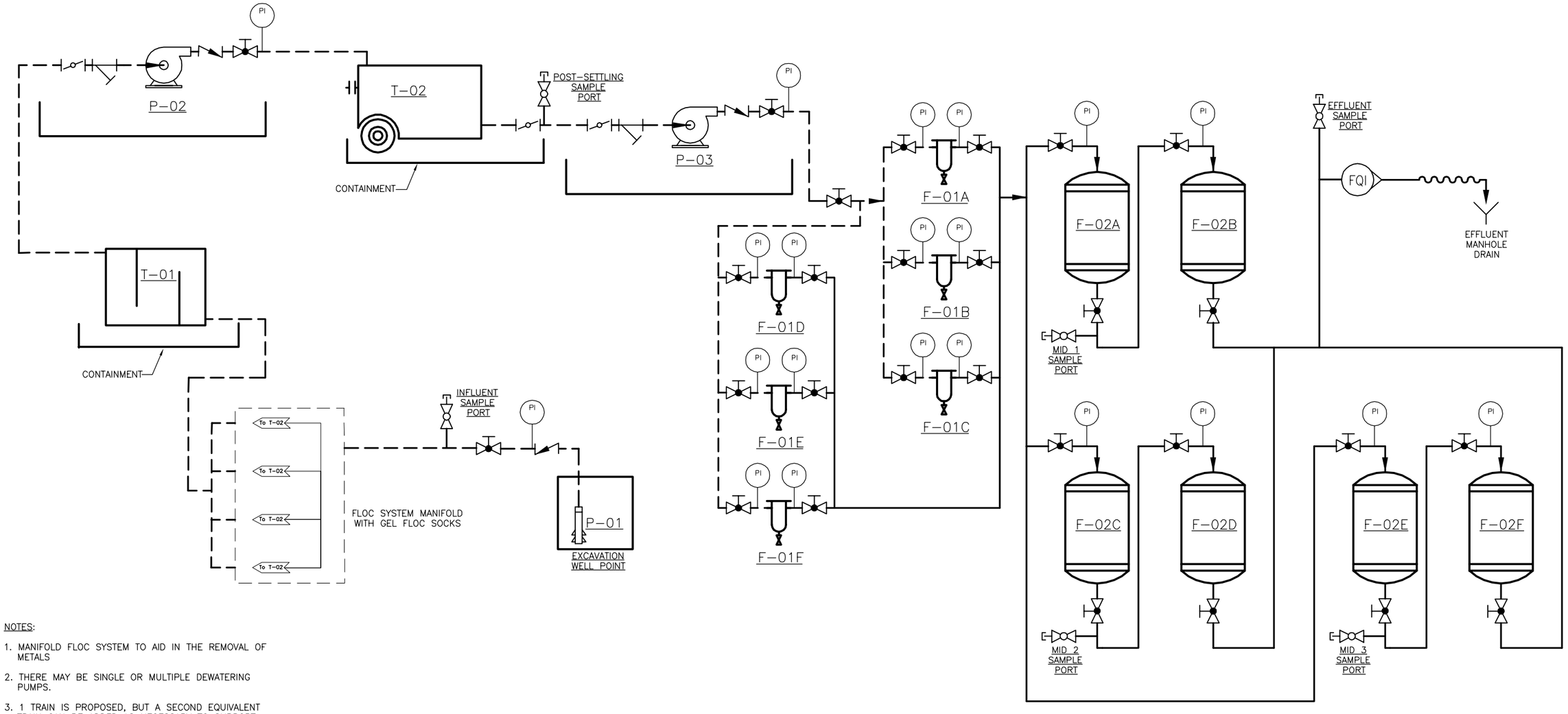
File: \\USWTF1FP0001\Northboro\PST\CFI 2140\New Hampshire 2140\Salem, NH 2803 (382 S. Broadway)\Construction Project\500 Deliverables\506 Discharge_Location.dwg Layout: SP User: bourdeauj Plotted: Apr 11

T-01
WEIR TANK
20,000 GAL

T-02
FRAC TANK
20,000 GAL

F-01A TO 01F
BAG FILTER
20 MICRON

F-02A TO 02F
2,000 LB
GRANULAR ACTIVATED CARBON



NOTES:

1. MANIFOLD FLOC SYSTEM TO AID IN THE REMOVAL OF METALS
2. THERE MAY BE SINGLE OR MULTIPLE DEWATERING PUMPS.
3. 1 TRAIN IS PROPOSED, BUT A SECOND EQUIVALENT TRAIN CAN BE ADDED AS NECESSARY TO SUPPORT THE PERMIT FLOW RATE.
4. AN AIR COMPRESSOR SIZED TO DELIVER UP TO 100 CFM AT 20 PSI THROUGH EDI FLEX AIR DIFFUSER RINGS WILL BE AVAILABLE AS NECESSARY TO PROVIDE ADDITIONAL AERATION IN T-01 IF RESULTS INDICATE THAT IRON IS NOT SUFFICIENTLY REMOVED THROUGH THE USE OF THE FLOC SYSTEM.

P-02
TRANSFER PUMP
200 GPM

P-01
DEWATERING PUMP
200 GPM
SUBMERSIBLE PUMP

P-03
CENTRIFUGAL PUMP
200 GPM
GAS POWERED

LEGEND

- TREATED WATER
- IMPACTED WATER
- CHECK VALVE
- BALL VALVE
- Y-STRAINER
- BUTTERFLY VALVE
- PI — PRESSURE INDICATOR
- PI — LOCAL MOUNTED INSTRUMENT
- FQI — FLOW TOTALIZER

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
7							
6							
5							
4							
3							
2							
1							
0							

AECOM
AECOM
250 Apollo Drive
Chelmsford, MA 01824
www.aecom.com

CUMBERLAND FARMS FACILITY No. 2803
382 SOUTH BROADWAY
SALEM, NEW HAMPSHIRE

PROJ. NUMBER: 60318232

DATE: 4/9/14

TREATMENT SYSTEM PROCESS FLOW DIAGRAM

DRAWING NUMBER: 2

SHEET NUMBER: 2 of 2

REVISION 0

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

January 7, 2014

To Whom It May Concern:

This project was reviewed for the presence of federally listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm

Based on information currently available to us, no federally listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required. No further Endangered Species Act coordination is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Maria Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

Dilution Factor

$$\left(\frac{(Q_d + Q_s)}{Q_d}\right) * 0.9$$

$$\left(\frac{(0.42\ cfs + 0.028\ cfs)}{0.42\ cfs}\right) * 0.9$$

$$DF = 0.96$$

Report Date:
25-Mar-14 15:14

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

AECOM Environment
250 Apollo Drive
Chelmsford, MA 01824
Attn: Jeffrey Dvorak

Project: 382 S. Broadway - Salem, NH
Project #: 60318232

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB86129-01	B-4 (6-8')	Soil	17-Mar-14 08:30	18-Mar-14 15:30
SB86129-02	B-9 (6-8')	Soil	17-Mar-14 10:50	18-Mar-14 15:30
SB86129-03	ECS-9	Ground Water	17-Mar-14 08:15	18-Mar-14 15:30
SB86129-04	Trip Blank	Ground Water	17-Mar-14 08:00	18-Mar-14 15:30

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

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

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 83 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, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, NJ-MA012, PA-68-04426 and FL-E87936).

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

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

The samples were received 2.9 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.

VOA vials preserved with deionized water were received frozen upon custody transfer to laboratory representative.

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.

All VOC soils samples submitted and analyzed in methanol will have a minimum dilution factor of 50. This is the minimum amount of solvent allowed on the instrumentation without causing interference. Soils are run on a manual load instrument. 100ug of sample (MEOH) is spiked into 5ml DI water along with the surrogate and added directly onto the instrument. Additional dilution factors may be required to keep analyte concentration within instrument calibration range.

Method SW846 5035A is designed to use on samples containing low levels of VOCs, ranging from 0.5 to 200 ug/Kg. Target analytes that are less responsive to purge and trap may be present at concentrations over 200ug/Kg but may not be reportable in the methanol preserved vial (SW846 5030). This is the result of the inherent dilution factor required for the methanol preservation.

Reactivity (40 CFR 261.23) Case Narrative:

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

Reactive sulfide and cyanide are tested at a pH of 2 and not tested at all conditions between pH 2 and12.5 as stated in 40 CFR 261.23, section (5); thus reactive cyanide and sulfide results as reported in this document can not be used to support the nonreactive properties of these samples.

The responsibility falls on the generator to use knowledge of the waste to determine if the waste meets or does not meet the descriptive, prose definition of reactivity.

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

EPA 245.1/7470A

Laboratory Control Samples:

1406088 BS

Mercury percent recovery 118 (85-115) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially high bias:

ECS-9

Spikes:

1406088-MS1 *Source: SB86129-03*

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

Mercury

1406088-MSD1 *Source: SB86129-03*

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

Mercury

SW846 6010C

SW846 6010C

Spikes:

1406072-MS1 *Source: SB86129-02*

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

Silver

1406072-MSD1 *Source: SB86129-02*

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

Silver

Duplicates:

1406086-DUP1 *Source: SB86129-03*

Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.

Silver

SW846 8260C

Calibration:

1402033

Analyte quantified by quadratic equation type calibration.

1,1,2,2-Tetrachloroethane
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2-Dibromo-3-chloropropane
1,3,5-Trichlorobenzene
Naphthalene
n-Butylbenzene
trans-1,4-Dichloro-2-butene

This affected the following samples:

1405821-BLK1
1405821-BS1
1405821-BSD1
S401580-ICV1
S402718-CCV1
Trip Blank

1403008

Analyte quantified by quadratic equation type calibration.

1,2-Dibromo-3-chloropropane
Bromoform
cis-1,3-Dichloropropene
Dibromochloromethane
trans-1,3-Dichloropropene
trans-1,4-Dichloro-2-butene

SW846 8260C

Calibration:

1403008

This affected the following samples:

1405824-BLK1
1405824-BS1
1405824-BSD1
B-9 (6-8')
S402353-ICV1
S402715-CCV1

1403017

Analyte quantified by quadratic equation type calibration.

1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2-Dibromo-3-chloropropane
Bromoform
Dibromochloromethane
Naphthalene
trans-1,3-Dichloropropene
Vinyl chloride

This affected the following samples:

1406041-BLK1
1406041-BS1
1406041-BSD1
ECS-9
S402774-ICV1
S402810-CCV1

S401580-ICV1

Analyte percent recovery is outside individual acceptance criteria (80-120).

Isopropylbenzene (121%)

This affected the following samples:

1405821-BLK1
1405821-BS1
1405821-BSD1
S402718-CCV1
Trip Blank

S402774-ICV1

Analyte percent recovery is outside individual acceptance criteria (80-120).

Isopropylbenzene (127%)

This affected the following samples:

1406041-BLK1
1406041-BS1
1406041-BSD1
ECS-9
S402810-CCV1

Laboratory Control Samples:

1405821 BS/BSD

SW846 8260C

Laboratory Control Samples:

1405821 BS/BSD

Bromoform percent recoveries (125/131) 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 high bias:

Trip Blank

Dichlorodifluoromethane (Freon12) percent recoveries (107/131) 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 high bias:

Trip Blank

Trichlorofluoromethane (Freon 11) percent recoveries (126/131) 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 high bias:

Trip Blank

1405824 BS/BSD

Tert-amyl methyl ether percent recoveries (135/131) 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 high bias:

B-9 (6-8')

1406043 BS/BSD

Tert-Butanol / butyl alcohol percent recoveries (122/133) 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 high bias:

B-4 (6-8')

Spikes:

1406043-MS1 *Source: SB86129-01*

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

1,2,4-Trichlorobenzene
Chloromethane
Dichlorodifluoromethane (Freon12)
Naphthalene
sec-Butylbenzene
Tert-Butanol / butyl alcohol

1406043-MSD1 *Source: SB86129-01*

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

1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
Chloroethane
Chloromethane
Ethyl ether
Naphthalene
Tert-Butanol / butyl alcohol

Samples:

S402715-CCV1

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

Ethyl tert-butyl ether (23.1%)

SW846 8260C

Samples:

S402715-CCV1

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

Tert-amyl methyl ether (30.5%)

This affected the following samples:

1405824-BLK1
1405824-BS1
1405824-BSD1
B-9 (6-8')

S402718-CCV1

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

1,2,4-Trimethylbenzene (24.6%)
Bromoform (24.6%)
Trichlorofluoromethane (Freon 11) (26.7%)

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

Tetrahydrofuran (-23.4%)

This affected the following samples:

1405821-BLK1
1405821-BS1
1405821-BSD1
Trip Blank

S402802-CCV1

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

Tert-Butanol / butyl alcohol (21.8%)

This affected the following samples:

1406043-BLK1
1406043-BS1
1406043-BSD1
1406043-MS1
1406043-MSD1
B-4 (6-8')

SB86129-01 *B-4 (6-8')*

Reporting limits reflect SW846 5035A High Level extraction technique due to interference and/or QC issues using SW846 5035A Low Level extraction technique.

SB86129-03 *ECS-9*

Sample dilution required for high concentration of target analytes to be within the instrument calibration range.

SW846 8270D

Calibration:

1402041

SW846 8270D

Calibration:

1402041

Analyte quantified by quadratic equation type calibration.

2,4-Dinitrophenol
4,6-Dinitro-2-methylphenol
Benzoic acid

This affected the following samples:

1405819-BLK1
1405819-BS1
1405819-BSD1
ECS-9
S401786-ICV1
S402785-CCV1
S402904-CCV1

Laboratory Control Samples:

1405817 BS

2,4-Dinitrophenol percent recovery 28 (30-130) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

B-4 (6-8')
B-9 (6-8')

Benzoic acid percent recovery 12 (30-130) is outside individual acceptance criteria, but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

B-4 (6-8')
B-9 (6-8')

1405819 BS/BSD

4-Nitrophenol percent recoveries (47/25) are outside individual acceptance criteria (30-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-9

Benzidine percent recoveries (71/22) are outside individual acceptance criteria (40-140), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-9

Benzoic acid percent recoveries (36/21) are outside individual acceptance criteria (30-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-9

Benzyl alcohol percent recoveries (39/32) are outside individual acceptance criteria (40-140), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-9

N-Nitrosodimethylamine percent recoveries (35/27) are outside individual acceptance criteria (40-140), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-9

Phenol percent recoveries (24/14) are outside individual acceptance criteria (30-130), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-9

SW846 8270D

Laboratory Control Samples:

1405819 BS/BSD

Pyridine percent recoveries (31/29) are outside individual acceptance criteria (40-140), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-9

1405819 BSD

2,4-Dinitrophenol RPD 22% (20%) is outside individual acceptance criteria.

2,4-Dinitrotoluene RPD 23% (20%) is outside individual acceptance criteria.

3 & 4-Methylphenol RPD 28% (20%) is outside individual acceptance criteria.

3-Nitroaniline RPD 21% (20%) is outside individual acceptance criteria.

4,6-Dinitro-2-methylphenol RPD 21% (20%) is outside individual acceptance criteria.

4-Chloro-3-methylphenol RPD 21% (20%) is outside individual acceptance criteria.

4-Nitrophenol RPD 60% (20%) is outside individual acceptance criteria.

Anthracene RPD 21% (20%) is outside individual acceptance criteria.

Benzidine RPD 104% (20%) is outside individual acceptance criteria.

Benzo (a) anthracene RPD 21% (20%) is outside individual acceptance criteria.

Benzo (b) fluoranthene RPD 21% (20%) is outside individual acceptance criteria.

Benzo (g,h,i) perylene RPD 22% (20%) is outside individual acceptance criteria.

Benzo (k) fluoranthene RPD 23% (20%) is outside individual acceptance criteria.

Benzoic acid RPD 53% (20%) is outside individual acceptance criteria.

Carbazole RPD 23% (20%) is outside individual acceptance criteria.

Chrysene RPD 22% (20%) is outside individual acceptance criteria.

Dibenzofuran RPD 23% (20%) is outside individual acceptance criteria.

Diethyl phthalate RPD 21% (20%) is outside individual acceptance criteria.

Dimethyl phthalate RPD 21% (20%) is outside individual acceptance criteria.

Di-n-butyl phthalate RPD 22% (20%) is outside individual acceptance criteria.

Fluoranthene RPD 22% (20%) is outside individual acceptance criteria.

SW846 8270D

Laboratory Control Samples:

1405819 BSD

Hexachlorobenzene RPD 21% (20%) is outside individual acceptance criteria.

N-Nitrosodimethylamine RPD 26% (20%) is outside individual acceptance criteria.

N-Nitrosodiphenylamine RPD 21% (20%) is outside individual acceptance criteria.

Pentachlorophenol RPD 28% (20%) is outside individual acceptance criteria.

Phenanthrene RPD 22% (20%) is outside individual acceptance criteria.

Phenol RPD 54% (20%) is outside individual acceptance criteria.

Pyrene RPD 23% (20%) is outside individual acceptance criteria.

Samples:

S402785-CCV1

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

Benzyl alcohol (-24.2%)

This affected the following samples:

1405819-BLK1
1405819-BS1
1405819-BSD1

S402851-CCV1

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

4-Nitrophenol (22.5%)
Aniline (-29.4%)
Benzidine (-74.6%)
Benzo (b) fluoranthene (20.3%)
Pyridine (-22.7%)

This affected the following samples:

1405817-BLK1
1405817-BS1

S402904-CCV1

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

4-Nitrophenol (28.3%)
Aniline (-29.8%)
Benzidine (-74.1%)
Benzyl alcohol (-33.9%)

This affected the following samples:

ECS-9

S402933-CCV1

SW846 8270D

Samples:

S402933-CCV1

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

Aniline (-23.8%)
Benzidine (-43.2%)
Benzyl alcohol (-29.2%)

This affected the following samples:

B-4 (6-8')

S402966-CCV1

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

4-Nitrophenol (26.1%)
Benzidine (-20.4%)
Benzyl alcohol (-38.9%)

This affected the following samples:

B-9 (6-8')

Sample Acceptance Check Form

Client:	AECOM Environment - Chelmsford, MA
Project:	382 S. Broadway - Salem, NH / 60318232
Work Order:	SB86129
Sample(s) received on:	3/18/2014
Received by:	Jessica Hoffman

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
1. Were custody seals present?	☐	☑	☐
2. Were custody seals intact?	☐	☐	☑
3. Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
4. Were samples cooled on ice upon transfer to laboratory representative?	☐	☑	☐
5. Were samples refrigerated upon transfer to laboratory representative?	☑	☐	☐
6. Were sample containers received intact?	☑	☐	☐
7. Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
8. Were samples accompanied by a Chain of Custody document?	☑	☐	☐
9. Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
10. Did sample container labels agree with Chain of Custody document?	☑	☐	☐
11. Were samples received within method-specific holding times?	☑	☐	☐

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-9	60318232	Ground Water	17-Mar-14 08:15	18-Mar-14
SB86129-03				

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260			GS1										
Prepared by method SW846 5030 Water MS													
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	< 5.00	D	µg/l	5.00	3.24	5	SW846 8260C	21-Mar-14	21-Mar-14	GMA	1406041	X
67-64-1	Acetone	< 50.0	D	µg/l	50.0	12.8	5	"	"	"	"	"	X
107-13-1	Acrylonitrile	< 2.50	D	µg/l	2.50	2.38	5	"	"	"	"	"	X
71-43-2	Benzene	< 5.00	D	µg/l	5.00	3.34	5	"	"	"	"	"	X
108-86-1	Bromobenzene	< 5.00	D	µg/l	5.00	3.60	5	"	"	"	"	"	X
74-97-5	Bromochloromethane	< 5.00	D	µg/l	5.00	3.55	5	"	"	"	"	"	X
75-27-4	Bromodichloromethane	< 2.50	D	µg/l	2.50	2.40	5	"	"	"	"	"	X
75-25-2	Bromoform	< 5.00	D	µg/l	5.00	3.02	5	"	"	"	"	"	X
74-83-9	Bromomethane	< 10.0	D	µg/l	10.0	5.70	5	"	"	"	"	"	X
78-93-3	2-Butanone (MEK)	< 50.0	D	µg/l	50.0	9.67	5	"	"	"	"	"	X
104-51-8	n-Butylbenzene	< 5.00	D	µg/l	5.00	2.81	5	"	"	"	"	"	X
135-98-8	sec-Butylbenzene	< 5.00	D	µg/l	5.00	4.10	5	"	"	"	"	"	X
98-06-6	tert-Butylbenzene	< 5.00	D	µg/l	5.00	3.72	5	"	"	"	"	"	X
75-15-0	Carbon disulfide	< 10.0	D	µg/l	10.0	6.40	5	"	"	"	"	"	X
56-23-5	Carbon tetrachloride	< 5.00	D	µg/l	5.00	2.74	5	"	"	"	"	"	X
108-90-7	Chlorobenzene	< 5.00	D	µg/l	5.00	3.27	5	"	"	"	"	"	X
75-00-3	Chloroethane	< 10.0	D	µg/l	10.0	5.00	5	"	"	"	"	"	X
67-66-3	Chloroform	< 5.00	D	µg/l	5.00	3.44	5	"	"	"	"	"	X
74-87-3	Chloromethane	< 10.0	D	µg/l	10.0	7.36	5	"	"	"	"	"	X
95-49-8	2-Chlorotoluene	< 5.00	D	µg/l	5.00	3.96	5	"	"	"	"	"	X
106-43-4	4-Chlorotoluene	< 5.00	D	µg/l	5.00	3.66	5	"	"	"	"	"	X
96-12-8	1,2-Dibromo-3-chloropropane	< 10.0	D	µg/l	10.0	6.00	5	"	"	"	"	"	X
124-48-1	Dibromochloromethane	< 2.50	D	µg/l	2.50	1.72	5	"	"	"	"	"	X
106-93-4	1,2-Dibromoethane (EDB)	< 2.50	D	µg/l	2.50	1.80	5	"	"	"	"	"	X
74-95-3	Dibromomethane	< 5.00	D	µg/l	5.00	3.33	5	"	"	"	"	"	X
95-50-1	1,2-Dichlorobenzene	< 5.00	D	µg/l	5.00	3.34	5	"	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	< 5.00	D	µg/l	5.00	3.56	5	"	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 5.00	D	µg/l	5.00	3.12	5	"	"	"	"	"	X
75-71-8	Dichlorodifluoromethane (Freon12)	< 10.0	D	µg/l	10.0	2.24	5	"	"	"	"	"	X
75-34-3	1,1-Dichloroethane	< 5.00	D	µg/l	5.00	3.40	5	"	"	"	"	"	X
107-06-2	1,2-Dichloroethane	< 5.00	D	µg/l	5.00	3.90	5	"	"	"	"	"	X
75-35-4	1,1-Dichloroethene	< 5.00	D	µg/l	5.00	2.44	5	"	"	"	"	"	X
156-59-2	cis-1,2-Dichloroethene	< 5.00	D	µg/l	5.00	3.58	5	"	"	"	"	"	X
156-60-5	trans-1,2-Dichloroethene	< 5.00	D	µg/l	5.00	4.16	5	"	"	"	"	"	X
78-87-5	1,2-Dichloropropane	< 5.00	D	µg/l	5.00	3.86	5	"	"	"	"	"	X
142-28-9	1,3-Dichloropropane	< 5.00	D	µg/l	5.00	4.04	5	"	"	"	"	"	X
594-20-7	2,2-Dichloropropane	< 5.00	D	µg/l	5.00	4.36	5	"	"	"	"	"	X
563-58-6	1,1-Dichloropropene	< 5.00	D	µg/l	5.00	3.18	5	"	"	"	"	"	X
10061-01-5	cis-1,3-Dichloropropene	< 2.50	D	µg/l	2.50	1.82	5	"	"	"	"	"	X
10061-02-6	trans-1,3-Dichloropropene	< 2.50	D	µg/l	2.50	2.50	5	"	"	"	"	"	X
100-41-4	Ethylbenzene	< 5.00	D	µg/l	5.00	4.76	5	"	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 2.50	D	µg/l	2.50	2.44	5	"	"	"	"	"	X
591-78-6	2-Hexanone (MBK)	< 50.0	D	µg/l	50.0	3.29	5	"	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-9	60318232	Ground Water	17-Mar-14 08:15	18-Mar-14
SB86129-03				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260			GS1										
Prepared by method SW846 5030 Water MS													
98-82-8	Isopropylbenzene	< 5.00	D	µg/l	5.00	3.10	5	SW846 8260C	21-Mar-14	21-Mar-14	GMA	1406041	X
99-87-6	4-Isopropyltoluene	< 5.00	D	µg/l	5.00	3.04	5	"	"	"	"	"	X
1634-04-4	Methyl tert-butyl ether	111	D	µg/l	5.00	3.26	5	"	"	"	"	"	X
108-10-1	4-Methyl-2-pentanone (MIBK)	< 50.0	D	µg/l	50.0	13.8	5	"	"	"	"	"	X
75-09-2	Methylene chloride	< 10.0	D	µg/l	10.0	4.74	5	"	"	"	"	"	X
91-20-3	Naphthalene	< 5.00	D	µg/l	5.00	2.90	5	"	"	"	"	"	X
103-65-1	n-Propylbenzene	< 5.00	D	µg/l	5.00	3.79	5	"	"	"	"	"	X
100-42-5	Styrene	< 5.00	D	µg/l	5.00	3.08	5	"	"	"	"	"	X
630-20-6	1,1,1,2-Tetrachloroethane	< 5.00	D	µg/l	5.00	3.36	5	"	"	"	"	"	X
79-34-5	1,1,2,2-Tetrachloroethane	< 2.50	D	µg/l	2.50	1.58	5	"	"	"	"	"	X
127-18-4	Tetrachloroethene	< 5.00	D	µg/l	5.00	3.72	5	"	"	"	"	"	X
108-88-3	Toluene	< 5.00	D	µg/l	5.00	4.06	5	"	"	"	"	"	X
87-61-6	1,2,3-Trichlorobenzene	< 5.00	D	µg/l	5.00	1.88	5	"	"	"	"	"	X
120-82-1	1,2,4-Trichlorobenzene	< 5.00	D	µg/l	5.00	1.80	5	"	"	"	"	"	X
108-70-3	1,3,5-Trichlorobenzene	< 5.00	D	µg/l	5.00	3.92	5	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	< 5.00	D	µg/l	5.00	2.91	5	"	"	"	"	"	X
79-00-5	1,1,2-Trichloroethane	< 5.00	D	µg/l	5.00	3.21	5	"	"	"	"	"	X
79-01-6	Trichloroethene	< 5.00	D	µg/l	5.00	3.78	5	"	"	"	"	"	X
75-69-4	Trichlorofluoromethane (Freon 11)	< 5.00	D	µg/l	5.00	3.14	5	"	"	"	"	"	X
96-18-4	1,2,3-Trichloropropane	< 5.00	D	µg/l	5.00	3.68	5	"	"	"	"	"	X
95-63-6	1,2,4-Trimethylbenzene	< 5.00	D	µg/l	5.00	3.78	5	"	"	"	"	"	X
108-67-8	1,3,5-Trimethylbenzene	< 5.00	D	µg/l	5.00	3.72	5	"	"	"	"	"	X
75-01-4	Vinyl chloride	< 5.00	D	µg/l	5.00	4.04	5	"	"	"	"	"	X
179601-23-1	m,p-Xylene	< 10.0	D	µg/l	10.0	8.20	5	"	"	"	"	"	X
95-47-6	o-Xylene	< 5.00	D	µg/l	5.00	4.41	5	"	"	"	"	"	X
109-99-9	Tetrahydrofuran	< 10.0	D	µg/l	10.0	7.21	5	"	"	"	"	"	
60-29-7	Ethyl ether	< 5.00	D	µg/l	5.00	3.46	5	"	"	"	"	"	X
994-05-8	Tert-amyl methyl ether	10.2	D	µg/l	5.00	3.60	5	"	"	"	"	"	X
637-92-3	Ethyl tert-butyl ether	< 5.00	D	µg/l	5.00	3.91	5	"	"	"	"	"	X
108-20-3	Di-isopropyl ether	< 5.00	D	µg/l	5.00	3.64	5	"	"	"	"	"	X
75-65-0	Tert-Butanol / butyl alcohol	< 50.0	D	µg/l	50.0	43.2	5	"	"	"	"	"	X
123-91-1	1,4-Dioxane	< 100	D	µg/l	100	60.0	5	"	"	"	"	"	X
110-57-6	trans-1,4-Dichloro-2-buten e	< 25.0	D	µg/l	25.0	3.68	5	"	"	"	"	"	X
64-17-5	Ethanol	< 2000	D	µg/l	2000	175	5	"	"	"	"	"	X
Surrogate recoveries:													
460-00-4	*4-Bromofluorobenzene*	*97*			*70-130 %*			"	"	"	"	"	
2037-26-5	*Toluene-d8*	*102*			*70-130 %*			"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*102*			*70-130 %*			"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*101*			*70-130 %*			"	"	"	"	"	
Gasoline Range Organics													
Prepared by method VPH - EPA 5030C Water													

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-9	60318232	Ground Water	17-Mar-14 08:15	18-Mar-14
SB86129-03				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Gasoline Range Organics													
Prepared by method VPH - EPA 5030C Water													
	Gasoline Range Organics (C5-C12)	< 0.4	D	mg/l	0.4	0.009	5	Mod 8015	25-Mar-14	25-Mar-14	mp	1406262	X
Surrogate recoveries:													
615-59-8	*2,5-Dibromotoluene (PID)*	*97*			*70-130 %*			"	"	"	"	"	
615-59-8	*2,5-Dibromotoluene (FID)*	*94*			*70-130 %*			"	"	"	"	"	
Semivolatile Organic Compounds by GCMS													
Semivolatile Organic Compounds													
Prepared by method SW846 3510C													
83-32-9	Acenaphthene	< 5.38		µg/l	5.38	0.968	1	SW846 8270D	19-Mar-14	23-Mar-14	MSL	1405819	X
208-96-8	Acenaphthylene	< 5.38		µg/l	5.38	0.935	1	"	"	"	"	"	X
62-53-3	Aniline	< 5.38		µg/l	5.38	0.677	1	"	"	"	"	"	X
120-12-7	Anthracene	< 5.38		µg/l	5.38	0.968	1	"	"	"	"	"	X
103-33-3	Azobenzene/Diphenyldiazene	< 5.38		µg/l	5.38	0.806	1	"	"	"	"	"	
92-87-5	Benzidine	< 5.38		µg/l	5.38	4.70	1	"	"	"	"	"	X
56-55-3	Benzo (a) anthracene	< 5.38		µg/l	5.38	1.28	1	"	"	"	"	"	X
50-32-8	Benzo (a) pyrene	< 5.38		µg/l	5.38	0.935	1	"	"	"	"	"	X
205-99-2	Benzo (b) fluoranthene	< 5.38		µg/l	5.38	0.914	1	"	"	"	"	"	X
191-24-2	Benzo (g,h,i) perylene	< 5.38		µg/l	5.38	0.968	1	"	"	"	"	"	X
207-08-9	Benzo (k) fluoranthene	< 5.38		µg/l	5.38	1.19	1	"	"	"	"	"	X
65-85-0	Benzoic acid	< 5.38		µg/l	5.38	2.33	1	"	"	"	"	"	X
100-51-6	Benzyl alcohol	< 5.38		µg/l	5.38	1.00	1	"	"	"	"	"	X
111-91-1	Bis(2-chloroethoxy)methane	< 5.38		µg/l	5.38	0.753	1	"	"	"	"	"	X
111-44-4	Bis(2-chloroethyl)ether	< 5.38		µg/l	5.38	0.903	1	"	"	"	"	"	X
108-60-1	Bis(2-chloroisopropyl)ether	< 5.38		µg/l	5.38	1.05	1	"	"	"	"	"	X
117-81-7	Bis(2-ethylhexyl)phthalate	< 5.38		µg/l	5.38	1.10	1	"	"	"	"	"	X
101-55-3	4-Bromophenyl phenyl ether	< 5.38		µg/l	5.38	0.914	1	"	"	"	"	"	X
85-68-7	Butyl benzyl phthalate	< 5.38		µg/l	5.38	1.11	1	"	"	"	"	"	X
86-74-8	Carbazole	< 5.38		µg/l	5.38	3.45	1	"	"	"	"	"	X
59-50-7	4-Chloro-3-methylphenol	< 5.38		µg/l	5.38	1.02	1	"	"	"	"	"	X
106-47-8	4-Chloroaniline	< 5.38		µg/l	5.38	0.602	1	"	"	"	"	"	X
91-58-7	2-Chloronaphthalene	< 5.38		µg/l	5.38	0.935	1	"	"	"	"	"	X
95-57-8	2-Chlorophenol	< 5.38		µg/l	5.38	1.03	1	"	"	"	"	"	X
7005-72-3	4-Chlorophenyl phenyl ether	< 5.38		µg/l	5.38	0.957	1	"	"	"	"	"	X
218-01-9	Chrysene	< 5.38		µg/l	5.38	1.23	1	"	"	"	"	"	X
53-70-3	Dibenzo (a,h) anthracene	< 5.38		µg/l	5.38	1.00	1	"	"	"	"	"	X
132-64-9	Dibenzofuran	< 5.38		µg/l	5.38	0.946	1	"	"	"	"	"	X
95-50-1	1,2-Dichlorobenzene	< 5.38		µg/l	5.38	1.05	1	"	"	"	"	"	X
541-73-1	1,3-Dichlorobenzene	< 5.38		µg/l	5.38	1.03	1	"	"	"	"	"	X
106-46-7	1,4-Dichlorobenzene	< 5.38		µg/l	5.38	1.08	1	"	"	"	"	"	X
91-94-1	3,3´-Dichlorobenzidine	< 5.38		µg/l	5.38	0.731	1	"	"	"	"	"	X
120-83-2	2,4-Dichlorophenol	< 5.38		µg/l	5.38	0.882	1	"	"	"	"	"	X
84-66-2	Diethyl phthalate	< 5.38		µg/l	5.38	0.925	1	"	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-9	60318232	Ground Water	17-Mar-14 08:15	18-Mar-14
SB86129-03				

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													
131-11-3	Dimethyl phthalate	< 5.38		µg/l	5.38	0.978	1	SW846 8270D	19-Mar-14	23-Mar-14	MSL	1405819	X
105-67-9	2,4-Dimethylphenol	< 5.38		µg/l	5.38	0.871	1	"	"	"	"	"	X
84-74-2	Di-n-butyl phthalate	< 5.38		µg/l	5.38	1.01	1	"	"	"	"	"	X
534-52-1	4,6-Dinitro-2-methylphenol	< 5.38		µg/l	5.38	0.720	1	"	"	"	"	"	X
51-28-5	2,4-Dinitrophenol	< 5.38		µg/l	5.38	3.09	1	"	"	"	"	"	X
121-14-2	2,4-Dinitrotoluene	< 5.38		µg/l	5.38	1.01	1	"	"	"	"	"	X
606-20-2	2,6-Dinitrotoluene	< 5.38		µg/l	5.38	1.01	1	"	"	"	"	"	X
117-84-0	Di-n-octyl phthalate	< 5.38		µg/l	5.38	0.839	1	"	"	"	"	"	X
206-44-0	Fluoranthene	< 5.38		µg/l	5.38	1.03	1	"	"	"	"	"	X
86-73-7	Fluorene	< 5.38		µg/l	5.38	0.968	1	"	"	"	"	"	X
118-74-1	Hexachlorobenzene	< 5.38		µg/l	5.38	1.00	1	"	"	"	"	"	X
87-68-3	Hexachlorobutadiene	< 5.38		µg/l	5.38	0.892	1	"	"	"	"	"	X
77-47-4	Hexachlorocyclopentadiene	< 5.38		µg/l	5.38	5.08	1	"	"	"	"	"	X
67-72-1	Hexachloroethane	< 5.38		µg/l	5.38	1.09	1	"	"	"	"	"	X
193-39-5	Indeno (1,2,3-cd) pyrene	< 5.38		µg/l	5.38	0.989	1	"	"	"	"	"	X
78-59-1	Isophorone	< 5.38		µg/l	5.38	0.892	1	"	"	"	"	"	X
91-57-6	2-Methylnaphthalene	< 5.38		µg/l	5.38	0.978	1	"	"	"	"	"	X
95-48-7	2-Methylphenol	< 5.38		µg/l	5.38	1.03	1	"	"	"	"	"	X
108-39-4, 106-44-5	3 & 4-Methylphenol	< 10.8		µg/l	10.8	1.01	1	"	"	"	"	"	X
91-20-3	Naphthalene	< 5.38		µg/l	5.38	0.957	1	"	"	"	"	"	X
88-74-4	2-Nitroaniline	< 5.38		µg/l	5.38	0.882	1	"	"	"	"	"	X
99-09-2	3-Nitroaniline	< 5.38		µg/l	5.38	0.688	1	"	"	"	"	"	X
100-01-6	4-Nitroaniline	< 21.5		µg/l	21.5	0.774	1	"	"	"	"	"	X
98-95-3	Nitrobenzene	< 5.38		µg/l	5.38	1.02	1	"	"	"	"	"	X
88-75-5	2-Nitrophenol	< 5.38		µg/l	5.38	1.11	1	"	"	"	"	"	X
100-02-7	4-Nitrophenol	< 21.5		µg/l	21.5	3.00	1	"	"	"	"	"	X
62-75-9	N-Nitrosodimethylamine	< 5.38		µg/l	5.38	1.09	1	"	"	"	"	"	X
621-64-7	N-Nitrosodi-n-propylamine	< 5.38		µg/l	5.38	0.989	1	"	"	"	"	"	X
86-30-6	N-Nitrosodiphenylamine	< 5.38		µg/l	5.38	1.03	1	"	"	"	"	"	X
87-86-5	Pentachlorophenol	< 21.5		µg/l	21.5	0.871	1	"	"	"	"	"	X
85-01-8	Phenanthrene	< 5.38		µg/l	5.38	0.935	1	"	"	"	"	"	X
108-95-2	Phenol	< 5.38		µg/l	5.38	1.02	1	"	"	"	"	"	X
129-00-0	Pyrene	< 5.38		µg/l	5.38	1.38	1	"	"	"	"	"	X
110-86-1	Pyridine	< 5.38		µg/l	5.38	1.04	1	"	"	"	"	"	X
120-82-1	1,2,4-Trichlorobenzene	< 5.38		µg/l	5.38	0.989	1	"	"	"	"	"	X
90-12-0	1-Methylnaphthalene	< 5.38		µg/l	5.38	1.00	1	"	"	"	"	"	
95-95-4	2,4,5-Trichlorophenol	< 5.38		µg/l	5.38	0.892	1	"	"	"	"	"	X
88-06-2	2,4,6-Trichlorophenol	< 5.38		µg/l	5.38	0.839	1	"	"	"	"	"	X
82-68-8	Pentachloronitrobenzene	< 5.38		µg/l	5.38	0.978	1	"	"	"	"	"	X
95-94-3	1,2,4,5-Tetrachlorobenzene	< 5.38		µg/l	5.38	1.03	1	"	"	"	"	"	X
Surrogate recoveries:													
321-60-8	*2-Fluorobiphenyl*	*71*			*30-130 %*			"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-9	60318232	Ground Water	17-Mar-14 08:15	18-Mar-14
SB86129-03				

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													
367-12-4	*2-Fluorophenol*	*40*			*15-110 %*			SW846 8270D	19-Mar-14	23-Mar-14	MSL	1405819	
4165-60-0	*Nitrobenzene-d5*	*61*			*30-130 %*			"	"	"	"	"	
4165-62-2	*Phenol-d5*	*27*			*15-110 %*			"	"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*78*			*30-130 %*			"	"	"	"	"	
118-79-6	*2,4,6-Tribromophenol*	*80*			*15-110 %*			"	"	"	"	"	
Semivolatile Organic Compounds by GC													
Polychlorinated Biphenyls													
Prepared by method SW846 3510C													
12674-11-2	Aroclor-1016	< 0.211		µg/l	0.211	0.0774	1	SW846 8082A	18-Mar-14	20-Mar-14	IMR	1405717	X
11104-28-2	Aroclor-1221	< 0.211		µg/l	0.211	0.133	1	"	"	"	"	"	X
11141-16-5	Aroclor-1232	< 0.211		µg/l	0.211	0.109	1	"	"	"	"	"	X
53469-21-9	Aroclor-1242	< 0.211		µg/l	0.211	0.126	1	"	"	"	"	"	X
12672-29-6	Aroclor-1248	< 0.211		µg/l	0.211	0.109	1	"	"	"	"	"	X
11097-69-1	Aroclor-1254	< 0.211		µg/l	0.211	0.137	1	"	"	"	"	"	X
11096-82-5	Aroclor-1260	< 0.211		µg/l	0.211	0.115	1	"	"	"	"	"	X
37324-23-5	Aroclor-1262	< 0.211		µg/l	0.211	0.145	1	"	"	"	"	"	X
11100-14-4	Aroclor-1268	< 0.211		µg/l	0.211	0.0868	1	"	"	"	"	"	X
Surrogate recoveries:													
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*120*			*30-150 %*			"	"	"	"	"	
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr) [2C]*	*125*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*85*			*30-150 %*			"	"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr) [2C]*	*75*			*30-150 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons													
Diesel Range Organics													
Prepared by method SW846 3510C													
68476-30-2	Fuel Oil #2	< 0.2		mg/l	0.2	0.2	1	8015DM	21-Mar-14	24-Mar-14	SEP	1406040	
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	"	"	"	"	"	
J00100000	Aviation Fuel	< 0.2		mg/l	0.2	0.05	1	"	"	"	"	"	
	Unidentified	**0.5**		mg/l	0.2	0.05	1	"	"	"	"	"	
	Other Oil	**Calculated as**		mg/l	0.2	0.02	1	"	"	"	"	"	
	Diesel Range Organics (DRO) C10-C28	**0.5**		mg/l	0.2	0.2	1	"	"	"	"	"	X
Surrogate recoveries:													
3386-33-2	*1-Chlorooctadecane*	*52*			*40-140 %*			"	"	"	"	"	
Total Metals by EPA 200/6000 Series Methods													
	Preservation	**Field Preserved**		N/A			1	EPA 200/6000 methods			BJW	1405844	
Total Metals by EPA 6000/7000 Series Methods													
7440-22-4	Silver	< 0.0100		mg/l	0.0100	0.0022	1	SW846 6010C	21-Mar-14	24-Mar-14	EDT	1406086	X
7440-38-2	Arsenic	< 0.0080		mg/l	0.0080	0.0038	1	"	"	"	"	"	X
7440-39-3	Barium	**0.819**		mg/l	0.0100	0.0015	1	"	"	"	"	"	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-9 SB86129-03	60318232	Ground Water	17-Mar-14 08:15	18-Mar-14

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Total Metals by EPA 6000/7000 Series Methods													
7440-43-9	Cadmium	< 0.0050		mg/l	0.0050	0.0024	1	SW846 6010C	21-Mar-14	24-Mar-14	EDT	1406086	X
7440-47-3	Chromium	**0.0197**		mg/l	0.0100	0.0027	1	"	"	"	"	"	X
7439-92-1	Lead	< 0.0150		mg/l	0.0150	0.0065	1	"	"	"	"	"	X
7782-49-2	Selenium	< 0.0300		mg/l	0.0300	0.0134	1	"	"	"	"	"	X
Total Metals by EPA 200 Series Methods													
7439-97-6	Mercury	< 0.00020		mg/l	0.00020	0.00008	1	EPA 245.1/7470A	21-Mar-14	21-Mar-14	LR	1406088	X
General Chemistry Parameters													
	Flashpoint	**>150**		°F			1	SW846 1010A	19-Mar-14	19-Mar-14	BD	1405905	
	pH	**6.08**	pH	pH Units			1	ASTM D 1293-99B	18-Mar-14 16:23	18-Mar-14 16:30	DJB	1405791	
Reactivity Cyanide/Sulfide													
Prepared by method General Preparation													
	Reactivity	**See Narrative**		mg/l			1	SW846 Ch. 7.3	25-Mar-14	25-Mar-14	DJB	1406335	
57-12-5	Reactive Cyanide	< 25.0		mg/l	25.0	25.0	1	"	"	"	"	"	
18496-25-8	Reactive Sulfide	< 50.0		mg/l	50.0	50.0	1	"	"	"	"	"	

The following list indicates the date and time low-level VOC soil/sediment samples were placed in the freezer:

SB86129-01	*B-4 (6-8')*	3/18/2014 3:30 PM
SB86129-02	*B-9 (6-8')*	3/18/2014 3:30 PM

Notes and Definitions

D	Data reported from a dilution
GS1	Sample dilution required for high concentration of target analytes to be within the instrument calibration range.
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
QM7	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM8	The spike recovery exceeded the QC control limits for the MS and/or MSD. The batch was accepted based upon acceptable PS and /or LCS recovery.
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
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.
QR5	RPD out of acceptance range.
QR8	Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.
VOC8	Reporting limits reflect SW846 5035A High Level extraction technique due to interference and/or QC issues using SW846 5035A Low Level extraction technique.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
pH	The method for pH does not stipulate a specific holding time other than to state that the samples should be analyzed as soon as possible. For aqueous samples the 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous pH samples not analyzed in the field are considered out of hold time at the time of sample receipt. All soil samples are analyzed as soon as possible after sample receipt.

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:
Nicole Leja

SB86129 5Day

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: ~~48 hrs~~ JR 5Day
· All TATs subject to laboratory approval.
· Min. 24-hour notification needed for rushes.
· Samples disposed of after 60 days unless otherwise instructed.

Report To: AECOM 250 Apollo Drive Chelmsford, MA 01824

Telephone #: (978) 905-2100

Project Mgr. Jeff Dvorak

Invoice To: Cumberland Farms, Inc.

P.O. No.: PM will provide RQN:

Project No.: 60318232

Site Name: Salem, NH

Location: 382 S. Broadway, Salem State: NH

Sampler(s): Chris Hayden

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=None 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: 7/9, 11, 11, 11, 4, 2, 11, 11

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		~~VPH~~ 8260	RCRA 8 metals, SVOCs 8270, PCBs 8082, TPH 8015 and 8151B / DRO / GRO	Flashpt, pH, Reactivity herbicides and	Pesticides	Total RCRA 8 metals	VOCs 8260 / GRO / ~~MA EPH~~, TPH 8015	SVOC 8270, PCBs 8082, Flashpt., pH	Reactivity
86129-01	B-4 (6-8')	~~0830~~ 3/17/14	0830	C	SO	3	2				X	X	X	X				
02	B-9 (6-8')	3/17/14	1050	C	SO	3	2				X	X	X	X				
03	ECS-9	3/17/14	0815	G	GW	3	4		2						X	X	X	X
04	Trip Blank	3/17/14	0800	G	GW	2										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:

2.9/0/2.9 IR
JCH 3/18

Relinquished by:	Received by:	Date:	Time:	Temp°C
C. Hayden	[signature]	3-18-14	1300	
[signature]	JCH	3/18/14	1530	

☒ EDD Format
☒ E-mail to Jeff.Dvorak@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☒ Refrigerated ☒ DI VOA Frozen ☐ Soil Jar Frozen

SB 86129 SM

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: ~~48 hrs~~ 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: AECOM 250 Apollo Drive Chelmsford, MA 01824

Telephone #: (978) 905-2100

Project Mgr. Jeff Dvorak

Invoice To: Cumberland Farms, Inc.

P.O. No.: PM will provide RQN:

Project No.: 60318232

Site Name: Salem, NH

Location: 382 S. Broadway, Salem State: NH

Sampler(s): Chris Hayden

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= None 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

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	List preservative code below: 7/9 | 11 | 11 | 11 | 4 | 2 | 14 | 14	Analyses: 8260 | RCRA 8 metals | PCBs 8082 | TPH DRO/GRO ext | Pesticides | Total RCRA 8 metals | VOCs 8260 | SVOC 8270 | Flashpoint | Reactivity	QA/QC Reporting Notes: * additional charges may apply
86129-01	B-4 (6-8')	~~3/17/14~~ 3/17/14	0830	C	SO	3	2				X X X X	Run DRO and GRO by 8015 for -03.
02	B-9 (6-8')	3/17/14	1050	C	SO	3	2				X X X X	
03	ECS-9	3/17/14	0815	G	GW	3	4		2		X X X X	
04	Trip Blank	3/17/14	0800	G	GW	2					X	

2-9/10-9 IR 01

JH 3/18

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
C. Hayden		3-18-14	1300	
	JH	3/18/14	1530	

☒ EDD Format
☒ E-mail to Jeff.Dvorak@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☒ Refrigerated ☒ DI VOA Frozen ☐ Soil Jar Frozen

Report Date:
03-Apr-14 17:04

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

AECOM Environment
250 Apollo Drive
Chelmsford, MA 01824
Attn: Jeffrey Dvorak

Project: CFI # 2803 - Salem, NH
Project #: 60318232

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB86924-01	ECS-9	Ground Water	02-Apr-14 13:25	02-Apr-14 15:48
SB86924-02	Trip Blank	Ground Water	02-Apr-14 13:15	02-Apr-14 15:48

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

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

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 11 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

CASE NARRATIVE:

Data has been reported to the RDL. This report excludes estimated concentrations detected below the RDL and above the MDL (J-Flag).

The samples were received 3.7 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.

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

SW846 6020A

Laboratory Control Samples:

1407056 BS/BSD

Lead percent recoveries (105/84) are outside individual acceptance criteria (85-115), but within overall method allowances. All reported results of the following samples are considered to have a potentially low bias:

ECS-9

1407056 BSD

Lead RPD 22% (20%) is outside individual acceptance criteria.

1407056-BSD1

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

Lead

Sample Acceptance Check Form

Client:	AECOM Environment - Chelmsford, MA
Project:	CFI # 2803 - Salem, NH / 60318232
Work Order:	SB86924
Sample(s) received on:	4/2/2014
Received by:	Mary Wilson

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
1. Were custody seals present?	☐	☑	☐
2. Were custody seals intact?	☐	☐	☑
3. Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
4. Were samples cooled on ice upon transfer to laboratory representative?	☐	☑	☐
5. Were samples refrigerated upon transfer to laboratory representative?	☑	☐	☐
6. Were sample containers received intact?	☑	☐	☐
7. Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
8. Were samples accompanied by a Chain of Custody document?	☑	☐	☐
9. Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
10. Did sample container labels agree with Chain of Custody document?	☑	☐	☐
11. Were samples received within method-specific holding times?	☑	☐	☐

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
ECS-9 SB86924-01	60318232	Ground Water	02-Apr-14 13:25	02-Apr-14

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Microextractable Organic Compounds													
106-93-4	1,2-Dibromoethane (EDB)	< 0.0100		µg/l	0.0100	0.00513	1	SW846 8011	03-Apr-14	03-Apr-14	SM	1407067	X
Extractable Petroleum Hydrocarbons													
	Non-polar material (SGT-HEM)	< 1.0		mg/l	1.0	0.3	1	EPA 1664B	03-Apr-14	03-Apr-14	JK	1407072	X
Total Metals by EPA 200/6000 Series Methods													
	Preservation	**Field Preserved**		N/A			1	EPA 200/6000 methods			LNB	1406996	
Total Metals by EPA 6000/7000 Series Methods													
7439-89-6	Iron	**7.46**		mg/l	0.0300	0.0243	1	SW846 6010C	02-Apr-14	03-Apr-14	tbc	1407055	X
7439-92-1	Lead	< 0.00050		mg/l	0.00050	0.00010	1	SW846 6020A	"	03-Apr-14	edt	1407056	X
General Chemistry Parameters													
	Total Suspended Solids	**26.0**		mg/l	5.0	2.2	1	SM2540D	02-Apr-14	03-Apr-14	BD	1407050	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip Blank SB86924-02	60318232	Ground Water	02-Apr-14 13:15	02-Apr-14

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
Microextractable Organic Compounds													
106-93-4	1,2-Dibromoethane (EDB)	< 0.0100		µg/l	0.0100	0.00513	1	SW846 8011	03-Apr-14	03-Apr-14	SM	1407067	X

Microextractable Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1407067 - General Preparation SVOC										
Blank (1407067-BLK1)						Prepared & Analyzed: 03-Apr-14				
1,2-Dibromoethane (EDB)	< 0.0100		µg/l	0.0100						
LCS (1407067-BS1)						Prepared & Analyzed: 03-Apr-14				
1,2-Dibromoethane (EDB)	**0.235**		µg/l	0.0100	0.200		118	50-150		
LCS Dup (1407067-BSD1)						Prepared & Analyzed: 03-Apr-14				
1,2-Dibromoethane (EDB)	**0.211**		µg/l	0.0100	0.200		106	50-150	11	50
Duplicate (1407067-DUP1)			**Source: SB86924-01**			Prepared & Analyzed: 03-Apr-14				
1,2-Dibromoethane (EDB)	< 0.0100		µg/l	0.0100		BRL				30

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1407072 - SW846 3510C										
Blank (1407072-BLK1)						Prepared & Analyzed: 03-Apr-14				
Non-polar material (SGT-HEM)	< 1.0		mg/l	1.0						
LCS (1407072-BS1)						Prepared & Analyzed: 03-Apr-14				
Non-polar material (SGT-HEM)	**36.6**		mg/l	1.0	41.6		88	83-101		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1407055 - SW846 3005A										
Blank (1407055-BLK1)					Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Iron	< 0.0300		mg/l	0.0300						
LCS (1407055-BS1)					Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Iron	**2.48**		mg/l	0.0300	2.50		99	85-115		
LCS Dup (1407055-BSD1)					Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Iron	**2.49**		mg/l	0.0300	2.50		100	85-115	0.7	20
Duplicate (1407055-DUP1)			**Source: SB86924-01**		Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Iron	**8.02**		mg/l	0.0300		7.46			7	20
Matrix Spike (1407055-MS1)			**Source: SB86924-01**		Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Iron	**10.2**		mg/l	0.0300	2.50	7.46	110	75-125		
Matrix Spike Dup (1407055-MSD1)			**Source: SB86924-01**		Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Iron	**10.2**		mg/l	0.0300	2.50	7.46	108	75-125	0.4	20
Batch 1407056 - SW846 3005A										
Blank (1407056-BLK1)					Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Lead	< 0.00050		mg/l	0.00050						
LCS (1407056-BS1)					Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Lead	**0.105**	D	mg/l	0.00500	0.100		105	85-115		
LCS Dup (1407056-BSD1)					Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Lead	**0.0843**	QM9, QR7, D	mg/l	0.00500	0.100		84	85-115	22	20
Duplicate (1407056-DUP1)			**Source: SB86924-01**		Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Lead	**0.00033**	J	mg/l	0.00050		0.00039			15	20
Matrix Spike (1407056-MS1)			**Source: SB86924-01**		Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Lead	**0.0975**	D	mg/l	0.00500	0.100	0.00039	97	75-125		
Matrix Spike Dup (1407056-MSD1)			**Source: SB86924-01**		Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Lead	**0.0866**	D	mg/l	0.00500	0.100	0.00039	86	75-125	12	20
Post Spike (1407056-PS1)			**Source: SB86924-01**		Prepared: 02-Apr-14 Analyzed: 03-Apr-14					
Lead	**0.0983**	D	mg/l	0.00500	0.100	0.00039	98	75-125		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1407050 - General Preparation										
Blank (1407050-BLK1)						Prepared: 02-Apr-14 Analyzed: 03-Apr-14				
Total Suspended Solids	< 5.0		mg/l	5.0						
LCS (1407050-BS1)						Prepared: 02-Apr-14 Analyzed: 03-Apr-14				
Total Suspended Solids	**102**		mg/l	10.0	100		102	90-110		

Notes and Definitions

D	Data reported from a dilution
QM9	The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
QR7	The RPD exceeded the QC control limits; however precision is demonstrated with acceptable RPD values for batch duplicate.
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:
June O'Connor
Nicole Leja
Rebecca Merz

SB860924 AME

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: 4/3/14 EBD

All TATs subject to laboratory approval.
Min. 24-hr notification needed for rushes.
Samples disposed after 60 days unless otherwise instructed.

Report To: AECOM
250 APOLLO DRIVE
CHELMSFORD MA
Telephone #: 978-905-2100
Project Mgr: JEFF DVORAK

Invoice To:
P.O No.: Quote/RQN:

Project No: 60318232
Site Name: CFI # 2803
Location: SALEM State: NH
Sampler(s): FB

F=Field Filtered 1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= NONE 12= ICE

List Preservative Code below: 12 2 4 4 1

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: TSS	TPH 1664	TOTAL LEAD (LOW LEVELS)	TOTAL IRON	EDB	Check if chlorinated
SB860924-01	ECS-9	4/2/14	1325	G	GW	3	1		3	X	X	X	X	X	☐
↓ -02	Trip Blank	4/2/14	1315	G	GW	1								X	☐
															☐
															☐
															☐
															☐
															☐
															☐
															☐
															☐

3.7/0/3.7 IR 01 mdw 4-2-2014

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☐ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other:
State-specific reporting standards:

TPH method per client req 4/2/14 e

Relinquished by:	Received by:	Date:	Time:	Temp °C
		4-2-14	1333	Observed
	mdw	4-2-2014	1548	Correction Factor
				Corrected
				IR ID #

☐ EDD format:
☒ E-mail to: jeff.dvorak@aecom.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☐ Ambient ☐ Iced ☒ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

Date: 9/27/2011
Revision: 00

Material Safety Data Sheet

HaloKlear: Gel-Floc

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name:	HaloSource, Inc.
Corporate Address:	1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone:	(425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone (24 Hours):	800-424-9300 CHEMTREC (Domestic, North America) 703-527-3887 CHEMTREC (International, collect calls accepted)
Material/Trade/Product Name:	**HaloKlear: Gel-Floc MB**
Synonyms:	Chitosan Lactate
Chemical Name:	Chitosan, 2-hydroxypropanoate (salt)
Chemical Formula:	Not available
CAS No.:	66267-50-3
Product Use:	Flocculates soil contamination in storm water.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	HAZARDOUS INGREDIENT (S)	%	OSHA HAZARDOUS?
Trade Secret	*Trade Secret*	85 – 95	YES
Trade Secret	*Trade Secret*	15 – 5	YES

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

A fine, off-white powder with no odor.

This material/product may cause eye or skin irritation.

POTENTIAL HEALTH EFFECTS

EYE: May cause mechanical irritation. Will tend to form film on the surface of the eye causing blurred vision.

SKIN: Possible skin irritation or rash.

INHALATION: May aggravate pre-existing respiratory conditions or allergies. It may accumulate on linings of the nose and lungs resulting in dryness & coughing.

INGESTION: While it is not likely to be hazardous by ingestion, it may start dissolving and form a film on mucous membranes.

CHRONIC EXPOSURE/CARCINOGENICITY: Not known.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: May cause mechanical irritation. Will tend to form film on the surface of the eye causing blurred vision. Skin irritation. It may accumulate on linings of the nose and lungs resulting in dryness & coughing. May start dissolving and form a film on mucous membranes.

AGGRAVATION OF PRE-EXISTING CONDITIONS: May aggravate pre-existing respiratory conditions or allergies.

POTENTIAL ENVIRONMENTAL EFFECTS: Avoid water if material is spilled; water will dissolve chitosan lactate forming a thick viscous solution or gelatinous mass.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: Remove contact lenses (when applicable) and flush eyes with water for 15 minutes. Get medical attention if irritation persists.

SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops or persists.

INHALATION: If exposed to excessive levels of dust, remove to fresh air and get medical attention if cough or other symptoms develop.

INGESTION: Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. Give large quantities of water. If available give several glasses of milk. Call a physician or poison control center immediately.

NOTE TO PHYSICIANS: None.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not available
AUTOIGNITION TEMPERATURE: Not available
UPPER FLAMMABLE LIMIT: Not available
LOWER FLAMMABLE LIMIT: Not available
FLAMMABLITY CLASS (OSHA): Not applicable
FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: Keep away from oxidizing agents and avoid open flames. Product may ignite at temperatures in excess of 400°F. Depending on moisture content and particle size, airborne dust of Chitosan lactate might explode in the presence of an ignition source. It is comparable to flour and wood dust.

HAZARDOUS COMBUSTION PRODUCTS: None known

EXTINGUISHING MEDIA: Water spray, CO_2 (carbon dioxide), foam or dry chemical.

PROTECTION OF FIREFIGHTERS: Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coat, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Water may be used to keep fire-exposed containers cool until fire is out.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: AVOID WATER; water will dissolve chitosan lactate forming a thick viscous solution or gelatinous mass.

METHODS FOR CLEANING UP: The material may be vacuumed or collected for recovery or disposal.

SECTION 7: HANDLING AND STORAGE

SAFE *HANDLING* RECOMMENDATIONS

VENTILATION: Use with adequate ventilation.

FIRE PREVENTION: No special requirements.

SPECIAL HANDLING REQUIREMENTS: None.

SAFE *STORAGE* RECOMMENDATIONS

CONTAINMENT: Keep container closed when not in use.

STORAGE ROOM RECOMMENDATIONS: Store in cool, dry areas and away from incompatible substances.

INCOMPATIBLE MATERIALS: Strong oxidizing agents.

STORAGE CONDITIONS: Store in cool, dry areas and away from incompatible substances.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: No special ventilation is required. None required under normal conditions of use.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: For operations where eye contact can occur, wear safety glasses.

SKIN PROTECTION: For operations where skin contact can occur, wear impervious rubber or neoprene apron.

HAND PROTECTION: For operations where hand contact can occur, wear impervious rubber or neoprene gloves.

RESPIRATORY PROTECTION: If dust is generated, a dust mask may be needed. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

GOOD HYGEIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

PERMISSIBLE EXPOSURE LIMITS						
INGREDIENT CAS NO.	OSHA		WISHA		ACGIH (TLV)	
	TWA	STEL	TWA	STEL	TWA	STEL

Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Off-white.
PHYSICAL FORM: Fine powder.
pH: Not available
VAPOR DENSITY: Not available
MELTING POINT: Not available
SOLUBILITY IN WATER: Soluble

SHAPE: Fine powder.
ODOR: None
VAPOR PRESSURE: Not available
BOILING POINT: Not available
FREEZING POINT: Not available
SPECIFIC GRAVITY OR DENSITY: Not available

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

CONDITIONS TO AVOID: None known.

MATERIALS TO AVOID (INCOMPATIBILITY): Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: None known.

HAZARDOUS POLYMERIZATION: Not known.

SECTION 11: TOXICOLOGICAL INFORMATION

ORAL LD_{50} (mice): >10g/kg

DERMAL LD_{50} (rabbit): Not available.

SKIN IRRITATION: Not available.

EYE IRRITATION: Not available.

SKIN SENSITIZATION: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY (in water):

Acute Toxicity

- Daphnia: LC50 – 135 mg/L
- Daphnia: LC25 – Not Calculable
- Fathead Minnows: LC50 – 22.8 mg/L
- Fathead Minnows: LC25 – 16.9 mg/L

- Rainbow Trout: LC50 – 6.4 mg/L
- Rainbow Trout: LC25 – 4.4 mg/L

Chronic Toxicity
- Rainbow Trout: LC50 (survival) – 5.3 mg/L, 7 days
- Rainbow Trout: LC25 (survival) – 4.8 mg/L, 7 days
- Rainbow Trout: EC25 (biomass) – 3.5 mg/L, 7 days
- Fathead Minnows: LC50 (survival) – 25.4 mg/L, 7 days
- Fathead Minnows: LC25 (survival) – Not Calculable
- Fathead Minnows: EC25 (biomass) – 13.9 mg/L, 7 days

MOBILITY: Not available.

PERSISTENCE AND DEGRADABILITY: Not available.

BIOACCUMULATIVE POTENTIAL: Not available.

ADDITIONAL INFORMATION: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name: Not Regulated
Hazard Class: Not Regulated
Identification Number (UN Number): Not Regulated
Packing Group (PG): Not Regulated

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ

Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	NO	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:
MSDS sections(s) changed since last revision of document:

- None, this is a new MSDS.

DISCLAIMER:
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MSDS PREPARED BY: Jeremy Heath, EH&S Manager

Date: 7/24/2012
Revision: 00

Material Safety Data Sheet

HaloKlear: DBP-2100

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Manufacturer's Name:	HaloSource, Inc.
Corporate Address:	1631 220th St. SE, Suite 100, Bothell, WA 98021
Manufacturer's Telephone:	(425) 881-6464 (Monday-Friday, 8AM-5PM PDT)
Emergency Telephone (24 Hours):	800-424-9300 CHEMTREC (Domestic, North America) 703-527-3887 CHEMTREC (International, collect calls accepted)
Material/Trade/Product Name:	**HaloKlear: DBP-2100**
Synonyms:	Poly X Socks
Chemical Name:	Proprietary
Chemical Formula:	Proprietary
CAS No.:	Proprietary
EPA Registration #:	Not applicable
Product Use:	Flocculant

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

CAS NO.	COMPONENT	%	OSHA HAZARDOUS?
Trade Secret	*Trade Secret*	*Trade Secret*	YES

NOTE: See Section 8 for permissible exposure limits.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Off-white to tan, odorless powder.

May cause irritation to eyes and respiratory tract. May cause drying or chapping or skin.

WARNING! Can contain sufficient fines to cause a combustible dust explosion. Product will burn when in contact with a flame. See Section 5 Fire Fighting Measures for more information.

POTENTIAL HEALTH EFFECTS

EYE: Dry powder may cause foreign body irritation in some individuals.

SKIN: Prolonged contact with the dry powder may cause drying or chapping.

INHALATION: Hygroscopic properties of the product can form a paste or gel in the airway. Inhalation of dust may cause respiratory tract irritation. Excessive inhalation of dust may cause coughing and sneezing.

INGESTION: Not toxic if swallowed (less than a mouthful) based on available information.

CHRONIC EXPOSURE/CARCINOGENICITY: None of the components present in this material at concentrations of equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

AGGRAVATION OF PRE-EXISTING CONDITIONS: None known.

POTENTIAL ENVIRONMENTAL EFFECTS: Contains no substances known to be hazardous to the environment.

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYE CONTACT: Remove contact lenses (if applicable), flush with water for 15 minutes. Call a physician.

SKIN CONTACT: Cleansing the skin after exposure is advisable.

INHALATION: If large amounts are inhaled, remove to fresh air and consult a physician.

INGESTION: Consult a physician if necessary.

NOTE TO PHYSICIANS: None.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: Not applicable
AUTOIGNITION TEMPERATURE: Not available
UPPER FLAMMABLE LIMIT: Not available
LOWER FLAMMABLE LIMIT: Not available
FLAMMABLITY CLASS (OSHA): Not applicable
FLAME PROPAGATION/BURNING RATE: Not available

UNIQUE FIRE PROPERTIES: Combustible dust which can contain sufficient fines to cause a combustible dust explosion.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide.

EXTINGUISHING MEDIA: Water, dry chemical, carbon dioxide.

PROTECTION OF FIREFIGHTERS: Treat as a “Class A” fire. Product will burn when in contact with a flame. Self extinguishers when ignition source is removed. Tends to smolder. As in any fire, wear self-contained breathing apparatus pressure-demand, and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: See Section 8 (Personal Protective Equipment).

ENVIRONMENTAL PRECAUTIONS: None known.

METHODS FOR CLEANING UP: Wet material on walking surfaces will be extremely slipper. Avoid dust formation. Use equipment designed specifically for combustible dust. Take precautionary measures against static discharges.

SECTION 7: HANDLING AND STORAGE

SAFE *HANDLING* RECOMMENDATIONS

VENTILATION: Avoid dust formation. Provide appropriate exhaust ventilation in places where dust is formed.

FIRE PREVENTION: Product may form combustible dust-air mixtures. Keep away from heat, flames, sparks, and other ignition sources. Avoid emptying package in or near flammable vapors. Static charges may cause flash fire.

SPECIAL HANDLING REQUIREMENTS: Remove material from eyes, skin and clothing.

SAFE *STORAGE* RECOMMENDATIONS

CONTAINMENT: No special containment needed.

STORAGE ROOM RECOMMENDATIONS: Store in a cool, dry, well-ventilated area away from direct heat.

INCOMPATIBLE MATERIALS: Strong oxidizing agents.

STORAGE CONDITIONS: Store in cool, dry place. Keep container closed when not in use; keep out of the reach of children.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits in this section.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE/FACE PROTECTION: This product does not cause significant eye irritation or eye toxicity requiring special protection. Where there is significant potential for eye contact, wear chemical goggles and have eye flushing equipment available.

SKIN PROTECTION: Although this product does not present a significant skin concern, minimizes skin contamination by following good industrial practice.

HAND PROTECTION: Chemical resistant gloves are recommended to minimize potential irritation from handling.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Respirator use is not required for this product.

GOOD HYGEIENE/WORK PRACTICES: Always follow good hygiene/work practices by avoiding vapors or mists and contact with eyes and skin. Thoroughly wash hands after handling and before eating or drinking. Always wear the appropriate PPE when repairing or performing maintenance on contaminated equipment.

EXPOSURE GUIDELINES

PERMISSIBLE EXPOSURE LIMITS			
INGREDIENT	OSHA	WISHA	ACGIH (TLV)

CAS NO.	TWA	STEL	TWA	STEL	TWA	STEL
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

COLOR: Off white to tan
PHYSICAL FORM: Solid, powder
pH: Approximately neutral (1% solution)
VAPOR DENSITY: Not known
MELTING POINT: Not known
SOLUBILITY IN WATER: Fully soluble
SHAPE: Powder
ODOR: Odorless
VAPOR PRESSURE: Not known
BOILING POINT: Not known
FREEZING POINT: Not known
SPECIFIC GRAVITY OR DENSITY: Not known

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Values should not be construed as a guaranteed analysis of any specific lot or as specifications.

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under recommended storage conditions

CONDITIONS TO AVOID: Avoid dust formation

MATERIALS TO AVOID (INCOMPATIBILITY): Strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide

HAZARDOUS POLYMERIZATION: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

ORAL LD_{50} (rat): >5,000 mg/kg

DERMAL LD_{50} (rabbit): Not available

DERMAL LD_{50} (rat): Not available

SKIN IRRITATION: Non-irritating (rabbit)

EYE IRRITATION: Non-irritating (rabbit)

SKIN SENSITIZATION: No skin allergy observed in gui8nea pig following repeated skin exposure

ADDITIONAL INFORMATION: The dry powder may cause foreign body irritation in some individuals. Prolonged contact with the dry powder may cause drying or chapping of the skin. Excessive inhalation of dust may be annoying and can mechanically impede respiration. Due to the hygroscopic properties, they can form a paste or gel in the airway.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

MOBILITY: Not available

PERSISTENCE AND DEGRADABILITY: This product is biodegradable.

BIOACCUMULATIVE POTENTIAL: Inherently biodegradable.

ADDITIONAL INFORMATION:

- 96 Hour Acute Survival
  - Rainbow Trout: LC_{50} 491 mg/L, LC_{25} 347 mg/L
  - Fathead Minnow: LC_{50} 1110 mg/L, LC_{25} 678 mg/L

- 7-Day Chronic Survival and Growth
  - Rainbow Trout: LC_{50} 510 mg/L, LC_{25} 390 mg/L
  - Fathead Minnow: LC_{50} 605 mg/L, LC_{25} 443 mg/L
  - Ceriodaphnia Dubia: LC_{50} 352 mg/L, LC_{25} 289 mg/L

- Rainbow Trout (Biomass): LC_{50} 386 mg/L, LC_{25} 262 mg/L
- Fathead Minnow (Biomass): LC_{50} 505 mg/L, LC_{25} 256 mg/L

SECTION 13: DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal regulations. Consult state and local regulations regarding the proper disposal of this material.

NOTE: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):

Proper Shipping Name: Not Regulated
Hazard Class: Not Regulated
Identification Number (UN Number): Not Regulated
Packing Group (PG): Not Regulated

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: Component(s) listed

CERCLA REPORTABLE QUANTITY (RQ):

CHEMICAL NAME	RQ
Not applicable	Not applicable

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (EHS):

CHEMICAL NAME	TPQ	RQ
Not applicable	Not applicable	Not applicable

SARA TITLE III SECTION 311/312 HAZARD CATEGORIES: Does this product/material meet the definition of the following hazard classes according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of SARA Title III?

ACUTE HEALTH HAZARD	CHRONIC HEALTH HAZARD	FIRE HAZARD	REACTIVE HAZARD	SUDDEN RELEASE OF PRESSURE
YES	NO	YES	NO	NO

SARA TITLE III SECTION 313 TOXIC CHEMICALS INFORMATION:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

CALIFORNIA PROPOSITION 65: The following chemical(s) is/are known to the state of California to cause cancer or reproductive toxicity:

CHEMICAL NAME	CAS NO.	CONCENTRATION (%)
Not applicable	Not applicable	Not applicable

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:
MSDS sections(s) changed since last revision of document:

- None, this is a new MSDS.

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MSDS PREPARED BY: Jeremy Heath, EH&S Manager

B. Submission of NOI to EPA - All operators applying for coverage under this General Permit must submit a completed Notice of Intent (NOI) to EPA. Signed and completed NOI forms and attachments must be submitted to EPA-NE at:

U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, MA 02109-3912
ATTN: Remediation General Permit NOI Processing

or electronically mailed to NPDES.Generalpermits@epa.gov

or faxed to the EPA Office at 617-918-0505

If filling out the suggested NOI form electronically on EPA's website, the signature page must be signed and faxed or mailed to EPA at the fax number and/or address listed above.

1. Filing with the states - A copy of any NOI form filed with EPA-NE must also be filed with state agencies. The state agency may elect to develop a state specific form or other information requirements.

a) Discharges in Massachusetts - In addition to the NOI, permit applicants must submit copies of the State Application Form BRPWM 12, Request for General Permit coverage for the RGP. The application form and the Transmittal Form for Permit Application and Payment may be obtained from the Massachusetts Department of Environmental Protection (MassDEP) website at www.state.ma.us/dep. Municipalities are fee-exempt, but should send a copy of the transmittal form to that address for project tracking purposes. All applicants should keep a copy of the transmittal form and a copy of the application package for their records.

1) A copy of the NOI, the transmittal form, a copy of the check, and Form BRPWM 12 should be sent to:

Massachusetts Department of Environmental Protection
Division of Watershed Management
627 Main Street, 2nd floor
Worcester, MA 01608

2) A copy of the transmittal form and the appropriate fee should be sent to:

Massachusetts Department of Environmental Protection
P.O. Box 4062
Boston, MA 02111

Please note: Applicants for discharges in Massachusetts should note that under 310 CMR 40.000, *as a matter of state law*, the general permit only applies to discharges that are **not** subject to the

Massachusetts Contingency Plan (MCP) and 310 CMR 40.000. Therefore, discharges subject to the MCP are **not** required to fill out and submit the State Application Form BRPWM 12 or pay the state fees. However, they must submit a NOI to EPA.

b) Discharges in New Hampshire - applicants must provide a copy of the Notice of Intent to:

New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
P.O. Box 95
Concord, New Hampshire 03302-0095.

2. Filing with Municipalities - A copy of the NOI must be submitted to the municipality in which the proposed discharge would be located.