CORPORATE ENVIRONMENTAL ADVISORS, INC.

Consultants | Engineers | Contractors

Via Delivery Confirmation

4/6/09 reminder

MAG-9104711

March 6, 2009

US-EPA Region 1
Ann Herrick
Industrial NPDES Permits (CIP)
One Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

RE: EPA Remediation General Permit Notice of Intent
Former Texaco Station
1 Grove Street
Hopkinton, MA
RTN 2-0507

Ms. Herrick:

On behalf of C.K. Smith Company, Inc., Corporate Environmental Advisors, Inc. (CEA) is submitting this Notice of Intent (NOI) for an EPA Remediation General Permit (RGP) to treat and discharge gasoline-impacted groundwater at the above-referenced site during soil excavation activities and from the discharge of a high vacuum extraction (HVE) system. This work is being conducted as part of Phase IV activities at the site under section 310 CMR 40.0874 of the Massachusetts Contingency Plan (MCP). **Figure 1,** Site Locus Map, shows the property location with respect to surrounding topography. **Figure 2**, Site Layout, depicts pertinent site features as well as the proposed soil excavation area.

Groundwater will be encountered during the soil excavation at the Site. Once groundwater is encountered during excavation activities, a groundwater recovery sump will be placed in the excavation. A submersible pump will be placed in the sump to remove groundwater from the excavation and temporarily store the water in a 20,000-gallon frac-tank. Groundwater will be pumped from the frac tank through an on-site mobile water treatment system. Recovered groundwater will be treated through two bag filters in parallel and two 1,000-lb. liquid-phase carbon vessels in series. A dewatering schematic is provided in **Figure 3.** The groundwater treatment system will be designed to treat and discharge groundwater at a maximum flow rate of 20 gallons per minute (GPM). The flow meter and flow totalizer will be located immediately prior to discharge of the treated groundwater. Flow rates will be periodically monitored throughout discharging and total discharged gallons of treated groundwater will be recorded at the end of each day. Generated groundwater will be treated and discharged to the stormwater drainage system in Main Street (Route 135), which discharges to a tributary of Indian Brook approximately ½ mile north of the site. The discharge point is shown on **Figure 1**. The dewatering system is anticipated to be operated periodically during a period of approximately one month.

After soil excavation activites are completed, a high vacuum extraction system shall be installed. The HVE system shall extract soil gas and groundwater from the subsurface. The groundwater will be treated through two bag filters in parallel and two 1,000-lb. liquid-phase carbon vessels in series. The groundwater treatment system will be designed to treat and discharge groundwater at a flow rate less than

ADDRESS Hartwell Business Park
127 Hartwell Street, West Boylston, MA 01583
TEL 508.835.8822 . 800.358.7960
FAX 508.835.8812
WEB www.cea-inc.com

20 GPM. The flow meter and flow totalizer will be located immediately prior to discharge of the treated groundwater. The HVE system layout is shown on **Figure 4**. A remedial system trailer layout is shown on **Figure 5**. The HVE system is expected to operate until a permanent solution and a condition of no significant risk is achieved for the site.

Treated water discharge will be monitored according to the guidelines described in the RGP. In-line sample ports for sample collection will be installed prior to the bag filters and after the carbon vessels. In addition, a totalizer and flow meter will be installed along the discharge line for proper recording of groundwater discharge volume and flow rates.

A groundwater sample was collected from well OW-4 on October 31, 2008 and is considered representative of groundwater quality in the area to be dewatered. The primary contaminants of concern at the site are gasoline compounds including MTBE. The NOI forms and supporting documentation are attached.

If this Remediation General Permit Notice of Intent has been prepared to your satisfaction, please issue a Remediation General Permit for the proposed remedial activities. If you have any questions or require additional information, please do not hesitate to contact the undersigned at (508) 835-8822.

Sincerely,
CORPORATE ENVIRONMENTAL ADVISORS, INC.

Michael J. Dziura, P.E.
Sr. Environmental Engineer

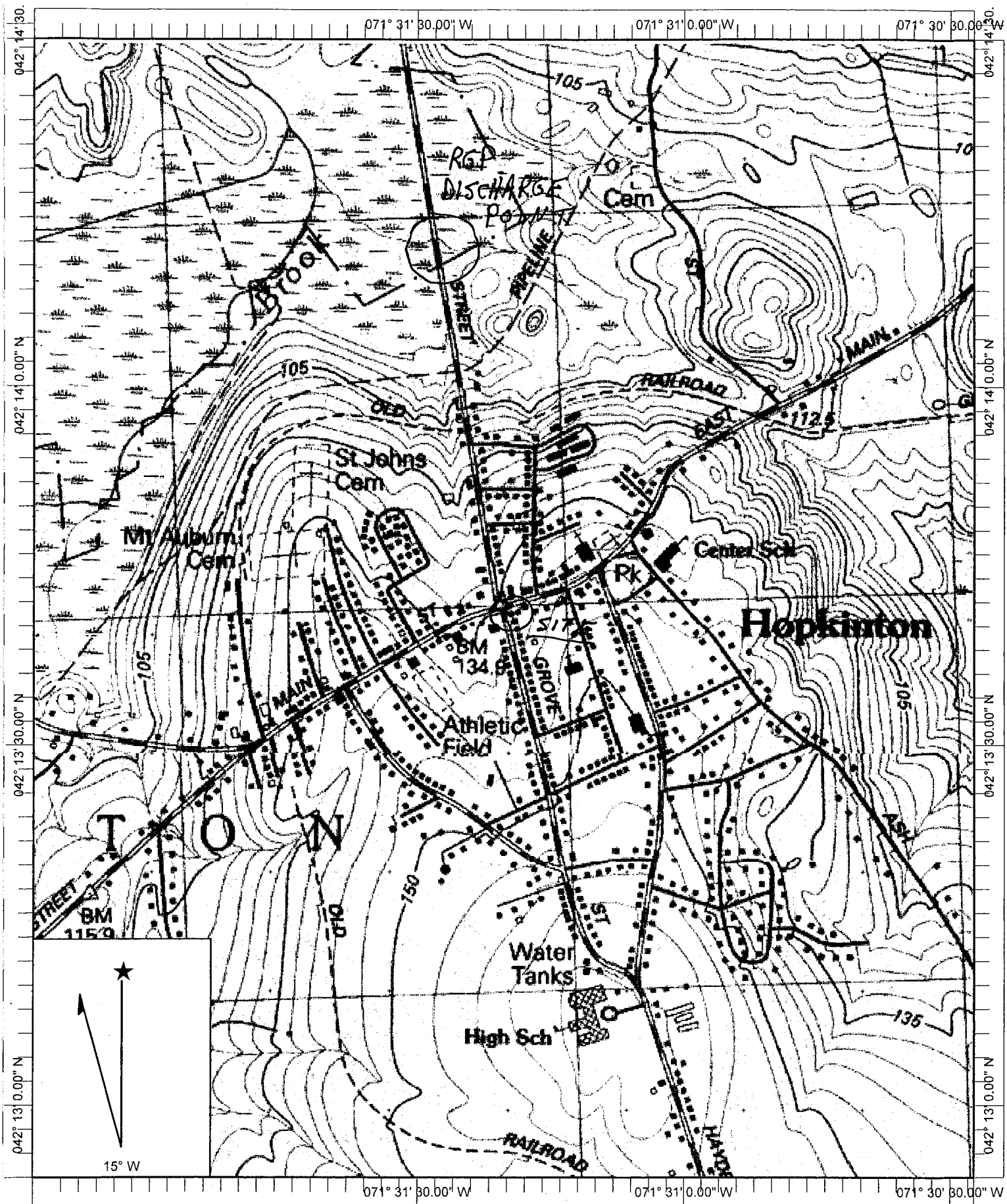
Figures

Figure 1	Site Locus
Figure 2	Site Layout
Figure 3	Excavation Dewatering Process & Instrumentation Diagram
Figure 4	HVE System Layout
Figure 5	Remediation System Shed Layout
Figure 6	MADEP Site Scoring Map
Figure 7	NHESP Map

Attachments

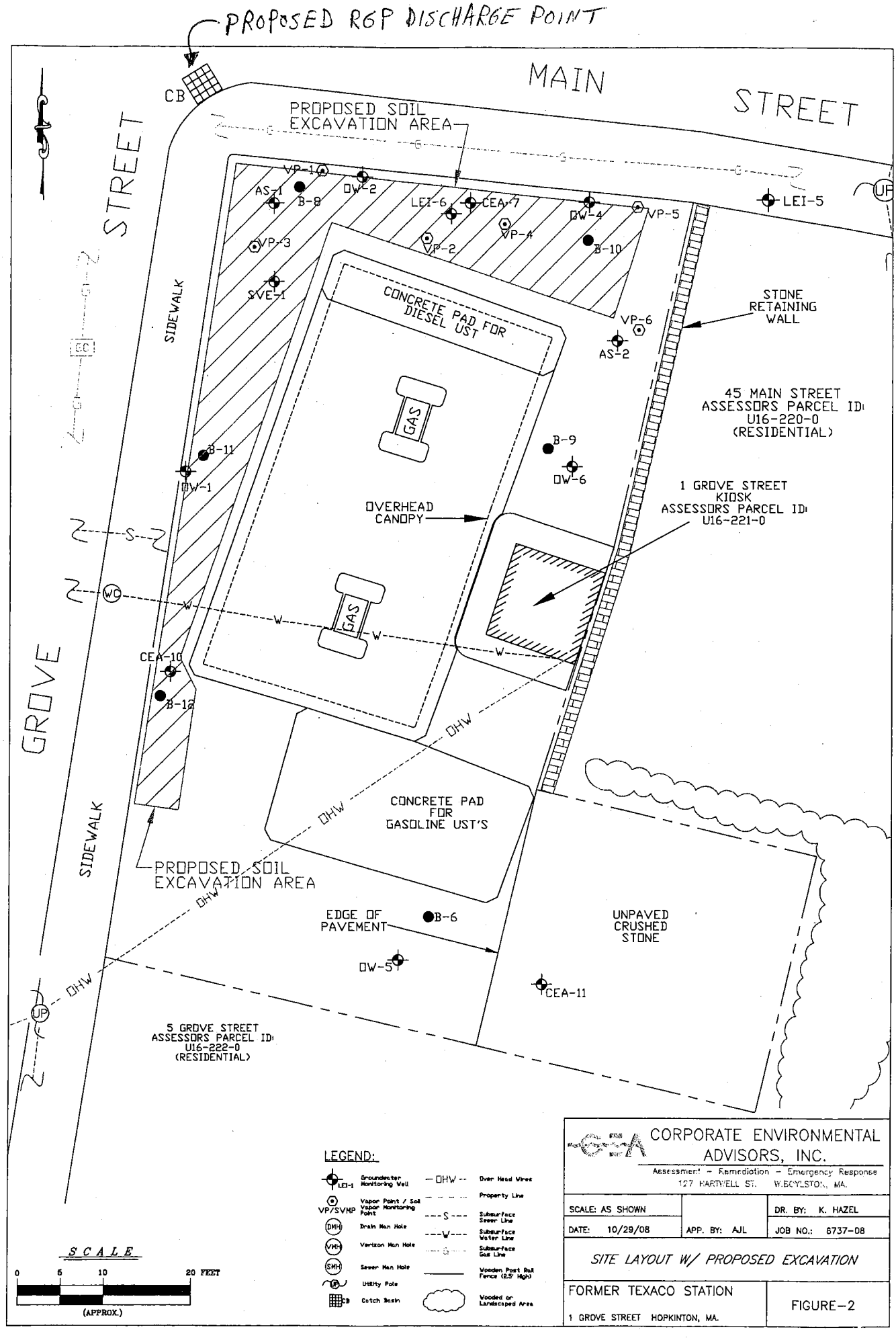
Attachment A: Notice of Intent Form
Attachment B: Laboratory Analytical Report - Groundwater

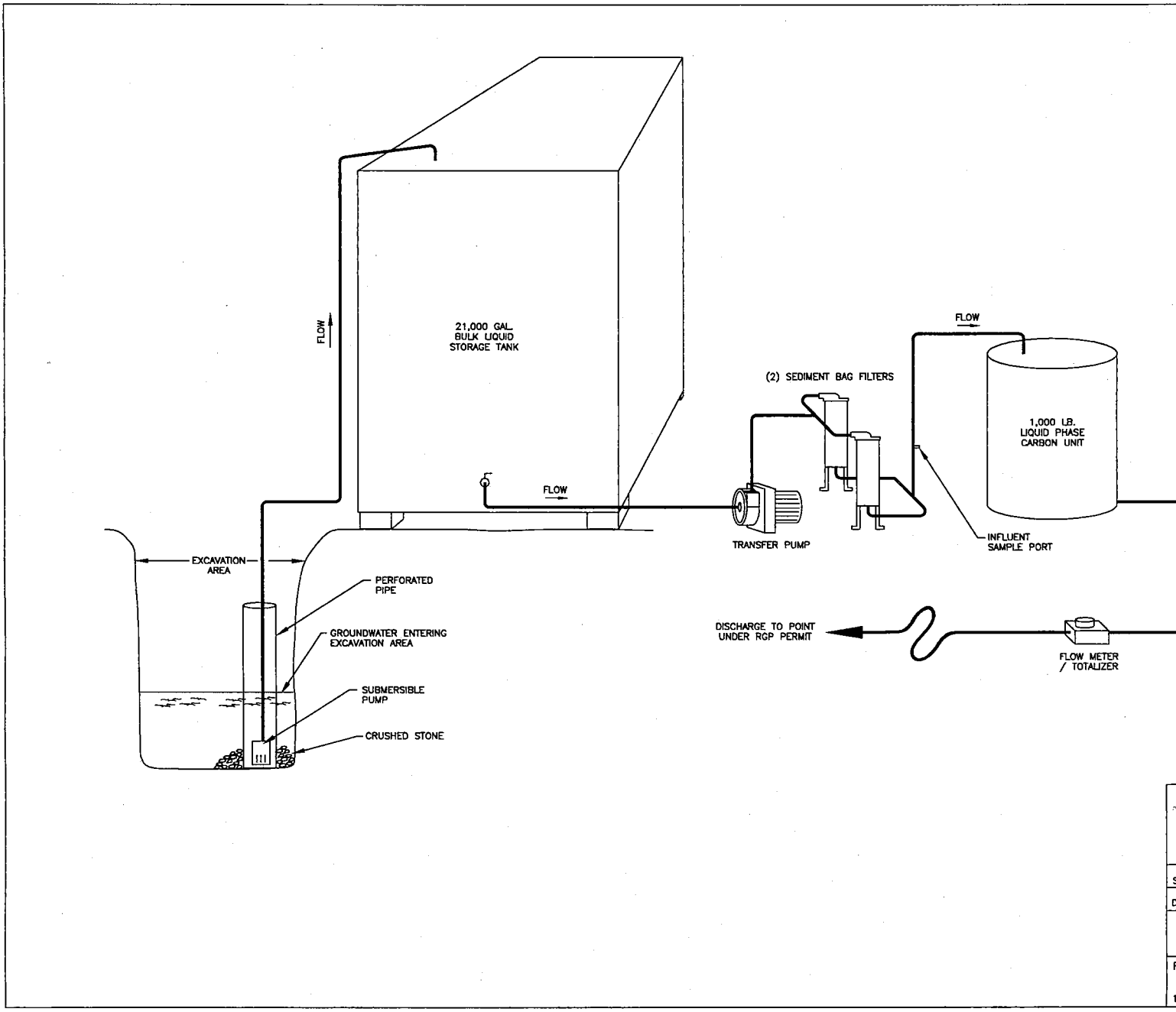
Pc: Janine Perley, C.K. Smith Company, Inc.
CEA File No. 6737-08

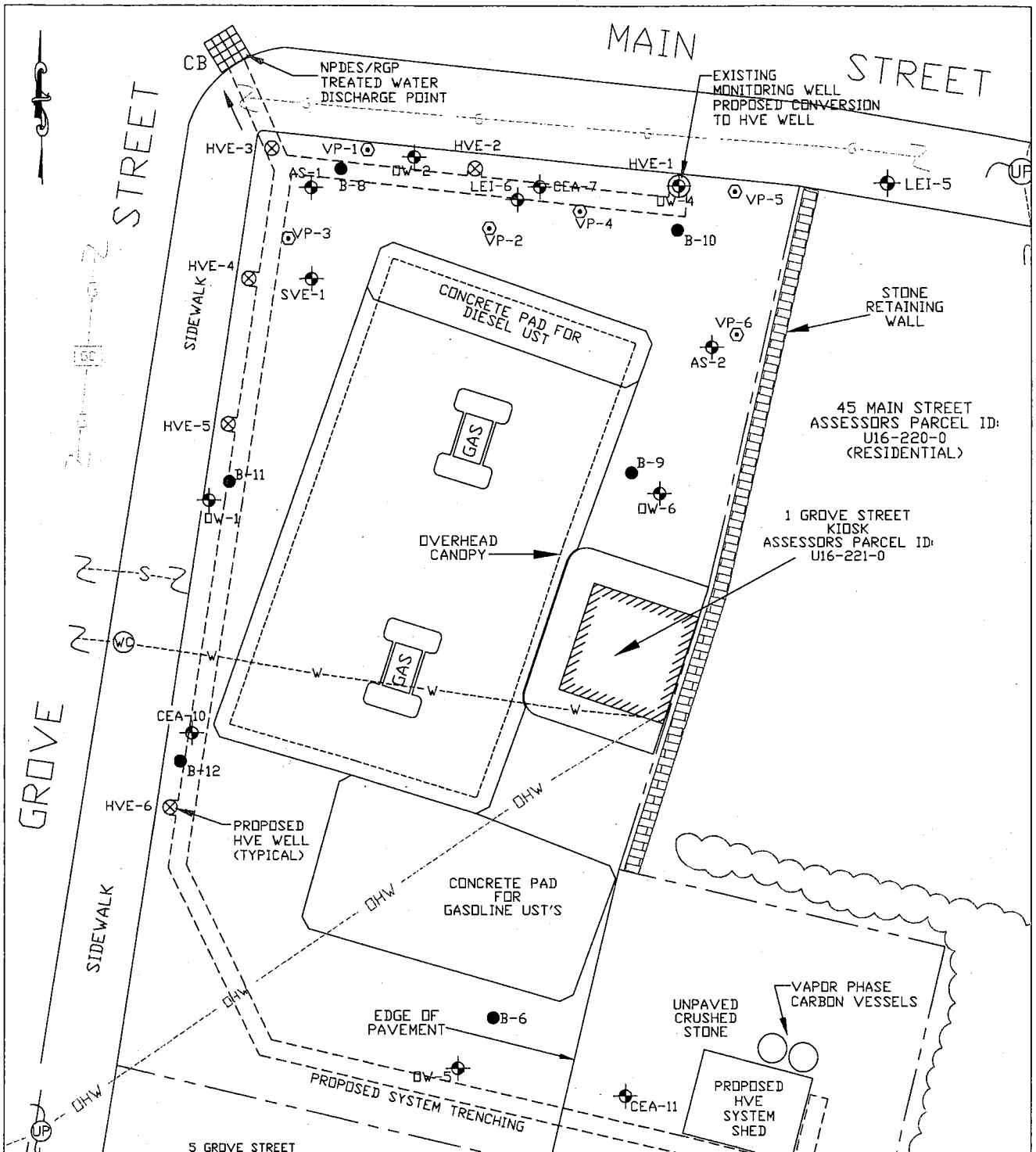


Name: MILFORD
Date: 10/31/2008
Scale: 1 inch equals 1000 feet

Location: 042° 13' 41.4" N 071° 31' 20.3" W
Caption: Figure 1 Site Locus
1 Grove Street
Hopkinton, MA


PROPOSED RGP DISCHARGE POINT
MAIN STREET
GROVE STREET
CB
PROPOSED SOIL EXCAVATION AREA
VP-1
AS-1
B-8
OW-2
LEI-6
CEA-7
OW-4
VP-5
LEI-5
VP-3
VP-2
VP-4
B-10
SVE-1
SIDEWALK
CONCRETE PAD FOR DIESEL UST
VP-6
AS-2
STONE RETAINING WALL
GAS
45 MAIN STREET ASSESSORS PARCEL ID: U16-220-0 (RESIDENTIAL)
B-11
OW-1
B-9
OW-6
1 GROVE STREET KIOSK ASSESSORS PARCEL ID: U16-221-0
OVERHEAD CANOPY
GAS
CEA-10
B-12
OHW
CONCRETE PAD FOR GASOLINE UST'S
PROPOSED SOIL EXCAVATION AREA
EDGE OF PAVEMENT
B-6
UNPAVED CRUSHED STONE
OW-5
CEA-11
5 GROVE STREET ASSESSORS PARCEL ID: U16-222-0 (RESIDENTIAL)
LEGEND:
Groundwater Monitoring Well
Vapor Point / Soil Vapor Monitoring Point
Drain Man Hole
Verizon Man Hole
Sewer Man Hole
Utility Pole
Catch Basin
Over Head Wires
Property Line
Subsurface Sewer Line
Subsurface Water Line
Subsurface Gas Line
Wooden Post Rail Fence (2.5' High)
Wooded or Landscaped Area
SCALE
0 5 10 20 FEET
(APPROX.)
CORPORATE ENVIRONMENTAL ADVISORS, INC.
Assessment - Remediation - Emergency Response
127 HARTWELL ST. W.BOYLSTON, MA.
SCALE: AS SHOWN
DR. BY: K. HAZEL
DATE: 10/29/08
APP. BY: AJL
JOB NO.: 6737-08
SITE LAYOUT W/ PROPOSED EXCAVATION
FORMER TEXACO STATION
1 GROVE STREET HOPKINTON, MA.
FIGURE-2


21,000 GAL.
BULK LIQUID
STORAGE TANK
FLOW
FLOW
FLOW
(2) SEDIMENT BAG FILTERS
1,000 LB.
LIQUID PHASE
CARBON UNIT
TRANSFER PUMP
INFLUENT
SAMPLE PORT
EXCAVATION
AREA
PERFORATED
PIPE
GROUNDWATER ENTERING
EXCAVATION AREA
SUBMERSIBLE
PUMP
CRUSHED STONE
DISCHARGE TO POINT
UNDER RGP PERMIT
FLOW METER
/ TOTALIZER


MAIN STREET
GROVE STREET
CB
NPDES/RGP TREATED WATER DISCHARGE POINT
EXISTING MONITORING WELL PROPOSED CONVERSION TO HVE WELL
HVE-1
HVE-2
HVE-3
HVE-4
HVE-5
HVE-6
VP-1
VP-2
VP-3
VP-4
VP-5
VP-6
AS-1
AS-2
B-6
B-8
B-9
B-10
B-11
B-12
LEI-5
LEI-6
CEA-7
CEA-10
CEA-11
DW-1
DW-2
DW-4
DW-5
DW-6
SVE-1
SIDEWALK
CONCRETE PAD FOR DIESEL UST
GAS
STONE RETAINING WALL
45 MAIN STREET ASSESSORS PARCEL ID: U16-220-0 (RESIDENTIAL)
1 GROVE STREET KIOSK ASSESSORS PARCEL ID: U16-221-0
OVERHEAD CANOPY
PROPOSED HVE WELL (TYPICAL)
CONCRETE PAD FOR GASOLINE UST'S
OHW
EDGE OF PAVEMENT
UNPAVED CRUSHED STONE
VAPOR PHASE CARBON VESSELS
PROPOSED HVE SYSTEM SHED
PROPOSED SYSTEM TRENCHING
5 GROVE STREET
W
S
UP

MA DEP - Bureau of Waste Site Cleanup

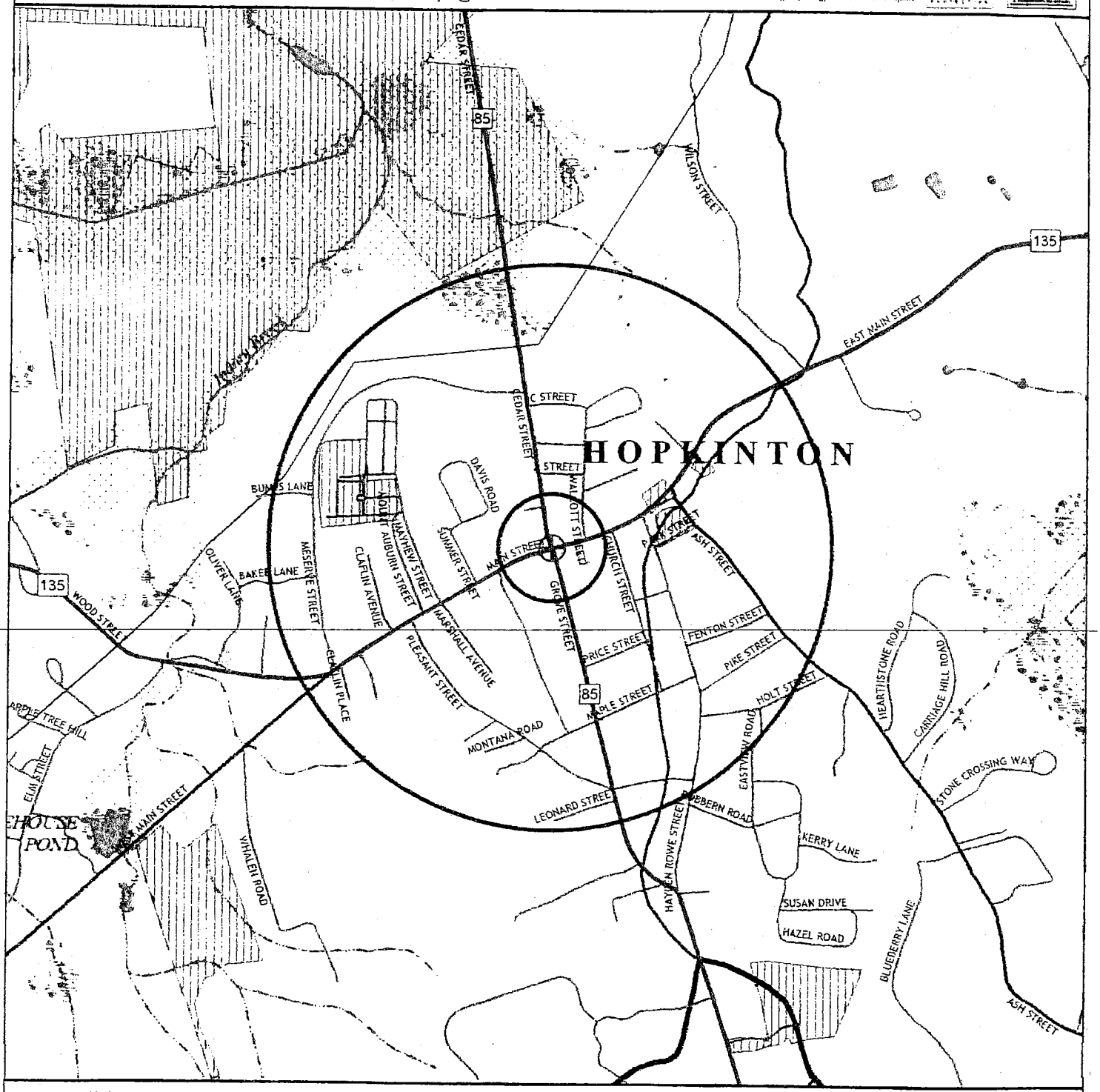
Site Scoring Map: 500 feet & 0.5 Mile Radii

SITE NAME:
1 Grove Street
1 Grove Street
Hopkinton, MA 01748
NAD83 Coordinates 886442 198183

Site Location
RTN: 2-0507

The information shown on this map is the best available at the date of printing. Please refer to the data source descriptions document.

MASS GIS — Office of Geographic and Environmental Information
Massachusetts Executive Office of Energy & Environmental Affairs



Roads: Limited Access, Divided, Major Road, Connector, Street, Track, Trail

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

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

Potentially Productive Aquifers: Medium,High Yield .....

Non-Potential Drinking Water Source Area: Medium,High Yield

EPA Sole Source Aquifer; FEMA 100-year floodplain .....

Public Water Supplies: Ground,Surface,Non Community

Approved Zone2; IWPA; Surface Water Supply Zone A

Hydrography: Open Water, Reservoir, Tidal Flat .....

Wetlands: Fresh,Salt,NHESP Wetlands Habitat .....

Cranberry Bog; Protected Open Space; ACEC .....

DEP Permitted Solid Waste Facilities; Certified Vernal Pools ..

N W E S

SCALE 1:15,000

0 0.4 0.8 Miles

0 0.4 0.8 Kilometers

February 1, 2008

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

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

a) Name of **facility/site**: Former Texaco Station			**Facility/site** address:	
Location of **facility/site**: longitude: 71°31'18" latitude: 42° 13' 42"	Facility SIC code (s): 333		Street: 1 Grove Street	
b) Name of facility/site **owner**: C.K. Smith Company, Inc.			Town: Hopkinton	
Email address of owner:			State: MA	Zip: 01748
Telephone no. of facility/site **owner**: (508) 753-1475				
Fax no. of facility/site **owner**:			**Owner** is (check one) 1. Federal ☐ 2. State/Tribal ☐ other, ☒ if so, describe: Corporation	
Address of **owner** (if different from site):				
Street: 99 Crescent Street				
Town: Worcester	State: MA	Zip: 01605		County: Worcester
c.) Legal name of **operator**: Corporate Environmental Advisors, Inc.	**Operator** telephone no.: 508-835-8822			
	Operator fax no.: 508-835-8812			**Operator** em mdziura@ce
Operator contact name and title: Michael J. Dziura, Senior Environmental Engineer				
Address of **operator** (if different from owner):	Street: 127 Hartwell Street			
Town: West Boylston	State: MA	Zip: 01583		County: Worcester

d) Check "yes" or "no" for the following:

1. Has a prior NPDES permit exclusion been granted for the discharge? Yes No ☒ , if "yes," number:

2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Yes ☐ No ☒, if "yes," date and tracking #:

3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Yes ☒ No ☐

4. For sites in Massachusetts, is the discharge covered under the MA Contingency Plan (MCP) and exempt from state permitting? Yes ☒ No ☐

e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes ☒, No ☐ If "yes," please list: 1. site identification # assigned by the state of NH or MA: MA DEP 2. permit or license # assigned: Release Tracking Number 2-0507 3. state agency contact information: name, location, and telephone number: MA DEP Bureau of Waste Site Cleanup, 627 Main St, Worcester, MA	f) Is the site/facility covered by any other EP A permit, including: 1. multi-sector storm water general permit? Yes ☐ No ☒, if Y, number: 2. phase I or II construction storm water general permit? Yes ☐ No ☒, if Y, number: 3. individual NPDES permit? Yes ☐ No ☒, if Y, number: 4. any other water quality related permit? Yes ☐ No ☒, 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:

Site Remediation: Groundwater will need to be pumped during gasoline-impacted soil excavation activities and from a high vacuum extraction (HVE) system.

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, W/s)? Max. flow 0.0444 ft3/sec Average flow 0.0222 ft3/sec Is maximum flow a **design value**? Yes ☒ No ☐, 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 500 feet: pt.1 :long.71° 31' 18" lat. 42° 13' 42" ; pt.2: long. ___ lat. ___ ; pt.3: long. ___ lat. ___ ;

pt.4:long. ___ lat. ___ ; pt.5: long. ___ lat. ___ ; pt.6:long. ___ lat. ___ ; pt.7: long. ___ lat. ___ ; pt.8:long. ___ lat. ___ ; etc.

4) If hydrostatic testing, total volume of the discharge (gals):	5) Is the discharge intermittent ☐ Or seasonal ☐ ? Is discharge ongoing Yes No ☒ Discharge during dewatering of soil excavation and then long term from a HVE system
N/A	

c) Expected dates of discharge (mm/dd/yy): start Summer 2009 end Summer 2012

d) Please attach a line drawing or flow schematic showing water flow through the facility including: See attached figure 3.

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

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

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

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

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

PARAMETER c	Believe Absent	Believe Present	#of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg/day)	concentration (ug/l)	mass (kg/day)
1. Total Suspended Solids		X	1	GRAB	SM 2540D	5,000	14,000,000	1526		
2. Total Residual Chlorine	√		1	GRAB	SM 18-20 4500	2,000	< 100,000			
3. Total Petroleum Hydrocarbons		X	1	GRAB	1664	1,000	14,500	1.58		
4. Cyanide	√		1	GRAB	9012A	10	<10			
5. Benzene		X	1	GRAB	5030	1	580	0.06		
6. Toluene		X	1	GRAB	5030	1	17,900	1.95		
7. Ethylbenzene		X	1	GRAB	5030	1	2,180	0.24		
8. (m,p,o) Xylenes		X	1	GRAB	5030	1	27,470	3		
9. Total BTEX[4]		X	1	GRAB	5030	-----	48,130	5.25		

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg/day)	concentration (ug/l)	mass (kg/day)
10. Ethylene Dibromide (1,2- Dibromo-methane)	√		1	GRAB	5030	0.20	< 50			
11. Methyl-tert-Butyl Ether (MtBE)		X	1	GRAB	5030	1	293	0.03		
12. tert-Butyl Alcohol (TBA)	√		1	GRAB	5030	10	< 1000			
13. tert-Amyl Methyl Ether (TAME)	√		1	GRAB	5030	1	< 100			
14. Naphthalene		x	1	GRAB	5030	1	791	0.086		
15. Carbon Tetra-chloride	√		1	GRAB	5030	1	< 100			
16. 1,4 Dichlorobenzene	√		1	GRAB	5030	1	< 100			
17.1,2 Dichlorobenzene	√		1	GRAB	5030	1	< 100			
18. 1,3 Dichlorobenzene	√		1	GRAB	5030	1	< 100			
19. 1,1 Dichloroethane	√		1	GRAB	5030	1	< 100			
20. 1,2 Dichloroethane	√		1	GRAB	5030	1	< 100			
21. 1,1 Dichloroethylene	√		1	GRAB	5030	1	< 100			
22. cis-1,2 Dichloro-ethylene	√		1	GRAB	5030	1	< 100			
23. Dichloromethane (Methylene Chloride)	√		1	GRAB	5030	10	< 500			
24. Tetrachloroethylene	√		1	GRAB	5030	1	< 100			

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg/day)	concentration (ug/l)	mass (kg/day)
25. 1,1,1 Trichloroethane	√		1	GRAB	5030	1	< 100			
26. 1,1,2 Trichloroethane	√		1	GRAB	5030	1	< 100			
27. Trichloroethylene	√		1	GRAB	5030	1	< 100			
28. Vinyl Chloride	√		1	GRAB	5030	1	< 100			
29. Acetone	√		1	GRAB	5030	20	< 1000			
30. 1,4 Dioxane	√		1	GRAB	5030	4.9	< 2000			
31. Total Phenols	√		1	GRAB	8270	5	< 38.5			
32. Pentachlorophenol	√		1	GRAB	8270	5	<154			
33. Total Phthalates [6] (phthalate esthers)	√		1	GRAB	8270	5	All phthalates are BDL see lab report	-		
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	√		1	GRAB	8270	5	<38.5			
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	√		1	GRAB	8270	35	< 269.5			
a. Benzo(a) Anthracene	√		1	GRAB	8270	5	<38.5			
b. Benzo(a) Pyrene	√		1	GRAB	8270	5	<38.5			
c. Benzo(b)Fluoranthene	√		1	GRAB	8270	5	<38.5			
d. Benzo(k) Fluoranthene	√		1	GRAB	8270	5	<38.5			
e. Chrysene	√		1	GRAB	8270	5	<38.5			

[6] The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	#of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg/day)	concentration (ug/l)	mass (kg/day)
f. Dibenzo(a,h) anthracene	√		1	GRAB	8270	5	<38.5			
g. Indeno(1,2,3-cd) Pyrene	√		1	GRAB	8270	5	<38.5			
36. Total Group II Polycyclic Aromatic Hydrocarbons (pAR)		x	1	GRAB	8270	45	458	0.05		
h. Acenaphthene	√		1	GRAB	8270	5	< 38.5			
i. Acenaphthylene	√		1	GRAB	8270	5	< 38.5			
j. Anthracene	√		1	GRAB	8270	5	<38.5			
k. Benzo(ghi) Perylene	√		1	GRAB	8270	5	< 38.5			
I. Fluoranthene	√		1	GRAB	8270	5	< 38.5			
m. Fluorene	√		1	GRAB	8270	5	<38.5			
n. Naphthalene-		X	1	GRAB	8270	5	458	0.05		
o. Phenanthrene	√		1	GRAB	8270	5	<38.5			
p. Pyrene	√		1	GRAB	8270	5	<38.5			
37. Total Polychlorinated Biphenyls (PCBs)	√		1	GRAB	8082	0.5	<20			
38. Antimony	X		1	GRAB	200.8	0.5	<0.5			
39. Arsenic		X	1	GRAB	200.7	4	201	0.02		
40. Cadmium		X	1	GRAB	200.8	0.007	28.8	0.003		
41. Chromium III (1)		X	1	GRAB	calculated	5	229	0.025		
42. Chromium VI	x		1	GRAB	7196A	50	< 50			

NOTES: (1) Chromium III = Total Chromium – Hexavalent Chromium.

PARAMETER	Believe Absent	Believe Present	#of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method (ug/l)	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg/day)	concentration (ug/l)	mass (kg/day)
43. Copper		√	1	GRAB	200.7	5	432	0.05		
44. Lead		√	1	GRAB	200.8	0.5	958	0.1		
45. Mercury		X	1	GRAB	7470A	0.20	0.37	0.00004		
46. Nickel		√	1	GRAB	200.7	5	5.2	0.00057		
47. Selenium	√		1	GRAB	200.7	0.5	< 0.5			
48. Silver	√		1	GRAB	200.7	5	< 5			
49. Zinc		√	1	GRAB	200.7	5	2,060	0.22		
50. Iron		√	1	GRAB	200.7	15	209,000	22.8		
Other (describe):	----	----	----	----	----	----	----	----	----	----

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

Step 1: Do any of the metals in the influent have a reasonable potential to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y ☒ N ☐	If yes, which metals? Arsenic, Cadmium, Chromium III, Copper, Lead, Zinc, and Iron.
Step 2: For any metals which have **reasonable potential** to exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? DF: 1.1 .	Look up the limit calculated at the corresponding dilution factor in **Appendix IV**. Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ☒ N ☐ If "Yes," list which metals: Same as above .

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

a) A description of the treatment system, including a schematic of the proposed or existing treatment system: See Figure 3.						
b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☒	Air stripper ☐	Oil/water separator ☐	Equalization tanks ☐	Bag filter ☒	GAC filter ☒
	Chlorination ☐	Dechlorination ☐	Other (please describe):			
c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system: Average flow rate of discharge 10 GPM Maximum flow rate of treatment system 20 GPM Design flow rate of treatment system 20 GPM						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets): Not Applicable						

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

a) Identify the discharge pathway:	Direct ☐	Within facility ☐	Storm drain ☒	River/brook ☒	Wetlands ☐	Other (describe):
b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters: Discharge to stormwater drainage system in Route 135/85, which discharges to a tributary to Indian Brook approx. ½ mile North of the site.						

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

1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water

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

d) Provide the state water quality classification of the receiving water ___.

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.00421 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)? NA

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

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

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes ☐ No ☒
Has any consultation with the federal services been completed? Yes ☐ No ☒ or is consultation underway? Yes ☐ No ☒

What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one): Not applicable

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.

See cover letter.

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: Former Texaco Service Station, 1 Grove Street, Hopkinton, MA.

Operator signature: Michael J. Dziura

Title: Michael J. Dziura, Sr. Environmental Engineer

Date: 3/6/09

Dilution Factor Calculation
Former Texaco Station
1 Grove St
Hopkinton, MA

DF=(Qd+Qs)/Qd

DF = Dilution factor	**1.1**	
Qd = Max flow rate of discharge in cubic feet per second		0.0444
Qs = receiving water flow in cubic feet per seconds 7Q10 flow rate		0.00421

Tributary to Indian Brook
7Q10* = min flow for seven consecutive days with a recurrence interval of 10 years

* 7Q10 flow based on data obtained from USGS Steamflow Statistics Report
Data attached

USGS
Massachusetts StreamStats

Streamstats Ungaged Site Report

Date: Fri Oct 31 2008 11:35:20
Site Location: Massachusetts
NAD83 Latitude: 42.2369 (42 14 12)
NAD83 Longitude: -71.5240 (-71 31 26)
NAD27 Latitude: 42.2368 (42 14 12)
NAD27 Longitude: -71.5245 (-71 31 28)
Drainage Area: 0.34 mi2

Peak Flow Basin Characteristics			
100% Statewide Low Flow (0.34 mi2)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	0.34 (below min value 1.61)	1.61	149
Mean Basin Slope from 250K DEM (percent)	3.18	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.0453	0	1.29
Massachusetts Region (dimensionless)	0	0	1

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

Streamflow Statistics					
Statistic	Flow (ft^3/s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
D50	0.32				
D60	0.19				
D70	0.0961				
D75	0.069				
D80	0.0529				
D85	0.0363				
D90	0.0243				
D95	0.0126				
D98	0.00757				
D99	0.00507				
M7D2Y	0.0134				
AUGD50	0.0379				
M7D10Y	0.00421				

Table
Mass Removal Calculations
1 Grove Street
Hopkinton, MA

Total influent hydrocarbons (ug/l)	100.0	(example)	
Mass Removal			
Influent Concentration (ug/l) x			
3.785 liters/1 gallon x			
1 kg/1,000 grams x			
1 gram/1.0E+06 ug =			
kg/gallon x	3.79E-07		
max number of gallons =	28,800	GPD	(20 gpm)
Kg of hydrocarbons removed	0.0109008	Kg/day	

Report Date:
13-Nov-08 10:41

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

CEA, Inc.
127 Hartwell Street
West Boylston, MA 01583
Attn: Adam Last

Project: CK Smith - Hopkinton, MA
Project CEA#6737-08-01

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SA86804-01	OW-4	Ground Water	31-Oct-08 08:15	31-Oct-08 17:50

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.
Spectrum Analytical holds certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes.
Please note that this report contains 25 pages of analytical data plus Chain of Custody document(s).
This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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

Authorized by:

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

Technical Reviewer's Initial:

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

CASE NARRATIVE:

Metals Narrative:

SA86804-01 requested Appendix VI reporting limits which would require the sample to be analyzed by EPA method 200.8f or several elements. The sample digestate is yellow and very high in some analytes and needed a 1:100 dilution on the ICP-MS due to the internal standard recoveries exceeding recovery criteria. Silver and Cadmium have been changed from method 200.8 to method 200.7 in order to give the best achievable reporting limits for these elements. If these elements were to be analyzed on the ICP-MS, they would need a 1:1000 dilution and the resulting reporting limit would be 0.5 ppm.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
OW-4 SA86804-01	CEA#6737-08-01	Ground Water	31-Oct-08 08:15	31-Oct-08

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Compounds											
Prepared by method SW846 5030 Water MS											
76-13-1	1,1,2-Trichlorotrifluoroethane (Freon 113)	BRL		µg/l	100	100	SW846 8260B	04-Nov-08	04-Nov-08	8110175	
67-64-1	Acetone	BRL		µg/l	1000	100	"	"	"	"	
107-13-1	Acrylonitrile	BRL		µg/l	50.0	100	"	"	"	"	
71-43-2	Benzene	580		µg/l	100	100	"	"	"	"	
108-86-1	Bromobenzene	BRL		µg/l	100	100	"	"	"	"	
74-97-5	Bromochloromethane	BRL		µg/l	100	100	"	"	"	"	
75-27-4	Bromodichloromethane	BRL		µg/l	50.0	100	"	"	"	"	
75-25-2	Bromoform	BRL		µg/l	100	100	"	"	"	"	
74-83-9	Bromomethane	BRL		µg/l	200	100	"	"	"	"	
78-93-3	2-Butanone (MEK)	BRL		µg/l	1000	100	"	"	"	"	
104-51-8	n-Butylbenzene	338		µg/l	100	100	"	"	"	"	
135-98-8	sec-Butylbenzene	BRL		µg/l	100	100	"	"	"	"	
98-06-6	tert-Butylbenzene	BRL		µg/l	100	100	"	"	"	"	
75-15-0	Carbon disulfide	BRL		µg/l	500	100	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL		µg/l	100	100	"	"	"	"	
108-90-7	Chlorobenzene	BRL		µg/l	100	100	"	"	"	"	
75-00-3	Chloroethane	BRL		µg/l	200	100	"	"	"	"	
67-66-3	Chloroform	BRL		µg/l	100	100	"	"	"	"	
74-87-3	Chloromethane	BRL		µg/l	200	100	"	"	"	"	
95-49-8	2-Chlorotoluene	BRL		µg/l	100	100	"	"	"	"	
106-43-4	4-Chlorotoluene	BRL		µg/l	100	100	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	BRL		µg/l	200	100	"	"	"	"	
124-48-1	Dibromochloromethane	BRL		µg/l	50.0	100	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	50.0	100	"	"	"	"	
74-95-3	Dibromomethane	BRL		µg/l	100	100	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL		µg/l	100	100	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL		µg/l	100	100	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	100	100	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	BRL		µg/l	200	100	"	"	"	"	
75-34-3	1,1-Dichloroethane	BRL		µg/l	100	100	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	100	100	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL		µg/l	100	100	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	BRL		µg/l	100	100	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	BRL		µg/l	100	100	"	"	"	"	
78-87-5	1,2-Dichloropropane	BRL		µg/l	100	100	"	"	"	"	
142-28-9	1,3-Dichloropropane	BRL		µg/l	100	100	"	"	"	"	
594-20-7	2,2-Dichloropropane	BRL		µg/l	100	100	"	"	"	"	
563-58-6	1,1-Dichloropropene	BRL		µg/l	100	100	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	BRL		µg/l	50.0	100	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	BRL		µg/l	50.0	100	"	"	"	"	
100-41-4	Ethylbenzene	2,180		µg/l	100	100	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL		µg/l	50.0	100	"	"	"	"	
591-78-6	2-Hexanone (MBK)	BRL		µg/l	1000	100	"	"	"	"	
98-82-8	Isopropylbenzene	145		µg/l	100	100	"	"	"	"	
99-87-6	4-Isopropyltoluene	BRL		µg/l	100	100	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	293		µg/l	100	100	"	"	"	"	
108-10-1	4-Methyl-2-pentanone (MIBK)	BRL		µg/l	1000	100	"	"	"	"	
75-09-2	Methylene chloride	BRL		µg/l	500	100	"	"	"	"	
91-20-3	Naphthalene	791		µg/l	100	100	"	"	"	"	
103-65-1	n-Propylbenzene	348		µg/l	100	100	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
OW-4	CEA#6737-08-01	Ground Water	31-Oct-08 08:15	31-Oct-08
SA86804-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Volatile Organic Compounds											
Volatile Organic Compounds											
Prepared by method SW846 5030 Water MS											
100-42-5	Styrene	BRL		µg/l	100	100	SW846 8260B	04-Nov-08	04-Nov-08	8110175	
630-20-6	1,1,1,2-Tetrachloroethane	BRL		µg/l	100	100	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	BRL		µg/l	50.0	100	"	"	"	"	
127-18-4	Tetrachloroethene	BRL		µg/l	100	100	"	"	"	"	
108-88-3	Toluene	17,900		µg/l	100	100	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	BRL		µg/l	100	100	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL		µg/l	100	100	"	"	"	"	
108-70-3	1,3,5-Trichlorobenzene	BRL		µg/l	100	100	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	BRL		µg/l	100	100	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	BRL		µg/l	100	100	"	"	"	"	
79-01-6	Trichloroethene	BRL		µg/l	100	100	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	BRL		µg/l	100	100	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	BRL		µg/l	100	100	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	6,570		µg/l	100	100	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	1,920		µg/l	100	100	"	"	"	"	
75-01-4	Vinyl chloride	BRL		µg/l	100	100	"	"	"	"	
179601-23-1	m,p-Xylene	19,400		µg/l	200	100	"	"	"	"	
95-47-6	o-Xylene	8,070		µg/l	100	100	"	"	"	"	
109-99-9	Tetrahydrofuran	BRL		µg/l	1000	100	"	"	"	"	
60-29-7	Ethyl ether	BRL		µg/l	100	100	"	"	"	"	
994-05-8	Tert-amyl methyl ether	BRL		µg/l	100	100	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	BRL		µg/l	100	100	"	"	"	"	
108-20-3	Di-isopropyl ether	BRL		µg/l	100	100	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	BRL		µg/l	1000	100	"	"	"	"	
123-91-1	1,4-Dioxane	BRL		µg/l	2000	100	"	"	"	"	
110-57-6	trans-1,4-Dichloro-2-butene	BRL		µg/l	500	100	"	"	"	"	
64-17-5	Ethanol	BRL		µg/l	40000	100	"	"	"	"	
Surrogate recoveries:											
460-00-4	*4-Bromofluorobenzene*	*101*		*70-130 %*			"	"	"	"	
2037-26-5	*Toluene-d8*	*100*		*70-130 %*			"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*98*		*70-130 %*			"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*97*		*70-130 %*			"	"	"	"	
Semivolatile Organic Compounds by GCMS											
Semivolatile Organic Compounds by SW846 8270C											
Prepared by method SW846 3510C											
83-32-9	Acenaphthene	BRL		µg/l	38.5	5	SW846 8270C	03-Nov-08	10-Nov-08	8110043	
208-96-8	Acenaphthylene	BRL		µg/l	38.5	5	"	"	"	"	
62-53-3	Aniline	BRL		µg/l	38.5	5	"	"	"	"	
120-12-7	Anthracene	BRL		µg/l	38.5	5	"	"	"	"	
1912-24-9	Atrazine	BRL		µg/l	38.5	5	"	"	"	"	
103-33-3	Azobenzene/Diphenyldiazine	BRL		µg/l	38.5	5	"	"	"	"	
92-87-5	Benzidine	BRL		µg/l	38.5	5	"	"	"	"	
56-55-3	Benzo (a) anthracene	BRL		µg/l	38.5	5	"	"	"	"	
50-32-8	Benzo (a) pyrene	BRL		µg/l	38.5	5	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	BRL		µg/l	38.5	5	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	BRL		µg/l	38.5	5	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	BRL		µg/l	38.5	5	"	"	"	"	
65-85-0	Benzoic acid	BRL		µg/l	38.5	5	"	"	"	"	
100-51-6	Benzyl alcohol	BRL		µg/l	38.5	5	"	"	"	"	
111-91-1	Bis(2-chloroethoxy)methane	BRL		µg/l	38.5	5	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
OW-4 SA86804-01	CEA#6737-08-01	Ground Water	31-Oct-08 08:15	31-Oct-08

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Semivolatile Organic Compounds by GCMS											
Semivolatile Organic Compounds by SW846 8270C											
Prepared by method SW846 3510C											
111-44-4	Bis(2-chloroethyl)ether	BRL		µg/l	38.5	5	SW846 8270C	03-Nov-08	10-Nov-08	8110043	
108-60-1	Bis(2-chloroisopropyl)ether	BRL		µg/l	38.5	5	"	"	"	"	
117-81-7	Bis(2-ethylhexyl)phthalate	BRL		µg/l	38.5	5	"	"	"	"	
101-55-3	4-Bromophenyl phenyl ether	BRL		µg/l	38.5	5	"	"	"	"	
85-68-7	Butyl benzyl phthalate	BRL		µg/l	38.5	5	"	"	"	"	
86-74-8	Carbazole	BRL		µg/l	38.5	5	"	"	"	"	
59-50-7	4-Chloro-3-methylphenol	BRL		µg/l	38.5	5	"	"	"	"	
106-47-8	4-Chloroaniline	BRL		µg/l	38.5	5	"	"	"	"	
91-58-7	2-Chloronaphthalene	BRL		µg/l	38.5	5	"	"	"	"	
95-57-8	2-Chlorophenol	BRL		µg/l	38.5	5	"	"	"	"	
7005-72-3	4-Chlorophenyl phenyl ether	BRL		µg/l	38.5	5	"	"	"	"	
218-01-9	Chrysene	BRL		µg/l	38.5	5	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	BRL		µg/l	38.5	5	"	"	"	"	
132-64-9	Dibenzofuran	BRL		µg/l	38.5	5	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL		µg/l	38.5	5	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL		µg/l	38.5	5	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL		µg/l	38.5	5	"	"	"	"	
91-94-1	3,3'-Dichlorobenzidine	BRL		µg/l	38.5	5	"	"	"	"	
120-83-2	2,4-Dichlorophenol	BRL		µg/l	38.5	5	"	"	"	"	
84-66-2	Diethyl phthalate	BRL		µg/l	38.5	5	"	"	"	"	
131-11-3	Dimethyl phthalate	BRL		µg/l	38.5	5	"	"	"	"	
105-67-9	2,4-Dimethylphenol	54.1		µg/l	38.5	5	"	"	"	"	
84-74-2	Di-n-butyl phthalate	BRL		µg/l	38.5	5	"	"	"	"	
534-52-1	4,6-Dinitro-2-methylphenol	BRL		µg/l	38.5	5	"	"	"	"	
51-28-5	2,4-Dinitrophenol	BRL		µg/l	38.5	5	"	"	"	"	
121-14-2	2,4-Dinitrotoluene	BRL		µg/l	38.5	5	"	"	"	"	
606-20-2	2,6-Dinitrotoluene	BRL		µg/l	38.5	5	"	"	"	"	
117-84-0	Di-n-octyl phthalate	BRL		µg/l	38.5	5	"	"	"	"	
206-44-0	Fluoranthene	BRL		µg/l	38.5	5	"	"	"	"	
86-73-7	Fluorene	BRL		µg/l	38.5	5	"	"	"	"	
118-74-1	Hexachlorobenzene	BRL		µg/l	38.5	5	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL		µg/l	38.5	5	"	"	"	"	
77-47-4	Hexachlorocyclopentadiene	BRL		µg/l	38.5	5	"	"	"	"	
67-72-1	Hexachloroethane	BRL		µg/l	38.5	5	"	"	"	"	
193-39-5	Indeno (1,2,3-cd) pyrene	BRL		µg/l	38.5	5	"	"	"	"	
78-59-1	Isophorone	BRL		µg/l	38.5	5	"	"	"	"	
91-57-6	2-Methylnaphthalene	278		µg/l	38.5	5	"	"	"	"	
95-48-7	2-Methylphenol	64.7		µg/l	38.5	5	"	"	"	"	
108-39-4, 106-44-5	3 & 4-Methylphenol	91.1		µg/l	76.9	5	"	"	"	"	
91-20-3	Naphthalene	458		µg/l	38.5	5	"	"	"	"	
88-74-4	2-Nitroaniline	BRL		µg/l	38.5	5	"	"	"	"	
99-09-2	3-Nitroaniline	BRL		µg/l	38.5	5	"	"	"	"	
100-01-6	4-Nitroaniline	BRL		µg/l	154	5	"	"	"	"	
98-95-3	Nitrobenzene	BRL		µg/l	38.5	5	"	"	"	"	
88-75-5	2-Nitrophenol	BRL		µg/l	38.5	5	"	"	"	"	
100-02-7	4-Nitrophenol	BRL		µg/l	154	5	"	"	"	"	
62-75-9	N-Nitrosodimethylamine	BRL		µg/l	38.5	5	"	"	"	"	
621-64-7	N-Nitrosodi-n-propylamine	BRL		µg/l	38.5	5	"	"	"	"	
86-30-6	N-Nitrosodiphenylamine	BRL		µg/l	38.5	5	"	"	"	"	
87-86-5	Pentachlorophenol	BRL		µg/l	154	5	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
OW-4 SA86804-01	CEA#6737-08-01	Ground Water	31-Oct-08 08:15	31-Oct-08

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Batch	Cert.
Semivolatile Organic Compounds by GCMS											
Semivolatile Organic Compounds by SW846 8270C											
Prepared by method SW846 3510C											
85-01-8	Phenanthrene	BRL		µg/l	38.5	5	SW846 8270C	03-Nov-08	10-Nov-08	8110043	
108-95-2	Phenol	BRL		µg/l	38.5	5	"	"	"	"	
129-00-0	Pyrene	BRL		µg/l	38.5	5	"	"	"	"	
110-86-1	Pyridine	BRL		µg/l	38.5	5	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL		µg/l	38.5	5	"	"	"	"	
90-12-0	1-Methylnaphthalene	141		µg/l	38.5	5	"	"	"	"	
95-95-4	2,4,5-Trichlorophenol	BRL		µg/l	38.5	5	"	"	"	"	
88-06-2	2,4,6-Trichlorophenol	BRL		µg/l	38.5	5	"	"	"	"	
82-68-8	Pentachloronitrobenzene	BRL		µg/l	38.5	5	"	"	"	"	
95-94-3	1,2,4,5-Tetrachlorobenzene	BRL		µg/l	38.5	5	"	"	"	"	
Surrogate recoveries:											
321-60-8	*2-Fluorobiphenyl*	*80*		*30-130 %*			"	"	"	"	
367-12-4	*2-Fluorophenol*	*31*		*15-110 %*			"	"	"	"	
4165-60-0	*Nitrobenzene-d5*	*78*		*30-130 %*			"	"	"	"	
4165-62-2	*Phenol-d5*	*41*		*15-110 %*			"	"	"	"	
1718-51-0	*Terphenyl-dl4*	*74*		*30-130 %*			"	"	"	"	
118-79-6	*2,4,6-Tribromophenol*	*97*		*15-110 %*			"	"	"	"	
Semivolatile Organic Compounds by GC											
Polychlorinated Biphenyls by SW846 8082											
Prepared by method SW846 3510C											
12674-11-2	PCB 1016	BRL		µg/l	20.0	1	SW846 8082	04-Nov-08	05-Nov-08	8110165	
11104-28-2	PCB 1221	BRL		µg/l	20.0	1	"	"	"	"	
11141-16-5	PCB 1232	BRL		µg/l	20.0	1	"	"	"	"	
53469-21-9	PCB 1242	BRL		µg/l	20.0	1	"	"	"	"	
12672-29-6	PCB 1248	BRL		µg/l	20.0	1	"	"	"	"	
11097-69-1	PCB 1254	BRL		µg/l	20.0	1	"	"	"	"	
11096-82-5	PCB 1260	BRL		µg/l	20.0	1	"	"	"	"	
37324-23-5	PCB 1262	BRL		µg/l	20.0	1	"	"	"	"	
11100-14-4	PCB 1268	BRL		µg/l	20.0	1	"	"	"	"	
Surrogate recoveries:											
10386-84-2	*4,4-DB-Octafluorobiphenyl (Sr)*	*93*		*30-150 %*			"	"	"	"	
2051-24-3	*Decachlorobiphenyl (Sr)*	*130*		*30-150 %*			"	"	"	"	
Extractable Petroleum Hydrocarbons											
	Non-polar material (SGT-HEM)	14.5		mg/l	1.0	1	EPA 1664 Rev. A	05-Nov-08	07-Nov-08	8110272	
Total Metals by EPA 200 Series Methods											
7440-22-4	Silver	BRL		mg/l	0.0050	1	EPA 200.7	05-Nov-08	08-Nov-08	8110121	X
7440-38-2	Arsenic	0.201		mg/l	0.0040	1	"	"	"	"	X
7440-43-9	Cadmium	0.0288		mg/l	0.0025	1	"	"	"	"	X
7440-47-3	Chromium	0.229		mg/l	0.0050	1	"	"	"	"	X
7440-50-8	Copper	0.432		mg/l	0.0050	1	"	"	"	"	X
7439-89-6	Iron	209		mg/l	0.0150	1	"	"	"	"	X
7439-97-6	Mercury	0.00037		mg/l	0.00020	1	EPA 245.1/7470A	"	11-Nov-08	8110122	X
7440-02-0	Nickel	0.167		mg/l	0.0050	1	EPA 200.7	"	08-Nov-08	8110121	X
7439-92-1	Lead	0.958		mg/l	0.0050	20	EPA 200.8	07-Nov-08	08-Nov-08	8110386	X
7440-36-0	Antimony	BRL	R01	mg/l	0.0050	20	"	"	"	"	X
7782-49-2	Selenium	BRL	R01	mg/l	0.0050	20	"	"	"	"	
7440-66-6	Zinc	2.06		mg/l	0.0050	1	EPA 200.7	05-Nov-08	08-Nov-08	8110121	X
General Chemistry Parameters											
16065-83-1	Trivalent Chromium	0.229		mg/l	0.0050	1	Calculation	05-Nov-08	08-Nov-08	8110121	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
OW-4 SA86804-01	CEA#6737-08-01	Ground Water	31-Oct-08 08:15	31-Oct-08

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Cert.*
General Chemistry Parameters											
1854-029-9	Hexavalent Chromium	BRL	R01	mg/l	25.0	1	SW846 7196A/SM3500CrD	31-Oct-08 20:17	31-Oct-08 20:17	8102398	
57-12-5	Cyanide (total)	BRL		mg/l	0.0100	1	EPA 335.4 / SW846 9012A	04-Nov-08	05-Nov-08	8110199	X
7782-50-5	Total Residual Chlorine	BRL	CIHT, R01	mg/l	100	1	SM 18-20 4500 -Cl G (00)	31-Oct-08 19:19	31-Oct-08 19:19	8102399	X
	Total Suspended Solids	14,000		mg/l	50.0	10	SM2540D	06-Nov-08	06-Nov-08	8110464	X

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110175 - SW846 5030 Water MS										
Blank (8110175-BLK1)										
Prepared & Analyzed: 04-Nov-08										
1,1,2-Trichlorotrifluoroethane (Freon 113)	BRL		µg/l	1.0						
Acetone	BRL		µg/l	10.0						
Acrylonitrile	BRL		µg/l	0.5						
Benzene	BRL		µg/l	1.0						
Bromobenzene	BRL		µg/l	1.0						
Bromochloromethane	BRL		µg/l	1.0						
Bromodichloromethane	BRL		µg/l	0.5						
Bromoform	BRL		µg/l	1.0						
Bromomethane	BRL		µg/l	2.0						
2-Butanone (MEK)	BRL		µg/l	10.0						
n-Butylbenzene	BRL		µg/l	1.0						
sec-Butylbenzene	BRL		µg/l	1.0						
tert-Butylbenzene	BRL		µg/l	1.0						
Carbon disulfide	BRL		µg/l	5.0						
Carbon tetrachloride	BRL		µg/l	1.0						
Chlorobenzene	BRL		µg/l	1.0						
Chloroethane	BRL		µg/l	2.0						
Chloroform	BRL		µg/l	1.0						
Chloromethane	BRL		µg/l	2.0						
2-Chlorotoluene	BRL		µg/l	1.0						
4-Chlorotoluene	BRL		µg/l	1.0						
1,2-Dibromo-3-chloropropane	BRL		µg/l	2.0						
Dibromochloromethane	BRL		µg/l	0.5						
1,2-Dibromoethane (EDB)	BRL		µg/l	0.5						
Dibromomethane	BRL		µg/l	1.0						
1,2-Dichlorobenzene	BRL		µg/l	1.0						
1,3-Dichlorobenzene	BRL		µg/l	1.0						
1,4-Dichlorobenzene	BRL		µg/l	1.0						
Dichlorodifluoromethane (Freon12)	BRL		µg/l	2.0						
1,1-Dichloroethane	BRL		µg/l	1.0						
1,2-Dichloroethane	BRL		µg/l	1.0						
1,1-Dichloroethene	BRL		µg/l	1.0						
cis-1,2-Dichloroethene	BRL		µg/l	1.0						
trans-1,2-Dichloroethene	BRL		µg/l	1.0						
1,2-Dichloropropane	BRL		µg/l	1.0						
1,3-Dichloropropane	BRL		µg/l	1.0						
2,2-Dichloropropane	BRL		µg/l	1.0						
1,1-Dichloropropene	BRL		µg/l	1.0						
cis-1,3-Dichloropropene	BRL		µg/l	0.5						
trans-1,3-Dichloropropene	BRL		µg/l	0.5						
Ethylbenzene	BRL		µg/l	1.0						
Hexachlorobutadiene	BRL		µg/l	0.5						
2-Hexanone (MBK)	BRL		µg/l	10.0						
Isopropylbenzene	BRL		µg/l	1.0						
4-Isopropyltoluene	BRL		µg/l	1.0						
Methyl tert-butyl ether	BRL		µg/l	1.0						
4-Methyl-2-pentanone (MIBK)	BRL		µg/l	10.0						
Methylene chloride	BRL		µg/l	5.0						
Naphthalene	BRL		µg/l	1.0						

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110175 - SW846 5030 Water MS										
Blank (8110175-BLK1)										
Prepared & Analyzed: 04-Nov-08										
n-Propylbenzene	BRL		µg/l	1.0						
Styrene	BRL		µg/l	1.0						
1,1,1,2-Tetrachloroethane	BRL		µg/l	1.0						
1,1,2,2-Tetrachloroethane	BRL		µg/l	0.5						
Tetrachloroethene	BRL		µg/l	1.0						
Toluene	BRL		µg/l	1.0						
1,2,3-Trichlorobenzene	BRL		µg/l	1.0						
1,2,4-Trichlorobenzene	BRL		µg/l	1.0						
1,3,5-Trichlorobenzene	BRL		µg/l	1.0						
1,1,1-Trichloroethane	BRL		µg/l	1.0						
1,1,2-Trichloroethane	BRL		µg/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
Trichlorofluoromethane (Freon 11)	BRL		µg/l	1.0						
1,2,3-Trichloropropane	BRL		µg/l	1.0						
1,2,4-Trimethylbenzene	BRL		µg/l	1.0						
1,3,5-Trimethylbenzene	BRL		µg/l	1.0						
Vinyl chloride	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		µg/l	1.0						
Tetrahydrofuran	BRL		µg/l	10.0						
Ethyl ether	BRL		µg/l	1.0						
Tert-amyl methyl ether	BRL		µg/l	1.0						
Ethyl tert-butyl ether	BRL		µg/l	1.0						
Di-isopropyl ether	BRL		µg/l	1.0						
Tert-Butanol / butyl alcohol	BRL		µg/l	10.0						
1,4-Dioxane	BRL		µg/l	20.0						
trans-1,4-Dichloro-2-butene	BRL		µg/l	5.0						
Ethanol	BRL		µg/l	400						
Surrogate: 4-Bromofluorobenzene	*48.1*		µg/l		*50.0*		*96*	*70-130*		
Surrogate: Toluene-d8	*49.7*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*50.7*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: Dibromofluoromethane	*48.8*		µg/l		*50.0*		*98*	*70-130*		
LCS (8110175-BS1)										
Prepared & Analyzed: 04-Nov-08										
1,1,2-Trichlorotrifluoroethane (Freon 113)	24.6		µg/l		20.0		123	70-130		
Acetone	21.9		µg/l		20.0		110	31.7-144		
Acrylonitrile	22.3		µg/l		20.0		112	70-130		
Benzene	23.0		µg/l		20.0		115	70-130		
Bromobenzene	20.8		µg/l		20.0		104	70-130		
Bromochloromethane	22.4		µg/l		20.0		112	70-130		
Bromodichloromethane	23.6		µg/l		20.0		118	70-130		
Bromoform	21.3		µg/l		20.0		106	70-130		
Bromomethane	25.4		µg/l		20.0		127	43-158		
2-Butanone (MEK)	17.3		µg/l		20.0		87	54.5-137		
n-Butylbenzene	21.9		µg/l		20.0		110	70-130		
sec-Butylbenzene	23.2		µg/l		20.0		116	70-130		
tert-Butylbenzene	23.5		µg/l		20.0		118	70-130		
Carbon disulfide	22.4		µg/l		20.0		112	70-130		
Carbon tetrachloride	22.4		µg/l		20.0		112	70-130		
Chlorobenzene	22.0		µg/l		20.0		110	70-130		

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110175 - SW846 5030 Water MS										
LCS (8110175-BS1)										
Prepared & Analyzed: 04-Nov-08										
Chloroethane	22.1		µg/l		20.0		111	60.1-131		
Chloroform	21.9		µg/l		20.0		109	70-130		
Chloromethane	25.5		µg/l		20.0		127	70-130		
2-Chlorotoluene	19.0		µg/l		20.0		95	70-130		
4-Chlorotoluene	22.3		µg/l		20.0		112	70-130		
1,2-Dibromo-3-chloropropane	22.8		µg/l		20.0		114	70-130		
Dibromochloromethane	22.0		µg/l		20.0		110	66.2-145		
1,2-Dibromoethane (EDB)	22.2		µg/l		20.0		111	70-130		
Dibromomethane	22.2		µg/l		20.0		111	70-130		
1,2-Dichlorobenzene	22.6		µg/l		20.0		113	70-130		
1,3-Dichlorobenzene	23.0		µg/l		20.0		115	70-130		
1,4-Dichlorobenzene	21.4		µg/l		20.0		107	70-130		
Dichlorodifluoromethane (Freon12)	25.6		µg/l		20.0		128	46.9-168		
1,1-Dichloroethane	23.3		µg/l		20.0		117	70-130		
1,2-Dichloroethane	21.8		µg/l		20.0		109	70-130		
1,1-Dichloroethene	23.4		µg/l		20.0		117	70-130		
cis-1,2-Dichloroethene	23.7		µg/l		20.0		118	70-130		
trans-1,2-Dichloroethene	21.6		µg/l		20.0		108	70-130		
1,2-Dichloropropane	23.7		µg/l		20.0		118	70-130		
1,3-Dichloropropane	22.6		µg/l		20.0		113	70-130		
2,2-Dichloropropane	25.7		µg/l		20.0		129	70-130		
1,1-Dichloropropene	23.0		µg/l		20.0		115	70-130		
cis-1,3-Dichloropropene	23.7		µg/l		20.0		118	70-130		
trans-1,3-Dichloropropene	21.4		µg/l		20.0		107	70-130		
Ethylbenzene	23.0		µg/l		20.0		115	70-130		
Hexachlorobutadiene	21.7		µg/l		20.0		109	70-135		
2-Hexanone (MBK)	20.6		µg/l		20.0		103	70-130		
Isopropylbenzene	21.0		µg/l		20.0		105	70-130		
4-Isopropyltoluene	24.2		µg/l		20.0		121	70-130		
Methyl tert-butyl ether	21.5		µg/l		20.0		107	70-130		
4-Methyl-2-pentanone (MIBK)	21.2		µg/l		20.0		106	57.6-130		
Methylene chloride	22.6		µg/l		20.0		113	70-130		
Naphthalene	20.3		µg/l		20.0		101	70-130		
n-Propylbenzene	23.3		µg/l		20.0		116	70-130		
Styrene	24.6		µg/l		20.0		123	70-130		
1,1,1,2-Tetrachloroethane	22.2		µg/l		20.0		111	70-130		
1,1,2,2-Tetrachloroethane	22.8		µg/l		20.0		114	70-130		
Tetrachloroethene	21.4		µg/l		20.0		107	70-130		
Toluene	22.4		µg/l		20.0		112	70-130		
1,2,3-Trichlorobenzene	21.2		µg/l		20.0		106	70-130		
1,2,4-Trichlorobenzene	19.5		µg/l		20.0		98	70-130		
1,3,5-Trichlorobenzene	19.8		µg/l		20.0		99	70-130		
1,1,1-Trichloroethane	22.8		µg/l		20.0		114	70-130		
1,1,2-Trichloroethane	23.4		µg/l		20.0		117	70-130		
Trichloroethene	21.8		µg/l		20.0		109	70-130		
Trichlorofluoromethane (Freon 11)	22.3		µg/l		20.0		111	64.9-147		
1,2,3-Trichloropropane	24.2		µg/l		20.0		121	70-130		
1,2,4-Trimethylbenzene	23.2		µg/l		20.0		116	70-130		
1,3,5-Trimethylbenzene	23.3		µg/l		20.0		117	70-130		

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110175 - SW846 5030 Water MS										
LCS (8110175-BS1)										
Prepared & Analyzed: 04-Nov-08										
Vinyl chloride	25.4		µg/l		20.0		127	70-130		
m,p-Xylene	45.9		µg/l		40.0		115	70-130		
o-Xylene	23.4		µg/l		20.0		117	70-130		
Tetrahydrofuran	22.0		µg/l		20.0		110	70-130		
Ethyl ether	21.5		µg/l		20.0		108	70-130		
Tert-amyl methyl ether	20.3		µg/l		20.0		102	70-130		
Ethyl tert-butyl ether	23.0		µg/l		20.0		115	70-130		
Di-isopropyl ether	23.2		µg/l		20.0		116	70-130		
Tert-Butanol / butyl alcohol	234		µg/l		200		117	70-130		
1,4-Dioxane	235		µg/l		200		117	53.8-137		
trans-1,4-Dichloro-2-butene	22.1		µg/l		20.0		110	70-130		
Ethanol	555	QC2	µg/l		400		139	70-130		
Surrogate: 4-Bromofluorobenzene	*50.7*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: Toluene-d8	*50.6*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*50.0*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: Dibromofluoromethane	*49.8*		µg/l		*50.0*		*100*	*70-130*		
LCS Dup (8110175-BSD1)										
Prepared & Analyzed: 04-Nov-08										
1,1,2-Trichlorotrifluoroethane (Freon 113)	22.5		µg/l		20.0		112	70-130	9	25
Acetone	22.1		µg/l		20.0		111	31.7-144	1	50
Acrylonitrile	22.6		µg/l		20.0		113	70-130	1	25
Benzene	21.7		µg/l		20.0		108	70-130	6	25
Bromobenzene	20.2		µg/l		20.0		101	70-130	3	25
Bromochloromethane	21.2		µg/l		20.0		106	70-130	6	25
Bromodichloromethane	22.0		µg/l		20.0		110	70-130	7	25
Bromoform	21.5		µg/l		20.0		108	70-130	1	25
Bromomethane	22.9		µg/l		20.0		115	43-158	10	50
2-Butanone (MEK)	17.9		µg/l		20.0		89	54.5-137	3	50
n-Butylbenzene	20.4		µg/l		20.0		102	70-130	7	25
sec-Butylbenzene	21.7		µg/l		20.0		108	70-130	7	25
tert-Butylbenzene	21.9		µg/l		20.0		109	70-130	7	25
Carbon disulfide	20.2		µg/l		20.0		101	70-130	10	25
Carbon tetrachloride	20.6		µg/l		20.0		103	70-130	8	25
Chlorobenzene	20.8		µg/l		20.0		104	70-130	6	25
Chloroethane	20.7		µg/l		20.0		103	60.1-131	7	50
Chloroform	20.8		µg/l		20.0		104	70-130	5	25
Chloromethane	23.3		µg/l		20.0		117	70-130	9	25
2-Chlorotoluene	19.0		µg/l		20.0		95	70-130	0.1	25
4-Chlorotoluene	21.4		µg/l		20.0		107	70-130	4	25
1,2-Dibromo-3-chloropropane	23.4		µg/l		20.0		117	70-130	2	25
Dibromochloromethane	21.2		µg/l		20.0		106	66.2-145	4	50
1,2-Dibromoethane (EDB)	22.0		µg/l		20.0		110	70-130	1	25
Dibromomethane	21.4		µg/l		20.0		107	70-130	4	25
1,2-Dichlorobenzene	21.4		µg/l		20.0		107	70-130	6	25
1,3-Dichlorobenzene	21.7		µg/l		20.0		109	70-130	6	25
1,4-Dichlorobenzene	20.3		µg/l		20.0		102	70-130	5	25
Dichlorodifluoromethane (Freon12)	23.4		µg/l		20.0		117	46.9-168	9	50
1,1-Dichloroethane	22.2		µg/l		20.0		111	70-130	5	25
1,2-Dichloroethane	20.8		µg/l		20.0		104	70-130	5	25
1,1-Dichloroethene	21.5		µg/l		20.0		107	70-130	9	25

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110175 - SW846 5030 Water MS										
LCS Dup (8110175-BSD1)										
Prepared & Analyzed: 04-Nov-08										
cis-1,2-Dichloroethene	22.3		µg/l		20.0		112	70-130	6	25
trans-1,2-Dichloroethene	20.2		µg/l		20.0		101	70-130	7	25
1,2-Dichloropropane	22.3		µg/l		20.0		111	70-130	6	25
1,3-Dichloropropane	21.8		µg/l		20.0		109	70-130	4	25
2,2-Dichloropropane	23.7		µg/l		20.0		119	70-130	8	25
1,1-Dichloropropene	21.3		µg/l		20.0		107	70-130	8	25
cis-1,3-Dichloropropene	22.5		µg/l		20.0		112	70-130	5	25
trans-1,3-Dichloropropene	20.4		µg/l		20.0		102	70-130	5	25
Ethylbenzene	21.4		µg/l		20.0		107	70-130	7	25
Hexachlorobutadiene	19.2		µg/l		20.0		96	70-135	12	50
2-Hexanone (MBK)	21.3		µg/l		20.0		107	70-130	3	25
Isopropylbenzene	19.7		µg/l		20.0		98	70-130	7	25
4-Isopropyltoluene	22.7		µg/l		20.0		114	70-130	6	25
Methyl tert-butyl ether	20.8		µg/l		20.0		104	70-130	3	25
4-Methyl-2-pentanone (MIBK)	21.0		µg/l		20.0		105	57.6-130	1	50
Methylene chloride	21.2		µg/l		20.0		106	70-130	6	25
Naphthalene	19.2		µg/l		20.0		96	70-130	6	25
n-Propylbenzene	20.6		µg/l		20.0		103	70-130	12	25
Styrene	23.2		µg/l		20.0		116	70-130	6	25
1,1,1,2-Tetrachloroethane	20.8		µg/l		20.0		104	70-130	6	25
1,1,2,2-Tetrachloroethane	22.7		µg/l		20.0		113	70-130	0.4	25
Tetrachloroethene	19.4		µg/l		20.0		97	70-130	10	25
Toluene	21.0		µg/l		20.0		105	70-130	6	25
1,2,3-Trichlorobenzene	19.6		µg/l		20.0		98	70-130	8	25
1,2,4-Trichlorobenzene	18.5		µg/l		20.0		93	70-130	5	25
1,3,5-Trichlorobenzene	18.5		µg/l		20.0		92	70-130	7	25
1,1,1-Trichloroethane	21.0		µg/l		20.0		105	70-130	8	25
1,1,2-Trichloroethane	22.4		µg/l		20.0		112	70-130	4	25
Trichloroethene	20.6		µg/l		20.0		103	70-130	6	25
Trichlorofluoromethane (Freon 11)	20.4		µg/l		20.0		102	64.9-147	9	50
1,2,3-Trichloropropane	24.3		µg/l		20.0		121	70-130	0.2	25
1,2,4-Trimethylbenzene	22.0		µg/l		20.0		110	70-130	5	25
1,3,5-Trimethylbenzene	22.0		µg/l		20.0		110	70-130	6	25
Vinyl chloride	23.1		µg/l		20.0		116	70-130	9	25
m,p-Xylene	43.0		µg/l		40.0		108	70-130	7	25
o-Xylene	22.4		µg/l		20.0		112	70-130	4	25
Tetrahydrofuran	22.3		µg/l		20.0		112	70-130	2	25
Ethyl ether	21.3		µg/l		20.0		106	70-130	1	50
Tert-amyl methyl ether	19.7		µg/l		20.0		98	70-130	3	25
Ethyl tert-butyl ether	22.3		µg/l		20.0		112	70-130	3	25
Di-isopropyl ether	22.4		µg/l		20.0		112	70-130	4	25
Tert-Butanol / butyl alcohol	222		µg/l		200		111	70-130	5	25
1,4-Dioxane	237		µg/l		200		118	53.8-137	0.8	25
trans-1,4-Dichloro-2-butene	21.1		µg/l		20.0		106	70-130	4	25
Ethanol	565	QC2	µg/l		400		141	70-130	2	30
Surrogate: 4-Bromofluorobenzene	*50.3*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: Toluene-d8	*49.9*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*49.6*		µg/l		*50.0*		*99*	*70-130*		
Surrogate: Dibromofluoromethane	*49.7*		µg/l		*50.0*		*99*	*70-130*		

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110175 - SW846 5030 Water MS										
Matrix Spike (8110175-MS1)	**Source: SA86826-01**	Z-2								
Prepared & Analyzed: 04-Nov-08										
Benzene	17.6		µg/l		20.0	BRL	88	70-130		
Chlorobenzene	17.2		µg/l		20.0	BRL	86	70-130		
1,1-Dichloroethene	17.8		µg/l		20.0	BRL	89	70-130		
Toluene	18.1		µg/l		20.0	BRL	90	70-130		
Trichloroethene	17.5		µg/l		20.0	BRL	88	70-130		
Surrogate: 4-Bromofluorobenzene	*50.0*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*50.4*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*49.0*		µg/l		*50.0*		*98*	*70-130*		
Surrogate: Dibromofluoromethane	*49.1*		µg/l		*50.0*		*98*	*70-130*		
Matrix Spike Dup (8110175-MSD1)	**Source: SA86826-01**	Z-2								
Prepared & Analyzed: 04-Nov-08										
Benzene	18.2		µg/l		20.0	BRL	91	70-130	3	30
Chlorobenzene	17.8		µg/l		20.0	BRL	89	70-130	4	30
1,1-Dichloroethene	18.2		µg/l		20.0	BRL	91	70-130	2	30
Toluene	18.4		µg/l		20.0	BRL	92	70-130	2	30
Trichloroethene	17.9		µg/l		20.0	BRL	89	70-130	2	30
Surrogate: 4-Bromofluorobenzene	*50.0*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: Toluene-d8	*50.5*		µg/l		*50.0*		*101*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*49.8*		µg/l		*50.0*		*100*	*70-130*		
Surrogate: Dibromofluoromethane	*49.3*		µg/l		*50.0*		*99*	*70-130*		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110043 - SW846 3510C										
Blank (8110043-BLK1)										
Prepared: 03-Nov-08 Analyzed: 08-Nov-08										
Acenaphthene	BRL		µg/l	5.00						
Acenaphthylene	BRL		µg/l	5.00						
Aniline	BRL		µg/l	5.00						
Anthracene	BRL		µg/l	5.00						
Atrazine	BRL		µg/l	5.00						
Azobenzene/Diphenyldiazine	BRL		µg/l	5.00						
Benzidine	BRL		µg/l	5.00						
Benzo (a) anthracene	BRL		µg/l	5.00						
Benzo (a) pyrene	BRL		µg/l	5.00						
Benzo (b) fluoranthene	BRL		µg/l	5.00						
Benzo (g,h,i) perylene	BRL		µg/l	5.00						
Benzo (k) fluoranthene	BRL		µg/l	5.00						
Benzoic acid	BRL		µg/l	5.00						
Benzyl alcohol	BRL		µg/l	5.00						
Bis(2-chloroethoxy)methane	BRL		µg/l	5.00						
Bis(2-chloroethyl)ether	BRL		µg/l	5.00						
Bis(2-chloroisopropyl)ether	BRL		µg/l	5.00						
Bis(2-ethylhexyl)phthalate	BRL		µg/l	5.00						
4-Bromophenyl phenyl ether	BRL		µg/l	5.00						
Butyl benzyl phthalate	BRL		µg/l	5.00						
Carbazole	BRL		µg/l	5.00						
4-Chloro-3-methylphenol	BRL		µg/l	5.00						
4-Chloroaniline	BRL		µg/l	5.00						
2-Chloronaphthalene	BRL		µg/l	5.00						
2-Chlorophenol	BRL		µg/l	5.00						
4-Chlorophenyl phenyl ether	BRL		µg/l	5.00						
Chrysene	BRL		µg/l	5.00						
Dibenzo (a,h) anthracene	BRL		µg/l	5.00						
Dibenzofuran	BRL		µg/l	5.00						
1,2-Dichlorobenzene	BRL		µg/l	5.00						
1,3-Dichlorobenzene	BRL		µg/l	5.00						
1,4-Dichlorobenzene	BRL		µg/l	5.00						
3,3'-Dichlorobenzidine	BRL		µg/l	5.00						
2,4-Dichlorophenol	BRL		µg/l	5.00						
Diethyl phthalate	BRL		µg/l	5.00						
Dimethyl phthalate	BRL		µg/l	5.00						
2,4-Dimethylphenol	BRL		µg/l	5.00						
Di-n-butyl phthalate	BRL		µg/l	5.00						
4,6-Dinitro-2-methylphenol	BRL		µg/l	5.00						
2,4-Dinitrophenol	BRL		µg/l	5.00						
2,4-Dinitrotoluene	BRL		µg/l	5.00						
2,6-Dinitrotoluene	BRL		µg/l	5.00						
Di-n-octyl phthalate	BRL		µg/l	5.00						
Fluoranthene	BRL		µg/l	5.00						
Fluorene	BRL		µg/l	5.00						
Hexachlorobenzene	BRL		µg/l	5.00						
Hexachlorobutadiene	BRL		µg/l	5.00						
Hexachlorocyclopentadiene	BRL		µg/l	5.00						
Hexachloroethane	BRL		µg/l	5.00						

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110043 - SW846 3510C										
Blank (8110043-BLK1)										
Prepared: 03-Nov-08 Analyzed: 08-Nov-08										
Indeno (1,2,3-cd) pyrene	BRL		µg/l	5.00						
Isophorone	BRL		µg/l	5.00						
2-Methylnaphthalene	BRL		µg/l	5.00						
2-Methylphenol	BRL		µg/l	5.00						
3 & 4-Methylphenol	BRL		µg/l	10.0						
Naphthalene	BRL		µg/l	5.00						
2-Nitroaniline	BRL		µg/l	5.00						
3-Nitroaniline	BRL		µg/l	5.00						
4-Nitroaniline	BRL		µg/l	20.0						
Nitrobenzene	BRL		µg/l	5.00						
2-Nitrophenol	BRL		µg/l	5.00						
4-Nitrophenol	BRL		µg/l	20.0						
N-Nitrosodimethylamine	BRL		µg/l	5.00						
N-Nitrosodi-n-propylamine	BRL		µg/l	5.00						
N-Nitrosodiphenylamine	BRL		µg/l	5.00						
Pentachlorophenol	BRL		µg/l	20.0						
Phenanthrene	BRL		µg/l	5.00						
Phenol	BRL		µg/l	5.00						
Pyrene	BRL		µg/l	5.00						
Pyridine	BRL		µg/l	5.00						
1-Methylnaphthalene	BRL		µg/l	5.00						
1,2,4-Trichlorobenzene	BRL		µg/l	5.00						
2,4,5-Trichlorophenol	BRL		µg/l	5.00						
2,4,6-Trichlorophenol	BRL		µg/l	5.00						
Pentachloronitrobenzene	BRL		µg/l	5.00						
1,2,4,5-Tetrachlorobenzene	BRL		µg/l	5.00						
Surrogate: 2-Fluorobiphenyl	*31.0*		µg/l		*50.0*		*62*	*30-130*		
Surrogate: 2-Fluorophenol	*25.2*		µg/l		*50.0*		*50*	*15-110*		
Surrogate: Nitrobenzene-d5	*29.8*		µg/l		*50.0*		*60*	*30-130*		
Surrogate: Phenol-d5	*17.3*		µg/l		*50.0*		*35*	*15-110*		
Surrogate: Terphenyl-dl4	*31.8*		µg/l		*50.0*		*64*	*30-130*		
Surrogate: 2,4,6-Tribromophenol	*36.6*		µg/l		*50.0*		*73*	*15-110*		
LCS (8110043-BS1)										
Prepared: 03-Nov-08 Analyzed: 08-Nov-08										
Acenaphthene	33.0		µg/l	5.00	50.0		66	40-130		
Acenaphthylene	33.8		µg/l	5.00	50.0		68	40-130		
Aniline	27.7		µg/l	5.00	50.0		55	40-130		
Anthracene	34.8		µg/l	5.00	50.0		70	40-130		
Atrazine	35.0		µg/l	5.00	50.0		70	40-130		
Azobenzene/Diphenyldiazine	35.1		µg/l	5.00	50.0		70	40-130		
Benzidine	BRL		µg/l	5.00	50.0			0-224		
Benzo (a) anthracene	34.2		µg/l	5.00	50.0		68	40-130		
Benzo (a) pyrene	35.3		µg/l	5.00	50.0		71	40-130		
Benzo (b) fluoranthene	36.4		µg/l	5.00	50.0		73	40-130		
Benzo (g,h,i) perylene	36.0		µg/l	5.00	50.0		72	40-130		
Benzo (k) fluoranthene	36.5		µg/l	5.00	50.0		73	40-130		
Benzoic acid	22.7		µg/l	5.00	50.0		45	40-130		
Benzyl alcohol	36.6		µg/l	5.00	50.0		73	40-130		
Bis(2-chloroethoxy)methane	40.0		µg/l	5.00	50.0		80	40-130		
Bis(2-chloroethyl)ether	38.2		µg/l	5.00	50.0		76	40-130		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110043 - SW846 3510C										
LCS (8110043-BS1)										
Prepared: 03-Nov-08 Analyzed: 08-Nov-08										
Bis(2-chloroisopropyl)ether	36.0		µg/l	5.00	50.0		72	40-130		
Bis(2-ethylhexyl)phthalate	38.6		µg/l	5.00	50.0		77	40-130		
4-Bromophenyl phenyl ether	38.3		µg/l	5.00	50.0		77	40-130		
Butyl benzyl phthalate	39.0		µg/l	5.00	50.0		78	40-130		
Carbazole	43.3		µg/l	5.00	50.0		87	40-130		
4-Chloro-3-methylphenol	38.3		µg/l	5.00	50.0		77	40-130		
4-Chloroaniline	30.5		µg/l	5.00	50.0		61	40-130		
2-Chloronaphthalene	31.2		µg/l	5.00	50.0		62	40-130		
2-Chlorophenol	34.4		µg/l	5.00	50.0		69	40-130		
4-Chlorophenyl phenyl ether	38.0		µg/l	5.00	50.0		76	40-130		
Chrysene	34.9		µg/l	5.00	50.0		70	40-130		
Dibenzo (a,h) anthracene	36.6		µg/l	5.00	50.0		73	40-130		
Dibenzofuran	33.6		µg/l	5.00	50.0		67	40-130		
1,2-Dichlorobenzene	26.0		µg/l	5.00	50.0		52	40-130		
1,3-Dichlorobenzene	25.5		µg/l	5.00	50.0		51	40-130		
1,4-Dichlorobenzene	25.1		µg/l	5.00	50.0		50	40-130		
3,3'-Dichlorobenzidine	33.4		µg/l	5.00	50.0		67	40-130		
2,4-Dichlorophenol	35.3		µg/l	5.00	50.0		71	40-130		
Diethyl phthalate	40.3		µg/l	5.00	50.0		81	40-130		
Dimethyl phthalate	40.8		µg/l	5.00	50.0		82	40-130		
2,4-Dimethylphenol	33.2		µg/l	5.00	50.0		66	40-130		
Di-n-butyl phthalate	38.7		µg/l	5.00	50.0		77	40-130		
4,6-Dinitro-2-methylphenol	37.1		µg/l	5.00	50.0		74	40-130		
2,4-Dinitrophenol	39.6		µg/l	5.00	50.0		79	40-130		
2,4-Dinitrotoluene	38.2		µg/l	5.00	50.0		76	40-130		
2,6-Dinitrotoluene	39.1		µg/l	5.00	50.0		78	40-130		
Di-n-octyl phthalate	41.5		µg/l	5.00	50.0		83	40-130		
Fluoranthene	35.7		µg/l	5.00	50.0		71	40-130		
Fluorene	35.0		µg/l	5.00	50.0		70	40-130		
Hexachlorobenzene	33.9		µg/l	5.00	50.0		68	40-130		
Hexachlorobutadiene	23.4		µg/l	5.00	50.0		47	40-130		
Hexachlorocyclopentadiene	21.5		µg/l	5.00	50.0		43	40-130		
Hexachloroethane	23.6		µg/l	5.00	50.0		47	40-130		
Indeno (1,2,3-cd) pyrene	35.6		µg/l	5.00	50.0		71	40-130		
Isophorone	34.0		µg/l	5.00	50.0		68	40-130		
2-Methylnaphthalene	30.7		µg/l	5.00	50.0		61	40-130		
2-Methylphenol	33.1		µg/l	5.00	50.0		66	40-130		
3 & 4-Methylphenol	33.7		µg/l	10.0	50.0		67	40-130		
Naphthalene	31.4		µg/l	5.00	50.0		63	40-130		
2-Nitroaniline	36.2		µg/l	5.00	50.0		72	40-130		
3-Nitroaniline	40.0		µg/l	5.00	50.0		80	40-130		
4-Nitroaniline	45.0		µg/l	20.0	50.0		90	40-130		
Nitrobenzene	31.8		µg/l	5.00	50.0		64	40-130		
2-Nitrophenol	35.7		µg/l	5.00	50.0		71	40-130		
4-Nitrophenol	22.2		µg/l	20.0	50.0		44	40-130		
N-Nitrosodimethylamine	30.5		µg/l	5.00	50.0		61	40-130		
N-Nitrosodi-n-propylamine	39.8		µg/l	5.00	50.0		80	40-130		
N-Nitrosodiphenylamine	27.5		µg/l	5.00	50.0		55	40-130		
Pentachlorophenol	44.1		µg/l	20.0	50.0		88	40-130		

Semivolatile Organic Compounds by GCMS - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110043 - SW846 3510C										
LCS (8110043-BS1)										
Prepared: 03-Nov-08 Analyzed: 08-Nov-08										
Phenanthrene	36.2		µg/l	5.00	50.0		72	40-130		
Phenol	21.0		µg/l	5.00	50.0		42	40-130		
Pyrene	34.4		µg/l	5.00	50.0		69	40-130		
Pyridine	18.9		µg/l	5.00	50.0		38	0-130		
1,2,4-Trichlorobenzene	26.2		µg/l	5.00	50.0		52	40-130		
1-Methylnaphthalene	31.2		µg/l	5.00	50.0		62	40-140		
2,4,5-Trichlorophenol	34.8		µg/l	5.00	50.0		70	40-130		
2,4,6-Trichlorophenol	36.0		µg/l	5.00	50.0		72	40-130		
Pentachloronitrobenzene	29.9		µg/l	5.00	50.0		60	40-140		
1,2,4,5-Tetrachlorobenzene	25.2		µg/l	5.00	50.0		50	40-140		
Surrogate: 2-Fluorobiphenyl	*32.6*		µg/l		*50.0*		*65*	*30-130*		
Surrogate: 2-Fluorophenol	*24.0*		µg/l		*50.0*		*48*	*15-110*		
Surrogate: Nitrobenzene-d5	*33.7*		µg/l		*50.0*		*67*	*30-130*		
Surrogate: Phenol-d5	*16.6*		µg/l		*50.0*		*33*	*15-110*		
Surrogate: Terphenyl-dl4	*33.2*		µg/l		*50.0*		*66*	*30-130*		
Surrogate: 2,4,6-Tribromophenol	*39.9*		µg/l		*50.0*		*80*	*15-110*		

Semivolatile Organic Compounds by GC - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110165 - SW846 3510C										
Blank (8110165-BLK1)										
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
PCB 1016	BRL		µg/l	0.200						
PCB 1221	BRL		µg/l	0.200						
PCB 1232	BRL		µg/l	0.200						
PCB 1242	BRL		µg/l	0.200						
PCB 1248	BRL		µg/l	0.200						
PCB 1254	BRL		µg/l	0.200						
PCB 1260	BRL		µg/l	0.200						
PCB 1262	BRL		µg/l	0.200						
PCB 1268	BRL		µg/l	0.200						
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*BRL*		µg/l		*0.200*		*70*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.223*		µg/l		*0.200*		*112*	*30-150*		
LCS (8110165-BS1)										
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
PCB 1016	2.28		µg/l	0.200	2.50		91	40-140		
PCB 1260	2.66		µg/l	0.200	2.50		106	40-140		
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.143*		µg/l		*0.200*		*72*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.253*		µg/l		*0.200*		*126*	*30-150*		
LCS Dup (8110165-BSD1)										
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
PCB 1016	2.22		µg/l	0.200	2.50		89	40-140	2	20
PCB 1260	2.56		µg/l	0.200	2.50		102	40-140	4	20
Surrogate: 4,4-DB-Octafluorobiphenyl (Sr)	*0.139*		µg/l		*0.200*		*70*	*30-150*		
Surrogate: Decachlorobiphenyl (Sr)	*0.243*		µg/l		*0.200*		*122*	*30-150*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110272 - SW846 3510C										
Blank (8110272-BLK1)										
Prepared: 05-Nov-08 Analyzed: 07-Nov-08										
Non-polar material (SGT-HEM)	BRL		mg/l	1.0						
LCS (8110272-BS1)										
Prepared: 05-Nov-08 Analyzed: 07-Nov-08										
Non-polar material (SGT-HEM)	14.3		mg/l		17.2		83	79.3-89.9		

Total Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110121 - EPA 200 Series										
Blank (8110121-BLK1)										
Prepared: 05-Nov-08 Analyzed: 07-Nov-08										
Iron	BRL		mg/l	0.0150						
Nickel	BRL		mg/l	0.0050						
Zinc	BRL		mg/l	0.0050						
Copper	BRL		mg/l	0.0050						
Arsenic	BRL		mg/l	0.0040						
Cadmium	BRL		mg/l	0.0025						
Chromium	BRL		mg/l	0.0050						
Silver	BRL		mg/l	0.0050						
LCS (8110121-BS1)										
Prepared: 05-Nov-08 Analyzed: 08-Nov-08										
Iron	1.22		mg/l	0.0150	1.25		98	85-115		
Nickel	1.30		mg/l	0.0050	1.25		104	85-115		
Zinc	1.28		mg/l	0.0050	1.25		103	85-115		
Silver	1.19		mg/l	0.0050	1.25		96	85-115		
Cadmium	1.32		mg/l	0.0025	1.25		105	85-115		
Chromium	1.27		mg/l	0.0050	1.25		101	85-115		
Copper	1.24		mg/l	0.0050	1.25		99	85-115		
Arsenic	1.25		mg/l	0.0040	1.25		100	85-115		
Duplicate (8110121-DUP1) **Source: SA86695-01**										
Prepared: 05-Nov-08 Analyzed: 08-Nov-08										
Zinc	0.0234		mg/l	0.0050		0.0236			0.6	20
Nickel	0.0018	J	mg/l	0.0050		BRL				20
Iron	0.0718		mg/l	0.0150		0.0668			7	20
Copper	BRL		mg/l	0.0050		BRL				20
Cadmium	BRL		mg/l	0.0025		BRL				20
Arsenic	BRL		mg/l	0.0040		BRL				20
Chromium	BRL		mg/l	0.0050		BRL				20
Silver	BRL		mg/l	0.0050		BRL				20
Matrix Spike (8110121-MS1) **Source: SA86695-02**										
Prepared: 05-Nov-08 Analyzed: 08-Nov-08										
Iron	2.24		mg/l	0.0150	1.25	1.13	89	70-130		
Nickel	1.27		mg/l	0.0050	1.25	BRL	101	70-130		
Zinc	1.28		mg/l	0.0050	1.25	0.0140	101	70-130		
Arsenic	1.25		mg/l	0.0040	1.25	BRL	100	70-130		
Cadmium	1.29		mg/l	0.0025	1.25	BRL	104	70-130		
Copper	1.26		mg/l	0.0050	1.25	0.0038	101	70-130		
Silver	1.26		mg/l	0.0050	1.25	BRL	101	70-130		
Chromium	1.28		mg/l	0.0050	1.25	BRL	102	70-130		
Matrix Spike (8110121-MS2) **Source: SA86720-01**										
Prepared: 05-Nov-08 Analyzed: 08-Nov-08										
Iron	85.1	QM2	mg/l	0.0150	1.25	83.2	156	70-130		
Zinc	2.33		mg/l	0.0050	1.25	1.13	96	70-130		
Nickel	1.42		mg/l	0.0050	1.25	0.199	98	70-130		
Silver	1.49		mg/l	0.0050	1.25	BRL	119	70-130		
Arsenic	1.37		mg/l	0.0040	1.25	0.0183	108	70-130		
Chromium	1.33		mg/l	0.0050	1.25	0.0614	101	70-130		
Cadmium	1.24		mg/l	0.0025	1.25	0.0021	99	70-130		
Copper	1.42		mg/l	0.0050	1.25	0.0176	112	70-130		

Total Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110121 - EPA 200 Series										
Post Spike (8110121-PS1)	**Source: SA86695-02**									
Prepared: 05-Nov-08 Analyzed: 08-Nov-08										
Nickel	1.27		mg/l	0.0050	1.25	BRL	102	85-115		
Iron	2.25		mg/l	0.0150	1.25	1.13	90	85-115		
Zinc	1.27		mg/l	0.0050	1.25	0.0140	100	85-115		
Chromium	1.28		mg/l	0.0050	1.25	BRL	102	85-115		
Copper	1.26		mg/l	0.0050	1.25	0.0038	100	85-115		
Arsenic	1.26		mg/l	0.0040	1.25	BRL	100	85-115		
Cadmium	1.29		mg/l	0.0025	1.25	BRL	103	85-115		
Silver	1.22		mg/l	0.0050	1.25	BRL	97	85-115		
Post Spike (8110121-PS2)	**Source: SA86720-01**									
Prepared: 05-Nov-08 Analyzed: 08-Nov-08										
Nickel	1.42		mg/l	0.0050	1.25	0.199	97	85-115		
Zinc	2.33		mg/l	0.0050	1.25	1.13	96	85-115		
Iron	83.0	QM2	mg/l	0.0150	1.25	83.2	-16	85-115		
Chromium	1.34		mg/l	0.0050	1.25	0.0614	102	85-115		
Arsenic	1.34		mg/l	0.0040	1.25	0.0183	106	85-115		
Cadmium	1.24		mg/l	0.0025	1.25	0.0021	99	85-115		
Copper	1.39		mg/l	0.0050	1.25	0.0176	110	85-115		
Silver	1.44		mg/l	0.0050	1.25	BRL	115	85-115		
Batch 8110122 - EPA200/SW7000 Series										
Blank (8110122-BLK1)										
Prepared: 05-Nov-08 Analyzed: 11-Nov-08										
Mercury	BRL		mg/l	0.00020						
LCS (8110122-BS1)										
Prepared: 05-Nov-08 Analyzed: 11-Nov-08										
Mercury	0.00425		mg/l	0.00020	0.00500		85	85-115		
Duplicate (8110122-DUP1)	**Source: SA86804-01**									
Prepared: 05-Nov-08 Analyzed: 11-Nov-08										
Mercury	0.00036		mg/l	0.00020		0.00037			3	20
Matrix Spike (8110122-MS1)	**Source: SA86764-01**									
Prepared: 05-Nov-08 Analyzed: 11-Nov-08										
Mercury	0.00496		mg/l	0.00020	0.00500	0.00052	89	75-125		
Post Spike (8110122-PS1)	**Source: SA86764-01**									
Prepared: 05-Nov-08 Analyzed: 11-Nov-08										
Mercury	0.00481		mg/l	0.00020	0.00500	0.00052	86	85-115		
Batch 8110386 - EPA 200 Series										
Blank (8110386-BLK1)										
Prepared: 07-Nov-08 Analyzed: 08-Nov-08										
Selenium	BRL		mg/l	0.0002						
Lead	BRL		mg/l	0.0002						
Antimony	BRL		mg/l	0.0002						
LCS (8110386-BS1)										
Prepared: 07-Nov-08 Analyzed: 08-Nov-08										
Antimony	1.39		mg/l	0.0125	1.25		111	85-115		
Lead	1.39		mg/l	0.0125	1.25		111	85-115		
Selenium	1.54	QC2	mg/l	0.0125	1.25		123	85-115		

Total Metals by EPA 200 Series Methods - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110386 - EPA 200 Series										
Duplicate (8110386-DUP1)	**Source: SA86901-03**									
Prepared: 07-Nov-08 Analyzed: 08-Nov-08										
Antimony	0.0005		mg/l	0.0002		0.0005			10	20
Selenium	BRL		mg/l	0.0002		BRL				20
Lead	0.0010	QR9	mg/l	0.0002		0.0013			23	20
Matrix Spike (8110386-MS1)	**Source: SA86901-03**									
Prepared: 07-Nov-08 Analyzed: 08-Nov-08										
Antimony	1.39		mg/l	0.0125	1.25	0.0005	111	70-130		
Selenium	1.50		mg/l	0.0125	1.25	BRL	120	70-130		
Lead	1.39		mg/l	0.0125	1.25	0.0013	111	70-130		
Post Spike (8110386-PS1)	**Source: SA86901-03**									
Prepared: 07-Nov-08 Analyzed: 08-Nov-08										
Antimony	1.35		mg/l	0.0125	1.25	0.0005	108	85-115		
Lead	1.42		mg/l	0.0125	1.25	0.0013	114	85-115		

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8102398 - General Preparation										
Blank (8102398-BLK1)										
Prepared & Analyzed: 31-Oct-08										
Hexavalent Chromium	BRL		mg/l	0.005						
Blank (8102398-BLK2)										
Prepared & Analyzed: 31-Oct-08										
Hexavalent Chromium	BRL		mg/l	0.005						
LCS (8102398-BS1)										
Prepared & Analyzed: 31-Oct-08										
Hexavalent Chromium	0.049		mg/l	0.005	0.0501		98	90-110		
LCS (8102398-BS2)										
Prepared & Analyzed: 31-Oct-08										
Hexavalent Chromium	0.051		mg/l	0.005	0.0501		102	90-110		
Duplicate (8102398-DUP1)	**Source: SA86804-01**									
Prepared & Analyzed: 31-Oct-08										
Hexavalent Chromium	BRL		mg/l	25.0		BRL				20
Matrix Spike (8102398-MS1)	**Source: SA86804-01**									
Prepared & Analyzed: 31-Oct-08										
Hexavalent Chromium	235		mg/l	25.0	250	BRL	94	80-120		
Matrix Spike Dup (8102398-MSD1)	**Source: SA86804-01**									
Prepared & Analyzed: 31-Oct-08										
Hexavalent Chromium	240		mg/l	25.0	250	BRL	96	80-120	2	20
Reference (8102398-SRM1)										
Prepared & Analyzed: 31-Oct-08										
Hexavalent Chromium	0.023		mg/l	0.005	0.0250		92	85-115		
Batch 8102399 - General Preparation										
Blank (8102399-BLK1)										
Prepared & Analyzed: 31-Oct-08										
Total Residual Chlorine	BRL		mg/l	0.020						
Blank (8102399-BLK2)										
Prepared & Analyzed: 31-Oct-08										
Total Residual Chlorine	BRL		mg/l	0.020						
LCS (8102399-BS1)										
Prepared & Analyzed: 31-Oct-08										
Total Residual Chlorine	0.053		mg/l	0.020	0.0500		106	90-110		
LCS (8102399-BS2)										
Prepared & Analyzed: 31-Oct-08										
Total Residual Chlorine	0.049		mg/l	0.020	0.0500		98	90-110		
Duplicate (8102399-DUP1)	**Source: SA86804-01**									
Prepared & Analyzed: 31-Oct-08										
Total Residual Chlorine	BRL		mg/l	100		BRL				20
Matrix Spike (8102399-MS1)	**Source: SA86804-01**									
Prepared & Analyzed: 31-Oct-08										
Total Residual Chlorine	230		mg/l	100	250	BRL	92	80-120		
Matrix Spike Dup (8102399-MSD1)	**Source: SA86804-01**									
Prepared & Analyzed: 31-Oct-08										
Total Residual Chlorine	260		mg/l	100	250	BRL	104	80-120	12	200

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

* Reportable Detection Limit BRL = Below Reporting Limit

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8102399 - General Preparation										
Matrix Spike Dup (8102399-MSD1)	**Source: SA86804-01**									
Prepared & Analyzed: 31-Oct-08										
Reference (8102399-SRM1)										
Prepared & Analyzed: 31-Oct-08										
Total Residual Chlorine	0.107		mg/l	0.020	0.0967		111	85-115		
Batch 8110199 - SM4500 CN C.										
Blank (8110199-BLK1)										
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
Cyanide (total)	BRL		mg/l	0.0100						
Blank (8110199-BLK2)										
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
Cyanide (total)	BRL		mg/l	0.0100						
LCS (8110199-BS1)										
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
Cyanide (total)	0.314		mg/l	0.0100	0.300		105	90-110		
LCS (8110199-BS2)										
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
Cyanide (total)	0.272		mg/l	0.0100	0.300		91	90-110		
Duplicate (8110199-DUP1)	**Source: SA86725-02**									
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
Cyanide (total)	BRL		mg/l	0.0100		BRL				20
Matrix Spike (8110199-MS1)	**Source: SA86725-02**									
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
Cyanide (total)	0.155	QM7	mg/l	0.0100	0.300	BRL	52	90-110		
Matrix Spike Dup (8110199-MSD1)	**Source: SA86725-02**									
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
Cyanide (total)	0.326	QR7	mg/l	0.0100	0.300	BRL	109	90-110	71	20
Reference (8110199-SRM1)										
Prepared: 04-Nov-08 Analyzed: 05-Nov-08										
Cyanide (total)	0.336		mg/l	0.0100	0.361		93	75-125		
Batch 8110464 - General Preparation										
Blank (8110464-BLK1)										
Prepared & Analyzed: 06-Nov-08										
Total Suspended Solids	BRL		mg/l	5.00						
Blank (8110464-BLK2)										
Prepared & Analyzed: 06-Nov-08										
Total Suspended Solids	BRL		mg/l	5.00						
Duplicate (8110464-DUP1)	**Source: SA86782-12**									
Prepared & Analyzed: 06-Nov-08										
Total Suspended Solids	BRL		mg/l	5.00		BRL				20
Duplicate (8110464-DUP2)	**Source: SA86804-01**									
Prepared & Analyzed: 06-Nov-08										
Total Suspended Solids	16000		mg/l	50.0		14000			14	20
Reference (8110464-SRM1)										
Prepared & Analyzed: 06-Nov-08										

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 8110464 - General Preparation										
Reference (8110464-SRM1)										
Prepared & Analyzed: 06-Nov-08										
Total Suspended Solids	42.0		mg/l	5.00	44.4		95	90-110		
Reference (8110464-SRM2)										
Prepared & Analyzed: 06-Nov-08										
Total Suspended Solids	42.0		mg/l	5.00	44.4		95	90-110		

Notes and Definitions

ClHT	A hold time of 12 hours has been set to expedite this analysis through the laboratory. However, the hold time for Chlorine Residual is not specified within the method other than to state that the samples should be analyzed as soon as possible.
QC2	Analyte out of acceptance range in QC spike but no reportable concentration present in sample.
QM2	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
QM7	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QR7	The RPD exceeded the QC control limits; however precision is demonstrated with acceptable RPD values for batch duplicate.
QR9	RPD out of acceptance range. The batch is accepted based upon LCS and/or LCSD recovery.
R01	The Reporting Limit has been raised to account for matrix interference.
Z-2	MS/MSD ran outside of 12 hour window.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

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

Interpretation of Total Petroleum Hydrocarbon Report

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

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

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

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

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

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

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

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

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

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

Validated by:
Hanibal C. Tayeh, Ph.D.
Rebecca Merz

SPECTRUM ANALYTICAL, INC.
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CHAIN OF CUSTODY RECORD

Page 1 of 1

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

Report To: CEA Inc.
13? Railroad St.
[illegible] [illegible] MA 01583
508-835-8822

Invoice To: Bill to CR Smith
[illegible] Place

Project No.: CEA # 6777-08-01
Site Name: CR Smith Hopkinton
Location: 1 Grove St State: MA
Sampler(s): Busch

Project Mgr.: Adam [illegible] P.O. No.: ______ RQN: ______

1=Na2S2O3 2=HCl 3=H2SO4 4=HNO3 5=NaOH 6=Ascorbic Acid 7=CH3OH 8=NaHSO4 9= ______ 10= ______

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

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: EPA ~~[illegible]~~ RGP Appendix III 1-14.
[illegible]	OW-4	10-31-08	8:15 am	G	GW	3,4	3	3		3	X

QA Reporting Notes: (check if needed)
Provide MA DEP MCP CAM Report
Provide CT DEP RCP Report
QA/QC Reporting Level
Standard No QC
Other ______
State-specific reporting standards: ______

- [ ] Fax results when available to: ______
- [X] E-mail to: kdepiez@cea-inc.com

EDD Format: ______

Condition upon receipt: [ ] Iced [ ] Ambient [X] °C 7.1

Relinquished by:	Received by:	Date:	Time:
[signature] - CEA	[signature]	10/31/08	
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Appendix III - Effluent Limitations

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

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

l. Fluoranthene		(limited as ug/L total Group II PAHs)	daily maximum	grab
m. Fluorene		(limited as ug/L total Group II PAHs)	daily maximum	grab
n. Naphthalene		20 ug/l	daily maximum	grab
o. Phenanthrene		(limited as ug/L total Group II PAHs)	daily maximum	grab
p. Pyrene		(limited as ug/L total Group II PAHs)	daily maximum	grab
38. Total Polychlorinated Biphenyls (PCBs)[17]		0.000064 ug/L[18]	daily maximum	grab
Metal parameters	Total Recoverable Metal Limit @ H = 50 mg/l CaCO3[19] for discharges in Massachusetts (ug/l)	Total Recoverable Metal Limit @ H = 25 mg/l CaCO3[19] for Discharges in New Hampshire (ug/l)	Averaging Time	Sample Type
39. Antimony	5.6	5.6	daily maximum	grab
40. Arsenic	FW = 10 SW = 36	FW = 10 SW = 36	monthly average	grab
41. Cadmium	FW = 0.2 SW = 8.9	FW = 0.8 SW = 9.3	monthly average	grab
42. Chromium III (trivalent)	FW = 48.8 SW = 100	FW = 27.7 SW = 100	monthly average	grab
43. Chromium VI (hexavalent)	FW = 11.4 SW = 50.3	FW = 11.4 SW = 50.3	monthly average	grab
44. Copper	FW = 5.2 SW = 3.7	FW = 2.9 SW = 3.7	monthly average	grab
45. Lead	FW = 1.3 SW = 8.5	FW = 0.5 SW = 8.5	monthly average	grab
46. Mercury	FW = 0.9 SW = 1.1	FW = 0.9 SW = 1.1	monthly average	grab
47. Nickel	FW = 29.0 SW = 8.2	FW = 16.1 SW = 8.2	monthly average	grab
48. Selenium	FW = 5.0 SW = 71	FW = 5.0 SW = 71	monthly average	grab
49. Silver	FW = 1.2 SW = 2.2	FW = 0.4 SW = 2.2	daily maximum	grab
50. Zinc	FW = 66.6 SW = 85.6	FW = 37 SW = 85.6	monthly average	grab
51. Iron	1,000	1,000	daily maximum	grab

1. FW = fresh water.

2. Although the maximum values for TRC are 11 ug/l and 7.5 ug/l for freshwater and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 20 ug/l).

3. SW = salt water.

4. Limits for cyanide are based on EPA's water quality criteria expressed as micrograms (ug) of free cyanide per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.

5. Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).

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

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

8. The sum of individual phthalate compounds.

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

10. In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as *"total PCBs is the sum of all homologue, all isomer, all congener, or all Aroclor analyses."*

11. Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.000005 ug/l when Method 1668a is approved).

12. Assumes FW Hardness Value (H) = 50 mg/l as $CaCO_3$ in MA: Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc which are Hardness Dependent.

13. Assumes FW Hardness Value (H) = 25 mg/L in NH for: Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc which are Hardness Dependent.

Appendix VI: Minimum Levels and Test Methods

PARAMETER - CAS No. -	Minimum Levels and Test Methods[1,2,3]				
	GC[4]	GCMS[5]	LC[6]	FAA[7]	Other
1. Total Suspended Solids (TSS)					5 mg/l Method 160.2
2. Total Residual Chlorine (TRC)					20 ug/l Method 330.5
3. Total Petroleum Hydrocarbons (TPH)					5 mg/l Method 1664
4. Cyanide (total) - 57125 -					10 ug/l Method 335.4
5. Benzene (B) - 71432 -	0.5 ug/l Method 602	2 ug/l Method 624			Method 8260C[3]
6. Toluene (T) - 108883 -	0.5 ug/l Method 602	2 ug/l Method 624			Method 8260C[3]
7. Ethylbenzene (E) - 100414 -	0.5 ug/l Method 602	2 ug/l Method 624			Method 8260C[3]
8. (m,p,o) Xylenes (X) - 108383;106423; 95476-	0.5 ug/l Method 602	10 ug/l Method 1624			Method 8260C[3]
9. Total BTEX	0.5 ug/l Method 602	2 ug/l Method 624			Method 8260C[3]
10. Ethylene Dibromide (EDB) (1,2- Dibromoethane) - 106934 -	1.0 ug/l Method 618 0.01 ug/l Method 504.1	0.1 ug/l Methods 524.2			Method 8260C[3]

PARAMETER - CAS No. -	Minimum Levels and Test Methods (40 CFR 136)				
	GC	GCMS	LC	FAA	Other
11. Methyl-tert-Butyl Ether (MtBE)	0.5 ug/l Method 602[8]	5.0 ug/l Method 524.2			Method 8260C[2]
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol) - 75650 -	0.5 ug/l Method 602[8]	100 ug/l Method 1666			Method 8260C[2]
13. tert-Amyl Methyl Ether (TAME) -994058-	0.5 ug/l Method 602[8]				Method 8260C[2]
14. Naphthalene - 91203 -	10 ug/l Method 610 GC/FID	2 ug/l Method 625 5.0 ug/l Method 524.2	0.2 ug/l Method 610 HPLC		Method 8270D[3]
15. Carbon Tetrachloride - 56235 -	0.5 ug/l Method 601	2 ug/l Methods 624, 1624			Method 8260C[2]
16. 1,4 Dichlorobenzene (p-DCB) - 106467 -	0.5 ug/l Methods 601, 602	2 ug/l Methods 624, 625			Method 8260C[2]
17. 1,2 Dichlorobenzene (o-DCB) - 95501 -	0.5 ug/l Methods 601, 602	2 ug/l Methods 624, 625			Method 8260C[2]
18. 1,3 Dichlorobenzene (m-DCB) - 541731 -	0.5 ug/l Methods 601, 602	2 ug/l Methods 624, 625			Method 8260C[2]
19. 1,1 Dichloroethane (DCA) - 75343 -	0.5 ug/l Method 601	1 ug/l Method 624			Method 8260C[2]
20. 1,2 Dichloroethane (DCA)- 107062 -	0.5 ug/l Method 601[7]	2 ug/l Method 624			Method 8260C[2]

PARAMETER - CAS No. -	Minimum Levels and Test Methods (40 CFR 136)				
	GC	GCMS	LC	FAA	Other
21. 1,1 Dichloroethylene (DCE) - 75354 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C[2]
22. cis-1,2 Dichloro-ethylene (DCE) -156592-	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C[2]
23. Dichloromethane (Methylene Chloride)- 75092 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C[2]
24. Tetrachloroethylene (PCE) - 127184 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C[2]
25. 1,1,1 Trichloro-ethane (TCA) - 71556 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C[2]
26. 1,1,2 Trichloro-ethane (TCA) - 79005 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C[2]
27. Trichloroethylene (TCE) - 79016 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C[2]
28. Vinyl Chloride - 75014 -	0.5 ug/l Method 601	2 ug/l Method 624			Method 8260C[2]
29. Acetone - 67641 -	1.0 ug/l Method 524.2	50 ug/l Method 1624			Method 8260C[2]
30. 1,4 Dioxane -123911-		50 ug/l Method 1624			Method 8260C[2]
31. Total Phenols - 108952	1.0 ug/l Method 604 Method 8260[2]	1 ug/l Methods 625, 1625			Method 8260C[2] Method 8270D[2]
32. Pentachlorophenol (PCP) - 87865 -	1.0 ug/l Method 604 GCFID	5 ug/l Methods 625, 1625			Method 8270D[2]

PARAMETER - CAS No. -	Minimum Levels and Test Methods (40 CFR 136)				
	GC	GCMS	LC	FAA	Other
33. Total Phthalates [V] (Phthalate esthers)		10 ug/l* Method 625			Method 8270D[1]
34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate] - 117817 -	10 ug/l Method 606	5 ug/l Method 625			Method 8270D[3]
35. Total Group I Polynuclear Aromatic Hydrocarbons (PAH)					Method 8270D[1]
a. Benzo(a) Anthracene -56553-	10 ng/l Method 610 GC	5 ug/l Method 625	0.05 ug/l Method 610 HPLC		Method 8270D[3]
b. Benzo(a) Pyrene -50328 -		10 ug/l Method 625	2 ug/l Method 610 HPLC		Method 8270D[3]
c. Benzo(b)Fluoranthene - 205992 -		10 ug/l Method 625	0.1 ug/l Method 610 HPLC		Method 8270D[3]
d. Benzo(k)Fluoranthene - 207089 -		10 ug/l Method 625	2 ug/l Method 610 HPLC		Method 8270D[3]
e. Chrysene - 218019 -		10 ug/l Method 625	5 ug/l Method 610 HPLC		Method 8270D[3]
f. Dibenzo(a,h) anthracene		10 ug/l Method 625	0.1 ug/l Method 610 HPLC		Method 8270D[3]
g. Indeno(1,2,3-cd) Pyrene - 193395 -		10 ug/l Method 625	0.15 ug/l Method 610		Method 8270D[3]
36. Total Group II Polynuclear Aromatic Hydrocarbons (PAH)					Method 8270D[3]

Minor Modification on Remediation General Permit (RGP):

On March 22, 2007, EPA made a minor modification to the RGP to correct the Minimum Level, (ML) for total phthalates (Phthalates and esthers), using Gas Chromatography/Mass Spectrometry (GCMS) from 5ug/l, Method 625 to 10 ug/l, Method 625. This change is just as Row 33 on Page 4 of Appendix VI.

Inorganic parameters:	Minimum Levels (ug/l) and Test Methods			
	Flame Atomic Absorption	Inductively Coupled Plasma	Furnace Atomic Absorption	Other
38. Antimony	200 ug/l	50 ug/l	5 ug/l	
39. Arsenic		5 ug/l	2 ug/l	
40. Cadmium	10 ug/l	5 ug/l	0.5 ug/l	
Inorganic parameters:	Minimum Levels (ug/l) and Test Methods			
	Flame Atomic Absorption	Inductively Coupled Plasma	Furnace Atomic Absorption	Other
41. Chromium (total)	Method 218.1	10 ug/l Methods 200.7[33], 200.8, 200.15, 1620	5 ug/l Method 200.9	50 ug/l
42. Chromium (hexavalent)				10 ug/l Method 218.6 Method 1636
43. Copper	20 ug/l	5 ug/l	3 ug/l	
44. Lead	100 ug/l	40 ug/l	3 ug/l	
45. Mercury				0.2 ug/l
46. Nickel	30 ug/l	10 ug/l	5 ug/l	
47. Selenium		50 ug/l	5 ug/l	
48. Silver	50 ug/l	10 ug/l	2 ug/l	
49. Zinc	30 ug/l	10 ug/l		
50. Iron		Methods 6010b 200.7[32]		

1. Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B). Where a minimum level (ML) is listed but a test method is not specified, permittee may use any of the available methods approved for use under 40 CFR 136, including alternatives approved by this permit, that meets that ML. See EPA's "Methods and Guidance for the Analysis of Water" at www.epa.gov/waterscience/methods.html. Where test method is specified but ML not listed for that method, the lowest ML for listed methods must be used before concentration can be considered as "non-detect."

2. For measuring volatile organic compounds, Method 8260C (or the latest version) may be used as a substitute for CWA Methods 524.2, 602, 624, or 1624. Method 8260C must be preceded by Method 5030 as the preparation method. However, any method changes must be accompanied by documented quality assurance quality control (QA/QC) test results to prove that the analytical process can achieve the lower detection limits of Method 8260C.

3. For measuring semi-volatile organic compounds, Method 8270D may be used as a substitute for Methods 610, 625, or 1625. Method 8270D must be preceded by Method 3535 or Method 3520C as the sample preparation method. In either case, the quality control requirements of Method 3500B must be taken into account. The sample preparation method must be specified with data analysis records. Method 8270D may be modified to provide lower detection and quantitation limits using Selected Ion Monitoring (SIM). Any method changes must be accompanied by documented quality assurance quality control (QA/QC) test results to prove that the analytical process can achieve the lower detection limits of Method 8270D.

4. GC - gas chromatography

5. GCMS - gas chromatography/mass spectrometry

6. LC - high pressure liquid chromatography

7. Flame Atomic Absorption

8. For measuring fuel oxygenates, Method 602 must be modified to include a heated purge.

9. The sum of individual phthalate compounds.

10. In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as *"total PCBs is the sum of all homologue, all isomer, all congener, or all Aroclor analyses"*.

11. Method 1668a (HRGC/HRMS) has been proposed by EPA and is currently being validated. When approval of the method is finalized, it will be approved for use with this general permit.

12. Methods 6010b and 200.7 for metals may only be used when sample prepared with SW-846 digestion method, Method 3010.