

**REMEDIAL GENERAL PERMIT
NOTICE OF INTENT PACKAGE**

**RESIDENCE
13 JORDAN ROAD
HALIFAX, MASSACHUSETTS**

RTN 4-22368

March 25, 2010

Prepared for:

**Kevin Murphy
13 Jordan Road
Halifax, Massachusetts 02338**

Prepared by:



*Lauren Konetzny
Project Engineer*

Reviewed by:



*Ronald K. Burns, PE, LSP
Division Manager*

**Coler & Colantonio, Inc.
101 Accord Park Drive
Norwell, Massachusetts 02061-1685
(781)-982-5400**

Project No. 11-1410.00

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PART I

Remedial General Permit Notice of Intent

*Residence
13 Jordan Road
Halifax, Massachusetts
Project No. 11-1410.00*

Prepared by Coler & Colantonio, Inc.

*RGP NOI
March 25, 2010
RTN 3-4-22368*

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

a) Name of facility/site : Murphy Residence		Facility/site address:		
Location of facility/site : longitude: <u>-70.832767</u> latitude: <u>42.009161</u>	Facility SIC code(s):	Street: 13 Jordan Road		
b) Name of facility/site owner : Kevin Murphy		Town: Halifax		
Email address of owner: murphykimnkev@comcast.net	State: MA	Zip: 02338	County: Plymouth	
Telephone no. of facility/site owner : (339) 933-9401				
Fax no. of facility/site owner :		Owner is (check one): 1. Federal____ 2. State/Tribal____ 3. Private <input checked="" type="checkbox"/> 4. other, if so, describe:		
Address of owner (if different from site):				
Street:				
Town:	State:	Zip:	County:	
c) Legal name of operator : Contractor: Coler & Colantonio, Inc.		Operator telephone no: (781) 982-5400		
		Operator fax no.: (781) 982-5486	Operator email: rburns@col-col.com	
Operator contact name and title: Ronald K. Burns, LSP (Division Manager - Environmental Services)				

Address of operator (if different from owner):		Street: 101 Accord Park Drive	
Town: Norwell	State: MA	Zip: 02061	County: Plymouth
d) Check "yes" or "no" for the following: 1. Has a prior NPDES permit exclusion been granted for the discharge? Yes ___ No <input checked="" type="checkbox"/> , if "yes," number: 2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Yes ___ No <input checked="" type="checkbox"/> , if "yes," date and tracking #: 3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Yes <input checked="" type="checkbox"/> No ___ 4. For sites in Massachusetts, is the discharge covered under the MA Contingency Plan (MCP) and exempt from state permitting? Yes <input checked="" type="checkbox"/> No ___			
e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes <input checked="" type="checkbox"/> No ___ If "yes," please list: 1. site identification # assigned by the state of NH or MA: MADEP RTN 4-22368 2. permit or license # assigned: NA 3. state agency contact information: name, location, and telephone number: MADEP, SERO, 20 Riverside Dr., Lakeville, MA 508-946-2700		f) Is the site/facility covered by any other EPA permit, including: 1. multi-sector storm water general permit? Y ___ N <input checked="" type="checkbox"/> , if Y, number: 2. phase I or II construction storm water general permit? Y ___ N <input checked="" type="checkbox"/> , if Y, number: 3. individual NPDES permit? Y ___ N <input checked="" type="checkbox"/> , if Y, number: 4. any other water quality related permit? Y ___ N <input checked="" type="checkbox"/> , if Y, number:	

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

a) Describe the discharge activities for which the owner/applicant is seeking coverage: Discharge of water generated during dewatering activities associated with the installation of a new foundation for the residence. If less than 40,000 gallons of water are generated, water will be discharged as one or two batch sample(s) from one or two 20,000 gallon frac tanks. If more than 40,000 gallons of water are generated, continuous discharge may be utilized. The discharge will flow into a wetland which is believed to be a tributary of Monponsett Pond, a Class A surface water body.		
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 <u>0.045</u> Average flow <u>0.023</u> Is maximum flow a design value ? Y <input checked="" type="checkbox"/> N ___ For average flow, include the units and appropriate notation if this value is a design value or estimate if not available.
3) Latitude and longitude of each discharge within 100 feet: pt.1:long. <u>-70.832503</u> lat. <u>42.009203</u> ; pt.2: long. _____ lat. _____ ; pt.3: long. _____ lat. _____ ; pt.4:long. _____ lat. _____ ; pt.5: long. _____ lat. _____ ; pt.6:long. _____ lat. _____ ; pt.7: long. _____ lat. _____ ; pt.8:long. _____ lat. _____ ; etc.		

4) If hydrostatic testing, total volume of the discharge (gals):	5) Is the discharge intermittent <input checked="" type="checkbox"/> or seasonal _____? Is discharge ongoing Yes _____ No <input checked="" type="checkbox"/> ?
c) Expected dates of discharge (mm/dd/yy): start <u>04/01/10</u> end <u>07/30/10</u>	
d) Please attach a line drawing or flow schematic showing water flow through the facility including: 1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).	

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

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

Gasoline Only	VOC Only	Primarily Metals	Urban Fill Sites	Contaminated Sumps	Mixed Contaminants	Aquifer Testing
Fuel Oils (and <input checked="" type="checkbox"/> Other Oils) only	VOC with Other Contaminants	Petroleum with Other Contaminants	Listed Contaminated Sites	Contaminated Dredge Condensates	Hydrostatic Testing of Pipelines/Tanks	Well Development or Rehabilitation

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids		<input checked="" type="checkbox"/>	1	grab	160.2	5 mg/L	2,800			
2. Total Residual Chlorine	<input checked="" type="checkbox"/>		1	grab	330.1	20 ug/L	ND (<20)			
3. Total Petroleum Hydrocarbons		<input checked="" type="checkbox"/>	1	grab	1664A	5 mg/L	ND (<4,000)			
4. Cyanide	<input checked="" type="checkbox"/>		1	grab	335.2	10 ug/L	ND (<5)			
5. Benzene	<input checked="" type="checkbox"/>		1	grab	624	2 ug/L	ND (<1)			
6. Toluene		<input checked="" type="checkbox"/>	1	grab	624	2 ug/L	2.2			
7. Ethylbenzene	<input checked="" type="checkbox"/>		1	grab	624	2 ug/L	ND (<1)			
8. (m,p,o) Xylenes	<input checked="" type="checkbox"/>		1	grab	624	10 ug/L	ND (<2)			
9. Total BTEX ⁴		<input checked="" type="checkbox"/>	1	grab	624	2 ug/ L	2.2			

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide (1,2- Dibromo-methane)	✓		1	grab	504.1	0.01 ug/L	ND (<0.01)			
11. Methyl-tert-Butyl Ether (MtBE)	✓		1	grab	624	5.0 ug/L	ND (<20)			
12. tert-Butyl Alcohol (TBA)	✓		1	grab	624	100 ug/L	ND (<100)			
13. tert-Amyl Methyl Ether (TAME)	✓		1	grab	624	0.5 ug/L	ND (<20)			
14. Naphthalene	✓		1	grab	8270C	0.2 ug/L	ND (<0.19)			
15. Carbon Tetra-chloride	✓		1	grab	624	2 ug/L	ND (<1)			
16. 1,4 Dichlorobenzene	✓		1	grab	624	2 ug/L	ND (<5)			
17. 1,2 Dichlorobenzene	✓		1	grab	624	2 ug/L	ND (<5)			
18. 1,3 Dichlorobenzene	✓		1	grab	624	2 ug/L	ND (<5)			
19. 1,1 Dichloroethane	✓		1	grab	624	1 ug/L	ND (<1.5)			
20. 1,2 Dichloroethane	✓		1	grab	624	2 ug/L	ND (<1.5)			
21. 1,1 Dichloroethylene	✓		1	grab	624	2 ug/L	ND (<1)			
22. cis-1,2 Dichloro-ethylene	✓		1	grab	624	2 ug/L	ND (<1)			
23. Dichloromethane (Methylene Chloride)	✓		1	grab	624	2 ug/L	ND (<5)			
24. Tetrachloroethylene	✓		1	grab	624	2 ug/L	ND (<1.5)			

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane	✓		1	grab	624	2 ug/L	ND (<2)			
26. 1,1,2 Trichloroethane	✓		1	grab	624	2 ug/L	ND (<1.5)			
27. Trichloroethylene	✓		1	grab	624	2 ug/L	ND (<1)			
28. Vinyl Chloride	✓		1	grab	624	2 ug/L	ND (<2)			
29. Acetone	✓		1	grab	624	50 ug/L	330			
30. 1,4 Dioxane	✓		1	grab	624	50 ug/L	ND (<2,000)			
31. Total Phenols	✓		1	grab	8270C	1.0 ug/L	ND(<30)			
32. Pentachlorophenol	✓		1	grab	8270C	1.0 ug/L	ND (<0.78)			
33. Total Phthalates ⁵ (Phthalate esthers)	✓		1	grab		5 ug/L	ND			
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✓		1	grab	8270C	5 ug/L	ND (<4.8)			
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✓		1	grab	8270C		ND			
a. Benzo(a) Anthracene	✓		1	grab	8270C	0.05 ug/L	ND (<0.19)			
b. Benzo(a) Pyrene	✓		1	grab	8270C	2 ug/L	ND (<0.19)			
c. Benzo(b)Fluoranthene	✓		1	grab	8270C	0.1 ug/L	ND (<0.19)			
d. Benzo(k) Fluoranthene	✓		1	grab	8270C	2 ug/L	ND (<0.19)			
e. Chrysene	✓		1	grab	8270C	5 ug/L	ND (<0.19)			

⁵The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	✓		1	grab	8270C	0.1 ug/L	ND (<0.19)			
g. Indeno(1,2,3-cd) Pyrene	✓		1	grab	8270C	0.15 ug/L	ND (<0.19)			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	✓		1	grab	8270C		ND			
h. Acenaphthene	✓		1	grab	8270C	0.5 ug/L	ND (<0.19)			
i. Acenaphthylene	✓		1	grab	8270C	0.2 ug/L	ND (<0.19)			
j. Anthracene	✓		1	grab	8270C	2 ug/L	ND (<0.19)			
k. Benzo(ghi) Perylene	✓		1	grab	8270C	0.1 ug/L	ND (<0.19)			
l. Fluoranthene	✓		1	grab	8270C	0.5 ug/L	ND (<0.19)			
m. Fluorene	✓		1	grab	8270C	0.1 ug/L	ND (<0.19)			
n. Naphthalene-	✓		1	grab	8270C	0.2 ug/L	ND (<0.19)			
o. Phenanthrene	✓		1	grab	8270C	0.05 ug/L	ND (<0.19)			
p. Pyrene	✓		1	grab	8270C	0.05 ug/L	ND (<0.19)			
37. Total Polychlorinated Biphenyls (PCBs)	✓		1	grab	608	0.5 ug/L	ND (<0.258)			
38. Antimony	✓		1	grab	3005A	50 ug/L	ND (<0.5)			
39. Arsenic		✓	1	grab	3005A	5 ug/L	1.3			
40. Cadmium	✓		1	grab	3005A	0.5 ug/L	ND (<0.2)			
41. Chromium III		✓	1	grab	3005A	10 ug/L	1.9			
42. Chromium VI	✓		1	grab	3500CR-D	10 ug/L	ND (<10)			

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper		✓	1	grab	3005A	5 ug/L	8.3			
44. Lead		✓	1	grab	3005A	40 ug/L	11.8			
45. Mercury	✓		1	grab	245.1	0.2 ug/L	ND (<0.2)			
46. Nickel		✓	1	grab	3005A	10 ug/L	1.7			
47. Selenium	✓		1	grab	3005A	50 ug/L	ND (<1)			
48. Silver	✓		1	grab	3005A	2 ug/L	ND (<0.4)			
49. Zinc		✓	1	grab	3005A	10 ug/L	65.2			
50. Iron		✓	1	grab	3005A		1,300			
Other (describe):	✓									

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

<p><i>Step 1:</i> Do any of the metals in the influent have a reasonable potential to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y <input checked="" type="checkbox"/> N <input type="checkbox"/></p>	<p>If yes, which metals? copper, iron, & lead</p>
<p><i>Step 2:</i> For any metals which have reasonable potential to exceed the Appendix III limits, calculate the dilution factor (DF) using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metals: <u>copper, iron, & lead</u></p> <p>DF: <u>3.4</u></p>	<p>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 <input checked="" type="checkbox"/> N <input type="checkbox"/> If "Yes," list which metals: copper, iron, & lead</p>

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

<p>a) A description of the treatment system, including a schematic of the proposed or existing treatment system: Water from the excavation will be pumped into one or two 20,000 gallon frac tanks as necessary during foundation installation activities. If the volume of water approaches 30,000 gallons, continuous discharge through a treatment system consisting of two bag filters in parallel and two 500 pounds GAC filters in series will be utilized, otherwise batch discharge will be utilized. For batch discharge, once dewatering activities are complete, one sample will be collected from each frac tank. Each sample will be submitted for analysis of all chemicals identified as "believed present." If any chemicals are present in either of the frac tanks above Effluent Limitations, the following treatment measures will be employed: for metals above Effluent Limitations a bag filter will be utilized, for TPH or VOCs above Effluent Limitations a GAC filter will be utilized.</p>						
b) Identify each applicable treatment unit (check all that apply):	Frac. tank ✓	Air stripper	Oil/water separator	Equalization tanks	Bag filter ✓	GAC filter ✓
	Chlorination	Dechlorination	Other (please describe):			
<p>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 <u>11</u> Maximum flow rate of treatment system <u>20</u> Design flow rate of treatment system <u>20</u></p>						
<p>d) A description of chemical additives being used or planned to be used (attach MSDS sheets): Not applicable</p>						

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

a) Identify the discharge pathway:	Direct <u> </u>	Within facility <u> </u>	Storm drain <u> </u>	River/brook <u> </u>	Wetlands <u> ✓ </u>	Other (describe):
<p>b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters: A pump will be utilized to remove water from the within the open excavation (created by excavation of impacted soil) as necessary to conduct construction of a new foundation for the residence. The water will be temporarily stored in one or two 20,000 gallon frac tanks. After treatment, if necessary, the water will be directly discharged to a nearby wetland which is believed to be a tributary to the nearby Monponsett Pond, a Class A surface water body. It is estimated that the total volume of collected water will not exceed 40,000 gallons; however, should additional dewatering be necessary due to heavy rainfall or groundwater infiltration, continous discharge or off-site disposal will be utilized to for dealing with the additional water.</p>						

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:

1. For multiple discharges, number the discharges sequentially.

2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water

The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water Class A,

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.11 cfs

Please attach any calculation sheets used to support stream flow and dilution calculations.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Yes No If yes, for which pollutant(s)?

Is there a TMDL? Yes No If yes, for which pollutant(s)?

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

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes No

Has any consultation with the federal services been completed? No or is consultation underway? Yes No

What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one):

a "no jeopardy" opinion? or written concurrence on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?

b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge?

Yes No Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes No

7. Supplemental information. :

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

The following are references that support our findings:

The following are the DF calculations per Appendix V I.A.3.c (Step 2):

$$DF = (Qd + Qs)/Qd$$

Qd = maximum flow rate of the discharge (cfs) = 0.045 cfs

Qs = Receiving water 7Q10 flow (cfs) = 0.11 cfs - from USGS Massachusetts Stream Stats (see attached Stream Stats data)

$$DF = [0.045 \text{ cfs} + 0.11 \text{ cfs}] / 0.045 \text{ cfs} = 3.4$$

The dilution factor concentration range between 0-5 from Appendix IV is the same as the Effluent Limitations from Appendix III

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:

Murphy Residence

Operator signature:



Title:

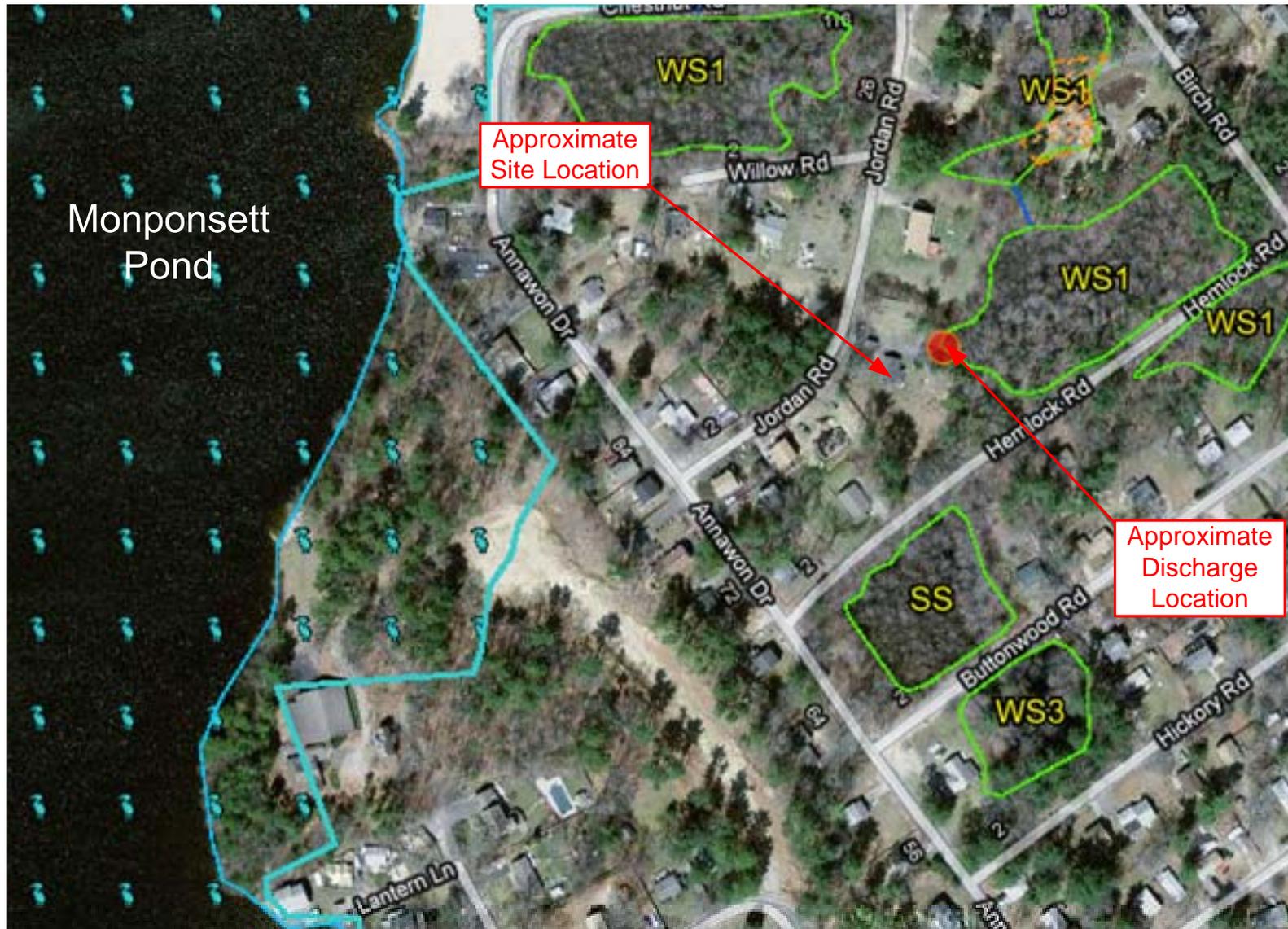
Operator: Ronald Burns

Date: 03/24/10

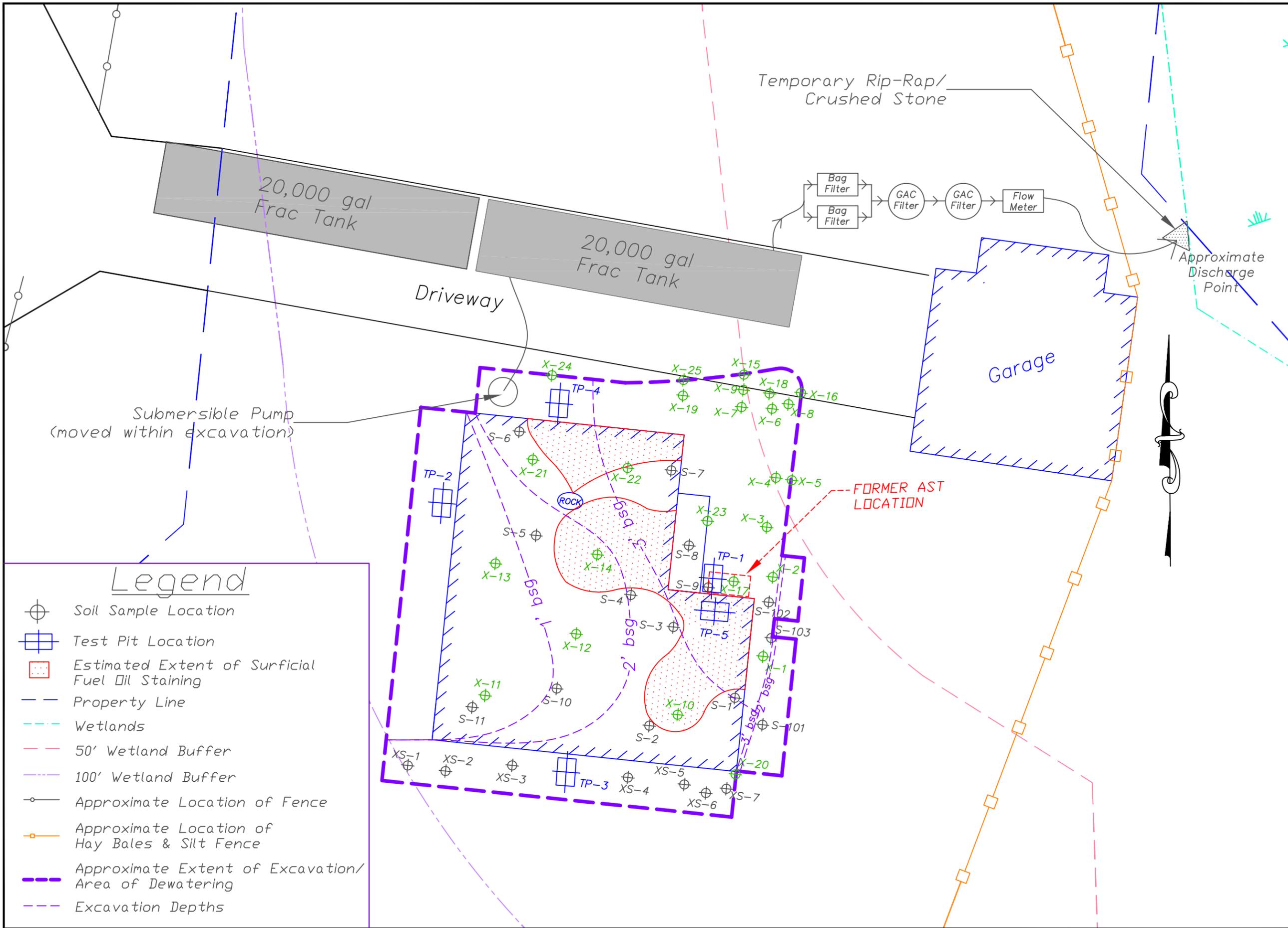
PART II

Figures

- Figure 1 Receiving Waters Map
- Figure 2 Treatment System Diagram
- Figure 3 DEP Priority Resource Map



- 100 Year Flood Zone A
- 100 Year Flood Velocity Zone
- NHESP Estimated Habitats of Rare Wildlife
- Areas of Critical Environmental Concern
- Shoreline
- Hydrologic Connection
- Mean Low Water Line
- Apparent Wetland Limit
- Closure Line
- Edge of Interpreted Area
- MassDEP Wetland Change Area



REVISIONS:

No.	DATE	

GENERAL NOTES:

1. THE BASE MAP WAS DRAWN FROM A SITE PLAN BY LAND PLANNING, INC. ENTITLED SUBSURFACE SEWAGE DISPOSAL SYSTEM AND DATED MARCH 3, 1999. ORIGINAL SCALE 1" = 20'
2. THE COMPONENTS OF THE TREATMENT SYSTEM ARE NOT DRAWN TO SCALE.

COLER & COLANTONIO
ENGINEERS AND SCIENTISTS

781-982-5400 Fax: 781-982-5490 101 Accord Park Drive Norwell, MA 02061-1685

TITLE:

FIGURE 2
Treatment System Diagram

MURPHY RESIDENCE
13 JORDAN ROAD
HALIFAX, MASSACHUSETTS

Project Number: 11-1408.00
RTN: 4-22368

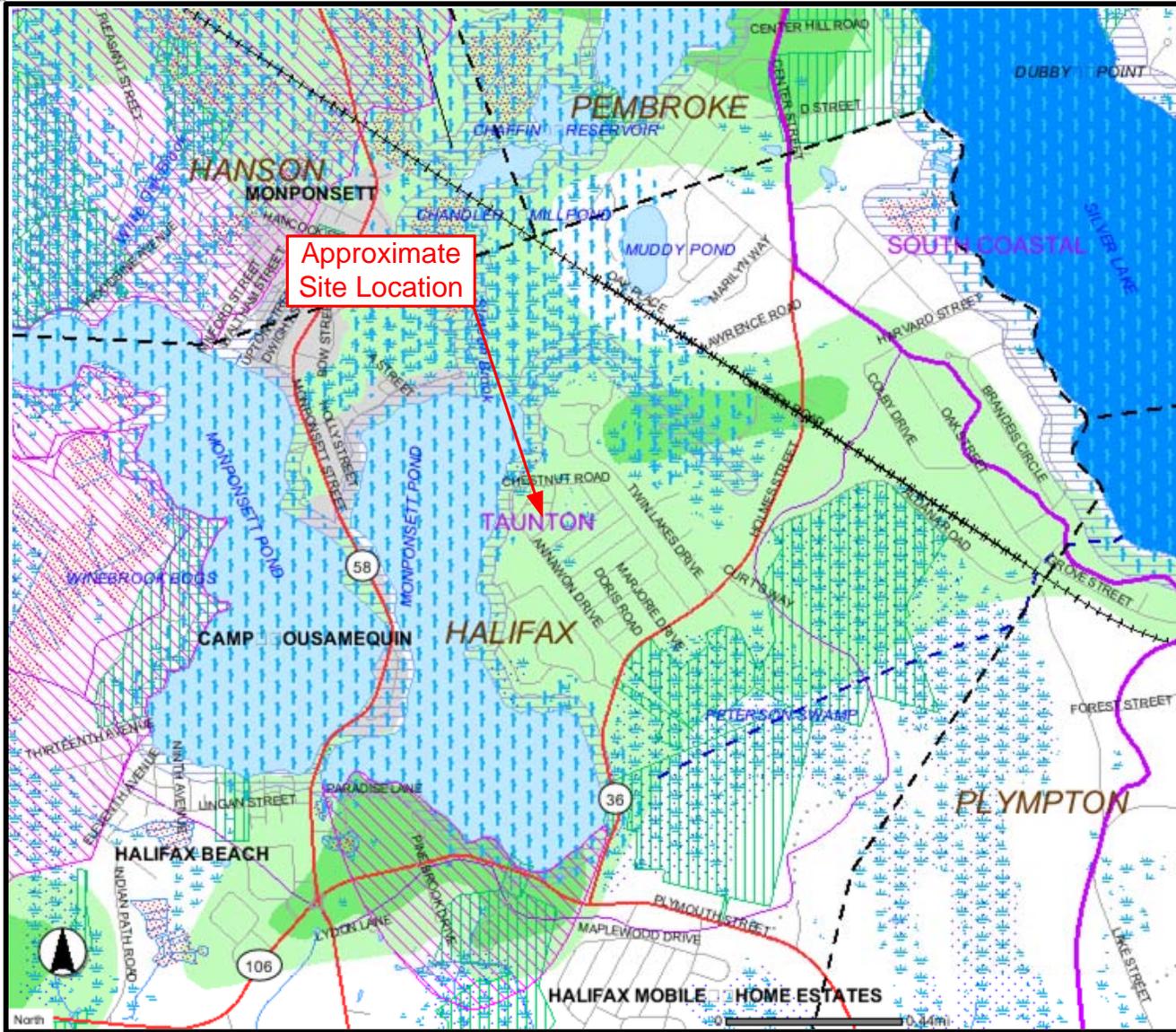
DATE: MARCH 23, 2010
COMP./DESIGN: LMK
CHECK: RKB
DRAWN: LMK
SCALE: 1" = 10'
JOB NO.: 11-1408
DWG NO.: Site Plan
SHEET 1 OF 1

Legend

- Soil Sample Location
- Test Pit Location
- Estimated Extent of Surficial Fuel Oil Staining
- Property Line
- Wetlands
- 50' Wetland Buffer
- 100' Wetland Buffer
- Approximate Location of Fence
- Approximate Location of Hay Bales & Silt Fence
- Approximate Extent of Excavation/ Area of Dewatering
- Excavation Depths

DEP MCP 21e Map Legend

- Zone IIs
 - IWPA
 - Zone A
 - Sole Source Aquifers
 - Solid Waste Sites
 - Protected Openspace
 - ACECs
 - NHESP Estimated Habitat of Rare Wildlife in Wetland Areas
 - Certified Vernal Pools 2003 NHESP
 - Subbasins
 - Mass Major Basins
 - DEP Region
 - Town Arcs
 - County Boundaries
- Public Water Supplies**
- COMMUNITY PUBLIC WATER SUPPLY - GROUNDWATER
 - COMMUNITY PUBLIC WATER SUPPLY - SURFACE WATER
 - NON COMMUNITY PUBLIC WATER SUPPLY
- Aquifers, By Yield**
- HIGH YIELD
 - MEDIUM YIELD
- Non Potential Drinking Water Source Area**
- HIGH YIELD
 - MEDIUM YIELD
- FEMA Floodplains**
- 100 YEAR FLOODPLAIN



- Hydrography**
- WATER
 - RESERVOIR
 - WETLANDS
 - SALTWATER WETLANDS
 - FLATS, SHOALS
- Rivers and Streams**
- PERENNIAL
 - INTERMITTENT
 - SHORELINE
 - MAN MADE SHORE
 - DAM
 - AQUEDUCT
- MHD Roads**
- LIMITED ACCESS HIGHWAY
 - MULTILANE HWY, NOT LIMITED ACCESS
 - OTHER NUMBERED HWY
 - MAJOR ROAD - COLLECTOR
 - MINOR STREET OR ROAD, RAMP
- Tracks and Trails MHD**
- TRACK
 - TRAIL
- Transmission Lines**
- PIPELINE
 - POWERLINE
 - TRAIN

PART III

Laboratory Analytical Data



ANALYTICAL REPORT

Lab Number:	L1003788
Client:	Coler & Colantonio 101 Accord Park Drive Norwell, MA 02061
ATTN:	Lauren Konetzny
Project Name:	RESIDENCE
Project Number:	11-1410.00
Report Date:	03/23/10

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1003788-01	RGP	HALIFAX, MA	03/16/10 08:15
L1003788-02	TRIP BLANK	HALIFAX, MA	03/16/10 00:00

Project Name: RESIDENCE

Lab Number: L1003788

Project Number: 11-1410.00

Report Date: 03/23/10

MADEP MCP Response Action Analytical Report Certification

This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.

An affirmative response to questions A, B, C & D is required for "Presumptive Certainty" status		
A	Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set?	YES
B	Were all QA/QC procedures required for the specified analytical methods(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	YES
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	YES
D	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	YES
A response to questions E and F is required for "Presumptive Certainty" status		
E	Were all QC performance standards and recommendations for the specified method(s) achieved?	NO
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	NO
For any questions answered "No", please refer to the case narrative section on the following page(s).		

Please note that sample matrix information is located in the Sample Results section of this report.



Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEX data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

MCP Related Narratives

EPH

In reference to question E:

The WG404297-2/-3 LCS/LCSD RPD, associated with L1003788-01, is above the acceptance criteria for Nonane (C9) (28%); however, the individual LCS/LCSD recoveries are within method limits. The results of the associated sample are reported.

In reference to question F:

All samples were analyzed for a subset of MCP compounds per the Chain of Custody.

Non-MCP Related Narratives

Sample Receipt

At the client's request, the Trip Blank was not analyzed.

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Case Narrative (continued)

TPH

A Matrix Spike could not be performed due to insufficient sample volume available for analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Title: Technical Director/Representative

Date: 03/23/10

ORGANICS

VOLATILES

Project Name: RESIDENCE**Lab Number:** L1003788**Project Number:** 11-1410.00**Report Date:** 03/23/10**SAMPLE RESULTS**

Lab ID: L1003788-01
Client ID: RGP
Sample Location: HALIFAX, MA
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 03/23/10 10:32
Analyst: JB

Date Collected: 03/16/10 08:15
Date Received: 03/16/10
Field Prep: Not Specified
Extraction Date: 03/23/10 10:00

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Pesticides by GC - Westborough Lab					
1,2-Dibromoethane	ND		ug/l	0.010	1
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	1

Project Name: RESIDENCE**Lab Number:** L1003788**Project Number:** 11-1410.00**Report Date:** 03/23/10**SAMPLE RESULTS**

Lab ID: L1003788-01
Client ID: RGP
Sample Location: HALIFAX, MA
Matrix: Water
Analytical Method: 5,624
Analytical Date: 03/17/10 08:59
Analyst: TT

Date Collected: 03/16/10 08:15
Date Received: 03/16/10
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab					
Methylene chloride	ND		ug/l	5.0	1
1,1-Dichloroethane	ND		ug/l	1.5	1
Chloroform	ND		ug/l	1.5	1
Carbon tetrachloride	ND		ug/l	1.0	1
1,2-Dichloropropane	ND		ug/l	3.5	1
Dibromochloromethane	ND		ug/l	1.0	1
1,1,2-Trichloroethane	ND		ug/l	1.5	1
2-Chloroethylvinyl ether	ND		ug/l	10	1
Tetrachloroethene	ND		ug/l	1.5	1
Chlorobenzene	ND		ug/l	3.5	1
Trichlorofluoromethane	ND		ug/l	5.0	1
1,2-Dichloroethane	ND		ug/l	1.5	1
1,1,1-Trichloroethane	ND		ug/l	2.0	1
Bromodichloromethane	ND		ug/l	1.0	1
trans-1,3-Dichloropropene	ND		ug/l	1.5	1
cis-1,3-Dichloropropene	ND		ug/l	1.5	1
Bromoform	ND		ug/l	1.0	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	1
Benzene	ND		ug/l	1.0	1
Toluene	2.2		ug/l	1.0	1
Ethylbenzene	ND		ug/l	1.0	1
Chloromethane	ND		ug/l	10	1
Bromomethane	ND		ug/l	5.0	1
Vinyl chloride	ND		ug/l	2.0	1
Chloroethane	ND		ug/l	2.0	1
1,1-Dichloroethene	ND		ug/l	1.0	1
trans-1,2-Dichloroethene	ND		ug/l	1.5	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	1
Trichloroethene	ND		ug/l	1.0	1
1,2-Dichlorobenzene	ND		ug/l	5.0	1

Project Name: RESIDENCE

Lab Number: L1003788

Project Number: 11-1410.00

Report Date: 03/23/10

SAMPLE RESULTS

Lab ID: L1003788-01
 Client ID: RGP
 Sample Location: HALIFAX, MA

Date Collected: 03/16/10 08:15
 Date Received: 03/16/10
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab					
1,3-Dichlorobenzene	ND		ug/l	5.0	1
1,4-Dichlorobenzene	ND		ug/l	5.0	1
p/m-Xylene	ND		ug/l	2.0	1
o-xylene	ND		ug/l	1.0	1
Xylene (Total)	ND		ug/l	2.0	1
Styrene	ND		ug/l	1.0	1
Acetone	330		ug/l	10	1
Carbon disulfide	ND		ug/l	5.0	1
2-Butanone	ND		ug/l	10	1
Vinyl acetate	ND		ug/l	20	1
4-Methyl-2-pentanone	ND		ug/l	10	1
2-Hexanone	ND		ug/l	10	1
Acrolein	ND		ug/l	8.0	1
Acrylonitrile	ND		ug/l	10	1
Methyl tert butyl ether	ND		ug/l	20	1
1,4-Dioxane	ND		ug/l	2000	1
Tert-Butyl Alcohol	ND		ug/l	100	1
Tertiary-Amyl Methyl Ether	ND		ug/l	20	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	105		80-120
Fluorobenzene	99		80-120
4-Bromofluorobenzene	105		80-120

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,624
 Analytical Date: 03/17/10 07:45
 Analyst: TT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG404054-6				
Methylene chloride	ND		ug/l	5.0
1,1-Dichloroethane	ND		ug/l	1.5
Chloroform	ND		ug/l	1.5
Carbon tetrachloride	ND		ug/l	1.0
1,2-Dichloropropane	ND		ug/l	3.5
Dibromochloromethane	ND		ug/l	1.0
1,1,2-Trichloroethane	ND		ug/l	1.5
2-Chloroethylvinyl ether	ND		ug/l	10
Tetrachloroethene	ND		ug/l	1.5
Chlorobenzene	ND		ug/l	3.5
Trichlorofluoromethane	ND		ug/l	5.0
1,2-Dichloroethane	ND		ug/l	1.5
1,1,1-Trichloroethane	ND		ug/l	2.0
Bromodichloromethane	ND		ug/l	1.0
trans-1,3-Dichloropropene	ND		ug/l	1.5
cis-1,3-Dichloropropene	ND		ug/l	1.5
Bromoform	ND		ug/l	1.0
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0
Benzene	ND		ug/l	1.0
Toluene	ND		ug/l	1.0
Ethylbenzene	ND		ug/l	1.0
Chloromethane	ND		ug/l	10
Bromomethane	ND		ug/l	5.0
Vinyl chloride	ND		ug/l	2.0
Chloroethane	ND		ug/l	2.0
1,1-Dichloroethene	ND		ug/l	1.0
trans-1,2-Dichloroethene	ND		ug/l	1.5
cis-1,2-Dichloroethene	ND		ug/l	1.0
Trichloroethene	ND		ug/l	1.0
1,2-Dichlorobenzene	ND		ug/l	5.0
1,3-Dichlorobenzene	ND		ug/l	5.0

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,624
Analytical Date: 03/17/10 07:45
Analyst: TT

Parameter	Result	Qualifier	Units	RDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG404054-6				
1,4-Dichlorobenzene	ND		ug/l	5.0
p/m-Xylene	ND		ug/l	2.0
o-xylene	ND		ug/l	1.0
Xylene (Total)	ND		ug/l	2.0
Styrene	ND		ug/l	1.0
Acetone	ND		ug/l	10
Carbon disulfide	ND		ug/l	5.0
2-Butanone	ND		ug/l	10
Vinyl acetate	ND		ug/l	20
4-Methyl-2-pentanone	ND		ug/l	10
2-Hexanone	ND		ug/l	10
Acrolein	ND		ug/l	8.0
Acrylonitrile	ND		ug/l	10
Methyl tert butyl ether	ND		ug/l	20
1,4-Dioxane	ND		ug/l	2000
Tert-Butyl Alcohol	ND		ug/l	100
Tertiary-Amyl Methyl Ether	ND		ug/l	20

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	104		80-120
Fluorobenzene	100		80-120
4-Bromofluorobenzene	110		80-120

Project Name: RESIDENCE**Lab Number:** L1003788**Project Number:** 11-1410.00**Report Date:** 03/23/10**Method Blank Analysis
Batch Quality Control**

Analytical Method: 14,504.1

Analytical Date: 03/23/10 09:44

Analyst: JB

Extraction Date: 03/23/10 10:00

Parameter	Result	Qualifier	Units	RDL
Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG405082-1				
1,2-Dibromoethane	ND		ug/l	0.010
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE

Project Number: 11-1410.00

Lab Number: L1003788

Report Date: 03/23/10

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG404054-5								
Methylene chloride	101		-		1-221	-		30
1,1-Dichloroethane	102		-		59-155	-		30
Chloroform	105		-		51-138	-		30
Carbon tetrachloride	96		-		70-140	-		30
1,2-Dichloropropane	101		-		1-210	-		30
Dibromochloromethane	108		-		53-149	-		30
1,1,2-Trichloroethane	110		-		52-150	-		30
2-Chloroethylvinyl ether	96		-		1-305	-		30
Tetrachloroethene	121		-		64-148	-		30
Chlorobenzene	113		-		37-160	-		30
Trichlorofluoromethane	98		-		17-181	-		30
1,2-Dichloroethane	101		-		49-155	-		30
1,1,1-Trichloroethane	97		-		52-162	-		30
Bromodichloromethane	109		-		35-155	-		30
trans-1,3-Dichloropropene	88		-		17-183	-		30
cis-1,3-Dichloropropene	98		-		1-227	-		30
Bromoform	103		-		45-169	-		30
1,1,2,2-Tetrachloroethane	105		-		46-157	-		30
Benzene	102		-		37-151	-		30
Toluene	110		-		47-150	-		30
Ethylbenzene	110		-		37-162	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE

Project Number: 11-1410.00

Lab Number: L1003788

Report Date: 03/23/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG404054-5								
Chloromethane	131		-		1-273	-		30
Bromomethane	90		-		1-242	-		30
Vinyl chloride	84		-		1-251	-		30
Chloroethane	95		-		14-230	-		30
1,1-Dichloroethene	116		-		1-234	-		30
trans-1,2-Dichloroethene	105		-		54-156	-		30
cis-1,2-Dichloroethene	100		-		60-140	-		30
Trichloroethene	106		-		71-157	-		30
1,2-Dichlorobenzene	112		-		18-190	-		30
1,3-Dichlorobenzene	114		-		59-156	-		30
1,4-Dichlorobenzene	110		-		18-190	-		30
p/m-Xylene	108		-		40-160	-		30
o-Xylene	107		-		40-160	-		30
XYLENE (TOTAL)	108		-		40-160	-		30
Styrene	89		-		40-160	-		30
Acetone	80		-		40-160	-		30
Carbon disulfide	94		-		40-160	-		30
2-Butanone	91		-		40-160	-		30
Vinyl acetate	85		-		40-160	-		30
4-Methyl-2-pentanone	93		-		40-160	-		30
2-Hexanone	89		-		40-160	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG404054-5								
Acrolein	101		-		40-160	-		30
Acrylonitrile	90		-		40-160	-		30

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
Pentafluorobenzene	104				80-120
Fluorobenzene	98				80-120
4-Bromofluorobenzene	106				80-120

Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG405082-2								
Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
1,2-Dibromoethane	91		-		70-130	-		20
1,2-Dibromo-3-chloropropane	94		-		70-130	-		20

Matrix Spike Analysis

Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404054-3 QC Sample: L1003770-01 Client ID: MS Sample												
Methylene chloride	ND	20	21	105		-	-		1-221	-		30
1,1-Dichloroethane	ND	20	22	108		-	-		59-155	-		30
Chloroform	ND	20	25	110		-	-		51-138	-		30
Carbon tetrachloride	ND	20	24	118		-	-		70-140	-		30
1,2-Dichloropropane	ND	20	22	109		-	-		1-210	-		30
Dibromochloromethane	ND	20	23	113		-	-		53-149	-		30
1,1,2-Trichloroethane	ND	20	22	109		-	-		52-150	-		30
2-Chloroethylvinyl ether	ND	20	ND	3		-	-		1-305	-		30
Tetrachloroethene	ND	20	30	112		-	-		64-148	-		30
Chlorobenzene	ND	20	22	112		-	-		37-160	-		30
Trichlorofluoromethane	ND	20	21	107		-	-		17-181	-		30
1,2-Dichloroethane	ND	20	21	106		-	-		49-155	-		30
1,1,1-Trichloroethane	ND	20	23	114		-	-		52-162	-		30
Bromodichloromethane	ND	20	23	116		-	-		35-155	-		30
trans-1,3-Dichloropropene	ND	20	21	105		-	-		17-183	-		30
cis-1,3-Dichloropropene	ND	20	22	109		-	-		1-227	-		30
Bromoform	ND	20	23	114		-	-		45-169	-		30
1,1,2,2-Tetrachloroethane	ND	20	22	112		-	-		46-157	-		30
Benzene	ND	20	21	106		-	-		35-151	-		30
Toluene	ND	20	22	109		-	-		47-150	-		30
Ethylbenzene	ND	20	22	110		-	-		37-162	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404054-3 QC Sample: L1003770-01 Client ID: MS Sample												
Chloromethane	ND	20	27	135	-	-	-	-	1-273	-	-	30
Bromomethane	ND	20	23	116	-	-	-	-	1-242	-	-	30
Vinyl chloride	ND	20	19	93	-	-	-	-	1-251	-	-	30
Chloroethane	ND	20	20	99	-	-	-	-	14-230	-	-	30
1,1-Dichloroethene	ND	20	24	119	-	-	-	-	1-234	-	-	30
trans-1,2-Dichloroethene	ND	20	25	123	-	-	-	-	54-156	-	-	30
cis-1,2-Dichloroethene	ND	20	21	105	-	-	-	-	60-140	-	-	30
Trichloroethene	ND	20	22	109	-	-	-	-	71-157	-	-	30
1,2-Dichlorobenzene	ND	20	21	107	-	-	-	-	18-190	-	-	30
1,3-Dichlorobenzene	ND	20	21	107	-	-	-	-	59-156	-	-	30
1,4-Dichlorobenzene	ND	20	21	104	-	-	-	-	18-190	-	-	30
p/m-Xylene	ND	40	42	106	-	-	-	-	40-160	-	-	30
o-Xylene	ND	20	21	106	-	-	-	-	40-160	-	-	30
XYLENE (TOTAL)	ND	60	63	106	-	-	-	-	40-160	-	-	30
Styrene	ND	20	18	89	-	-	-	-	40-160	-	-	30
Acetone	ND	50	47	94	-	-	-	-	40-160	-	-	30
Carbon disulfide	ND	20	18	92	-	-	-	-	40-160	-	-	30
2-Butanone	ND	50	45	90	-	-	-	-	40-160	-	-	30
Vinyl acetate	ND	40	42	105	-	-	-	-	40-160	-	-	30
4-Methyl-2-pentanone	ND	50	45	90	-	-	-	-	40-160	-	-	30
2-Hexanone	ND	50	42	83	-	-	-	-	40-160	-	-	30

Matrix Spike Analysis

Batch Quality Control

Project Name: RESIDENCE

Lab Number: L1003788

Project Number: 11-1410.00

Report Date: 03/23/10

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404054-3 QC Sample: L1003770-01 Client ID: MS Sample												
Acrolein	ND	40	39	97		-	-		40-160	-		30
Acrylonitrile	ND	40	36	90		-	-		40-160	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
4-Bromofluorobenzene	101				80-120
Fluorobenzene	99				80-120
Pentafluorobenzene	105				80-120

Pesticides by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG405082-3 QC Sample: L1003730-01 Client ID: MS Sample												
1,2-Dibromoethane	ND	0.25	0.222	88		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	0.25	0.224	89		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: RESIDENCE

Lab Number: L1003788

Project Number: 11-1410.00

Report Date: 03/23/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404054-4 QC Sample: L1003770-01 Client ID: DUP Sample						
Benzene	ND	ND	ug/l	NC		30
Toluene	ND	ND	ug/l	NC		30
Ethylbenzene	ND	ND	ug/l	NC		30
p/m-Xylene	ND	ND	ug/l	NC		30
o-xylene	ND	ND	ug/l	NC		30
Xylene (Total)	ND	ND	ug/l	NC		30
Methyl tert butyl ether	ND	ND	ug/l	NC		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	107		105		80-120
Fluorobenzene	101		103		80-120
4-Bromofluorobenzene	105		104		80-120

SEMIVOLATILES

Project Name: RESIDENCE**Lab Number:** L1003788**Project Number:** 11-1410.00**Report Date:** 03/23/10**SAMPLE RESULTS**

Lab ID: L1003788-01
Client ID: RGP
Sample Location: HALIFAX, MA
Matrix: Water
Analytical Method: 1,8270C
Analytical Date: 03/18/10 17:31
Analyst: AS

Date Collected: 03/16/10 08:15
Date Received: 03/16/10
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 03/17/10 17:30

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab					
Acenaphthene	ND		ug/l	0.19	1
2-Chloronaphthalene	ND		ug/l	0.19	1
Fluoranthene	ND		ug/l	0.19	1
Hexachlorobutadiene	ND		ug/l	0.48	1
Naphthalene	ND		ug/l	0.19	1
Benzo(a)anthracene	ND		ug/l	0.19	1
Benzo(a)pyrene	ND		ug/l	0.19	1
Benzo(b)fluoranthene	ND		ug/l	0.19	1
Benzo(k)fluoranthene	ND		ug/l	0.19	1
Chrysene	ND		ug/l	0.19	1
Acenaphthylene	ND		ug/l	0.19	1
Anthracene	ND		ug/l	0.19	1
Benzo(ghi)perylene	ND		ug/l	0.19	1
Fluorene	ND		ug/l	0.19	1
Phenanthrene	ND		ug/l	0.19	1
Dibenzo(a,h)anthracene	ND		ug/l	0.19	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.19	1
Pyrene	ND		ug/l	0.19	1
1-Methylnaphthalene	ND		ug/l	0.19	1
2-Methylnaphthalene	ND		ug/l	0.19	1
Pentachlorophenol	ND		ug/l	0.78	1
Hexachlorobenzene	ND		ug/l	0.78	1
Hexachloroethane	ND		ug/l	0.78	1

Project Name: RESIDENCE**Lab Number:** L1003788**Project Number:** 11-1410.00**Report Date:** 03/23/10**SAMPLE RESULTS**

Lab ID: L1003788-01

Date Collected: 03/16/10 08:15

Client ID: RGP

Date Received: 03/16/10

Sample Location: HALIFAX, MA

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		21-120
Phenol-d6	28		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	72		15-120
2,4,6-Tribromophenol	90		10-120
4-Terphenyl-d14	81		33-120

Project Name: RESIDENCE**Lab Number:** L1003788**Project Number:** 11-1410.00**Report Date:** 03/23/10**SAMPLE RESULTS**

Lab ID: L1003788-01
Client ID: RGP
Sample Location: HALIFAX, MA
Matrix: Water
Analytical Method: 1,8270C
Analytical Date: 03/22/10 16:57
Analyst: PS

Date Collected: 03/16/10 08:15
Date Received: 03/16/10
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 03/17/10 17:27

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab					
Benzidine	ND		ug/l	48	1
1,2,4-Trichlorobenzene	ND		ug/l	4.8	1
Bis(2-chloroethyl)ether	ND		ug/l	4.8	1
1,2-Dichlorobenzene	ND		ug/l	4.8	1
1,3-Dichlorobenzene	ND		ug/l	4.8	1
1,4-Dichlorobenzene	ND		ug/l	4.8	1
3,3'-Dichlorobenzidine	ND		ug/l	48	1
2,4-Dinitrotoluene	ND		ug/l	5.8	1
2,6-Dinitrotoluene	ND		ug/l	4.8	1
Azobenzene	ND		ug/l	4.8	1
4-Chlorophenyl phenyl ether	ND		ug/l	4.8	1
4-Bromophenyl phenyl ether	ND		ug/l	4.8	1
Bis(2-chloroisopropyl)ether	ND		ug/l	4.8	1
Bis(2-chloroethoxy)methane	ND		ug/l	4.8	1
Hexachlorocyclopentadiene	ND		ug/l	29	1
Isophorone	ND		ug/l	4.8	1
Nitrobenzene	ND		ug/l	4.8	1
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/l	14	1
Bis(2-Ethylhexyl)phthalate	ND		ug/l	4.8	1
Butyl benzyl phthalate	ND		ug/l	4.8	1
Di-n-butylphthalate	ND		ug/l	4.8	1
Di-n-octylphthalate	ND		ug/l	4.8	1
Diethyl phthalate	ND		ug/l	4.8	1
Dimethyl phthalate	ND		ug/l	4.8	1
Aniline	ND		ug/l	19	1
4-Chloroaniline	ND		ug/l	4.8	1
2-Nitroaniline	ND		ug/l	4.8	1
3-Nitroaniline	ND		ug/l	4.8	1
4-Nitroaniline	ND		ug/l	6.8	1
Dibenzofuran	ND		ug/l	4.8	1

Project Name: RESIDENCE**Lab Number:** L1003788**Project Number:** 11-1410.00**Report Date:** 03/23/10**SAMPLE RESULTS**

Lab ID: L1003788-01
 Client ID: RGP
 Sample Location: HALIFAX, MA

Date Collected: 03/16/10 08:15
 Date Received: 03/16/10
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab					
n-Nitrosodimethylamine	ND		ug/l	48	1
2,4,6-Trichlorophenol	ND		ug/l	4.8	1
P-Chloro-M-Cresol	ND		ug/l	4.8	1
2-Chlorophenol	ND		ug/l	5.8	1
2,4-Dichlorophenol	ND		ug/l	9.7	1
2,4-Dimethylphenol	ND		ug/l	9.7	1
2-Nitrophenol	ND		ug/l	19	1
4-Nitrophenol	ND		ug/l	9.7	1
2,4-Dinitrophenol	ND		ug/l	29	1
4,6-Dinitro-o-cresol	ND		ug/l	19	1
Phenol	ND		ug/l	6.8	1
2-Methylphenol	ND		ug/l	5.8	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.8	1
2,4,5-Trichlorophenol	ND		ug/l	4.8	1
Benzoic Acid	ND		ug/l	48	1
Benzyl Alcohol	ND		ug/l	9.7	1
Carbazole	ND		ug/l	4.8	1
Pyridine	ND		ug/l	48	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	35		21-120
Phenol-d6	23		10-120
Nitrobenzene-d5	61		23-120
2-Fluorobiphenyl	72		15-120
2,4,6-Tribromophenol	76		10-120
4-Terphenyl-d14	79		33-120

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 03/18/10 18:11
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 03/17/10 17:27

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG404365-1				
Benzidine	ND		ug/l	50
1,2,4-Trichlorobenzene	ND		ug/l	5.0
Bis(2-chloroethyl)ether	ND		ug/l	5.0
1,2-Dichlorobenzene	ND		ug/l	5.0
1,3-Dichlorobenzene	ND		ug/l	5.0
1,4-Dichlorobenzene	ND		ug/l	5.0
3,3'-Dichlorobenzidine	ND		ug/l	50
2,4-Dinitrotoluene	ND		ug/l	6.0
2,6-Dinitrotoluene	ND		ug/l	5.0
Azobenzene	ND		ug/l	5.0
4-Chlorophenyl phenyl ether	ND		ug/l	5.0
4-Bromophenyl phenyl ether	ND		ug/l	5.0
Bis(2-chloroisopropyl)ether	ND		ug/l	5.0
Bis(2-chloroethoxy)methane	ND		ug/l	5.0
Hexachlorocyclopentadiene	ND		ug/l	30
Isophorone	ND		ug/l	5.0
Nitrobenzene	ND		ug/l	5.0
NitrosoDiPhenylAmine(NDPA)/DPA	ND		ug/l	15
Bis(2-Ethylhexyl)phthalate	ND		ug/l	5.0
Butyl benzyl phthalate	ND		ug/l	5.0
Di-n-butylphthalate	ND		ug/l	5.0
Di-n-octylphthalate	ND		ug/l	5.0
Diethyl phthalate	ND		ug/l	5.0
Dimethyl phthalate	ND		ug/l	5.0
Aniline	ND		ug/l	20
4-Chloroaniline	ND		ug/l	5.0
2-Nitroaniline	ND		ug/l	5.0
3-Nitroaniline	ND		ug/l	5.0
4-Nitroaniline	ND		ug/l	7.0
Dibenzofuran	ND		ug/l	5.0
n-Nitrosodimethylamine	ND		ug/l	50

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 03/18/10 18:11
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 03/17/10 17:27

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG404365-1				
2,4,6-Trichlorophenol	ND		ug/l	5.0
P-Chloro-M-Cresol	ND		ug/l	5.0
2-Chlorophenol	ND		ug/l	6.0
2,4-Dichlorophenol	ND		ug/l	10
2,4-Dimethylphenol	ND		ug/l	10
2-Nitrophenol	ND		ug/l	20
4-Nitrophenol	ND		ug/l	10
2,4-Dinitrophenol	ND		ug/l	30
4,6-Dinitro-o-cresol	ND		ug/l	20
Phenol	ND		ug/l	7.0
2-Methylphenol	ND		ug/l	6.0
3-Methylphenol/4-Methylphenol	ND		ug/l	6.0
2,4,5-Trichlorophenol	ND		ug/l	5.0
Benzoic Acid	ND		ug/l	50
Benzyl Alcohol	ND		ug/l	10
Carbazole	ND		ug/l	5.0
Pyridine	ND		ug/l	50

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	38		21-120
Phenol-d6	25		10-120
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	61		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	85		33-120

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 03/18/10 15:39
Analyst: AS

Extraction Method: EPA 3510C
Extraction Date: 03/17/10 17:30

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG404368-1				
Acenaphthene	ND		ug/l	0.20
2-Chloronaphthalene	ND		ug/l	0.20
Fluoranthene	ND		ug/l	0.20
Hexachlorobutadiene	ND		ug/l	0.50
Naphthalene	ND		ug/l	0.20
Benzo(a)anthracene	ND		ug/l	0.20
Benzo(a)pyrene	ND		ug/l	0.20
Benzo(b)fluoranthene	ND		ug/l	0.20
Benzo(k)fluoranthene	ND		ug/l	0.20
Chrysene	ND		ug/l	0.20
Acenaphthylene	ND		ug/l	0.20
Anthracene	ND		ug/l	0.20
Benzo(ghi)perylene	ND		ug/l	0.20
Fluorene	ND		ug/l	0.20
Phenanthrene	ND		ug/l	0.20
Dibenzo(a,h)anthracene	ND		ug/l	0.20
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20
Pyrene	ND		ug/l	0.20
1-Methylnaphthalene	ND		ug/l	0.20
2-Methylnaphthalene	ND		ug/l	0.20
Pentachlorophenol	ND		ug/l	0.80
Hexachlorobenzene	ND		ug/l	0.80
Hexachloroethane	ND		ug/l	0.80

Project Name: RESIDENCE

Lab Number: L1003788

Project Number: 11-1410.00

Report Date: 03/23/10

**Method Blank Analysis
Batch Quality Control**

Analytical Method: 1,8270C
 Analytical Date: 03/18/10 15:39
 Analyst: AS

Extraction Method: EPA 3510C
 Extraction Date: 03/17/10 17:30

Parameter	Result	Qualifier	Units	RDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG404368-1				

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	68		15-120
2,4,6-Tribromophenol	82		10-120
4-Terphenyl-d14	82		33-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG404365-2 WG404365-3								
1,2,4-Trichlorobenzene	54		55		39-98	2		30
1,2-Dichlorobenzene	55		55		40-140	0		30
1,4-Dichlorobenzene	54		53		36-97	2		30
2,4-Dinitrotoluene	88		91		24-96	3		30
2,6-Dinitrotoluene	79		82		40-140	4		30
4-Chlorophenyl phenyl ether	76		77		40-140	1		30
n-Nitrosodi-n-propylamine	64		67		41-116	5		30
Butyl benzyl phthalate	86		88		40-140	2		30
P-Chloro-M-Cresol	78		81		23-97	4		30
2-Chlorophenol	67		68		27-123	1		30
2-Nitrophenol	69		72		30-130	4		30
4-Nitrophenol	40		40		10-80	0		30
2,4-Dinitrophenol	56		57		20-130	2		30
Phenol	32		34		12-110	6		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG404365-2 WG404365-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	43		44		21-120
Phenol-d6	28		28		10-120
Nitrobenzene-d5	66		69		23-120
2-Fluorobiphenyl	76		77		15-120
2,4,6-Tribromophenol	87		86		10-120
4-Terphenyl-d14	87		86		33-120

Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG404368-2 WG404368-3

Acenaphthene	82		78		37-111	5	40
2-Chloronaphthalene	95		92		40-140	3	40
Fluoranthene	100		103		40-140	3	40
Anthracene	105		111		40-140	6	40
Pyrene	98		100		26-127	2	40
Pentachlorophenol	75		75		9-103	0	40

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
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Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG404368-2 WG404368-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	54		60		21-120
Phenol-d6	40		46		10-120
Nitrobenzene-d5	85		91		23-120
2-Fluorobiphenyl	75		76		15-120
2,4,6-Tribromophenol	86		97		10-120
4-Terphenyl-d14	86		96		33-120

PETROLEUM HYDROCARBONS

Project Name: RESIDENCE**Lab Number:** L1003788**Project Number:** 11-1410.00**Report Date:** 03/23/10**SAMPLE RESULTS**

Lab ID: L1003788-01
Client ID: RGP
Sample Location: HALIFAX, MA
Matrix: Water
Analytical Method: 61,EPH-04-1
Analytical Date: 03/19/10 16:57
Analyst: MW

Date Collected: 03/16/10 08:15
Date Received: 03/16/10
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 03/17/10 11:51
Cleanup Method1: EPH-04-1
Cleanup Date1: 03/19/10

Quality Control Information

Condition of sample received: Satisfactory
Aqueous Preservative: Laboratory Provided Preserved Container
Sample Temperature upon receipt: Received on Ice
Sample Extraction method: Extracted Per the Method

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab					
C9-C18 Aliphatics	ND		ug/l	103	1
C19-C36 Aliphatics	ND		ug/l	103	1
C11-C22 Aromatics, Unadjusted	104		ug/l	103	1
C11-C22 Aromatics, Adjusted	104		ug/l	103	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	49		40-140
o-Terphenyl	86		40-140
2-Fluorobiphenyl	91		40-140
2-Bromonaphthalene	88		40-140

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 61,EPH-04-1
Analytical Date: 03/19/10 15:22
Analyst: MW

Extraction Method: EPA 3510C
Extraction Date: 03/17/10 11:51
Cleanup Method1: EPH-04-1
Cleanup Date1: 03/19/10

Parameter	Result	Qualifier	Units	RDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG404297-1				
C9-C18 Aliphatics	ND		ug/l	100
C19-C36 Aliphatics	ND		ug/l	100
C11-C22 Aromatics, Unadjusted	ND		ug/l	100
C11-C22 Aromatics, Adjusted	ND		ug/l	100

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	73		40-140
o-Terphenyl	77		40-140
2-Fluorobiphenyl	80		40-140
2-Bromonaphthalene	78		40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE

Lab Number: L1003788

Project Number: 11-1410.00

Report Date: 03/23/10

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG404297-2 WG404297-3								
C9-C18 Aliphatics	49		60		40-140	20		25
C19-C36 Aliphatics	67		77		40-140	14		25
C11-C22 Aromatics	100		109		40-140	9		25
Naphthalene	86		97		40-140	12		25
2-Methylnaphthalene	91		102		40-140	11		25
Acenaphthylene	90		99		40-140	10		25
Acenaphthene	88		98		40-140	11		25
Fluorene	90		99		40-140	10		25
Phenanthrene	95		103		40-140	8		25
Anthracene	89		97		40-140	9		25
Fluoranthene	92		100		40-140	8		25
Pyrene	92		100		40-140	8		25
Benzo(a)anthracene	91		99		40-140	8		25
Chrysene	93		101		40-140	8		25
Benzo(b)fluoranthene	96		104		40-140	8		25
Benzo(k)fluoranthene	94		102		40-140	8		25
Benzo(a)pyrene	90		98		40-140	9		25
Indeno(1,2,3-cd)Pyrene	98		106		40-140	8		25
Dibenzo(a,h)anthracene	94		103		40-140	9		25
Benzo(ghi)perylene	96		105		40-140	9		25
Nonane (C9)	37		49		30-140	28	Q	25

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG404297-2 WG404297-3								
Decane (C10)	44		56		40-140	24		25
Dodecane (C12)	49		62		40-140	23		25
Tetradecane (C14)	54		67		40-140	21		25
Hexadecane (C16)	60		72		40-140	18		25
Octadecane (C18)	64		75		40-140	16		25
Nonadecane (C19)	66		77		40-140	15		25
Eicosane (C20)	65		76		40-140	16		25
Docosane (C22)	66		76		40-140	14		25
Tetracosane (C24)	67		77		40-140	14		25
Hexacosane (C26)	67		77		40-140	14		25
Octacosane (C28)	66		75		40-140	13		25
Triacontane (C30)	69		78		40-140	12		25
Hexatriacontane (C36)	72		80		40-140	11		25

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
Chloro-Octadecane	64		71		40-140
o-Terphenyl	131		137		40-140
2-Fluorobiphenyl	101		102		40-140
2-Bromonaphthalene	98		100		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

**Fractionation Check Standard
Quality Control**

Fractionation check standard for 200818205

Parameter	% Recovery	QC Criteria
C9-C18 Aliphatics	77	40-140
C19-C36 Aliphatics	76	40-140
C11-C22 Aromatics	86	40-140
Naphthalene	82	40-140
2-Methylnaphthalene	78	40-140
Acenaphthylene	76	40-140
Acenaphthene	80	40-140
Fluorene	79	40-140
Phenanthrene	78	40-140
Anthracene	82	40-140
Fluoranthene	84	40-140
Pyrene	84	40-140
Benzo(a)anthracene	82	40-140
Chrysene	88	40-140
Benzo(b)fluoranthene	81	40-140
Benzo(k)fluoranthene	97	40-140
Benzo(a)pyrene	78	40-140
Indeno(1,2,3-cd)Pyrene	76	40-140
Dibenzo(a,h)anthracene	83	40-140
Benzo(g,h,i)perylene	82	40-140
Nonane	72	30-140
Decane	77	40-140
Dodecane	80	40-140
Tetradecane	76	40-140
Hexadecane	78	40-140
Octadecane	76	40-140
Nonadecane	75	40-140
Eicosane	77	40-140
Docosane	79	40-140
Tetracosane	83	40-140
Hexacosane	78	40-140
Octacosane	77	40-140
triacontane	76	40-140
Hexatriacontane	75	40-140
% Naphthalene Breakthrough	0	0-5
% 2-Methylnaphthalene Breakthrough	0	0-5

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

**Fractionation Check Standard
Quality Control**

Fractionation check standard for 200818205

Surrogate	% Recovery	QC Criteria
Chloro-Octadecane	66	40-140
o-Terphenyl	83	40-140
2-Fluorobiphenyl	75	40-140
2-Bromonaphthalene	76	40-140

PCBS

Project Name: RESIDENCE**Lab Number:** L1003788**Project Number:** 11-1410.00**Report Date:** 03/23/10**SAMPLE RESULTS**

Lab ID: L1003788-01
Client ID: RGP
Sample Location: HALIFAX, MA
Matrix: Water
Analytical Method: 5,608
Analytical Date: 03/18/10 13:28
Analyst: JB

Date Collected: 03/16/10 08:15
Date Received: 03/16/10
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 03/17/10 11:54
Cleanup Method1: EPA 3665A
Cleanup Date1: 03/18/10
Cleanup Method2: EPA 3660B
Cleanup Date2: 03/18/10

Parameter	Result	Qualifier	Units	RDL	Dilution Factor
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Polychlorinated Biphenyls by GC - Westborough Lab					
Aroclor 1016	ND		ug/l	0.258	1
Aroclor 1221	ND		ug/l	0.258	1
Aroclor 1232	ND		ug/l	0.258	1
Aroclor 1242	ND		ug/l	0.258	1
Aroclor 1248	ND		ug/l	0.258	1
Aroclor 1254	ND		ug/l	0.258	1
Aroclor 1260	ND		ug/l	0.258	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	82		30-150	A

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
 Analytical Date: 03/19/10 07:33
 Analyst: JB

Extraction Method: EPA 608
 Extraction Date: 03/17/10 11:54
 Cleanup Method1: EPA 3665A
 Cleanup Date1: 03/18/10
 Cleanup Method2: EPA 3660B
 Cleanup Date2: 03/18/10

Parameter	Result	Qualifier	Units	RDL
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG404299-1				
Aroclor 1016	ND		ug/l	0.250
Aroclor 1221	ND		ug/l	0.250
Aroclor 1232	ND		ug/l	0.250
Aroclor 1242	ND		ug/l	0.250
Aroclor 1248	ND		ug/l	0.250
Aroclor 1254	ND		ug/l	0.250
Aroclor 1260	ND		ug/l	0.250

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	108		30-150	A

Matrix Spike Analysis

Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404299-3 QC Sample: L1003788-01 Client ID: RGP												
Aroclor 1016	ND	2.04	1.90	93		-	-		40-126	-		30
Aroclor 1260	ND	2.04	2.04	100		-	-		40-127	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74				30-150	A
Decachlorobiphenyl	89				30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG404299-2								
Aroclor 1016	91		-		40-126	-		30
Aroclor 1260	94		-		40-127	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68				30-150	A
Decachlorobiphenyl	57				30-150	A

Lab Duplicate Analysis

Batch Quality Control

Project Name: RESIDENCE

Project Number: 11-1410.00

Lab Number: L1003788

Report Date: 03/23/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404299-4 QC Sample: L1003788-01 Client ID: RGP						
Aroclor 1016	ND	ND	ug/l	NC		30
Aroclor 1221	ND	ND	ug/l	NC		30
Aroclor 1232	ND	ND	ug/l	NC		30
Aroclor 1242	ND	ND	ug/l	NC		30
Aroclor 1248	ND	ND	ug/l	NC		30
Aroclor 1254	ND	ND	ug/l	NC		30
Aroclor 1260	ND	ND	ug/l	NC		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		74		30-150	A
Decachlorobiphenyl	82		95		30-150	A

METALS

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

SAMPLE RESULTS

Lab ID: L1003788-01
 Client ID: RGP
 Sample Location: HALIFAX, MA
 Matrix: Water

Date Collected: 03/16/10 08:15
 Date Received: 03/16/10
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab										
Antimony, Total	ND		mg/l	0.0005	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM
Arsenic, Total	0.0013		mg/l	0.0005	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM
Cadmium, Total	ND		mg/l	0.0002	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM
Chromium, Total	0.0019		mg/l	0.0005	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM
Copper, Total	0.0083		mg/l	0.0005	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM
Iron, Total	1.3		mg/l	0.05	1	03/17/10 10:30	03/18/10 14:51	EPA 3005A	19,200.7	AI
Lead, Total	0.0118		mg/l	0.0005	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM
Mercury, Total	ND		mg/l	0.0002	1	03/18/10 16:45	03/19/10 15:03	EPA 245.1	3,245.1	EZ
Nickel, Total	0.0017		mg/l	0.0005	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM
Selenium, Total	ND		mg/l	0.001	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM
Silver, Total	ND		mg/l	0.0004	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM
Zinc, Total	0.0652		mg/l	0.0050	1	03/17/10 11:30	03/17/10 23:44	EPA 3005A	1,6020	BM

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG404303-1								
Iron, Total	ND	mg/l	0.05	1	03/17/10 10:30	03/18/10 14:35	19,200.7	AI

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG404310-1								
Antimony, Total	ND	mg/l	0.0005	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM
Arsenic, Total	ND	mg/l	0.0005	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM
Cadmium, Total	ND	mg/l	0.0002	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM
Chromium, Total	ND	mg/l	0.0005	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM
Copper, Total	ND	mg/l	0.0005	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM
Lead, Total	ND	mg/l	0.0005	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM
Nickel, Total	ND	mg/l	0.0005	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM
Selenium, Total	ND	mg/l	0.001	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM
Silver, Total	ND	mg/l	0.0004	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM
Zinc, Total	ND	mg/l	0.0050	1	03/17/10 11:30	03/17/10 20:20	1,6020	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG404548-1								
Mercury, Total	ND	mg/l	0.0002	1	03/18/10 16:45	03/19/10 15:00	3,245.1	EZ

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE

Project Number: 11-1410.00

Lab Number: L1003788

Report Date: 03/23/10

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG404303-2								
Iron, Total	100		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG404310-2								
Antimony, Total	100		-		80-120	-		
Arsenic, Total	102		-		80-120	-		
Cadmium, Total	108		-		80-120	-		
Chromium, Total	95		-		80-120	-		
Copper, Total	104		-		80-120	-		
Lead, Total	105		-		80-120	-		
Nickel, Total	102		-		80-120	-		
Selenium, Total	107		-		80-120	-		
Silver, Total	106		-		80-120	-		
Zinc, Total	107		-		80-120	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG404548-2								
Mercury, Total	110		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404303-4 QC Sample: L1003762-01 Client ID: MS Sample												
Iron, Total	ND	1	1.0	100		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404310-4 QC Sample: L1003807-02 Client ID: MS Sample												
Antimony, Total	0.0040	0.5	0.5314	105		-	-		80-120	-		20
Arsenic, Total	0.0046	0.12	0.1234	99		-	-		80-120	-		20
Cadmium, Total	0.0006	0.051	0.0571	111		-	-		80-120	-		20
Chromium, Total	ND	0.2	0.1994	100		-	-		80-120	-		20
Copper, Total	0.0053	0.25	0.2796	110		-	-		80-120	-		20
Lead, Total	0.0008	0.51	0.5305	104		-	-		80-120	-		20
Nickel, Total	0.0135	0.5	0.5517	108		-	-		80-120	-		20
Selenium, Total	0.003	0.12	0.125	102		-	-		80-120	-		20
Silver, Total	ND	0.05	0.0538	108		-	-		80-120	-		20
Zinc, Total	0.0304	0.5	0.4712	88		-	-		80-120	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404548-4 QC Sample: L1003885-01 Client ID: MS Sample												
Mercury, Total	ND	0.001	0.0012	120		-	-		70-130	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: RESIDENCE

Project Number: 11-1410.00

Lab Number: L1003788

Report Date: 03/23/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404310-3 QC Sample: L1003807-02 Client ID: DUP Sample						
Arsenic, Total	0.0046	0.0043	mg/l	6		20
Copper, Total	0.0053	0.0051	mg/l	3		20
Lead, Total	0.0008	0.0007	mg/l	4		20
Nickel, Total	0.0135	0.0126	mg/l	7		20
Zinc, Total	0.0304	0.0282	mg/l	8		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404548-3 QC Sample: L1003885-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS & MISCELLANEOUS

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

SAMPLE RESULTS

Lab ID: L1003788-01
Client ID: RGP
Sample Location: HALIFAX, MA
Matrix: Water

Date Collected: 03/16/10 08:15
Date Received: 03/16/10
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab									
Solids, Total Suspended	28		mg/l	5.0	1	-	03/17/10 15:15	30,2540D	DW
Cyanide, Total	ND		mg/l	0.005	1	03/16/10 15:30	03/16/10 22:13	30,4500CN-CE	AT
Chlorine, Total Residual	ND		mg/l	0.02	1	-	03/16/10 15:15	30,4500CL-D	DD
pH	6.8		SU	-	1	-	03/16/10 21:45	1,9040B	BH
TPH	ND		mg/l	4.00	1	03/17/10 17:30	03/17/10 20:30	74,1664A	AT
Phenolics, Total	ND		mg/l	0.03	1	-	03/18/10 20:33	4,420.1	TH
Chromium, Hexavalent	ND		mg/l	0.010	1	03/17/10 00:45	03/17/10 00:45	30,3500CR-D	JT



Project Name: RESIDENCE

Lab Number: L1003788

Project Number: 11-1410.00

Report Date: 03/23/10

**Method Blank Analysis
Batch Quality Control**

Parameter	Result Qualifier	Units	RDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG404151-1								
Cyanide, Total	ND	mg/l	0.005	1	03/16/10 15:30	03/16/10 22:04	30,4500CN-CE	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG404162-2								
Chlorine, Total Residual	ND	mg/l	0.02	1	-	03/16/10 15:15	30,4500CL-D	DD
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG404233-1								
Chromium, Hexavalent	ND	mg/l	0.010	1	03/17/10 00:45	03/17/10 00:45	30,3500CR-D	JT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG404255-1								
Solids, Total Suspended	ND	mg/l	5.0	1	-	03/17/10 15:15	30,2540D	DW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG404394-1								
TPH	ND	mg/l	4.00	1	03/17/10 17:30	03/17/10 20:30	74,1664A	AT
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG404569-1								
Phenolics, Total	ND	mg/l	0.03	1	-	03/18/10 20:28	4,420.1	TH

Lab Control Sample Analysis

Batch Quality Control

Project Name: RESIDENCE

Project Number: 11-1410.00

Lab Number: L1003788

Report Date: 03/23/10

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG404151-2								
Cyanide, Total	94		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG404162-1								
Chlorine, Total Residual	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG404233-2								
Chromium, Hexavalent	100		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG404341-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG404394-2								
TPH	85		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG404569-2								
Phenolics, Total	98		-		82-111	-		12

Matrix Spike Analysis
Batch Quality Control

Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404151-4 QC Sample: L1003788-01 Client ID: RGP												
Cyanide, Total	ND	0.2	0.219	110	-	-	-	-	80-120	-	-	30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404233-4 QC Sample: L1003788-01 Client ID: RGP												
Chromium, Hexavalent	ND	0.1	0.100	100	-	-	-	-	85-115	-	-	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404569-3 QC Sample: L1003589-01 Client ID: MS Sample												
Phenolics, Total	ND	0.8	0.66	82	-	-	-	-	77-124	-	-	12

Lab Duplicate Analysis

Batch Quality Control

Project Name: RESIDENCE

Project Number: 11-1410.00

Lab Number: L1003788

Report Date: 03/23/10

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404151-3 QC Sample: L1003788-01 Client ID: RGP						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404162-3 QC Sample: L1003795-02 Client ID: DUP Sample						
Chlorine, Total Residual	0.96	1.0	mg/l	4		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404233-3 QC Sample: L1003788-01 Client ID: RGP						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404255-2 QC Sample: L1003782-01 Client ID: DUP Sample						
Solids, Total Suspended	ND	ND	mg/l	NC		32
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404341-2 QC Sample: L1003788-01 Client ID: RGP						
pH	6.8	6.8	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404394-3 QC Sample: L1003788-01 Client ID: RGP						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG404569-4 QC Sample: L1003788-01 Client ID: RGP						
Phenolics, Total	ND	ND	mg/l	NC		12

Project Name: RESIDENCE

Lab Number: L1003788

Project Number: 11-1410.00

Report Date: 03/23/10

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis
L1003788-01A	Vial Na2S2O3 preserved	A	N/A	5	Y	Absent	504(14)
L1003788-01B	Vial Na2S2O3 preserved	A	N/A	5	Y	Absent	504(14)
L1003788-01C	Vial Na2S2O3 preserved	A	N/A	5	Y	Absent	624(7)
L1003788-01D	Vial Na2S2O3 preserved	A	N/A	5	Y	Absent	624(7)
L1003788-01E	Plastic 250ml HNO3 preserved	A	<2	5	Y	Absent	SE-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180),HG-U(28),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180)
L1003788-01F	Plastic 1000ml unpreserved	A	6	5	Y	Absent	TSS-2540(7)
L1003788-01G	Amber 1000ml Na2S2O3	A	6	5	Y	Absent	PCB-608(7)
L1003788-01H	Amber 1000ml Na2S2O3	A	6	5	Y	Absent	PCB-608(7)
L1003788-01I	Amber 1000ml unpreserved	A	6	5	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1003788-01J	Amber 1000ml unpreserved	A	6	5	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1003788-01K	Amber 1000ml unpreserved	A	6	5	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1003788-01L	Amber 1000ml unpreserved	A	6	5	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1003788-01M	Amber 1000ml HCl preserved	A	<2	5	Y	Absent	EPH-04(14)
L1003788-01N	Amber 1000ml HCl preserved	A	<2	5	Y	Absent	EPH-04(14)
L1003788-01O	Amber 1000ml HCl preserved	A	<2	5	Y	Absent	TPH-1664(28)
L1003788-01P	Plastic 1000ml NaOH preserved	A	>12	5	Y	Absent	TCN-4500(14)
L1003788-01Q	Amber 500ml H2SO4preserved	A	<2	5	Y	Absent	TPHENOL-420(28)
L1003788-01R	Amber 500ml H2SO4preserved	A	<2	5	Y	Absent	TPHENOL-420(28)
L1003788-01S	Plastic 1000ml unpreserved	A	6	5	Y	Absent	HEXCR-3500(1),TRC-4500(1),PH-9040(.025)
L1003788-01Z	Amber 1000ml HCl preserved	A	<2	5	Y	Absent	TPH-1664(28)
L1003788-02A	Vial Na2S2O3 preserved	A	N/A	5	Y	Absent	HOLD(14)
L1003788-02B	Vial Na2S2O3 preserved	A	N/A	5	Y	Absent	HOLD(14)

*Hold days indicated by values in parentheses



Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

GLOSSARY

Acronyms

- EPA** - Environmental Protection Agency.
- LCS** - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
- LCS D** - Laboratory Control Sample Duplicate: Refer to LCS.
- MS** - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
- MS D** - Matrix Spike Sample Duplicate: Refer to MS.
- NA** - Not Applicable.
- NC** - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
- NI** - Not Ignitable.
- RDL** - Reported Detection Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
- RPD** - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RDL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reported detection limit (RDL) for the sample.

Report Format: Data Usability Report



Project Name: RESIDENCE
Project Number: 11-1410.00

Lab Number: L1003788
Report Date: 03/23/10

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- 4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.
- 5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).
- 14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
- 61 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH). Massachusetts Department of Environmental Protection, DEA/ORS/BWSC. May 2004, Revision 1.1.
- 74 Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Woods Hole Labs shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Woods Hole Labs.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certificate/Approval Program Summary

Last revised March 16, 2010 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574. **NELAP Accredited Solid Waste/Soil.**

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Haloacetic Acids, Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB).)

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Calcium Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP (Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: Lead in Paint, pH, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), Reactivity. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP (Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Maine Department of Human Services Certificate/Lab ID: 2009024.

Drinking Water (Inorganic Parameters: SM9215B, 9221E, 9222B, 9222D, 9223B, EPA 180.1, 300.0, 353.2, SM2130B, 2320B, 4500CI-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1. Organic Parameters: 504.1, 524.2, SM 6251B.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500CI-D, 4500CI-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

Drinking Water

Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl)

(EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate)

353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, 2320B, SM2540C, SM4500H-B.

Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)

(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), 314.0, 332.

Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; MF-SM9222D

Non-Potable Water

Inorganic Parameters: (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn)

(EPA 200.7 for: Al,Sb,As,Be,Cd,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Ti,Tl, V,Zn,Ca,Mg,Na,K)

245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics)

(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables, 600/4-81-045-PCB-Oil

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 120.1, 300.0, 314.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. Organic Parameters: 504.1, 524.2, SM6251B.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH3-H, 4500NH3-E, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. Organic Parameters: SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, SM2120B, 2510B, 5310C, SM4500H-B, EPA 200.8, 245.2. Organic Parameters: 504.1, SM6251B, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500CI-D, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330, NJ OQA-QAM-025 Rev.7.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. Organic Parameters: SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 1312, 3540C, 3545, 3550B, 3580A, 5035L, 5035H, NJ OQA-QAM-025 Rev.7.)

New York Department of Health Certificate/Lab ID: 11148. *NELAP Accredited.*

Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 314.0, 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, EPA 120.1, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, LACHAT 10-117-07-1A or B, SM4500CI-E, 4500F-C, SM15 426C, EPA 350.1, LACHAT 10-107-06-1-B, SM4500NH3-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, SM4500-CN-E LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B, 9010B, 9030B.)

Solid & Hazardous Waste (Inorganic Parameters: 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. *Organic Parameters: MA-EPH, MA-VPH.***Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. *NELAP Accredited.***

Non-Potable Water (Organic Parameters: EPA 3510C, 5030B, 625, 624. 608, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010, 1030, 1311, 3050B, 3051, 6010B, EPA 7.3.3.2, EPA 7.3.4.2, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065. Organic Parameters: 3540C, 3545, 3580A, 5035, 8021B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. *NELAP Accredited via NY-DOH.*

Refer to MA-DEP Certificate for Potable and Non-Potable Water.

Refer to NY-DOH Certificate for Potable and Non-Potable Water.

Texas Commission on Environmental Quality Certificate/Lab ID: T104704476-09-1. NELAP Accredited.

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH₃-H, 4500NO₂B, 4500P-E, 4500 S²⁻ D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

Utah Department of Health Certificate/Lab ID: AAMA. NELAP Accredited.

Non-Potable Water (Inorganic Parameters: Chloride EPA 300.0)

Department of Defense Certificate/Lab ID: L2217.

Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 9251, 9038, 350.1, 353.2, 351.1, 314, 120.1, 9050A, 410.4, 9060, 1664, 420.1, LACHAT 10-107-06-1-B, SM 4500CN-E, 4500H-B, 4500CL-E, 4500F-BC, 4500SO₄-E, 426C, 4500NH₃-B, 4500NH₃-H, 4500NO₃-F, 4500NO₂-B, 4500Norg-C, 4500PE, 2510B, 5540C, 5220D, 5310C, 2540B, 2540C, 2540D, 510C, 4500S₂-AD, 3005A, 3015, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8330, 625, 8082, 8151A, 8081A, 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9040B, 9045C, 9065, 420.1, 9012A, 6860, 1311, 1312, 3050B, 9030B, 3051, 9010B, 3540C, SM 510ABC, 4500CN-CE, 2540G, SW-846 7.3, Organic Parameters: EPA 8260B, 8270C, 8330, 8082, 8081A, 8151A, 3545, 3546, 3580, 5035.)

Analytes Not Accredited by NELAP

Certification is not available by NELAP for the following analytes: **EPA 8260B**: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A**: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C**: Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625**: 4-Chloroaniline. **EPA 350.1** for Ammonia in a Soil matrix.



U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA NEW ENGLAND

OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION

11 TECHNOLOGY DRIVE, NORTH CHELMSFORD, MA 01863-2431

MEMORANDUM

DATE: November 3, 2005

SUBJ: Response to Questions/Concerns regarding the Remediation General Permit (RGP), E mail from Ellen M. Collins, Corporate QA Officer, Alpha Woods Hole Lab, October 18, 2005

FROM: Dick Siscanaw, Chemist

TO: Doug Corb, EPA Environmental Scientist

THRU: Gerry Sotolongo, EPA Quality Assurance Manager

RFA: 06026

FILE: alphalab1.doc

1. All samples should utilize an EPA approved method to achieve the effluent limits in Appendix III. The method should be approved as per 40CFR Part 136. (Per Page 26 of RGP.)

EPA Response.

EPA/QAU concurs with this comment. Methods listed in 40 CFR 136 may be used as long as the effluent limits listed in Appendix III are achieved. If the method is not listed in Appendix VI, the laboratory must retain supporting data for 5 years to demonstrate the method's minimum level (ML) satisfies the effluent limits (Appendix III). The following data should be kept on file: laboratory standard operation procedure (SOP), initial calibration data with the lowest standard at or below the required effluent limit, effluent spike recoveries, initial demonstration of capability (IDC), and a method detection limit study (MDL).

2. If we are able to achieve the listed effluent limit by an EPA approved method, which will be accepted under the regulation, we do not need to utilize the methodology listed in Appendix VI.

EPA Response.

EPA/QAU concurs with the comment. See response #1.

3. If we are unable to achieve the effluent limits in Appendix III, we should refer to Appendix VI and achieve the lowest listed ML by an EPA approved method. (Either one of the methods listed or one found in 40CFR Part 136.) However, we only need to achieve the effluent limit by that method.

a. TRC: we will be analyzing via 330.1 (not 330.5 as listed in Appendix VI) to achieve 20 ug/L.

EPA Response.

In Appendix VI the ML for method 330.5 is 20 ug/L. Method 330.1 is approved for NPDES, but the EPA is concern with the method's ML. Alpha labs must retain supporting data to demonstrate the ML at 20 ug/L to use this method (see response #1).

b. Ethylene dibromide: we will be analyzing via EPA 504.1 to achieve 0.05 ug/L, per our discussion, however this is still unclear.

QUESTION: Can we analyze EDB by 8260? If so, what limit of detection will be accepted for analysis/reporting?

QUESTION: Why are method 618 and 524.2 listed if those MLs will not be accepted?

EPA Response.

Ethylene dibromide (EDB) should be analyzed by method 504.1 to meet the ML of 0.05 ug/L, Appendix III, unless there are higher levels are present in the effluent. The Method 618, Determination of Volatile Pesticides in Municipal and Industrial Wastewaters by Gas Chromatography is an old hexane extraction that is an older version of 504.1 and is not recommended by EPA/QAU. The purge and trap methods (8260, 624, and 524.2) may be used when EDB is present at higher levels and the laboratory has the supporting data. QAU agrees with Alpha that Appendix VI is misleading because the MLs are above the effluent limits. This is clarified in Section 1.d of the RGP.

4. Section D of the RGP states that EPA Methods 8260C and 8270D will be allowed in lieu of utilizing 624 and 625. Per our discussion, we will be utilizing EPA 8260B and 8270C at this time, as they are the most recently promulgated methods.

EPA Response.

EPA methods 8260B and 8270C are the final promulgated SOPs by RCRA. These methods may be used. The EPA/QAU position is to use the most recent RCRA methods that are posted on the RCRA site. There is a 2 – 5 year delay in the final promulgated version. These RCRA draft methods, 8260C and 8270D, have passed the RCRA workgroup, available on the RCRA webpage, and are in the process of promulgation.

5. Regarding 8270, the RGP also notes that the analysis ‘must’ be preceded by EPA 3520C or 3535. Why is 3510C not allowed? Separatory funnel liquid-liquid extraction is part of EPA Method 625 and its application should be allowed via EPA 3510C. Per our discussion, we will utilize EPA 3510C as the extraction method for the Semivolatile Organic compounds.

EPA Response.

EPA QAU concurs with this suggestion. The Separatory Funnel Liquid-Liquid Extraction, Method 3510C is allow for EPA method 8270 along with method 3520 (continuous extraction) and method 3535 (solid phase extraction).

6. Method 200.8 is not listed as an available alternative method for the analysis of metals with the exception of Chromium. Why? Will this method be allowed for the other metals in Appendix III?

EPA Response.

The Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma – Mass Spectrometry (ICP/MS), Method 200.8 has not been finalized in 40 CFR 136 and in the proposed stage, April 6, 2004. RCRA Inductively Coupled Plasma – Mass Spectrometry, Method 6020A, is in the draft stage. The EPA/QAU accepts the ICP/MS methods, 200.8 and 6020A, for the analyses of metals as long as the laboratory can satisfy the effluent limits, Appendix III, with the supporting data (see response 1).

7. Appendix VI: Item No. 39: Methods 624 and 8260 are listed as alternative procedures for the analysis of Total Phenols.

EPA Response.

Item 39, the Total Phenols should use EPA manual method 420.1 or the automated method 420.2. Methods 624 and 8260 can not measure phenols and methods 625 and 8270 measure a subset of the total phenols.

8. Appendix III: Item No. 34 and 35: Bis (2-ethylhexyl) phthalate has an effluent limit of 6.0 ug/L, however Total Phthalates have a limit of 3.0 ug/L.

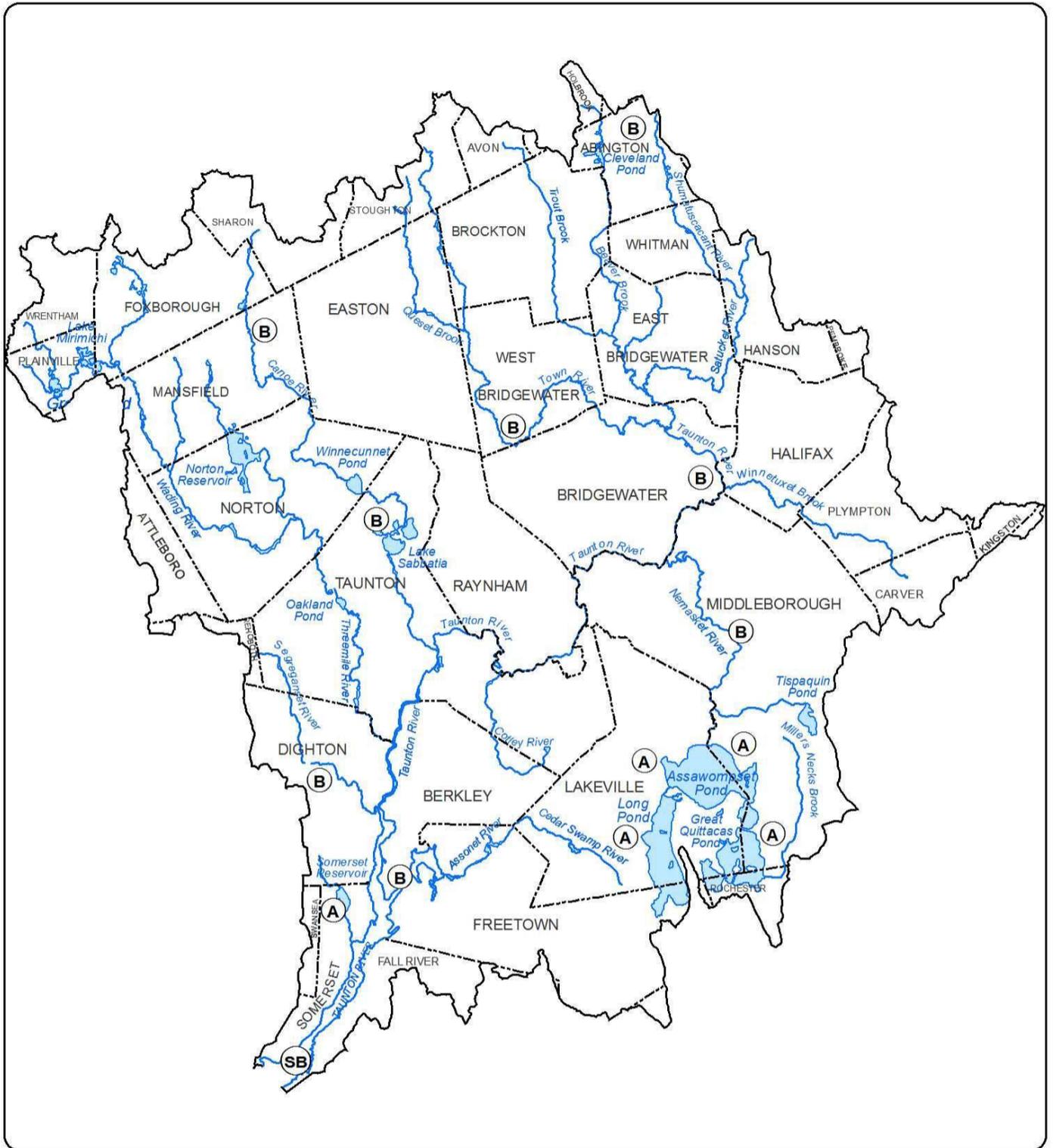
EPA Response.

The monthly average for the total phthalates is 3.0 ug/L and the daily maximum effluent limit for Bis (2-ethylhexyl) phthalate is 6.0 ug/L. Alpha Laboratory is correct one can not evaluate the monthly average for the total phthalates is 3.0 ug/L when the method's ML is 5 ug/L. In many risk assessments one uses half the ML so method 625 and 8270 should be adequate. The concern is the background phthalate contamination for the required methods, 625 and 8270, are at the effluent limits. The laboratory must be very careful to clean the glassware to achieve the 5 ug/L ML.

PART IV

Water Quality Classification

4.06: continued



LEGEND

- (A) (B) (SA) (SB) Class
- Change in Class
- River, Stream, Coastline
- Lake, Pond, Reservoir
- Basin Boundary
- Town Boundary

Figure 14
TAUNTON
RIVER BASIN

Miles

0 2.5 5 10 15

314 CMR 4.00: DIVISION OF WATER POLLUTION CONTROL

4.06: continued

TABLE 14
TAUNTON RIVER BASIN

<u>BOUNDARY</u>	<u>MILE POINT</u>	<u>CLASS</u>	<u>QUALIFIERS</u>
<u>Taunton River</u>			
Source to Rt. 24 Bridge	40.8 - 21.2	B	Warm Water
Rt. 24 Bridge to mouth	21.2 - 0.0	SB	Shellfishing CSO
<u>Salisbury Plain & Matfield Rivers</u>			
Brockton WWTF to confluence	-	B	Warm Water
<u>Town River</u>			
Bridgewater WWTF to confluence	2.4 - 0.0	B	Warm Water
<u>Nemasket River</u>			
Middleborough WWTF to confluence	-	B	Warm Water
<u>Saw Mill Brook</u>			
Entire Length	1.5 - 0.0	B	Warm Water
<u>Mill River</u>			
Outlet Lake Sabbatia, Taunton to confluence with Taunton River	3.4 - 0.0	B	Warm Water
<u>Three Mile River</u>			
Source to confluence	15.8 - 0.0	B	Warm Water
<u>Wading River (Attleboro Reservoir)</u>			
Source to water supply intake in Mansfield and tributaries thereto		A	Public Water Supply
From water supply intake, Mansfield to confluence with Three Mile River		B	Warm Water
<u>Assawompset Pond</u>			
Source to outlet in Lakeville and those tributaries thereto	-	A	Public Water Supply
<u>Great Quittacas Pond</u>			
Source to outlet in Lakeville and those tributaries thereto	-	A	Public Water Supply

4.06: continued

TABLE 14
TAUNTON RIVER BASIN (continued)

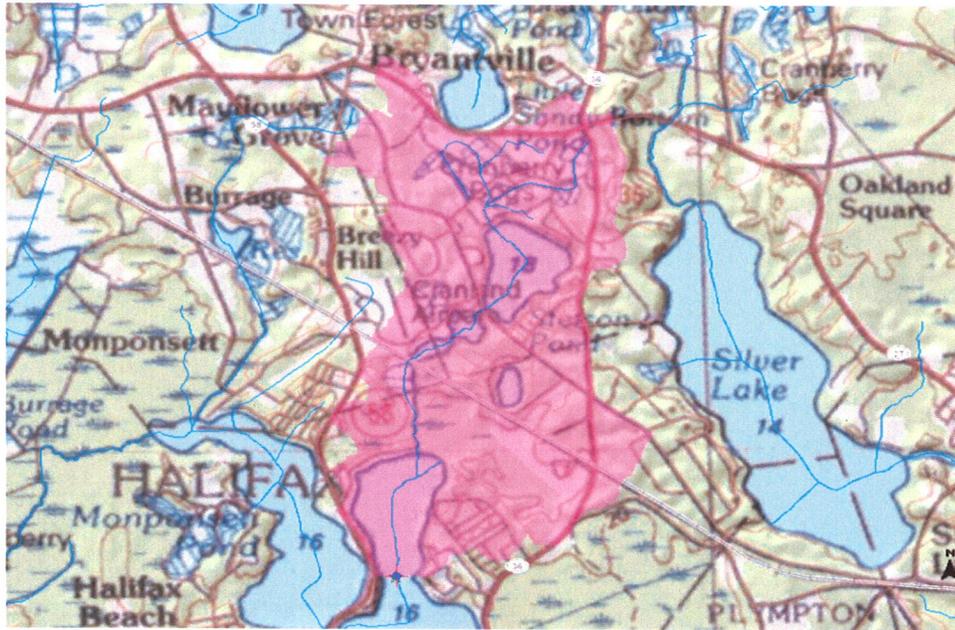
<u>BOUNDARY</u>	<u>MILE POINT</u>	<u>CLASS</u>	<u>QUALIFIERS</u>
<u>Little Quittacas Pond</u>			
Source to outlet in Lakeville and those tributaries thereto	-	A	Public Water Supply
<u>Long Pond</u>			
Source to outlet in Lakeville and those tributaries thereto	-	A	Public Water Supply
<u>Pocksha Pond</u>			
Source to outlet in Lakeville and those tributaries thereto	-	A	Public Water Supply
<u>Somerset Reservoir</u>			
Source to outlet in Somerset and those tributaries thereto including Segreganset River from pumping station, Dighton to source	-	A	Public Water Supply
<u>Monponsett Pond</u>			
Source to outlet in Halifax and those tributaries thereto	-	A	Public Water Supply
<u>Elders Pond</u>			
Source to outlet in Lakeville and those tributaries thereto	-	A	Public Water Supply
<u>Brockton Reservoir</u> <u>(Avon Reservoir, Salisbury</u> <u>Brook Reservoir)</u>			
Reservoir to outlet in Avon and those tributaries thereto	-	A	Public Water Supply

PART V

Receiving Water Characteristics



StreamStats Print Page



- Legend**
- ★ GlobalWatershedPoint
 - GlobalWatershed
 - ⊗ Excluded Areas
 - ◆ rhdgages
 - ◆ rhdams
 - hucpoly
 - Dendritic Stream Network
 - NHD Flowline
 - <all other values>
 - ArtificialPath
 - Canal/Ditch
 - Coastline
 - Connector
 - Pipeline
 - Stream/River
 - Underground Conduit
 - Stream Gages
 - ▲ Gaging Station, Continuous Record
 - ▲ Low Flow, Partial Record
 - ▲ Peak Flow, Partial Record
 - ▲ Peak and Low Flow, Partial Record
 - ▲ Miscellaneous Record
 - ▲ Unknown



3/24/2010 8:17:51 AM



Streamstats Ungaged Site Report

Date: Wed Mar 24 2010 08:16:57 Mountain Daylight Time
 Site Location: Massachusetts
 NAD83 Latitude: 42.0047 (42 00 16)
 NAD83 Longitude: -70.8384 (-70 50 18)
 NAD27 Latitude: 42.0046 (42 00 16)
 NAD27 Longitude: -70.8389 (-70 50 20)
 ReachCode: 01090004032356
 Measure: 52.75
 Drainage Area: 2.55 mi2

Low Flows Basin Characteristics			
100% Statewide Low Flow (2.55 mi2)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	2.55	1.61	149
Mean Basin Slope from 250K DEM (percent)	0.63	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.55	0	1.29
Massachusetts Region (dimensionless)	0	0	1

Probability of Perennial Flow Basin Characteristics			
100% Perennial Flow Probability (2.55 mi2)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	2.55 (above max value 1.99)	0.01	1.99
Percent Underlain By Sand And Gravel (percent)	100.00	0	100
Percent Forest (percent)	25.92	0	100
Massachusetts Region (dimensionless)	0	0	1

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

Low Flows Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
D50	2.48	18		1.03	5.95
D60	1.93	20		0.51	7.27
D70	1.42	24		0.44	4.47
D75	1.16	26		0.38	3.52
D80	0.93	28		0.3	2.86
D85	0.65	32		0.19	2.12
D90	0.49	37		0.15	1.61
D95	0.26	46		0.0656	0.97
D98	0.18	60		0.0411	0.72
D99	0.13	65		0.0272	0.56
M7D2Y	0.3	50		0.0755	1.18
AUGD50	0.77	33		0.22	2.66
M7D10Y	0.11	71		0.0227	0.53

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

Probability of Perennial Flow Statistics		
Statistic	Value	Standard Error (percent)
PROBPEREN	0.99	

PART VI

303(d) & TMDL Listings for the Halifax Area

Appendix 4

303(d) Impairments and Segments *removed* from the 2008 Integrated List

Aaron River Reservoir (94178)	MA94178_2006	5	4c	Northeast mercury TMDL approved
Great Herring Pond (94050)	MA94050_2006	5	4a	Northeast mercury TMDL approved
Great South Pond (94054)	MA94054_2006	5	4a	Northeast mercury TMDL approved
<i>Taunton</i>				
Monponsett Pond (62218)	MA62218_2006	5	4c	Northeast mercury TMDL approved
Lake Nippenicket (62131)	MA62131_2006	5	4c	Northeast mercury TMDL approved
Somerset Reservoir (62174)	MA62174_2006	5	4a	Northeast mercury TMDL approved

Appendix 1 Waters Covered by TMDL's

NAME	SEGMENT ID	CATEGORY	DESCRIPTION	SIZE	POLLUTANT(S) COVERED BY TMDL [EPA APPROVAL DATE-DOCUMENT CONTROL NUMBER]
South Coastal					
Aaron River Reservoir (94178)	MA94178_2008	4c	Cohasset/Hingham/Scituate	136 acres	-Metals [12/20/2007-NEHgTMDL]
Great Herring Pond (94050)	MA94050_2008	4a	Bourne/Plymouth	415 acres	-Metals [12/20/2007-NEHgTMDL]
Great South Pond (94054)	MA94054_2008	4a	Plymouth	284 acres	-Metals [12/20/2007-NEHgTMDL]
Little Harbor (94180)	MA94-20_2008	4a	Cove south of Nichols Road, west of Atlantic Avenue, and north of Cohasset center, Cohasset	0.24 sq mi	-Pathogens [9/12/2002-CN120.0]
Taunton					
Monponsett Pond (62218)	MA62218_2008	4c	[East Basin] Halifax	245 acres	-Metals [12/20/2007-NEHgTMDL]
Lake Nippenicket (62131)	MA62131_2008	4c	Bridgewater	375 acres	-Metals [12/20/2007-NEHgTMDL]
Somersset Reservoir (62174)	MA62174_2008	4a	Somersset	164 acres	-Metals [12/20/2007-NEHgTMDL]
Ten Mile					
Whiting Pond (52042)	MA52042_2008	4A	North Attleborough/Plainville	23.6 acres	-Mercury in Fish Tissue [12/20/2007-NEHgTMDL]

PART VII

Pertinent Threatened or Endangered Species Information

Appendix II: Endangered Species Act: County Species List

The following list identifies listed or proposed U.S. species by State and County. If you are located close to the border of a county or your site is located in one county and your discharge points are located in another, you must look under both counties. This list has been updated through October 2004. However, since species are listed and de-listed periodically, you will need the most current list at the time you are conducting your endangered species assessment. The Endangered Species Home Page is located at: <http://endangered.fws.gov/>. Species listed below with a status of both endangered (E) and threatened (T) are generally either endangered or threatened within the specified county. Designation of critical habitat (CH) does not mean that the county constitutes critical habitat, only that CH has been designated for that for that species.

Massachusetts:

County	Group name	Inverse name	Scientific name	Action/status
No county details - all permittees should consider	Mammals	Lynx, Canada	Lynx canadensis	T
Barnstable	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
		Plover, Piping	Charadrius melodus	E,T
		Tern, Roseate	Sterna dougalli dougalli	E,T
	Plants	Gerardia, Sandplain	Agalinus acuta	E
	Reptiles	Turtle, Kemp's (Atlantic) Ridley Sea	Lepidochelys kempii	E
		Turtle, Loggerhead Sea	Caretta caretta	T
Berkshire	Mammals	Bat, Indiana	Myotis sodalis	E
		Cougar, Eastern	Felis concolor cougar	E
	Reptiles	Turtle, Bog	Clemmys muhlenbergii	T
Bristol	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
		Plover, Piping	Charadrius melodus	E,T
	Fishes	Sturgeon, Shortnose	Acipenser brevirostrum	E
	Reptiles	Turtle, Kemp's (Atlantic) Ridley Sea	Lepidochelys kempii	E
		Turtle, Loggerhead Sea	Caretta caretta	T
Dukes	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
		Plover, Piping	Charadrius melodus	E,T
	Insects	Beetle, Northeastern Beach Tiger	Cincindela dorsalis dorsalis	T
	Reptiles	Turtle, Kemp's (Atlantic) Ridley Sea	Lepidochelys kempii	E
		Turtle, Loggerhead Sea	Caretta caretta	T

Essex	Birds	Eagle, Bald	<i>Haliaeetus leucocephalus</i>	T
		Plover, Piping	<i>Charadrius melodus</i>	E,T
	Fishes	Sturgeon, Shortnose	<i>Acipenser brevirostrum</i>	E
	Plants	Pogonia, Small Whorled	<i>Isotria medeoloides</i>	T
	Reptiles	Turtle, Kemp's (Atlantic) Ridley Sea	<i>Lepidochelys kempii</i>	E
		Turtle, Loggerhead Sea	<i>Caretta caretta</i>	T
Franklin	Birds	Eagle, Bald	<i>Haliaeetus leucocephalus</i>	T
	Fishes	Sturgeon, Shortnose	<i>Acipenser brevirostrum</i>	E
	Plants	Bulrush, Northeastern (= Barbed Bristle)	<i>Scirpus ancistrochaetus</i>	E
Hampden	Birds	Eagle, Bald	<i>Haliaeetus leucocephalus</i>	T
	Fishes	Sturgeon, Shortnose	<i>Acipenser brevirostrum</i>	E
	Plants	Pogonia, Small Whorled	<i>Isotria medeoloides</i>	T
Hampshire	Birds	Eagle, Bald	<i>Haliaeetus leucocephalus</i>	T
	Fishes	Sturgeon, Shortnose	<i>Acipenser brevirostrum</i>	E
	Insects	Beetle, Puritan Tiger	<i>Cincindela puritana</i>	T
	Mammals	Cougar, Eastern	<i>Felis concolor cougar</i>	E
	Plants	Pogonia, Small Whorled	<i>Isotria medeoloides</i>	T
Middlesex	Birds	Eagle, Bald	<i>Haliaeetus leucocephalus</i>	T
Nantucket	Birds	Eagle, Bald	<i>Haliaeetus leucocephalus</i>	T
		Plover, Piping	<i>Charadrius melodus</i>	E,T
	Reptiles	Turtle, Kemp's (Atlantic) Ridley Sea	<i>Lepidochelys kempii</i>	E
		Turtle, Loggerhead Sea	<i>Caretta caretta</i>	T
Norfolk	Reptiles	Turtle, Kemp's (Atlantic) Ridley Sea	<i>Lepidochelys kempii</i>	E
		Turtle, Loggerhead Sea	<i>Caretta caretta</i>	T
Plymouth	Birds	Eagle, Bald	<i>Haliaeetus leucocephalus</i>	T
		Plover, Piping	<i>Charadrius melodus</i>	E,T
		Tern, Roseate	<i>Sterna dougalli dougalli</i>	E,T
	Reptiles	Northern Redbelly Cooter	<i>Pseudemys rubriventris</i>	E, CH

New Hampshire:

County	Group name	Inverse name	Scientific name	Action/status
Belknap	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
	Plants	Pogonia, Small Whorled	Isotria medeoloides	T
Carroll	Plants	Pogonia, Small Whorled	Isotria medeoloides	T
Cheshire	Clams	Mussel, Dwarf Wedge	Alasmidonta heterodon	E
Coos	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
	Clams	Mussel, Dwarf Wedge	Alasmidonta heterodon	E
Grafton	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
	Clams	Mussel, Dwarf Wedge	Alasmidonta heterodon	E
Hillsborough	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
	Plants	Pogonia, Small Whorled	Isotria medeoloides	T
Merrimack	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
	Insects	Butterfly, Karner Blue	Lycæides melissa samuelis	E
	Plants	Pogonia, Small Whorled	Isotria medeoloides	T
Rockingham	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
		Plover, Piping	Charadrius melodus	T
	Plants	Pogonia, Small Whorled	Isotria medeoloides	T
Strafford	Plants	Pogonia, Small Whorled	Isotria medeoloides	T
Sullivan	Birds	Eagle, Bald	Haliaeetus leucocephalus	T
	Clams	Mussel, Dwarf Wedge	Alasmidonta heterodon	E
	Plants	Milk-Vetch, Jesup's	Astragalus robbinsii var. jesupi	E

Species Reports

Environmental Conservation Online System



Species By County Report

The following report contains Species that are known to occur in this county. If you are looking for the Section 7 range (for Section 7 Consultations), please visit the [IPaC](#) application.

County: **Plymouth, MA**

Group Name	Population	Status	Lead Office	Recovery Plan Name	Recovery Plan Action Status	Recovery Plan Stage
Birds	<u>Falco peregrinus tundrius</u>	Recovery				
	except Great Lakes watershed	Threatened	<u>Office Of The Regional Director</u>	<u>Piping Plover Atlantic Coast Population Revised Recovery Plan</u>	<u>View Implementation Progress</u>	Final Revision 1
				<u>Great Lakes & Northern Great Plains Piping Plover</u>	Recovery planning in progress, no plan or implementation information yet to display.	Final
Reptiles	<u>(Dermochelys coriacea)</u>	Endangered	<u>Jacksonville Ecological Services Field Office</u>	<u>Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle</u>	<u>View Implementation Progress</u>	Final Revision 1
				<u>Recovery Plan for Leatherback Turtles in the U.S. Caribbean, Atlantic, and Gulf of Mexico</u>	<u>View Implementation Progress</u>	Final Revision 1

ESTADOS UNIDOS MEXICANOS

<u>Green sea turtle</u> (<i><u>Chelonia mydas</u></i>)	except where endangered	Threatened	<u>Jacksonville Ecological Services Field Office</u>	<u>Recovery Plan for U.S. Population of Atlantic Green Turtle</u>	<u>View Implementation Progress</u>	Final Revision 1
<u>Loggerhead sea turtle</u> (<i><u>Caretta caretta</u></i>)		Threatened	<u>Jacksonville Ecological Services Field Office</u>	<u>Recovery Plan for U.S. Pacific Populations of the Green Turtle</u>	<u>View Implementation Progress</u>	Final Revision 1
<u>Plymouth Red-Bellied Turtle</u> (<i><u>Pseudemys rubriventris bangsi</u></i>)		Endangered	<u>New England Ecological Services Field Office</u>	<u>Recovery Plan for the Northwest Atlantic Population of the Loggerhead Sea Turtle</u> (<i><u>Caretta caretta</u></i>); <u>Second Revision</u>	<u>View Implementation Progress</u>	Final Revision 2
				<u>Plymouth Redbelly Turtle</u>	<u>View Implementation Progress</u>	Final Revision 2

Export options: [CSV](#) | [EXCEL](#) | [XML](#) | [PDF](#)

Last updated: March 23, 2010

[ECOS Home](#) | [Contact Us](#)

The federally-listed endangered dwarf wedgemussel (*Alasmidonta heterodon*) is found in the following areas in Massachusetts and New Hampshire:

1. Connecticut River from Northumberland to Dalton, New Hampshire (Coos County).
2. Connecticut River from Lebanon to North Walpole, New Hampshire (Grafton and Sullivan Counties).
3. Ashuelot River from the Surry Mountain Flood Control Project in Surry to Swanze, New Hampshire (Cheshire County).
4. South Branch of the Ashuelot River in East Swanze, New Hampshire (Cheshire County).
5. Mill River from Whately to Hatfield, Massachusetts (Hampshire County).
6. Fort River in Amherst, Massachusetts (Hampshire County).
7. Mill River south of State Route 10 in Northampton, Massachusetts (Hampshire County).

The federally-listed endangered shortnose sturgeon (*Acipenser brevirostrum*) is found in the following areas in Massachusetts:

8. Merrimack River from the Essex Dam in Lawrence, Massachusetts to the Merrimack River's mouth (Essex County).
9. Connecticut River from Turners Falls, Massachusetts (Franklin, Hampshire, and Hampden Counties) to the Connecticut River's mouth, Connecticut (Hartford, Middlesex, and New London Counties).

The federally-listed threatened **bog turtle** (*Clemmys muhlenbergii*), is found in the following areas in Massachusetts:

10. bodies of water in the Towns of Egremont and Sheffield (Berkshire County), MA.

The federally-listed endangered **northern redbelly cooter** (*Pseudemys rubriventris*) is found in the following areas in Massachusetts:

11. bodies of water occurring within the following boundaries: in the Towns of Plymouth and Carver, (Plymouth County) MA, west of Route 3 and north of Route 25; east of Route 58 and south of Route 44.

All facilities seeking coverage by this general permit, including owners and operators of facilities discharging into any of the eleven identified areas where the endangered dwarf wedgemussel, shortnose sturgeon, bog turtle, northern redbelly cooter are found, must determine whether they meet one or more of the ESA eligibility criteria (see section "C", below) before submitting an NOI. A facility that cannot meet any of the ESA eligibility criteria must apply for an individual permit.

SUMMARY OF 2002 MASSACHUSETTS PIPING PLOVER CENSUS DATA

Prepared by:

**Scott M. Melvin and Carolyn S. Mostello
Natural Heritage and Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Rte. 135, Westborough, MA 01581**

August 2003

ABSTRACT

This report summarizes data on Piping Plover (*Charadrius melodus*) abundance, distribution, reproductive success, and limiting factors in Massachusetts during the 2002 breeding season. A coastwide network of observers reported breeding plovers at 109 sites; 57 additional sites were monitored but no breeding pairs were detected. The Index Count (census conducted 1-9 June) was 522 pairs, an 8.5% increase from 2001. The Adjusted Total Count (estimated total number of breeding pairs during the entire season) was 538, an 8.7% increase over 2001. Overall statewide productivity was 1.14 chicks fledged per pair, based on data from 535 of 538 pairs (99%). Of 782 nests, 44% hatched ≥ 1 egg; 43% of eggs hatched, and 53% of chicks fledged. The most common causes of nest loss were predation, abandonment, and overwash or flooding from high tides or heavy rains. The most frequently identified nest predators were crow, gull, fox, skunk, and coyote. Predation was the most frequently identified cause of nest abandonment. Nests protected by wire predator exclosures were abandoned more frequently than unexclosed nests (23% vs. 11%); however, nest success was higher for exclosed than unexclosed nests (71% vs. 28%).

Table 1. Abundance, distribution, and productivity of Piping Plovers in Massachusetts, 2002.

Location	Number of pairs		No. chicks fledged ^c	No. pairs with fledge data ^c	Source ^d
	Index Count ^a	Total Count ^b			
NORTH SHORE					
Salisbury Beach- North, Salisbury ^e	0	0	0	0	SvO
Salisbury Beach – South, Salisbury ^e	1	1	2	1	SvO, JM, MM
Plum Island town beaches, Newburyport/Newbury	2	2	1	2	DM
Parker River NWR, Newbury/Rowley	13	13	13	13	DM
Sandy Point State Res., Ipswich	2	2	3	2	DM
Crane Beach, Ipswich	30	30	44	30	FI, DW
Coffin’s Beach, Gloucester	1	1	0	1	MZ, SvO
Wingarsheek Beach, Gloucester	0	nd ^f	nd	nd	SvO
Good Harbor Beach, Gloucester	nd	nd	nd	nd	nd
SOUTH SHORE					
Third Cliff, Scituate	6	6	6	6	FZ, MZ
Fourth Cliff, Scituate	1	1	0	1	FZ, MZ
Rexhame Beach, Marshfield	1	1	0	1	FZ, MZ
Duxbury Beach, Duxbury/Plymouth	12	12	14	12	JPl, MZ
Saquist Beach, Plymouth ^g	0	nd	nd	nd	JPl, MZ
Plymouth Beach, Plymouth	16	17	15	17	DG, SH
Ellisville, Plymouth ^h	5	5	8	5	SL, MZ
Sagamore Beach, Bourne and Sandwich	4	5	0	5	SL, MZ
Scusset Beach State Res., Sandwich	0	1	0	1	SL, MZ
UPPER CAPE					
Mashnee Dike, Bourne	2	2	0	2	SL, MZ
Bassetts Island, Bourne	nd	nd	nd	nd	Nd
Black Bch./Sippewisset, W. Falmouth	0	nd	nd	nd	JPa

PART VIII

National Register of Historic Places for Halifax

*Residence
13 Jordan Road
Halifax, Massachusetts
Project No. 11-1410.00*

Prepared by Coler & Colantonio, Inc.

*RGP NOI
March 25, 2010
RTN 3-4-22368*

Index by State and City

National Register Information System

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No filter

Include filter in navigation

Row	STATE ▾	COUNTY ▾	RESOURCE NAME ▾	ADDRESS ▾	CITY ▾	LISTED ▾	MULTIPLE ▾
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Page 1



PART IX

Best Management Practices Plan

**BEST MANAGEMENT
PRACTICES PLAN**

**RESIDENCE
13 JORDAN ROAD
HALIFAX, MASSACHUSETTS**

RTN 4-22368

March 25, 2010

Prepared for:

**Kevin Murphy
13 Jordan Road
Halifax, Massachusetts 02338**

Prepared by:



*Lauren Konetzny
Project Engineer*

Reviewed by:



*Ronald K. Burns, PE, LSP
Division Manager*

**Coler & Colantonio, Inc.
101 Accord Park Drive
Norwell, Massachusetts 02061-1685
(781)-982-5400**

Project No. 11-1410.00

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FIGURES

Figure 1	Receiving Waters Map
Figure 2	Treatment System Diagram

APPENDIX

Appendix A	Health and Safety Plan
------------	------------------------

1.0 INTRODUCTION

Coler & Colantonio Inc. has prepared this *Best Management Practices Plan (BMPP)* on behalf of Kevin Murphy, the owner, for the discharge operations covered under the Remedial General Permit (RGP) submitted to the United States Environmental Protection Agency (EPA) in March 2010 for groundwater discharge at 13 Jordan Road in Halifax, Massachusetts (the "Site"). The discharge is expected to occur sometime in April through June 2010 and is anticipated to be completed in less than a month. A copy of the BMPP will be maintained on-Site and will be made available for inspection to federal and state personnel.

2.0 POTENTIAL SOURCES OF POLLUTION

A release of approximately 70 gallons of home heating oil from a pin hole in the bottom of the 275 exterior above ground storage tank (AST) was discovered at the property on December 28, 2009. The residence was temporarily relocated in order to access the impacted soil. Now that soil removal activities have been completed, reconstruction of the building foundation can commence. However, due to the shallow water table, dewatering of approximately 15,000 to 50,000 gallons will be required to properly reconstruct the building foundation.

Remediation consisting of the off-site disposal of approximately 4,750 gallons of impacted groundwater and 150 tons of impacted soil has been conducted to address the Release. Concentrations of fuel oil related compounds in the soil have been reduced to below applicable Massachusetts Contingency Plan (MCP) Method 1 Cleanup Standards; however, groundwater assessment has not yet been completed at the Site. A groundwater sample collected from the open excavation on March 16, 2010 detected levels of toluene, acetone, arsenic, chromium III, nickel, and zinc below RGP Effluent Limitations and copper, iron and lead above RGP Effluent Limitations. Home heating oil impact to the groundwater is the only known potential source of pollution at the Site; the detected metals are believed to be naturally occurring and the acetone is believed to be a laboratory contaminant.

3.0 SYSTEM DESCRIPTION

Water will be pumped into one or two 20,000 gallon frac tanks from the open excavation that was created by soil removal activities as necessary for the installation of the new foundation. It is estimated that between 15,000 gallons and 50,000 gallons of water will be generated during dewatering activities. Because no more than two frac tanks can fit at the Site, once approximately 35,000 gallons have been accumulated, water from the frac tanks will begin to be disposed of off-site at an appropriate disposal facility or continuous discharge will be conducted. If less than 40,000 gallons of water is generated, batch discharge will be utilized. Both the batch discharge and continuous discharge methods are described below.

3.1 Batch Discharge

For batch discharge, once dewatering activities are complete, one sample will be collected from each frac tank. Each sample will be submitted for analysis of all chemicals identified as "believed present" in the RGP Notice of Intent (NOI). No other influent samples will be collected during discharge activities because the influent sample will be a batch sample and the chemical concentrations within the water contained within the frac tanks will not change after dewatering activities have been completed. If any chemicals are present in either of the frac tanks above Effluent Limitations, the following treatment measures will be employed: for metals above Effluent Limitations two size P2 bag filters in parallel will be utilized, for TPH or VOCs above Effluent Limitations two 500 pound liquid phase granular activated carbon (GAC) absorber vessels in series will be utilized. Regardless of whether or not treatment is necessary, water will be discharged to the wetlands at an average flow rate of 18.5 gpm (0.041 cfs). Discharge should be completed in less than six days. If treatment is necessary to achieve Effluent Limitations, an effluent sample will be collected for all the chemicals identified as "believed present" in the RGP NOI on the first, third, and sixth day of discharge. In accordance with the RGP, these samples will be submitted with a 72 hour turnaround time. No additional samples will be collected if treatment is not necessary to achieve Effluent Limitations.

3.2 Continuous Discharge

As previously mentioned, continuous discharge may be employed if the volume of water accumulated in the frac tanks approaches 35,000 gallons. If the excess water is not transported to an off-site disposal facility, the water in the frac tanks will be treated with two size P2 bag filters in parallel and two 500 pound liquid phase GAC absorber vessels in series prior to discharge. Water will initially be discharged to the wetlands at an average flow rate of 3 gpm (0.004 cfs) to maintain the level in the frac tanks below 40,000 gallons while dewatering activities are still occurring. During this period of continuous discharge, an influent and an effluent sample will be collected for all the chemicals identified as "believed present" in the RGP NOI on the first, third, and sixth day of discharge and once a week thereafter. In accordance with the RGP, the samples collected within the first week will be submitted with a 72 hour turnaround time.

Once dewatering activities are completed, discharge activities will become very similar to the batch discharge scenario presented above. One sample will be collected from each frac tank for all chemicals identified as "believed present" in the RGP NOI. No subsequent influent samples will be collected during the remaining discharge activities. If any chemicals are present in either of the frac tanks above Effluent Limitations, the following treatment measures will be employed: for metals above Effluent Limitations two size P2 bag filters in parallel will be utilized, for TPH or VOCs above Effluent Limitations two 500 pound liquid phase GAC absorber vessels in series will be utilized. Regardless of whether or not treatment is necessary, the remaining water will be discharged to the wetlands at an average flow rate of 18.5 gpm (0.041 cfs). The remaining discharge should be completed in less than six days. If treatment is necessary to achieve Effluent Limitations, an effluent sample will be collected for all the chemicals identified as "believed present" in the RGP NOI once per week if still within the first month of discharge or once a month if following the first month

of discharge. Since the effectiveness of the treatment system will already have been verified during the initial continuous discharge period, this sampling schedule is appropriate. No additional samples will be collected if treatment is not necessary to achieve Effluent Limitations.

4.0 POLLUTION CONTROLS

Several controls have been included in the remedial design to minimize the possibility of an accidental discharge or spill and to minimize the impacts should an accidental discharge or spill occur. Excavation activities were conducted on February 15, 2010 through February 17, 2010 and all removed impacted soil was transported off-site by February 18, 2010 and all impacted groundwater generated during excavation activities was removed on February 19, 2010. The only remedial waste currently on-site is three drums containing oily absorbents and groundwater generated during test pitting activities and the level of chemicals within the water to be discharged due to the Release is below Effluent Limitations. No water will be discharged to the wetlands without treatment unless prior sampling of the contents of the frac tank has determined that no compounds are present above Effluent Limitations. If any additional water is added to a frac tank after sampling, additional sampling must be conducted prior to discharge without treatment. Spent GAC filters will be disposed of under a Uniform Hazardous Waste Manifest shortly after discharge is completed.

5.0 PREVENTATIVE MAINTENANCE PLAN

The system will be inspected for any damage by a representative of Coler & Colantonio, Inc. and its subcontractors at each sampling event. If the system is compromised, Coler & Colantonio or its subcontractors will immediately perform the necessary repairs or adjustments to resolve the issue.

6.0 SITE SECURITY

Three sides of the property, other than an opening wide enough for the driveway, are enclosed by a four foot to six foot high wooden fence. The fourth side of the property is blocked by a barrier of hay bails and a 2.5 foot high silt fence. Snow fence has been used to block off access to the driveway when no personnel are on-site. The treatment system will be inspected prior to startup for any signs of tampering or vandalism. If any evidence of vandalism or tampering is observed, the system will not be utilized until someone familiar with the system design has inspected and repaired the system as necessary.

7.0 MANAGEMENT OF GENERATED WASTES

Spent GAC filters and bag filters will be disposed of under a Uniform Hazardous Waste Manifest shortly after discharge is completed.

8.0 PROHIBITION OF DISCHARGE EXCEEDING DESIGN FLOW

Discharge through the treatment system will be regulated by a pump. Unless the pump malfunctions, discharge will not exceed design flow. In order to ensure that design flow is not exceeded, the flow rate of the system will be checked during each sampling event. Discharge activities will be immediately halted upon any indication of an exceedance of design flow.

9.0 MONITORING ACTIVITIES

Monitoring activities will be conducted by Coler & Colantonio, Inc. frequently during operation of the treatment system to ensure that the P&T System is maintaining compliance with the RGP. For batch discharge effluent sampling will be performed prior to any discharge. For continuous discharge sampling will be conducted on the first, third, and sixth day of discharge; once a week for the first month; and once a month thereafter as detailed in section 3.0. Discharge activities will be immediately halted upon any indication of malfunction or violation of Effluent Limitations. In accordance with the RGP, a summary of the results will be submitted to the United State Environmental Protection Agency (EPA) Northeast (NE) office and the DEP Northeast Regional Office (NERO) if a violation of the effluent limits occurs.

10.0 EMPLOYEE TRAINING

Any employee who has direct or indirect responsibility for ensuring compliance with the RGP will be instructed in the requirements of the RGP. Employees will be made aware of the compounds which must be monitored, the appropriate laboratory methods for these compounds, and the appropriate sampling techniques and frequency required to maintain compliance with the RGP. Employees will be provided with a written description of the treatment system, as well as a flow diagram of the system, and will be instructed on the individual stages of the system and the proper maintenance of the system. Employees will be instructed on the proper monitoring procedures and frequency and will be provided with the appropriate monitoring forms. In addition, employees will be provided with the phone number of at least one emergency contact familiar with the treatment system and the requirement of the RGP. A Health and Safety Plan (HASP) has been prepared and is attached.

11.0 MANAGEMENT OF RUN-ON & RUN-OFF

Due to the short-term nature of the discharge, very little run-on or run-off is expected to occur. The dewatering activities required for the installation of the foundation will lower the groundwater table, preventing run-off from the open excavation. The water will be pumped

into an enclosed tank which will be sealed when dewatering activities are not underway. Surface drainage in the area is primarily away from the open excavation, minimizing the amount of run-on from rainfall. Hay bails and silt fence have been installed between the work area and the wetlands so that any run-off which did occur would not carry silt to the wetlands.

12.0 EROSION, SCOURING, & SEDIMENT CONTROL

Due to the short-term nature of the discharge and the relatively low discharge rates, erosion, scouring, and sediment impacts will be minimal and no additional erosion, scouring, or sediment controls are necessary.

13.0 IMPLEMENTATION OF BMPS

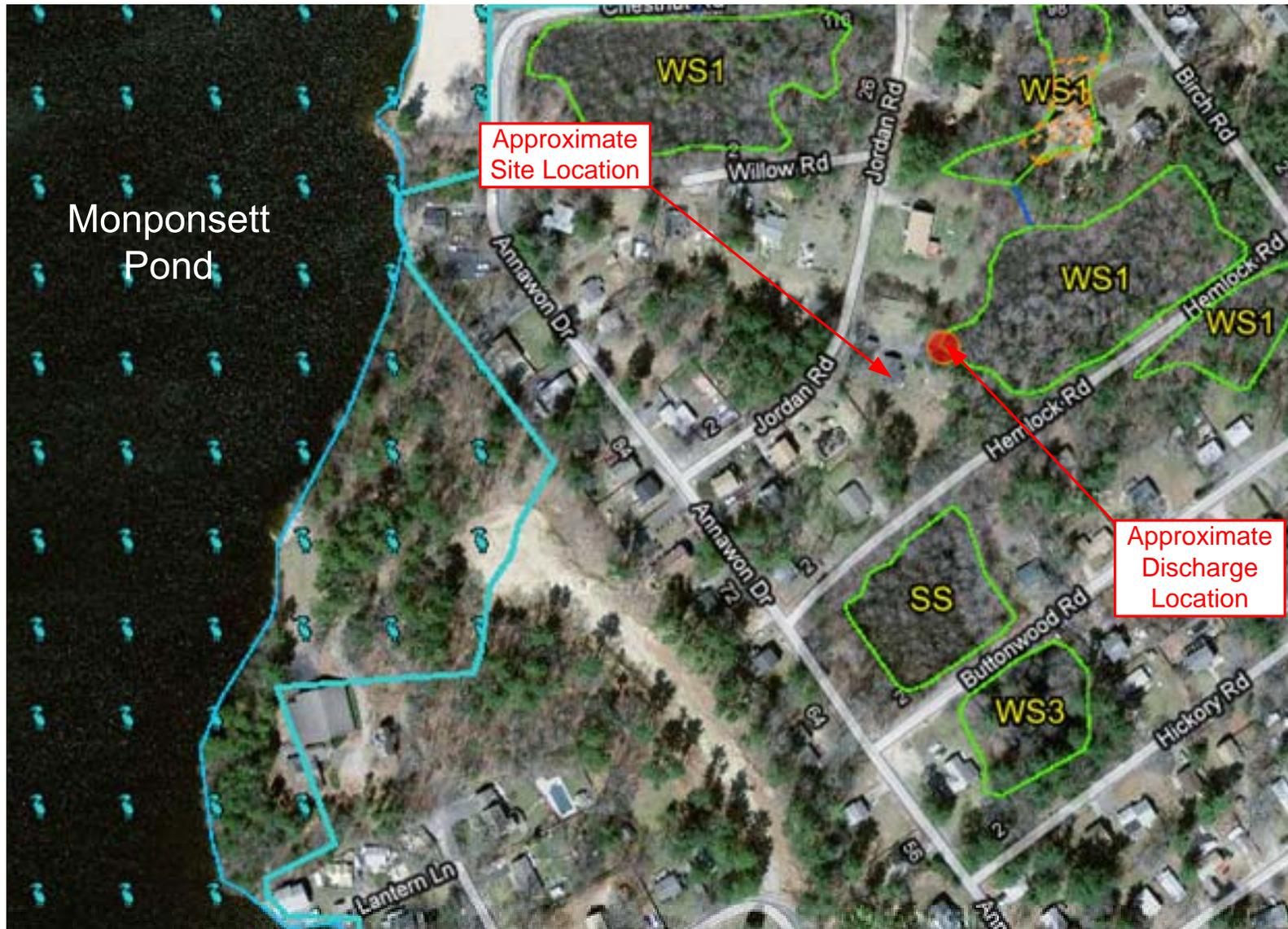
The following BMPs are already in place at the Site:

- One frac tank is currently located at the Site
- Hay bails and silt fence have already been installed between the wetlands and the work area
- Site security as discussed in section 6.0 is already in place
- Contaminated soil and groundwater generated during excavation activities have been appropriately disposed off-site
- Employees of Coler & Colantonio, Inc. who are expected to be responsible for the operations and maintenance of the treatment system have already received the appropriate training

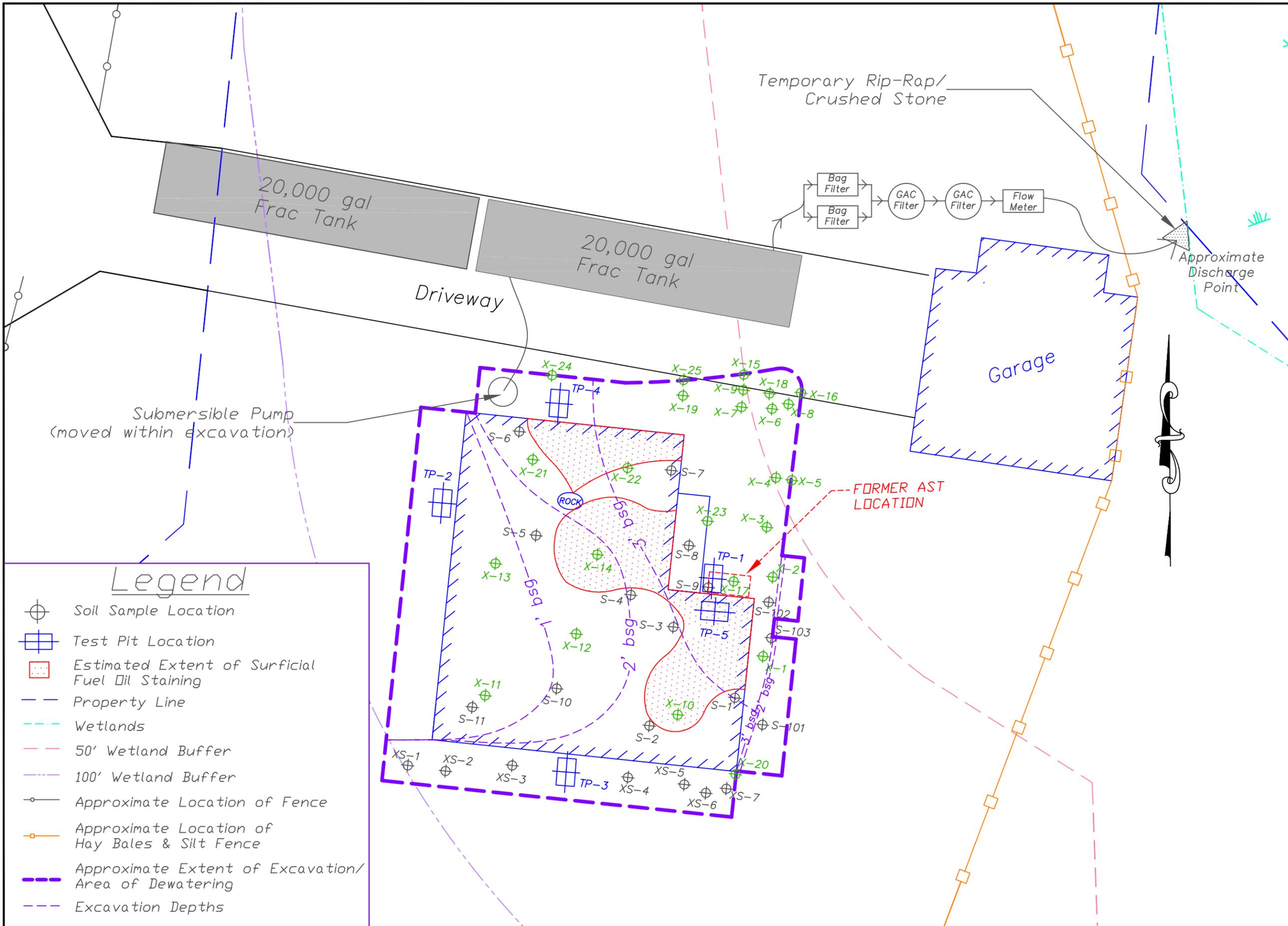
The additional BMPs discussed within this BMPP will be implemented throughout the discharge activities in accordance with this BMPP.

FIGURES

- Figure 1 Receiving Waters Map
Figure 2 Treatment System Diagram



- 100 Year Flood Zone A
- 100 Year Flood Velocity Zone
- NHESP Estimated Habitats of Rare Wildlife
- Areas of Critical Environmental Concern
- Shoreline
- Hydrologic Connection
- Mean Low Water Line
- Apparent Wetland Limit
- Closure Line
- Edge of Interpreted Area
- MassDEP Wetland Change Area



REVISIONS:

No.	DATE	

GENERAL NOTES:

1. THE BASE MAP WAS DRAWN FROM A SITE PLAN BY LAND PLANNING, INC. ENTITLED SUBSURFACE SEWAGE DISPOSAL SYSTEM AND DATED MARCH 3, 1999. ORIGINAL SCALE 1" = 20'
2. THE COMPONENTS OF THE TREATMENT SYSTEM ARE NOT DRAWN TO SCALE.

COLER & COLANTONIO
ENGINEERS AND SCIENTISTS

781-982-5400 Fax: 781-982-5490 101 Accord Park Drive Norwell, MA 02061-1685

TITLE:

FIGURE 2
Treatment System Diagram

MURPHY RESIDENCE
13 JORDAN ROAD
HALIFAX, MASSACHUSETTS

Project Number: 11-1408.00
RTN: 4-22368

DATE: MARCH 23, 2010
COMP./DESIGN: LMK
CHECK: RKB
DRAWN: LMK
SCALE: 1" = 10'
JOB NO.: 11-1408
DWG NO.: Site Plan
SHEET 1 OF 1

Legend

- Soil Sample Location
- Test Pit Location
- Estimated Extent of Surficial Fuel Oil Staining
- Property Line
- Wetlands
- 50' Wetland Buffer
- 100' Wetland Buffer
- Approximate Location of Fence
- Approximate Location of Hay Bales & Silt Fence
- Approximate Extent of Excavation/ Area of Dewatering
- Excavation Depths

APPENDIX A

Health & Safety Plan



HEALTH & SAFETY PLAN

Important: Please forward one copy of completed document to the reviewer three (3) working days prior to project start up and maintain a copy on site. Place signed copy in project file. Items marked with "1910.120..." are required by 29 CFR 1910.120 in the paragraph noted.

A. GENERAL INFORMATION (1910.120(c)(4))

Project Name Murphy Residence Project Number 11-1410

RTNs 4-22368

Project Manager Ron Burns Print Signature

Site or Building Name Murphy Residence

Address 13 Jordan Road

City, State & Zip Halifax, MA

Coler & Colantonio, Inc. Safety & Health Supervisor Name Ron Burns

Coler & Colantonio, Inc. Safety & Health Supervisor Phone Number 781/792-2233 c508/561-1611

Client Contact Name Kevin Murphy

Client Contact Phone Number (339) 933-9401

Fire #: 911 Police #: 911 Ambulance #: 911

Nearest Hospital Name Jordan Hospital

Address 275 Sandwich Street, Plymouth, MA

- Directions to Hospital (see attached map) 1. Left on Annawon Drive (0.4 miles) 2. Right at Holmes Street/MA-36S (0.6 miles) 3. Left at MA-106E/Plymouth Street (5.1 miles) 4. Slight right at Main Street (1.3 miles) 5. Turn right to merge onto MA-3S towards Plymouth/Cape Cod (2.2 miles) 6. Continue onto US-44E (0.9 miles) 7. Take the US 44S exit (0.3 miles) 8. Merge onto Samoset Street/US-44E (0.8 miles) 9. Turn right at Court Street/MA-3AS (1.5 miles) 10. Turn right at Sandwich Street (0.1 mile) 11. Slight left to stay on Sandwich Street; hospital will be on the right (0.2 miles)

miles); to access the Sykes Memorial Emergency Department, pass the entrance to the parking lot, and turn left at the stop sign. The emergency department is on your left, just down the hill.

Location of Nearest Phone Cell
(and special dialing instructions if any)

Directions for Emergency Escape Turn left (south) onto Jordan Road. Take the first left onto Annawon Drive. Pull into the parking lot of the former liquor store at the corner of Annawon Drive & Holmes St.
(attach diagram if necessary)

Designated Reporting Area Parking Lot of the convenience store at the corner of Annawon Drive & Holmes St.
(after emergency occurrence)

B. SITE DESCRIPTION (1910.120(c)(4))

Facility History:

Residence; fuel oil AST leaked into the soil. Approximately 4,750 gallons of impacted groundwater and 150 tons of impacted soil were removed from the Site.

Type of Hazard Anticipated On Site (i.e. tanks, drums, etc.):

Impacted groundwater.

Amount of Hazardous Materials Present:

Contaminant concentrations in the groundwater may exceed applicable MCP Method 1 Cleanup Standards.

Approximately 70 gallons of fuel oil were released, but approximately 4,750 gallons of impacted groundwater and 150 tons of impacted soil have been removed from the Site.

Water Supply:

None

General Site Description (including topography, accessibility, & site size):

Site is located on a residential property. Access to the property is from Jordan Drive. The house on-Site

Has been moved by a contractor to allow for assessment and remediation. Site is fairly flat with a wetland located approximately 50 feet from the excavation.

See attached Site map

C. PROJECT OBJECTIVE(S) (1910.120(b)(3))

(Description of work area activities planned:)

Dewater the excavation in order to allow for the installation of a new foundation for the residence by pumping the water from the excavation into one or two interconnected frac tanks. Once dewatering activities are completed, the water will be treated if necessary and discharged to the nearby wetlands. Excavation or House moving activities may occur during discharging activities.

Estimated Duration of Activities: April 2010—May 2010

D. PROJECT ORGANIZATION (1910.120(b)(2))

<u>Team Member</u>	<u>Responsibility</u>	<u>Type of Training</u>	<u>Date of Training</u>
Ron Burns	Safety & Health Supervisor	C & D	
Lauren Konetzny	General Site Worker	C & D	3/17/2009
Marisa Ross	General Site Worker	C & D	8/3/2008

Training Codes:

- A – minimum of 40 hours of instruction off the site & a minimum of 3 days field experience under the direct supervision of a trained experienced supervisor (*appropriate for general site workers such as equipment operators, general laborers & supervisory personnel engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances and health hazards*)
- B – minimum of 24 hours of instruction off the site & a minimum of 1 day field experience under the direct supervision of a trained experienced supervisor (*appropriate for workers on site only occasionally for a specific limited task such as groundwater monitoring, land surveying, or geophysical surveying & who are unlikely to be exposed over permissible & published exposure limits or workers regularly on site who work in areas which have been monitored & fully characterized indicating that exposures are under permissible & published exposure limits, where respirators are not necessary, & the characterization indicates that there are no health hazards or the possibility of an emergency developing*)
- C – minimum of 40 hours of instruction off the site & a minimum of 3 days field experience under the direct supervision of a trained experienced supervisor and at least 8 additional hours of specialized training on such topics as the employer’s safety & health program, PPE program, spill containment program, & health hazard monitoring procedure and techniques (*appropriate for on-site management and supervisors directly responsible for or who supervise employees engaged in hazardous waste operations*)
- D – 8 hours of annual refresher training (*appropriate for general site workers such as equipment operators, general laborers & supervisory personnel engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances and health hazards & on-site management and supervisors directly responsible for or who supervise employees engaged in hazardous waste operations*)
- E – equivalent training (*includes any academic training or the training that employees might have had from actual hazardous waste site experience*)

Responsibility

Safety & Health Supervisor

Description

Responsible for the implementation of the site health & safety plan & verify compliance with applicable safety & health requirements. May also conduct remediation oversight, sample collection, and field monitoring.

General Supervisor

Directs all hazardous waste operations. May also conduct remediation oversight, sample collection, and field monitoring.

General Site Worker

Conducts remediation oversight, sample collection, and field monitoring.

E. CHEMICAL HAZARD ANALYSIS (1910.120(b)(4))

Contaminant	IP	PEL/TLV	IDLH	LEL/UEL	Flash Point	Routes of Exposure
No. 2 Fuel Oil					125 °F	Absorption, inhalation, ingestion

NOTE: Attach Material Safety Data Sheets for all substances identified above. Also see Section (M) (2).

F. OTHER HAZARDS

Heat Stress? Yes No If yes, please specify precautions to be taken:

Suitable clothing which adequately ventilates must be worn. Drink a suitable amount of fluids.

If necessary, rest in a cool, shaded location.

Cold Stress? Yes No If yes, please specify precautions to be taken:

Suitable clothing which adequately insulates must be worn at all times, this includes a hat and

Gloves. If necessary, warm up in a vehicle or nearby building.

Excessive Noise? Yes No If yes, please specify precautions to be taken:

Confined Space Entry? Yes No If yes, attach copy of Confined Space Entry Permit.
Excavations 4' or greater in depth? Yes No If yes, specify precautions to be taken:

Welding, Cutting & Brazing? Yes No If yes, specify precautions to be taken:

Heavy Equipment Operation? Yes No If yes, specify precautions to be taken:

During excavation and house moving activities, hard hats and steel toed booted should be worn.

Slip, Trip or Fall Hazards? Yes No If yes, specify precautions to be taken:

Properly store equipment when not in use. Be aware of scattered debris throughout the Site.

Presence of Overhead Utilities

Are overhead utilities present at the project site? Yes No

***If so, always maintain suitable clearance from overhead lines.**

Specify location: _____

Presence of Underground Utilities

Have underground utilities been located and marked at the site? Yes No NA

Specify names and phone number of utilities contact:

Name of Contact Dig Safe

Phone Number 1-888-344-7233

G. SITE CONTROL (1910.120(d))

Work Zones have been established as shown on the attached **Site Plan**.

Site Security: Security on site will be maintained by:

 X Temporary barricades and/or warning tape

 Security Fencing

 24 Hour Security

 Other (specify) _____

H. PERSONAL PROTECTIVE EQUIPMENT (1910.120(b)(4)) (LIST EXPOSURES UNDER WORK ZONE)

Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work zones:

<u>Work Zone</u>	<u>Level of Protection</u>	<u>Required Protective Equipment</u> (specify exact type e.g. nitrile gloves)
Exclusion Zone	D	Respirator: _____
		Filters/Cartridges: _____
		Boots: <u>Chemical resistant</u>
		Inner Gloves: _____
		Outer Gloves: <u>Nitrile</u>
		Protective Coverall: <u>Work uniform</u>
		Hard Hat: _____
		Eye Protection: <u>Safety Glasses</u>
		Ear Protection: _____
		Other: _____
Contamination Reduction Zone	D	Respirator: _____
		Filters/Cartridges: _____
		Boots: <u>Chemical resistant</u>
		Inner Gloves: _____
		Outer Gloves: <u>nitrile</u>
		Protective Coverall: <u>Work uniform</u>
		Hard Hat: _____
		Eye Protection: _____
		Ear Protection: _____
		Other: _____

Exceptions and Modifications:

I. DECONTAMINATION (1910.120(k))

Personnel Decontamination Procedures

All personnel entering the Exclusion Zone will undergo decontamination prior to leaving the Site. Personnel will proceed through the following decontamination stations:

Decontamination Solution: Alconox and water

STATION #1: Scrub all reusable equipment thoroughly with decontamination solution.

Equipment Required: Decontamination solution, clean brush or rag

STATION #2: Rinse and dry all reusable equipment

Equipment Required: Clean water and paper towels

Equipment Decontamination

Gross Removal By:

- Hand Scrubbing
- Cold High Pressure Wash
- Hot High Pressure Wash
- Steam Cleaning
- Other (specify) _____
- Clean Rinse
- Decon solution (specify) Alconox & water

Decontamination Waste Water

Collection (specify how): Collect decontamination waste water in a bucket

Direct Discharge (specify how and where): _____

Pre-Treatment (specify): _____

Disposal (specify how and where): Drum all materials
until later off-site disposal.

L. CONTINGENCY PLAN (1910.120(l))

Emergency Communication Signal(s) (specify): _____

Emergency Escape Route(s) (specify and indicate on site diagram): Turn left (south) onto Jordan
Road. Take the first left onto Annawon Drive. Pull into the parking lot of the former liquor store at the
corner of Annawon Drive & Holmes St.

Emergency Equipment On Site: (specify location):

First Aid Kit: _____

Fire Extinguishers: _____

Telephone: Cell

Water Supply: None, must bring on-site.

Eye Wash/Safety Shower: _____

Others (specify): _____

Re-entry to the Exclusion Zone following an on-site emergency shall not be permitted until the following conditions are satisfied:

- (1) The conditions resulting in an emergency have been corrected.
- (2) The hazards have been re-evaluated.
- (3) The HASP has been reviewed and determined adequate for the hazards encountered.
- (4) All site personnel have been instructed in any new hazards and changes to the HASP.

N. ATTACHMENTS

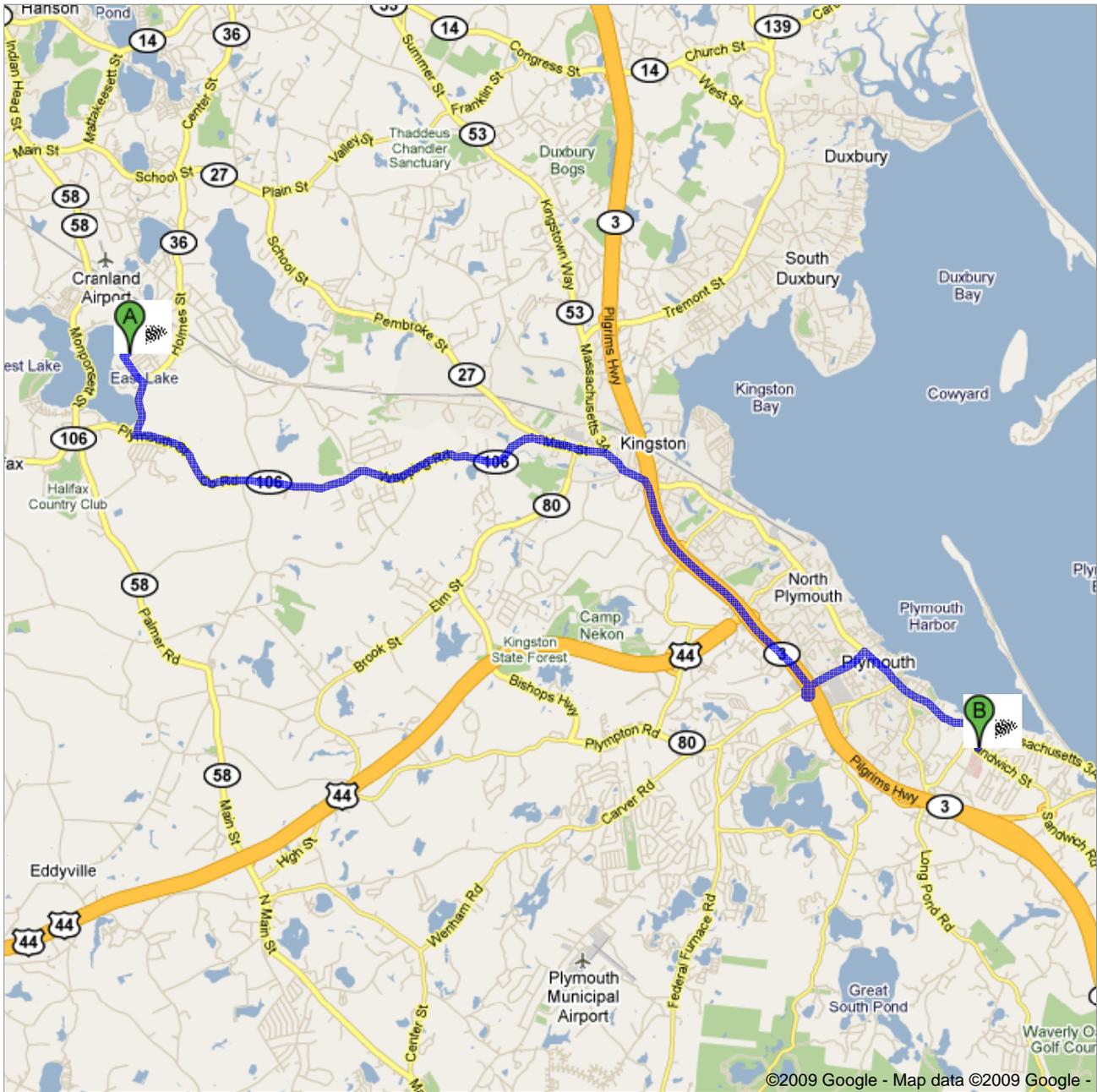
The following items have been amended to this Health & Safety Plan:

- 1) Hospital Map
- 2) Site Plan
- 3) Emergency Phone Numbers List
- 4) HASP Review List
- 5) MSDS



Directions to 275 Sandwich St, Plymouth, MA 02360
13.4 mi – about 21 mins

Save trees. Go green!
Download Google Maps on your phone at google.com/gmm



 13 Jordan Rd, Halifax, MA 02338

- | | | |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------|
| | 1. Head southwest on Jordan Rd toward Annawon Dr | go 292 ft
total 292 ft |
|  | 2. Turn left at Annawon Dr
About 1 min | go 0.4 mi
total 0.4 mi |
|  | 3. Turn right at Holmes St/MA-36 S
About 1 min | go 0.6 mi
total 1.1 mi |
|  | 4. Turn left at MA-106 E/Plymouth St
Continue to follow MA-106 E
About 8 mins | go 5.1 mi
total 6.2 mi |
|  | 5. Slight right at Main St
About 2 mins | go 1.3 mi
total 7.5 mi |
|  | 6. Turn right to merge onto MA-3 S toward Plymouth/Cape Cod
About 2 mins | go 2.2 mi
total 9.7 mi |
|  | 7. Continue onto US-44 E
About 1 min | go 0.9 mi
total 10.5 mi |
|  | 8. Take the U.S 44 S exit | go 0.3 mi
total 10.8 mi |
|  | 9. Merge onto Samoset St/US-44 E
About 1 min | go 0.8 mi
total 11.6 mi |
|  | 10. Turn right at Court St/Massachusetts 3A S
Continue to follow Massachusetts 3A S
About 3 mins | go 1.5 mi
total 13.1 mi |
|  | 11. Turn right at Sandwich St | go 0.1 mi
total 13.2 mi |
|  | 12. Slight left to stay on Sandwich St
Destination will be on the right | go 0.2 mi
total 13.4 mi |

 275 Sandwich St, Plymouth, MA 02360

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2009 , Google

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.

Legend

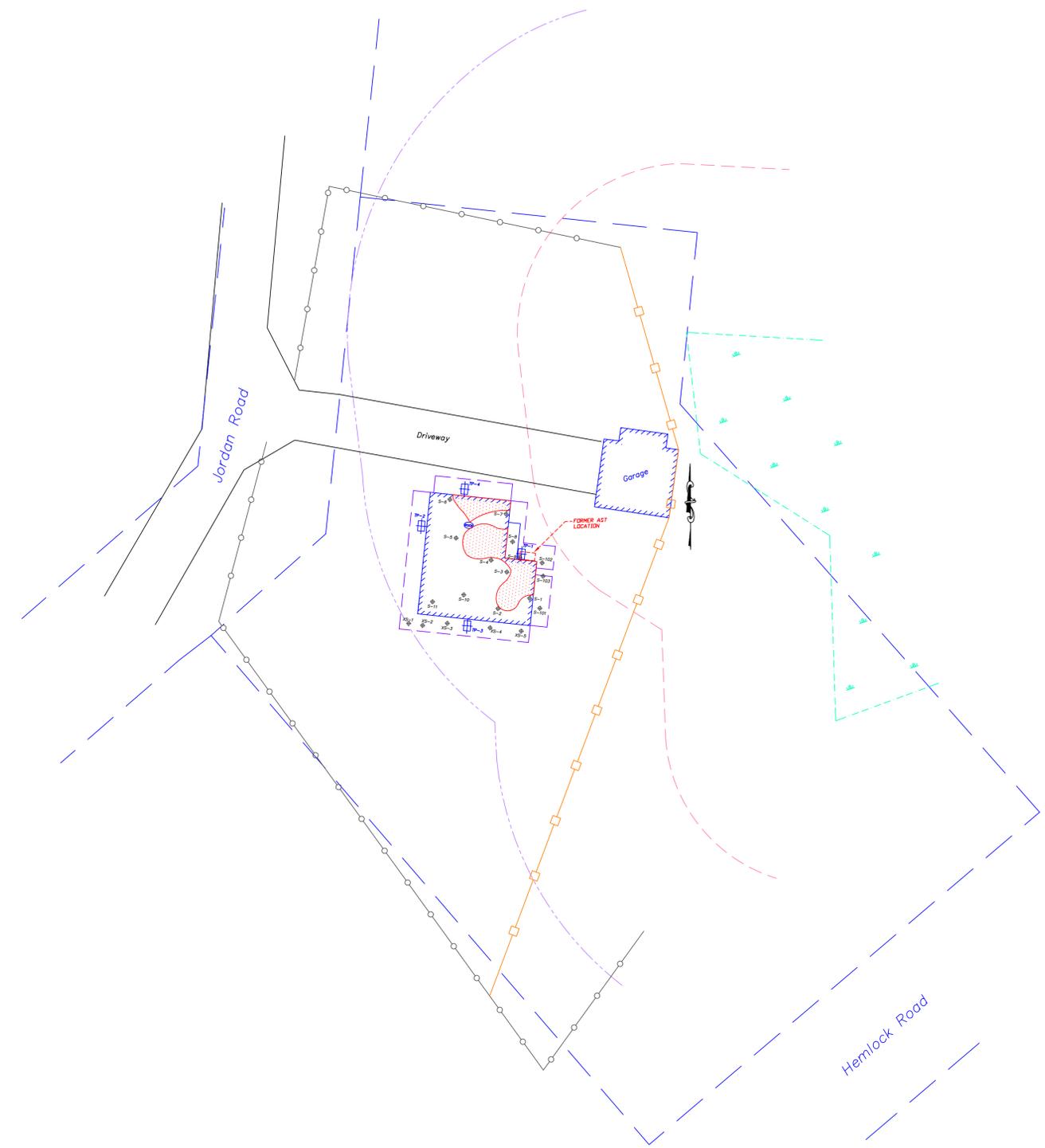
-  Soil Sample Location
-  Test Pit Location
-  Estimated Extent of Surficial Fuel Oil Staining
-  Wetlands
-  50' Wetland Buffer
-  100' Wetland Buffer
-  Approximate Location of Fence
-  Approximate Location of Hay Bales & Silt Fence
-  Approximate Extent of Excavation Completed for Relocation of the Residence

REVISIONS:

No.	DATE	

GENERAL NOTES:

1. THE BASE MAP WAS DRAWN FROM A SITE PLAN BY LAND PLANNING, INC. ENTITLED SUBSURFACE SEWAGE DISPOSAL SYSTEM AND DATED MARCH 3, 1999. ORIGINAL SCALE 1" = 20'



COLER & COLANTONIO INC
 ENGINEERS AND SCIENTISTS

781-982-5400 101 Accord Park Drive
 Fax: 781-982-5490 Norwell, MA 02061-1685

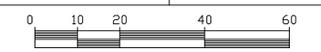
TITLE:

**FIGURE 2
 SITE PLAN**

OWNER/APPLICANT:

**MURPHY RESDIENCE
 13 JORDAN ROAD
 HALIFAX, MA
 RTN 4-22368**

DATE: 1/21/2010
COMP./DESIGN: LMK
CHECK: RKB
DRAWN: LMK
SCALE: 1" = 20'
JOB NO.: 11-1408.00
DWG NO.: SHEET 1 OF 1



**** EMERGENCY PHONE NUMBERS ****

---- Post in Full View ----

- Coler & Colantonio, Inc. Safety & Health Supervisor (781) 982-5400 x 230
- Chemtrec..... (800) 424-9300
- DOT Hotline..... (202) 366-4488
Materials Transportation Bureau
- Centers for Disease Control and Prevention..... (404) 633-5313
(Emergency Only)
- Solid Waste and Emergency Response..... (202) 260-2180
Office of Emergency and Remedial Response
- TSCA Assistance Information Services Hotline (202) 554-1404

HOSPITAL:

(Name): **Jordan Hospital**

(Address): **275 Sandwich Street**

Plymouth, MA

(Phone): **(508) 830-2800**

(Travel Time): **21 minutes**

(Directions to Hospital) 1. Left on Annawon Drive (0.4 miles)

(see attached map) 2. Right at Holmes Street/MA-36S (0.6 miles)

3. Left at MA-106E/Plymouth Street (5.1 miles)

4. Slight right at Main Street (1.3 miles)

5. Turn right to merge onto MA-3S towards
Plymouth/Cape Cod (2.2 miles)

6. Continue onto US-44E (0.9 miles)

7. Take the US 44S exit (0.3 miles)

8. Merge onto Samoset Street/US-44E (0.8 miles)

9. Turn right at Court Street/MA-3AS (1.5 miles)

10. Turn right at Sandwich Street (0.1 mile)

11. Slight left to stay on Sandwich Street; hospital will be
on the right (0.2 miles); to access the Sykes Memorial
Emergency Department, pass the entrance to the
parking lot, and turn left at the stop sign. The
emergency department is on your left, just down the
hill.

PARAMEDICS:

(Name): **Halifax Emergency Medical Center**

(Phone): 911

FIRE DEPT:

(Name): Halifax Fire Department

(Phone): 911

LOCAL POLICE:

(Name): Halifax Police Department

(Phone): 911

UTILITIES:

(Electric): National Grid

(Gas): Bay State Gas Company



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No. 2 Fuel Oil

MSDS No. 0088

EMERGENCY OVERVIEW

CAUTION!

**OSHA/NFPA COMBUSTIBLE LIQUID - SLIGHT TO MODERATE IRRITANT -
EFFECTS CENTRAL NERVOUS SYSTEM - HARMFUL OR FATAL IF
SWALLOWED**

Moderate fire hazard. Avoid breathing vapors or mists. May cause dizziness and drowsiness. May cause moderate eye irritation and skin irritation. Long-term, repeated exposure may cause skin cancer.

If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs).



NFPA 704 (Section 16)

1. CHEMICAL PRODUCT and COMPANY INFORMATION

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

EMERGENCY TELEPHONE NUMBER (24 hrs):

CHEMTREC (800) 424-9300

COMPANY CONTACT (business hours):

Corporate EHS (732) 750-6000

MSDS Internet Website:

www.hess.com

SYNONYMS: #2 Heating Oil; 2 Oil; Off-road Diesel Fuel

See Section 16 for abbreviations and acronyms.

2. COMPOSITION and INFORMATION ON INGREDIENTS

INGREDIENT NAME (CAS No.)	CONCENTRATION PERCENT BY WEIGHT
#2 Fuel Oil (68476-30-2)	100
Naphthalene (91-20-3)	Typically 0.1
A complex combination of hydrocarbons with carbon numbers in the range C9 and higher produced from the distillation of petroleum crude oil.	

3. HAZARDS IDENTIFICATION

EYES

Contact with eyes may cause mild irritation.

SKIN

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

INGESTION

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.



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Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

INHALATION

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

CHRONIC EFFECTS and CARCINOGENICITY

Similar products have produced skin cancer and systemic toxicity in laboratory animals following repeated applications. The significance of these results to human exposures has not been determined - see Section 11 Toxicological Information.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash).

4. FIRST AID MEASURES

EYES

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

SKIN

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops.

INGESTION

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

INHALATION

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT:	100 °F (38 °C) minimum PMCC
AUTOIGNITION POINT:	494 °F (257 °C)
LOWER EXPLOSIVE LIMIT (%):	0.6
UPPER EXPLOSIVE LIMIT (%):	7.5

FIRE AND EXPLOSION HAZARDS

OSHA and NFPA Class 2 COMBUSTIBLE LIQUID (see Section 14 for transportation classification). Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.



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EXTINGUISHING MEDIA

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, or Halon.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

FIRE FIGHTING INSTRUCTIONS

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.

6. ACCIDENTAL RELEASE MEASURES

ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN.

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

7. HANDLING and STORAGE

HANDLING PRECAUTIONS

Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when this product is loaded into tanks previously containing low flash point products (such as gasoline) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."



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STORAGE PRECAUTIONS

Keep containers closed and clearly labeled. Use approved vented storage containers. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

WORK/HYGIENIC PRACTICES

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and laundry before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION

EXPOSURE LIMITS

Components (CAS No.)	Source	Exposure Limits		Note
		TWA/STEL		
#2 Fuel Oil (68476-30-2)	OSHA	5 mg/m ³ (as mineral oil mist) TWA		
	ACGIH	0.2 mg/m ³ (as mineral oil) TWA		A2, skin
Naphthalene (91-20-3)	OSHA	10 ppm TWA		
	ACGIH	10 ppm TWA / 15 ppm STEL		A4, Skin

ENGINEERING CONTROLS

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

EYE/FACE PROTECTION

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

SKIN PROTECTION

Gloves constructed of nitrile, neoprene, or PVC are recommended. Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

RESPIRATORY PROTECTION

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.



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9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE

Red or reddish/orange colored (dyed) liquid

ODOR

Mild, petroleum distillate odor

BASIC PHYSICAL PROPERTIES

BOILING RANGE: 340 to 700 °F (171 to 371 °C)
VAPOR PRESSURE: 0.009 psia @ 70 °F (21 °C)
VAPOR DENSITY (air = 1): > 1.0
SPECIFIC GRAVITY (H₂O = 1): AP 0.87
PERCENT VOLATILES: 100 %
EVAPORATION RATE: Slow; varies with conditions
SOLUBILITY (H₂O): Negligible

10. STABILITY and REACTIVITY

STABILITY: Stable. Hazardous polymerization will not occur

CONDITIONS TO AVOID and INCOMPATIBLE MATERIALS

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers; Viton ®; Fluorel ®

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

11. TOXICOLOGICAL PROPERTIES

ACUTE TOXICITY

Acute Oral LD50 (rat): 14.5 ml/kg
Acute Dermal LD50 (rabbit): > 5 ml/kg
Guinea Pig Sensitization: negative
Primary dermal irritation: moderately irritating (Draize mean irritation score - 3.98 rabbits)
Draize eye irritation: mildly irritating (Draize score, 48 hours, unwashed - 2.0 rabbits)

CHRONIC EFFECTS AND CARCINOGENICITY

Carcinogenic: IARC: NO NTP: NO OSHA: NO ACGIH: A2
Dermal carcinogenicity: positive - mice

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

This product is similar to Diesel Fuel. IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A) and NIOSH regards it as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

MUTAGENICITY (genetic effects)

Material of similar composition has been positive in a mutagenicity study.

12. ECOLOGICAL INFORMATION

Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.



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13. DISPOSAL CONSIDERATIONS

Consult federal, state and local waste regulations to determine appropriate disposal options.

14. TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: FUEL OIL, NO. 2 Placard:
HAZARD CLASS & PACKING GROUP: 3, PG III
DOT IDENTIFICATION NUMBER: NA 1993
DOT SHIPPING LABEL: FLAMMABLE LIQUID



May be reclassified for transportation as a COMBUSTIBLE LIQUID under conditions of DOT 49 CFR 173.120(b)(2).

15. REGULATORY INFORMATION

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such. However, other federal reporting requirements (e.g., SARA Section 304 as well as the Clean Water Act if the spill occurs on navigable waters) may still apply.

SARA SECTION 311/312 - HAZARD CLASSES

Table with 5 columns: ACUTE HEALTH, CHRONIC HEALTH, FIRE, SUDDEN RELEASE OF PRESSURE, REACTIVE. Values: X, X, X, --, --

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product may contain listed chemicals below the de minimis levels which therefore are not subject to the supplier notification requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372. If you may be required to report releases of chemicals listed in 40 CFR 372.28, you may contact Hess Corporate Safety if you require additional information regarding this product.

CALIFORNIA PROPOSITON 65 LIST OF CHEMICALS

This product contains the following chemicals that are included on the Proposition 65 "List of Chemicals" required by the California Safe Drinking Water and Toxic Enforcement Act of 1986:

Table with 2 columns: INGREDIENT NAME (CAS NUMBER), Date Listed. Row: Residual Fuel Oil (no CAS Number listed), 10/01/1990

CANADIAN REGULATORY INFORMATION (WHMIS)



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Class B, Division 3(Combustible Liquid); Class D, Division 2, Subdivision B (Toxic by other means)

NFPA® HAZARD RATING HEALTH: 0
FIRE: 2
REACTIVITY: 0

Refer to NFPA 704 "Identification of the Fire Hazards of Materials" for further information

HMIS® HAZARD RATING HEALTH: 1 * Slight
FIRE: 2 Moderate
PHYSICAL: 0 Negligible
* Chronic

SUPERSEDES MSDS DATED: 05/24/02

ABBREVIATIONS:

AP = Approximately < = Less than > = Greater than
N/A = Not Applicable N/D = Not Determined ppm = parts per million

ACRONYMS:

Table with 4 columns: Acronym, Description, Acronym, Description. Includes entries like ACGIH, AIHA, ANSI, API, CERCLA, DOT, EPA, HMIS, IARC, MSHA, NFPA, NIOSH, NOIC, NTP, OPA, OSHA, PEL, RCRA, REL, SARA, SCBA, SPCC, STEL, TLV, TSCA, TWA, WEEL, WHMIS.

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