

MA910330

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: Gulf Oil Terminal		Facility/site address: 281 Eastern Avenue	
Location of facility/site: longitude: <u>71 1' 18" W</u> latitude: <u>42 23' 38" N</u>	Facility SIC code(s):	Street: 281 Eastern Avenue	
b) Name of facility/site owner: Gulf Oil LP		Town: Chelsea	
Email address of owner: dsmith@gulfoil.com	State: MA	Zip: 02150	County: Suffolk
Telephone no. of facility/site owner: 800-256-4853	Owner is (check one): 1. Federal ☐ 2. State/Tribal ☐ 3. Private ☒ 4. other, if so, describe:		
Fax no. of facility/site owner: 617-884-3325			
Address of owner (if different from site):			
Street: 275 Washington Street, Suite 300			
Town: Newton	State: MA	Zip: 02458-1646	County: Middlesex
c) Legal name of operator: ENSR	Operator telephone no: 978-589-3000		
	Operator fax no.: 978-589-3705		Operator email: despy@ensr.aecom.com
Operator contact name and title: David Espy/Project Manager			
Address of operator (if different from owner):		Street: 2 Technology Park Drive	
Town: Westford	State: MA	Zip: 01886	County: Middlesex
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: MA0001091			
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: RTN 3-27122 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number: MADEP NE Region, Wilmington, 978-694-3200	f) Is the site/facility covered by any other EPA permit, including: 1. multi-sector storm water general permit? Y ☐ N ☒, if Y, number: 2. phase I or II construction storm water general permit? Y ☐ N ☒, if Y, number: 3. individual NPDES permit? Y ☒ N ☐, if Y, number: MA0001091 4. any other water quality related permit? Y ☐ N ☒, if Y, number:
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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: The discharge is related to the pump and treat of groundwater from multiple recovery wells impacted with petroleum constituents resulting from an on-site release in September 2007.			
b) Provide the following information about each discharge:	<table border="1"> <tr> <td style="vertical-align: top;"> 1) Number of discharge points: 1 </td> <td style="vertical-align: top;"> 2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft³/s)? Max. flow <u>0.133</u> Average flow <u>0.08</u> Is maximum flow a design value? Y ☒ N ☐ For average flow, include the units and appropriate notation if this value is a design value or estimate if not available. Average flow is in units of cubic feet per second and is a design flow. </td> </tr> </table>	1) Number of discharge points: 1	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft³/s)? Max. flow <u>0.133</u> Average flow <u>0.08</u> Is maximum flow a design value? Y ☒ N ☐ For average flow, include the units and appropriate notation if this value is a design value or estimate if not available. Average flow is in units of cubic feet per second and is a design flow.
1) Number of discharge points: 1	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft³/s)? Max. flow <u>0.133</u> Average flow <u>0.08</u> Is maximum flow a design value? Y ☒ N ☐ For average flow, include the units and appropriate notation if this value is a design value or estimate if not available. Average flow is in units of cubic feet per second and is a design flow.		
3) Latitude and longitude of each discharge within 100 feet: pt.1: long. <u>71° 1' 18" W</u> lat. <u>42° 23' 38" N</u>; pt.2: long. _____ lat. _____; pt.3: long. _____ lat. _____; pt.4: long. _____ lat. _____; pt.5: long. _____ lat. _____; pt.6: long. _____ lat. _____; pt.7: long. _____ lat. _____; pt.8: long. _____ lat. _____; etc.			
4) If hydrostatic testing, total volume of the discharge (gals): n/a	5) Is the discharge intermittent ☒ or seasonal _____? Is discharge ongoing Yes ☒ No ☐ ?		
c) Expected dates of discharge (mm/dd/yy): start <u>10/08/07</u> end <u>10/08/12</u>			
d) Please attach a line drawing or flow schematic showing water flow through the facility including: 1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s). Figure 4			

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

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

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

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids		✓	3	Grab	2540D	5,000	26,000		24,666	
2. Total Residual Chlorine										
3. Total Petroleum Hydrocarbons	✓		3	Grab	1664	5,000	<5,000	0	ND	0
4. Cyanide										
5. Benzene		✓	3	Grab	8260B	2.0	8,000		5,500	
6. Toluene		✓	3	Grab	8260B	2.0	45,000		40,000	
7. Ethylbenzene		✓	3	Grab	8260B	2.0	3,300		2,700	
8. (m,p,o) Xylenes		✓	3	Grab	8260B	10.0	16,700		13,866	
9. Total BTEX ⁴		✓	3	Grab	8260B	16.0	73,000		62,066	

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide ⁵ (1,2- Dibromo-methane)										
11. Methyl-tert-Butyl Ether (MtBE)		✓	3	Grab	8260B	5.0	140,000		47,423	
12. tert-Butyl Alcohol (TBA)	✓		3	Grab	8260B	100	<500		ND	
13. tert-Amyl Methyl Ether (TAME)	✓		3	Grab	8260B	0.5	<500		ND	
14. Naphthalene		✓	3	Grab	8260B	5.0	610		1,203	
15. Carbon Tetra-chloride	✓		3	Grab	8260B	2.0	<500			
16. 1,4 Dichlorobenzene	✓		3	Grab	8260B	2.0	<500		ND	
17. 1,2 Dichlorobenzene	✓		3	Grab	8260B	2.0	<500		ND	
18. 1,3 Dichlorobenzene	✓		3	Grab	8260B	2.0	<500		ND	
19. 1,1 Dichloroethane	✓		3	Grab	8260B	1.0	<500		ND	
20. 1,2 Dichloroethane	✓		3	Grab	8260B	2.0	<500		ND	
21. 1,1 Dichloroethylene	✓		3	Grab	8260B	2.0	<500		ND	
22. cis-1,2 Dichloro-ethylene	✓		3	Grab	8260B	2.0	<500		ND	
23. Dichloromethane (Methylene Chloride)	✓		3	Grab	8260B	2.0	<2,500		ND	
24. Tetrachloroethylene	✓		3	Grab	8260B	2.0	<500		ND	

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane	✓		3	Grab	8260B	2.0	<500		ND	
26. 1,1,2 Trichloroethane	✓		3	Grab	8260B	2.0	<500		ND	
27. Trichloroethylene	✓		3	Grab	8260B	2.0	<500		ND	
28. Vinyl Chloride	✓		3	Grab	8260B	2.0	<500		ND	
29. Acetone	✓		3	Grab	8260B	50	<10,000		ND	
30. 1,4 Dioxane	✓		3	Grab	8260B	50	<500,000		ND	
31. Total Phenols										
32. Pentachlorophenol										
33. Total Phthalates ⁶ (Phthalate esthers)										
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]										
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)										
a. Benzo(a) Anthracene	✓		3	Grab	8270C	5.0	<3.2		ND	
b. Benzo(a) Pyrene	✓		3	Grab	8270C	10.0	<3.2		ND	
c. Benzo(b)Fluoranthene	✓		3	Grab	8270C	10.0	<3.2		ND	
d. Benzo(k) Fluoranthene	✓		3	Grab	8270C	10.0	<3.2		ND	
e. Chrysene	✓		3	Grab	8270C	10.0	<3.2		ND	

⁶The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min- imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	✓		3	Grab	8270C	10.0	<3.2		ND	
g. Indeno(1,2,3-cd) Pyrene	✓		3	Grab	8270C	10.0	<3.2		ND	
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)										
h. Acenaphthene	✓		3	Grab	8270C	1.0	<16		ND	
i. Acenaphthylene	✓		3	Grab	8270C	10.0	<16		ND	
j. Anthracene	✓		3	Grab	8270C	10.0	<16		ND	
k. Benzo(ghi) Perylene	✓		3	Grab	8270C	5.0	<3.2		ND	
l. Fluoranthene	✓		3	Grab	8270C	1.0	<16		ND	
m. Fluorene	✓		3	Grab	8270C	10.0	<16		ND	
n. Naphthalene-		✓	3	Grab	8270C	5.0	340		320	
o. Phenanthrene	✓		3	Grab	8270C	5.0	<16		ND	
p. Pyrene	✓		3	Grab	8270C	10.0	<16		ND	
37. Total Polychlorinated Biphenyls (PCBs)										
38. Antimony										
39. Arsenic										
40. Cadmium										
41. Chromium III										
42. Chromium VI										

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min- imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper	☐	☐								
44. Lead	☐	☐								
45. Mercury	☐	☐								
46. Nickel	☐	☐								
47. Selenium	☐	☐								
48. Silver	☐	☐								
49. Zinc	☐	☐								
50. Iron	☐	☐								
Other (describe):	☐	☐								

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

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

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: 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 ³⁰ _____ Maximum flow rate of treatment system ⁵⁰ _____ Design flow rate of treatment system ⁵⁰ _____						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets): none						

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

a) Identify the discharge pathway:	Direct ☒	Within facility__	Storm drain__	River/brook ☒	Wetlands__	Other (describe):
b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters: Upon treatment the groundwater will be pumped into a manway which discharges directly into the Chelsea River. See attached figure for layout of discharge pathway.						
c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water: Figure 1 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 <u>SB (CSO)</u> _____						
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water <u>n/a</u> _____ 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)? Category 5 see below Is there a TMDL? Yes ☒ No _____ If yes, for which pollutant(s)?						

Priority Organics
Pathogens
Unionized Ammonia
Organic enrichment/low
DO
Oil and grease
Taste, odor and color

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 ☒		Figure 2
Has any consultation with the federal services been completed? Yes ___ No ☒ or is consultation underway? Yes ___ No ☒		
What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service (check one):		
a "no jeopardy" opinion? ___ or written concurrence ___ on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat?		
b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge?		
Yes ___ No ☒ Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes ___ No ☒		

7. Supplemental information. :

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

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

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

Facility/Site Name:	Gulf Oil Chelsea Terminal
Operator signature:	David Espy Digitally signed by David Espy DN: cn=David Espy, o=US, ou=ENSR, ou=PPS, email=despy@ensr.com Reason: I am approving this document Date: 2007.10.02 16:08:02 -04'00'
Title:	Department Manager, ENSR
Date:	10/2/07

MA DEP - Bureau of Waste Site Cleanup

Site Scoring Map: 500 feet & 0.5 Mile Radii

SITE NAME:
Gulf Terminal
281 Eastern Avenue
Chelsea, MA 02150
904597n 239486ew

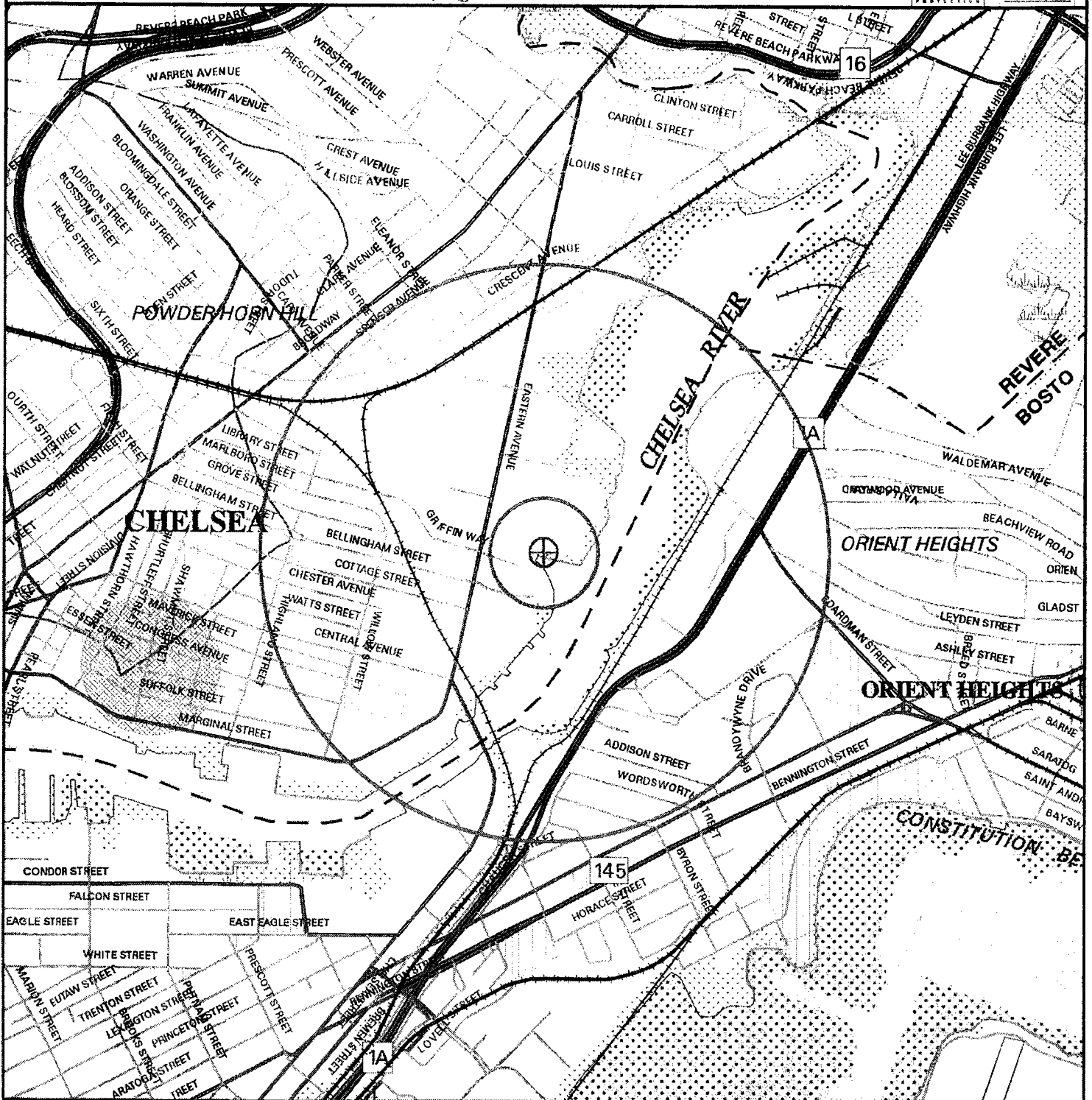
Site Location



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



Office of
 Geographic and
 Environmental
 Information



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; NWPA; Surface Water Supply Zone A

Hydrography: Water Features, Public Surface Water Supply

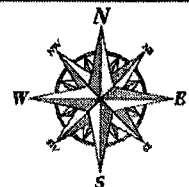
Wetlands: Fresh, Salt, NHESP Wetlands Habitat

Protected Open Space; ACEC

DEP Permitted Solid Waste Facilities; Certified Vernal Pools

SCALE 1:15000

0 1/2 1 KILOMETERS



July 27, 2007

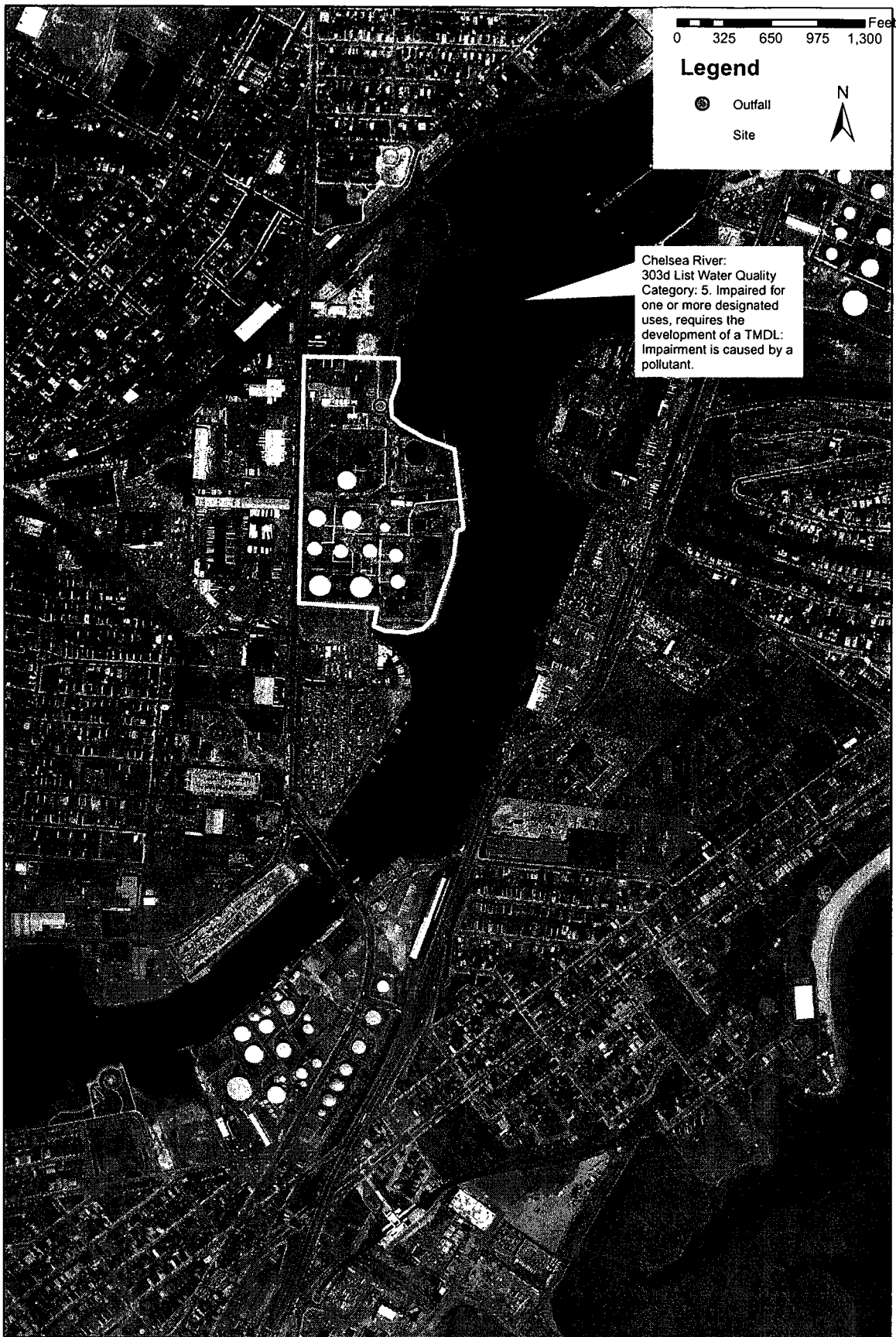


Figure 1: Site Location
Gulf Oil Terminal
281 Eastern Avenue
Chelsea, MA

SOURCE:
MassGIS
Data Portal:
2005
Orthophotography
Dataset
available at:
www.mass.gov

DATE:
OCT 2007

**PROJECT
NUMBER:**
02140322

ENSR

ENSR CORPORATION
2 Technology Park Drive
Westford, Massachusetts 01886-3140

**Drawn
by:** KM

**Checked
by:** JH

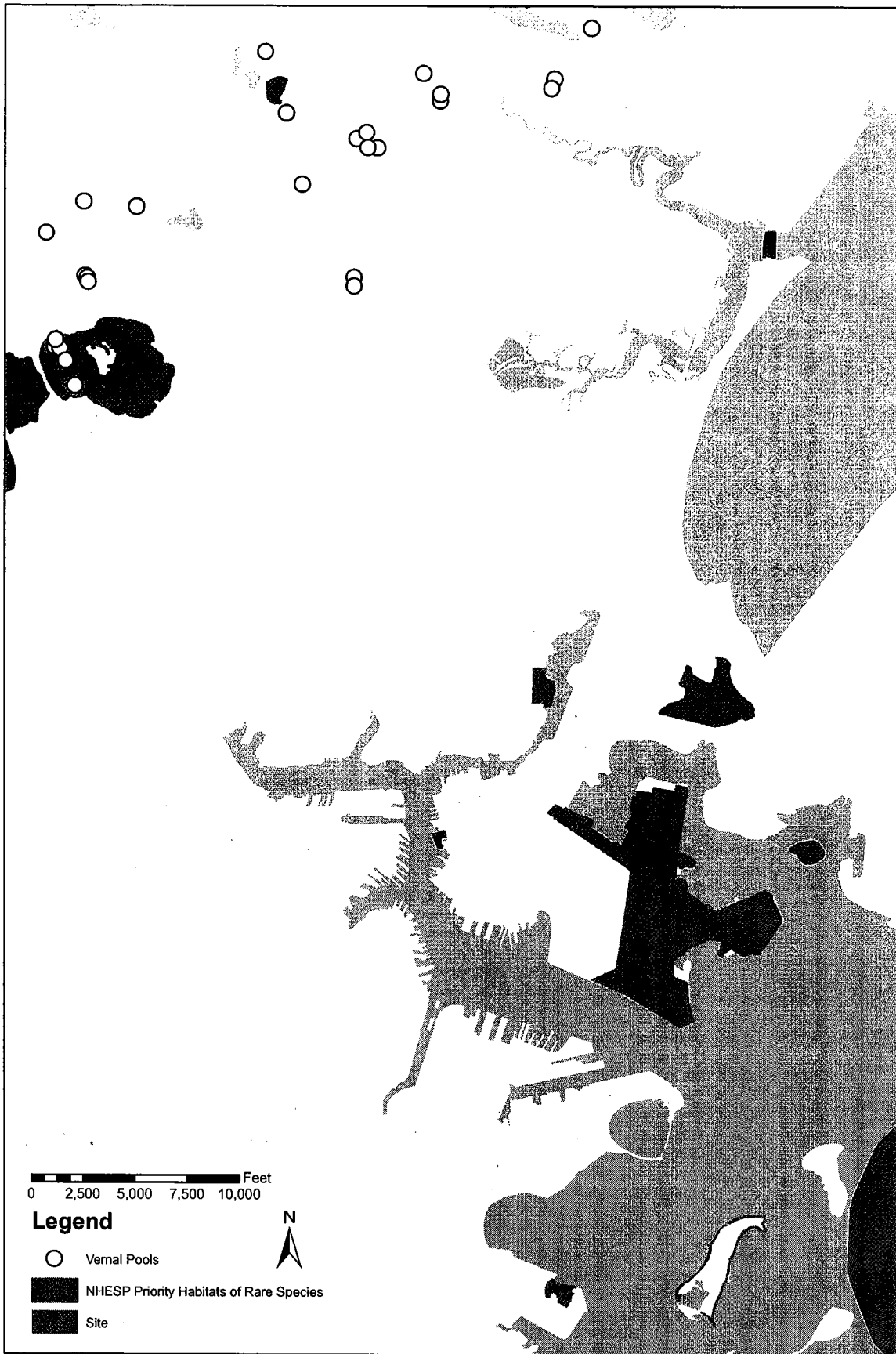


Figure 2: Critical Habitat
 Gulf Oil Terminal
 281 Eastern Avenue
 Chelsea, MA

SOURCE:
 NHESP Priority
 Habitats of Rare
 Species and
 NHESP Certified
 Vernal Pools
 available at:
www.mass.gov

DATE:
 OCT 2007

PROJECT
 NUMBER:
 02140322

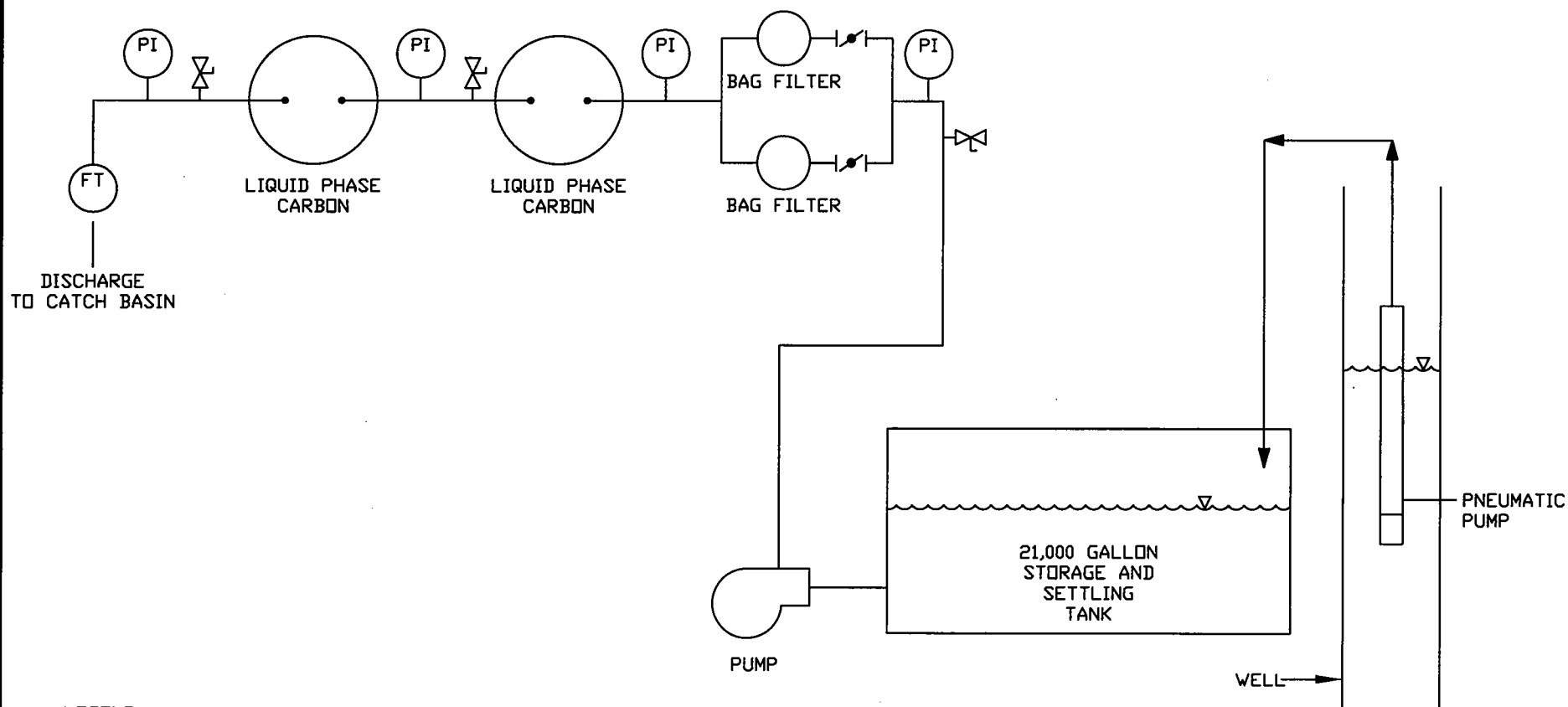
ENSR

ENSR CORPORATION

2 Technology Park Drive
 Westford, Massachusetts 01886-3140

Drawn
 by: KM

Checked
 by: JH



LEGEND

-  BUTTERFLY VALVE
-  SAMPLE PORT
-  PRESSURE INDICATOR
-  FLOW TOTALIZER

ENSR CORPORATION
 2 TECHNOLOGY PARK DRIVE
 WESTFORD, MASSACHUSETTS 01886
 PHONE: (978) 589-3000
 FAX: (978) 589-3100
 WEB: [HTTP://WWW.ENSRAECOM.COM](http://www.ensraecom.com)

C:\ENSR_PMS_CAD\tif

CARBON TREATMENT LAYOUT
 CHELSEA TERMINAL
 281 EASTERN AVENUE
 CHELSEA, MA

FIGURE NUMBER:

3

DRAWN BY:	DATE:	PROJECT NUMBER:	SHEET NUMBER:
K.P.B.	10/07	02140-322-900	3

Groundwater Analytical, Inc.
P.O.Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone: (508) 759-4441
FAX: (508) 759-4475

GROUNDWATER ANALYTICAL

e-mail

To:	Mark Newell	From:	e-mail reporting GWA
	ENSR International-Westford	Pages:	29
e-mail:	mnewell@ensr.aecom.com	Date:	09/28/2007 17:01:56
Re:	111162	CC:	

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply**

● Comments:

Final Project Report for Gulf Oil/2140-322-000, Lab ID 111162, Received
09-25-07

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Confidential

September 28, 2007

Mr. Mark Newell
ENSR International
2 Technology Park Drive
Westford, MA 01886

LABORATORY REPORT

Project: **Gulf Oil/2140-322-000**
Lab ID: **111162**
Received: **09-25-07**

Dear Mark:

Enclosed are the analytical results for the above referenced project. The project was processed for Rush 48 Hour turnaround.

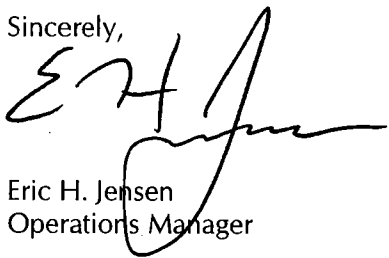
This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC or NVLAP standards, except as may be specifically noted, or described in the project narrative. The analytical results relate only to the samples received. This report may only be used or reproduced in its entirety.

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

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,



Eric H. Jensen
Operations Manager

EHJ/ajh
Enclosures

Sample Receipt Report

Project: **Gulf Oil/2140-322-000**
Client: **ENSR International**
Lab ID: **111162**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **09-25-07**

Temperature: **3.7'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-1	Tank 1		Aqueous	9/25/07 10:43	EPA 8260B Volatile Organics with Oxygenates			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C926628	10 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a	
C926654	10 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a	
C926656	10 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a	

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-2	Tank 2		Aqueous	9/25/07 11:00	EPA 8260B Volatile Organics with Oxygenates			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C926632	10 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a	
C926657	10 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a	
C926586	10 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a	

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-3	Tank 3		Aqueous	9/25/07 11:40	EPA 8260B Volatile Organics with Oxygenates			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C926629	10 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a	
C926630	10 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a	
C926631	10 mL Amber VOA Via	n/a	n/a	HCL	n/a	n/a	n/a	

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-4	Tank 1		Aqueous	9/25/07 10:43	EPA 1664 Hexane Extractable Material			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C926659	1 L Amber Glass	n/a	n/a	HCL	n/a	n/a	n/a	

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-5	Tank 2		Aqueous	9/25/07 11:00	EPA 1664 Hexane Extractable Material			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C926658	1 L Amber Glass	n/a	n/a	HCL	n/a	n/a	n/a	

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-6	Tank 3		Aqueous	9/25/07 11:40	EPA 1664 Hexane Extractable Material			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C926655	1 L Amber Glass	n/a	n/a	HCL	n/a	n/a	n/a	

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-10	Tank 1		Aqueous	9/25/07 10:43	SM 2540 D Total Suspended Solids SM 4500-H + B pH			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C1007712	250 mL Plastic	Proline	BX28411	None	n/a	n/a	n/a	

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-11	Tank 2		Aqueous	9/25/07 11:00	SM 2540 D Total Suspended Solids SM 4500-H + B pH			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C1007669	250 mL Plastic	Proline	BX28411	None	n/a	n/a	n/a	

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-12	Tank 3		Aqueous	9/25/07 11:40	SM 2540 D Total Suspended Solids SM 4500-H + B pH			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C1007713	250 mL Plastic	Proline	BX28411	None	n/a	n/a	n/a	

Sample Receipt Report (Continued)

Project: **Gulf Oil/2140-322-000**
Client: **ENSR International**
Lab ID: **111162**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **09-25-07**

Temperature: **3.7'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-13	Tank 1		Aqueous	9/25/07 10:43	EPA 8270C PAHs Low Level SIM			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C926604	1 L Glass	n/a	n/a	None	n/a	n/a	n/a	

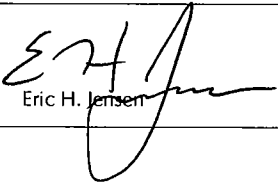
Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-14	Tank 2		Aqueous	9/25/07 11:00	EPA 8270C PAHs Low Level SIM			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C926605	1 L Glass	n/a	n/a	None	n/a	n/a	n/a	

Lab ID	Field ID		Matrix	Sampled	Method			Notes
111162-15	Tank 3		Aqueous	9/25/07 11:40	EPA 8270C PAHs Low Level SIM			
Con ID	Container	Vendor	QC Lot	Preserv	QC Lot	Prep	Ship	
C918732	1 L Glass	n/a	n/a	None	n/a	n/a	n/a	

Data Certification

Project: **Gulf Oil/2140-322-000**
Client: **ENSR International**

Lab ID: **111162**
Received: **09-25-07 18:06**

MA DEP Compendium of Analytical Methods					
Project Location: n/a		MA DEP RTN: n/a			
This Form provides certifications for the following data set:					
EPA 8260B:	111162-1,-2,-3				
EPA 8270C:	111162-13,-14,-15				
Sample Matrices:	Groundwater (X)	Soil/Sediment ()	Drinking Water ()	Other ()	
MCP SW-846	8260B (X)	8151A ()	8330 ()	6010B ()	7470A/1A ()
Methods Used	8270C (X)	8081A ()	VPH ()	6020A ()	9012A ² ()
As specified in MA DEP Compendium of Analytical Methods.	8082 ()	8021B ()	EPH ()	7000 S ³ ()	Other ()
(check all that apply)	1. List Release Tracking Number (RTN), if known. 2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method 3. S - SW-846 Methods 7000 Series. List individual method and analyte.				
An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.					
A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?				Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?				Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, <i>Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data</i> ?				Yes
D.	<u>VPH and EPH methods only:</u> Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?				Yes
A response to questions E and F below is required for "Presumptive Certainty" status.					
E.	Were all QC performance standards and recommendations for the specified methods achieved?				No
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?				No
All No answers are addressed in the attached Project Narrative.					
I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.					
Signature:			Position:	Operations Manager	
Printed Name:	Eric H. Jensen		Date:	09-28-07	

EPA Method 8260B Volatile Organics by GC/MS

Field ID: Tank 1
Project: Gulf Oil/2140-322-000
Client: ENSR International
Laboratory ID: 111162-01
Sampled: 09-25-07 10:43
Received: 09-25-07 18:06
Analyzed: 09-27-07 00:35
Analyst: CCT

Matrix: Aqueous
Container: 40 mL VOA Vial
Preservation: HCl/Cool
QC Batch ID: VM7-2636-W
Instrument ID: MS-7 Agilent 6890
Sample Volume: 25 mL
Dilution Factor: 1000

Page: 1 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	500
74-87-3	Chloromethane	BRL		ug/L	500
75-01-4	Vinyl Chloride	BRL		ug/L	500
74-83-9	Bromomethane	BRL		ug/L	500
75-00-3	Chloroethane	BRL		ug/L	500
75-69-4	Trichlorofluoromethane	BRL		ug/L	500
60-29-7	Diethyl Ether	BRL		ug/L	2000
75-35-4	1,1-Dichloroethene	BRL		ug/L	500
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5000
67-64-1	Acetone	BRL		ug/L	10000
75-15-0	Carbon Disulfide	BRL		ug/L	5000
75-09-2	Methylene Chloride	BRL		ug/L	2500
156-60-5	trans- 1,2-Dichloroethene	BRL		ug/L	500
1634-04-4	Methyl tert- butyl Ether (MTBE)	570		ug/L	500
75-34-3	1,1-Dichloroethane	BRL		ug/L	500
594-20-7	2,2-Dichloropropane	BRL		ug/L	500
156-59-2	cis- 1,2-Dichloroethene	BRL		ug/L	500
78-93-3	2-Butanone (MEK)	BRL		ug/L	5000
74-97-5	Bromochloromethane	BRL		ug/L	500
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5000
67-66-3	Chloroform	BRL		ug/L	500
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	500
56-23-5	Carbon Tetrachloride	BRL		ug/L	500
563-58-6	1,1-Dichloropropene	BRL		ug/L	500
71-43-2	Benzene	8,000		ug/L	500
107-06-2	1,2-Dichloroethane	BRL		ug/L	500
79-01-6	Trichloroethene	BRL		ug/L	500
78-87-5	1,2-Dichloropropane	BRL		ug/L	500
74-95-3	Dibromomethane	BRL		ug/L	500
75-27-4	Bromodichloromethane	BRL		ug/L	500
123-91-1	1,4-Dioxane	BRL		ug/L	500000
10061-01-5	cis- 1,3-Dichloropropene	BRL		ug/L	500
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5000
108-88-3	Toluene	41,000		ug/L	500
10061-02-6	trans- 1,3-Dichloropropene	BRL		ug/L	500
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	500
127-18-4	Tetrachloroethene	BRL		ug/L	500
142-28-9	1,3-Dichloropropane	BRL		ug/L	500
591-78-6	2-Hexanone	BRL		ug/L	5000
124-48-1	Dibromochloromethane	BRL		ug/L	500
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	500
108-90-7	Chlorobenzene	BRL		ug/L	500
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	500
100-41-4	Ethylbenzene	2,300		ug/L	500
108-38-3/106-42-3	meta- Xylene and para- Xylene	8,400		ug/L	500
95-47-6	ortho- Xylene	4,200		ug/L	500

EPA Method 8260B (Continued) Volatile Organics by GC/MS

Field ID: Tank 1
Project: Gulf Oil/2140-322-000
Client: ENSR International
Laboratory ID: 111162-01
Sampled: 09-25-07 10:43
Received: 09-25-07 18:06
Analyzed: 09-27-07 00:35
Analyst: CCT

Matrix: Aqueous
Container: 40 mL VOA Vial
Preservation: HCl/Cool
QC Batch ID: VM7-2636-W
Instrument ID: MS-7 Agilent 6890
Sample Volume: 25 mL
Dilution Factor: 1000

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
100-42-5	Styrene	BRL		ug/L	500
75-25-2	Bromoform	BRL		ug/L	500
98-82-8	Isopropylbenzene	BRL		ug/L	500
108-86-1	Bromobenzene	BRL		ug/L	500
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	500
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	500
103-65-1	n-Propylbenzene	BRL		ug/L	500
95-49-8	2-Chlorotoluene	BRL		ug/L	500
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	500
106-43-4	4-Chlorotoluene	BRL		ug/L	500
98-06-6	tert-Butylbenzene	BRL		ug/L	500
95-63-6	1,2,4-Trimethylbenzene	1,500		ug/L	500
135-98-8	sec-Butylbenzene	BRL		ug/L	500
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	500
99-87-6	4-Isopropyltoluene	BRL		ug/L	500
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	500
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	500
104-51-8	n-Butylbenzene	BRL		ug/L	500
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	500
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	500
87-68-3	Hexachlorobutadiene	BRL		ug/L	500
91-20-3	Naphthalene	BRL		ug/L	500
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	500
75-65-0	tert-Butyl Alcohol (TBA)	BRL		ug/L	20000
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	500
637-92-3	Ethyl tert-butyl Ether (ETBE)	BRL		ug/L	500
994-05-8	tert-Amyl Methyl Ether (TAME)	BRL		ug/L	500

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	11	112 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	11	108 %	70 - 130 %
Toluene-d ₈	10	12	120 %	70 - 130 %
4-Bromofluorobenzene	10	11	108 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

EPA Method 8260B Volatile Organics by GC/MS

Field ID: Tank 2
Project: Gulf Oil/2140-322-000
Client: ENSR International
Laboratory ID: 111162-02
Sampled: 09-25-07 11:00
Received: 09-25-07 18:06
Analyzed: 09-27-07 01:04
Analyst: CCT

Matrix: Aqueous
Container: 40 mL VOA Vial
Preservation: HCl/Cool
QC Batch ID: VM7-2636-W
Instrument ID: MS-7 Agilent 6890
Sample Volume: 25 mL
Dilution Factor: 1000

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	500
74-87-3	Chloromethane	BRL		ug/L	500
75-01-4	Vinyl Chloride	BRL		ug/L	500
74-83-9	Bromomethane	BRL		ug/L	500
75-00-3	Chloroethane	BRL		ug/L	500
75-69-4	Trichlorofluoromethane	BRL		ug/L	500
60-29-7	Diethyl Ether	BRL		ug/L	2000
75-35-4	1,1-Dichloroethene	BRL		ug/L	500
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5000
67-64-1	Acetone	BRL		ug/L	10000
75-15-0	Carbon Disulfide	BRL		ug/L	5000
75-09-2	Methylene Chloride	BRL		ug/L	2500
156-60-5	trans- 1,2-Dichloroethene	BRL		ug/L	500
1634-04-4	Methyl tert- butyl Ether (MTBE)	1,700		ug/L	500
75-34-3	1,1-Dichloroethane	BRL		ug/L	500
594-20-7	2,2-Dichloropropane	BRL		ug/L	500
156-59-2	cis- 1,2-Dichloroethene	BRL		ug/L	500
78-93-3	2-Butanone (MEK)	BRL		ug/L	5000
74-97-5	Bromochloromethane	BRL		ug/L	500
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5000
67-66-3	Chloroform	BRL		ug/L	500
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	500
56-23-5	Carbon Tetrachloride	BRL		ug/L	500
563-58-6	1,1-Dichloropropene	BRL		ug/L	500
71-43-2	Benzene	4,900		ug/L	500
107-06-2	1,2-Dichloroethane	BRL		ug/L	500
79-01-6	Trichloroethene	BRL		ug/L	500
78-87-5	1,2-Dichloropropane	BRL		ug/L	500
74-95-3	Dibromomethane	BRL		ug/L	500
75-27-4	Bromodichloromethane	BRL		ug/L	500
123-91-1	1,4-Dioxane	BRL		ug/L	500000
10061-01-5	cis- 1,3-Dichloropropene	BRL		ug/L	500
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5000
108-88-3	Toluene	45,000		ug/L	500
10061-02-6	trans- 1,3-Dichloropropene	BRL		ug/L	500
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	500
127-18-4	Tetrachloroethene	BRL		ug/L	500
142-28-9	1,3-Dichloropropane	BRL		ug/L	500
591-78-6	2-Hexanone	BRL		ug/L	5000
124-48-1	Dibromochloromethane	BRL		ug/L	500
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	500
108-90-7	Chlorobenzene	BRL		ug/L	500
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	500
100-41-4	Ethylbenzene	3,300		ug/L	500
108-38-3/106-42-3	meta- Xylene and para- Xylene	11,000		ug/L	500
95-47-6	ortho- Xylene	5,700		ug/L	500

**EPA Method 8260B (Continued)
Volatile Organics by GC/MS**

Field ID: Tank 2
Project: Gulf Oil/2140-322-000
Client: ENSR International
Laboratory ID: 111162-02
Sampled: 09-25-07 11:00
Received: 09-25-07 18:06
Analyzed: 09-27-07 01:04
Analyst: CCT

Matrix: Aqueous
Container: 40 mL VOA Vial
Preservation: HCl/Cool
QC Batch ID: VM7-2636-W
Instrument ID: MS-7 Agilent 6890
Sample Volume: 25 mL
Dilution Factor: 1000

Page: 2 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
100-42-5	Styrene	BRL		ug/L	500
75-25-2	Bromoform	BRL		ug/L	500
98-82-8	Isopropylbenzene	BRL		ug/L	500
108-86-1	Bromobenzene	BRL		ug/L	500
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	500
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	500
103-65-1	n-Propylbenzene	BRL		ug/L	500
95-49-8	2-Chlorotoluene	BRL		ug/L	500
108-67-8	1,3,5-Trimethylbenzene	520		ug/L	500
106-43-4	4-Chlorotoluene	BRL		ug/L	500
98-06-6	tert-Butylbenzene	BRL		ug/L	500
95-63-6	1,2,4-Trimethylbenzene	2,300		ug/L	500
135-98-8	sec-Butylbenzene	BRL		ug/L	500
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	500
99-87-6	4-Isopropyltoluene	BRL		ug/L	500
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	500
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	500
104-51-8	n-Butylbenzene	BRL		ug/L	500
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	500
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	500
87-68-3	Hexachlorobutadiene	BRL		ug/L	500
91-20-3	Naphthalene	610		ug/L	500
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	500
75-65-0	tert-Butyl Alcohol (TBA)	BRL		ug/L	20000
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	500
637-92-3	Ethyl tert-butyl Ether (ETBE)	BRL		ug/L	500
994-05-8	tert-Amyl Methyl Ether (TAME)	BRL		ug/L	500

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	12	115 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	11	114 %	70 - 130 %
Toluene-d ₈	10	12	122 %	70 - 130 %
4-Bromofluorobenzene	10	11	110 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

EPA Method 8260B Volatile Organics by GC/MS

Field ID: Tank 3
Project: Gulf Oil/2140-322-000
Client: ENSR International
Laboratory ID: 111162-03
Sampled: 09-25-07 11:40
Received: 09-25-07 18:06
Analyzed: 09-27-07 01:32
Analyst: CCT

Matrix: Aqueous
Container: 40 mL VOA Vial
Preservation: HCl/Cool
QC Batch ID: VM7-2636-W
Instrument ID: MS-7 Agilent 6890
Sample Volume: 25 mL
Dilution Factor: 5000

Page: 1 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	2500
74-87-3	Chloromethane	BRL		ug/L	2500
75-01-4	Vinyl Chloride	BRL		ug/L	2500
74-83-9	Bromomethane	BRL		ug/L	2500
75-00-3	Chloroethane	BRL		ug/L	2500
75-69-4	Trichlorofluoromethane	BRL		ug/L	2500
60-29-7	Diethyl Ether	BRL		ug/L	10000
75-35-4	1,1-Dichloroethene	BRL		ug/L	2500
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	25000
67-64-1	Acetone	BRL		ug/L	50000
75-15-0	Carbon Disulfide	BRL		ug/L	25000
75-09-2	Methylene Chloride	BRL		ug/L	13000
156-60-5	trans- 1,2-Dichloroethene	BRL		ug/L	2500
1634-04-4	Methyl tert- butyl Ether (MTBE)	140,000		ug/L	2500
75-34-3	1,1-Dichloroethane	BRL		ug/L	2500
594-20-7	2,2-Dichloropropane	BRL		ug/L	2500
156-59-2	cis- 1,2-Dichloroethene	BRL		ug/L	2500
78-93-3	2-Butanone (MEK)	BRL		ug/L	25000
74-97-5	Bromochloromethane	BRL		ug/L	2500
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	25000
67-66-3	Chloroform	BRL		ug/L	2500
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	2500
56-23-5	Carbon Tetrachloride	BRL		ug/L	2500
563-58-6	1,1-Dichloropropene	BRL		ug/L	2500
71-43-2	Benzene	3,600		ug/L	2500
107-06-2	1,2-Dichloroethane	BRL		ug/L	2500
79-01-6	Trichloroethene	BRL		ug/L	2500
78-87-5	1,2-Dichloropropane	BRL		ug/L	2500
74-95-3	Dibromomethane	BRL		ug/L	2500
75-27-4	Bromodichloromethane	BRL		ug/L	2500
123-91-1	1,4-Dioxane	BRL		ug/L	2500000
10061-01-5	cis- 1,3-Dichloropropene	BRL		ug/L	2500
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	25000
108-88-3	Toluene	34,000		ug/L	2500
10061-02-6	trans- 1,3-Dichloropropene	BRL		ug/L	2500
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	2500
127-18-4	Tetrachloroethene	BRL		ug/L	2500
142-28-9	1,3-Dichloropropane	BRL		ug/L	2500
591-78-6	2-Hexanone	BRL		ug/L	25000
124-48-1	Dibromochloromethane	BRL		ug/L	2500
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	2500
108-90-7	Chlorobenzene	BRL		ug/L	2500
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	2500
100-41-4	Ethylbenzene	BRL		ug/L	2500
108-38-3/106-42-3	meta- Xylene and para- Xylene	8,200		ug/L	2500
95-47-6	ortho- Xylene	4,100		ug/L	2500

EPA Method 8260B (Continued) Volatile Organics by GC/MS

Field ID: **Tank 3**
Project: **Gulf Oil/2140-322-000**
Client: **ENSR International**
Laboratory ID: **111162-03**
Sampled: **09-25-07 11:40**
Received: **09-25-07 18:06**
Analyzed: **09-27-07 01:32**
Analyst: **CCT**

Matrix: **Aqueous**
Container: **40 mL VOA Vial**
Preservation: **HCl/Cool**
QC Batch ID: **VM7-2636-W**
Instrument ID: **MS-7 Agilent 6890**
Sample Volume: **25 mL**
Dilution Factor: **5000**

Page: 2 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
100-42-5	Styrene	BRL		ug/L	2500
75-25-2	Bromoform	BRL		ug/L	2500
98-82-8	Isopropylbenzene	BRL		ug/L	2500
108-86-1	Bromobenzene	BRL		ug/L	2500
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	2500
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	2500
103-65-1	n-Propylbenzene	BRL		ug/L	2500
95-49-8	2-Chlorotoluene	BRL		ug/L	2500
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	2500
106-43-4	4-Chlorotoluene	BRL		ug/L	2500
98-06-6	tert-Butylbenzene	BRL		ug/L	2500
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	2500
135-98-8	sec-Butylbenzene	BRL		ug/L	2500
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	2500
99-87-6	4-Isopropyltoluene	BRL		ug/L	2500
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	2500
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	2500
104-51-8	n-Butylbenzene	BRL		ug/L	2500
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	2500
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	2500
87-68-3	Hexachlorobutadiene	BRL		ug/L	2500
91-20-3	Naphthalene	BRL		ug/L	2500
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	2500
75-65-0	tert-Butyl Alcohol (TBA)	BRL		ug/L	100000
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	2500
637-92-3	Ethyl tert-butyl Ether (ETBE)	BRL		ug/L	2500
994-05-8	tert-Amyl Methyl Ether (TAME)	BRL		ug/L	2500

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	12	116 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	12	116 %	70 - 130 %
Toluene-d ₈	10	12	120 %	70 - 130 %
4-Bromofluorobenzene	10	11	107 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

Inorganic Chemistry

Field ID: **Tank 1**

Project: **Gulf Oil/2140-322-000**

Client: **ENSR International**

Matrix: **Aqueous**

Received: **09-25-07 18:06**

Lab ID: **111162-04** Sampled: **09-25-07 10:43** Container: **1 L Amber Glass** Preservation: **H2SO4/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Oil and Grease, Total	BRL	mg/L	5	1	1000 mL	09-26-07 09:00	HO-0322-W	EPA 1664	2	KJR

Lab ID: **111162-10** Sampled: **09-25-07 10:43** Container: **250 mL Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	25	mg/L	10	5	100 mL	09-26-07 14:19	TSS-1406-W	SM 2540 D	2	KG
pH	7.1	pH	NA	1	50 mL	09-25-07 20:52	PH-2439-W	SM 4500-H + B	1	LD

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

RL Reporting Limit.

DF Dilution Factor.

1 Instrument ID: Accumet AR50

2 Instrument ID: Mettler AT 200 Balance

Inorganic Chemistry

Field ID: **Tank 2**
 Project: **Gulf Oil/2140-322-000**
 Client: **ENSR International**

Matrix: **Aqueous**
 Received: **09-25-07 18:06**

Lab ID: **111162-05** Sampled: **09-25-07 11:00** Container: **1 L Amber Glass** Preservation: **H2SO4/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Oil and Grease, Total	BRL	mg/L	5	1	1000 mL	09-26-07 09:00	HO-0322-W	EPA 1664	2	KJR

Lab ID: **111162-11** Sampled: **09-25-07 11:00** Container: **250 mL Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	26	mg/L	10	5	100 mL	09-26-07 14:19	TSS-1406-W	SM 2540 D	2	KG
pH	7.1	pH	NA	1	50 mL	09-25-07 20:59	PH-2439-W	SM 4500-H + B	1	LD

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations:

- BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
- RL Reporting Limit.
- DF Dilution Factor.
- 1 Instrument ID: Accumet AR50
- 2 Instrument ID: Mettler AT 200 Balance

Inorganic Chemistry

Field ID: **Tank 3**
Project: **Gulf Oil/2140-322-000**
Client: **ENSR International**

Matrix: **Aqueous**
Received: **09-25-07 18:06**

Lab ID: **111162-06** Sampled: **09-25-07 11:40** Container: **1 L Amber Glass** Preservation: **H2SO4/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Oil and Grease, Total	BRL	mg/L	5	1	1000 mL	09-26-07 09:00	HO-0322-W	EPA 1664	2	KJR

Lab ID: **111162-12** Sampled: **09-25-07 11:40** Container: **250 mL Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	23	mg/L	10	5	100 mL	09-26-07 14:19	TSS-1406-W	SM 2540 D	2	KG
pH	7.2	pH	NA	1	50 mL	09-25-07 21:04	PH-2439-W	SM 4500-H + B	1	LD

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

RL Reporting Limit.

DF Dilution Factor.

1 Instrument ID: Accumet AR50

2 Instrument ID: Mettler AT 200 Balance

**EPA Method 8270C
Polynuclear Aromatic Hydrocarbons by GC/MS-SIM**

Field ID: **Tank 1**
Project: **Gulf Oil/2140-322-000**
Client: **ENSR International**

Laboratory ID: **111162-13**
Sampled: **09-25-07 10:43**
Received: **09-25-07 18:06**
Extracted: **09-26-07 16:30**
Analyzed: **09-28-07 10:31**
Analyst: **MJB**

Matrix: **Aqueous**
Container: **1 L Glass**
Preservation: **Cool**

QC Batch ID: **SV-2141-L**
Instrument ID: **MS-6 HP 6890**
Sample Volume: **790 mL**
Final Volume: **1 mL**
Dilution Factor: **25**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	280		ug/L	16
91-57-6	2-Methylnaphthalene	91		ug/L	16
208-96-8	Acenaphthylene	BRL		ug/L	16
83-32-9	Acenaphthene	BRL		ug/L	16
86-73-7	Fluorene	BRL		ug/L	16
85-01-8	Phenanthrene	BRL		ug/L	16
120-12-7	Anthracene	BRL		ug/L	16
206-44-0	Fluoranthene	BRL		ug/L	16
129-00-0	Pyrene	BRL		ug/L	16
56-55-3	Benzo[a]anthracene	BRL		ug/L	3.2
218-01-9	Chrysene	BRL		ug/L	3.2
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	3.2
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	3.2
50-32-8	Benzo[a]pyrene	BRL		ug/L	3.2
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	3.2
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	3.2
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	3.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	13	na	d	30 - 130 %
2-Fluorobiphenyl	13	na	d	30 - 130 %
Terphenyl-d14	13	na	d	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3520C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
d Surrogate recovery not measurable due to required sample dilution.

**EPA Method 8270C
Polynuclear Aromatic Hydrocarbons by GC/MS-SIM**

Field ID: **Tank 2**
Project: **Gulf Oil/2140-322-000**
Client: **ENSR International**

Laboratory ID: **111162-14**
Sampled: **09-25-07 11:00**
Received: **09-25-07 18:06**
Extracted: **09-26-07 16:30**
Analyzed: **09-28-07 09:10**
Analyst: **MJB**

Matrix: **Aqueous**
Container: **1 L Glass**
Preservation: **Cool**

QC Batch ID: **SV-2141-L**
Instrument ID: **MS-6 HP 6890**
Sample Volume: **790 mL**
Final Volume: **1 mL**
Dilution Factor: **25**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	340		ug/L	16
91-57-6	2-Methylnaphthalene	120		ug/L	16
208-96-8	Acenaphthylene	BRL		ug/L	16
83-32-9	Acenaphthene	BRL		ug/L	16
86-73-7	Fluorene	BRL		ug/L	16
85-01-8	Phenanthrene	BRL		ug/L	16
120-12-7	Anthracene	BRL		ug/L	16
206-44-0	Fluoranthene	BRL		ug/L	16
129-00-0	Pyrene	BRL		ug/L	16
56-55-3	Benzo[a]anthracene	BRL		ug/L	3.2
218-01-9	Chrysene	BRL		ug/L	3.2
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	3.2
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	3.2
50-32-8	Benzo[a]pyrene	BRL		ug/L	3.2
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	3.2
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	3.2
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	3.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	13	na	d	30 - 130 %
2-Fluorobiphenyl	13	na	d	30 - 130 %
Terphenyl-d14	13	na	d	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3520C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
d Surrogate recovery not measurable due to required sample dilution.

EPA Method 8270C Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID: **Tank 3**
Project: **Gulf Oil/2140-322-000**
Client: **ENSR International**
Laboratory ID: **111162-15**
Sampled: **09-25-07 11:40**
Received: **09-25-07 18:06**
Extracted: **09-26-07 16:30**
Analyzed: **09-28-07 09:50**
Analyst: **MJB**

Matrix: **Aqueous**
Container: **1 L Glass**
Preservation: **Cool**
QC Batch ID: **SV-2141-L**
Instrument ID: **MS-6 HP 6890**
Sample Volume: **790 mL**
Final Volume: **1 mL**
Dilution Factor: **25**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	340		ug/L	16
91-57-6	2-Methylnaphthalene	120		ug/L	16
208-96-8	Acenaphthylene	BRL		ug/L	16
83-32-9	Acenaphthene	BRL		ug/L	16
86-73-7	Fluorene	BRL		ug/L	16
85-01-8	Phenanthrene	BRL		ug/L	16
120-12-7	Anthracene	BRL		ug/L	16
206-44-0	Fluoranthene	BRL		ug/L	16
129-00-0	Pyrene	BRL		ug/L	16
56-55-3	Benzo[a]anthracene	BRL		ug/L	3.2
218-01-9	Chrysene	BRL		ug/L	3.2
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	3.2
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	3.2
50-32-8	Benzo[a]pyrene	BRL		ug/L	3.2
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	3.2
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	3.2
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	3.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	13	na	d	30 - 130 %
2-Fluorobiphenyl	13	na	d	30 - 130 %
Terphenyl-d14	13	na	d	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3520C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.
d Surrogate recovery not measurable due to required sample dilution.

Project Narrative

Project: **Gulf Oil/2140-322-000**
Client: **ENSR International**

Lab ID: **111162**
Received: **09-25-07 18:06**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. Samples 111162-13 through -15 was analyzed by EPA Method 8270 PAH Low Level per Mark Newell on 09-26-07.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1. EPA 8260B Note: Samples 111162-01,-02, and -03. Samples were diluted prior to analysis. Dilution was required to keep all target analytes within calibration.
2. EPA 8270C Note: Samples 111162-13,-14, and -15. Samples were analyzed for only selected polynuclear aromatic hydrocarbons (PAH) target analytes, as requested by client.
3. EPA 8270C PAH Non-conformance: Samples 111162-13 through -15. Sample did not have measureable surrogate recoveries due to required sample dilution.
4. EPA 8270C PAH Note: Samples 111162-13 through -15. Sample were diluted prior to analysis. Dilution was required to keep all target analytes within calibration.

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

Govt Chelsea

Project Name: Gulf 0111	Firm: ENSR
Project Number: 2140-322000	Address: 2 Technology Park Drive
Sampler Name: M. Newell	City / State / Zip: Westford MA
Project Manager: M. Newell	Telephone: 978-589-3000

☐ STANDARD (10 Business Days)
☐ PRIORITY (5 Business Days)
☒ RUSH (RAN- 809)
 (Rush requires Rush Authorization Number)

REAGENT	IMPUS	SOWA	OPTIONS
ASBON TOL-ATHC	☐ 504		☐ TIC Scan
POWER			
1. 80000 Records	☐ 502 Alt 00		
1. 000000 Mass/Charge			
1. 000000 Normal			
1. 0020	☐ 503		☐ ACD Only ☐ BAC Only ☐ TIC Scan
1. 00700 TMS only	☐ 505 PMU only		
1. 000000 Peaks	☐ 502 Peaks/4	☐ 506	
1. 00000 Peaks	☐ 503 Peaks		
1. 0100 Peaks		☐ 504.5	
1. 0100 Peaks	☐ 505		
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1. 0100 Peaks	☐ 581		
1			

INSTRUCTIONS: Use separate line for each container (except replicates).

[illegible]

CHAIN-OF-CUSTODY RECORD

☐ YES ☐ NO MCP Data Certification required.

☐ YES ☐ NO MCP Drinking Water Sample included.
(Volatile analyses require duplicate collection and Trip Blanks).

☐ Analyze Duplicates and Trips Blanks only if positive results.

☐ YES ☒ NO RCP Data Certification required.

Signature: _____

Regulatory Program		
State	Standard	Deliverables
☐ CT	☐ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-2	☐ MWRA
☐ MA	☐ NY STARS	☐ _____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ Other	_____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. Each MS, MSD and Sample Duplicate requires an additional sample aliquot.

Project Specific QC Required	Selection of QC Sample
☐ Sample Duplicate	☐ Please use sample
☐ Matrix Spike	
☐ Matrix Spike Duplicate	

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof				
Relinquished by Sampler: <i>Mad M</i>	Date 9/29/07	Time 1:00	Received by: <i>Joe Cleary</i>	Receipt Temperature: 3.7 See Relinquished & Chain of Custody
Relinquished by: <i>Joe Cleary</i>	Date 9/29/07	Time 1:00	Received by: <i>Samuel Cleary</i>	Container Count: 15
Relinquished by:	Date	Time	Received by: Laboratory	Shipping Airbill Number
Method of Shipment: ☒ Ground Courier ☐ Express Mail ☐ Federal Express				Custody Seal Number

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans*, US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste*, US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

**Quality Control Report
Laboratory Control Sample**Category: **Inorganic Chemistry**Matrix: **Aqueous**

Analyte	Units	Spiked	Measured	Recovery	QC Limits	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	mg/L	89	94	106 %	80 - 120 %	09-26-07 14:19	TSS-1406-W	SM 2540 D	2	KLG
pH	pH	7.0	7.0	100 %	80 - 120 %	09-25-07 20:30	PH-2439-W	SM 4500-H+ B	1	LD
Oil and Grease, Total	mg/L	40	34	84 %	78 - 114 %	09-26-07 09:00	HO-0322-W	EPA 1664	2	KJR

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

- 1 Instrument ID: Accumet AR50
- 2 Instrument ID: Mettler AT 200 Balance

**Quality Control Report
Method Blank**Category: **Inorganic Chemistry**Matrix: **Aqueous**

Analyte	Result	Units	RL	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	09-26-07 14:19	TSS-1406-W	SM 2540 D	1	KLG
Oil and Grease, Total	BRL	mg/L	5	09-26-07 09:00	HO-0322-W	EPA 1664	1	KJR

Method Reference: Methods for Chemical Analysis of Water and Wastes, US EPA, EPA-600/4-790-020 (Revised 1983), and Methods for the Determination of Inorganic Substances in Environmental Samples, US EPA, EPA/600/R-93/100 (1993), and Standard Methods for the Examination of Water and Wastewater, APHA, Twentieth Edition (1998), and Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

RL Reporting Limit.

1 Instrument ID: Mettler AT 200 Balance

Quality Control Report Laboratory Control Samples

Category: EPA Method 8260B
QC Batch ID: VM7-2636-WL
Matrix: Aqueous
Units: ug/L

LCS
Instrument ID: MS-7 Agilent 6890
Analyzed: 09-26-07 20:02
Analyst: CCT

LCSD
Instrument ID: MS-7 Agilent 6890
Analyzed: 09-26-07 20:48
Analyst: CCT

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CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
75-71-8	Dichlorodifluoromethane	10	9.9	99 %	10	9.1	91 %	9 %	70 - 130 %	25 %
74-87-3	Chloromethane	10	10	102 %	10	9.4	94 %	8 %	70 - 130 %	25 %
75-01-4	Vinyl Chloride	10	11	107 %	10	9.7	97 %	10 %	70 - 130 %	25 %
74-83-9	Bromomethane	10	10	102 %	10	9.4	94 %	7 %	70 - 130 %	25 %
75-00-3	Chloroethane	10	9.6	96 %	10	9.1	91 %	5 %	70 - 130 %	25 %
75-69-4	Trichlorofluoromethane	10	10	103 %	10	9.3	93 %	11 %	70 - 130 %	25 %
60-29-7	Diethyl Ether	20	19	95 %	20	20	98 %	3 %	70 - 130 %	25 %
75-35-4	1,1-Dichloroethene	10	10	103 %	10	9.9	99 %	4 %	70 - 130 %	25 %
76-13-1	1,1,2-Trichlorotrifluoroethane	20	21	106 %	20	19	96 %	10 %	70 - 130 %	25 %
67-64-1	Acetone	20	22	108 %	20	22	110 %	2 %	70 - 130 %	25 %
75-15-0	Carbon Disulfide	20	18	92 %	20	17	86 %	6 %	70 - 130 %	25 %
75-09-2	Methylene Chloride	10	10	101 %	10	10	101 %	0 %	70 - 130 %	25 %
156-60-5	trans- 1,2-Dichloroethene	10	10	102 %	10	9.6	96 %	7 %	70 - 130 %	25 %
1634-04-4	Methyl tert- butyl Ether (MTBE)	10	11	106 %	10	11	107 %	2 %	70 - 130 %	25 %
75-34-3	1,1-Dichloroethane	10	10	100 %	10	9.6	96 %	4 %	70 - 130 %	25 %
594-20-7	2,2-Dichloropropane	10	11	106 %	10	9.3	93 %	13 %	70 - 130 %	25 %
156-59-2	cis- 1,2-Dichloroethene	10	11	109 %	10	11	106 %	3 %	70 - 130 %	25 %
78-93-3	2-Butanone (MEK)	20	17	85 %	20	18	90 %	6 %	70 - 130 %	25 %
74-97-5	Bromochloromethane	10	12	118 %	10	11	114 %	3 %	70 - 130 %	25 %
109-99-9	Tetrahydrofuran (THF)	20	19	95 %	20	18	88 %	8 %	70 - 130 %	25 %
67-66-3	Chloroform	10	10	105 %	10	10	102 %	3 %	70 - 130 %	25 %
71-55-6	1,1,1-Trichloroethane	10	10	103 %	10	9.3	93 %	10 %	70 - 130 %	25 %
56-23-5	Carbon Tetrachloride	10	11	107 %	10	9.9	99 %	8 %	70 - 130 %	25 %
563-58-6	1,1-Dichloropropene	10	10	103 %	10	9.6	96 %	7 %	70 - 130 %	25 %
71-43-2	Benzene	10	10	104 %	10	10	101 %	3 %	70 - 130 %	25 %
107-06-2	1,2-Dichloroethane	10	11	112 %	10	10	100 %	11 %	70 - 130 %	25 %
79-01-6	Trichloroethene	10	11	105 %	10	10	103 %	2 %	70 - 130 %	25 %
78-87-5	1,2-Dichloropropane	10	11	107 %	10	10	104 %	2 %	70 - 130 %	25 %
74-95-3	Dibromomethane	10	11	111 %	10	11	109 %	2 %	70 - 130 %	25 %
75-27-4	Bromodichloromethane	10	11	114 %	10	11	113 %	1 %	70 - 130 %	25 %
123-91-1	1,4-Dioxane	200	220	109 %	200	230	114 %	4 %	70 - 130 %	25 %
10061-01-5	cis- 1,3-Dichloropropene	10	11	110 %	10	11	108 %	1 %	70 - 130 %	25 %
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	20	102 %	20	20	100 %	2 %	70 - 130 %	25 %
108-88-3	Toluene	10	11	108 %	10	11	105 %	3 %	70 - 130 %	25 %
10061-02-6	trans- 1,3-Dichloropropene	10	11	109 %	10	11	108 %	1 %	70 - 130 %	25 %
79-00-5	1,1,2-Trichloroethane	10	12	115 %	10	11	114 %	1 %	70 - 130 %	25 %
127-18-4	Tetrachloroethene	10	12	116 %	10	11	109 %	5 %	70 - 130 %	25 %
142-28-9	1,3-Dichloropropane	10	11	115 %	10	11	114 %	1 %	70 - 130 %	25 %
591-78-6	2-Hexanone	20	22	111 %	20	21	106 %	5 %	70 - 130 %	25 %
124-48-1	Dibromochloromethane	10	13	126 %	10	12	123 %	3 %	70 - 130 %	25 %
106-93-4	1,2-Dibromoethane (EDB)	10	12	118 %	10	12	117 %	1 %	70 - 130 %	25 %
108-90-7	Chlorobenzene	10	11	112 %	10	11	108 %	4 %	70 - 130 %	25 %
630-20-6	1,1,1,2-Tetrachloroethane	10	12	118 %	10	11	112 %	5 %	70 - 130 %	25 %
100-41-4	Ethylbenzene	10	11	114 %	10	11	108 %	6 %	70 - 130 %	25 %
108-38-3/106-42-3	meta- Xylene and para- Xylene	20	23	116 %	20	22	109 %	6 %	70 - 130 %	25 %
95-47-6	ortho- Xylene	10	11	115 %	10	11	111 %	3 %	70 - 130 %	25 %
100-42-5	Styrene	10	12	123 %	10	12	119 %	3 %	70 - 130 %	25 %
75-25-2	Bromoform	10	13	129 %	10	12	125 %	4 %	70 - 130 %	25 %
98-82-8	Isopropylbenzene	10	10	102 %	10	9.9	99 %	3 %	70 - 130 %	25 %

Quality Control Report Laboratory Control Samples

Category: **EPA Method 8260B**
QC Batch ID: **VM7-2636-WL**
Matrix: **Aqueous**
Units: **ug/L**

LCS
Instrument ID: **MS-7 Agilent 6890**
Analyzed: **09-26-07 20:02**
Analyst: **CCT**

LCSD
Instrument ID: **MS-7 Agilent 6890**
Analyzed: **09-26-07 20:48**
Analyst: **CCT**

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CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
108-86-1	Bromobenzene	10	11	113 %	10	11	111 %	2 %	70 - 130 %	25%
79-34-5	1,1,2,2-Tetrachloroethane	10	10	105 %	10	11	105 %	0 %	70 - 130 %	25%
96-18-4	1,2,3-Trichloropropane	10	13	128 %	10	13	125 %	2 %	70 - 130 %	25%
103-65-1	n-Propylbenzene	10	10	104 %	10	9.9	99 %	5 %	70 - 130 %	25%
95-49-8	2-Chlorotoluene	10	11	105 %	10	10	104 %	1 %	70 - 130 %	25%
108-67-8	1,3,5-Trimethylbenzene	10	11	108 %	10	10	103 %	4 %	70 - 130 %	25%
106-43-4	4-Chlorotoluene	10	11	108 %	10	10	104 %	4 %	70 - 130 %	25%
98-06-6	tert-Butylbenzene	10	11	107 %	10	10	102 %	4 %	70 - 130 %	25%
95-63-6	1,2,4-Trimethylbenzene	10	11	110 %	10	11	106 %	4 %	70 - 130 %	25%
135-98-8	sec-Butylbenzene	10	10	103 %	10	9.7	97 %	6 %	70 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	10	11	107 %	10	10	103 %	4 %	70 - 130 %	25%
99-87-6	4-Isopropyltoluene	10	11	107 %	10	10	101 %	5 %	70 - 130 %	25%
106-46-7	1,4-Dichlorobenzene	10	11	108 %	10	10	105 %	3 %	70 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	10	11	110 %	10	11	108 %	1 %	70 - 130 %	25%
104-51-8	n-Butylbenzene	10	11	106 %	10	9.9	99 %	7 %	70 - 130 %	25%
96-12-8	1,2-Dibromo-3-chloropropane	10	11	109 %	10	11	114 %	4 %	70 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	10	11	114 %	10	11	109 %	4 %	70 - 130 %	25%
87-68-3	Hexachlorobutadiene	10	11	114 %	10	10	105 %	8 %	70 - 130 %	25%
91-20-3	Naphthalene	10	11	114 %	10	11	112 %	2 %	70 - 130 %	25%
87-61-6	1,2,3-Trichlorobenzene	10	13	126 %	10	13	126 %	1 %	70 - 130 %	25%
75-65-0	tert-Butyl Alcohol (TBA)	200	170	86 %	200	180	88 %	3 %	70 - 130 %	25%
108-20-3	Di-isopropyl Ether (DIPE)	10	9.2	92 %	10	9.2	92 %	0 %	70 - 130 %	25%
637-92-3	Ethyl tert-butyl Ether (ETBE)	10	8.9	89 %	10	8.9	89 %	0 %	70 - 130 %	25%
994-05-8	tert-Amyl Methyl Ether (TAME)	10	9.7	97 %	10	9.5	95 %	2 %	70 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	11	113 %	10	12	117 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	11	115 %	10	12	125 %	70 - 130 %
Toluene-d ₈	10	12	119 %	10	12	123 %	70 - 130 %
4-Bromofluorobenzene	10	11	108 %	10	11	109 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM7-2636-WB
Matrix: Aqueous

Instrument ID: MS-7 Agilent 6890
Analyzed: 09-26-07 22:37
Analyst: CCT

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CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	0.5
74-87-3	Chloromethane	BRL		ug/L	0.5
75-01-4	Vinyl Chloride	BRL		ug/L	0.5
74-83-9	Bromomethane	BRL		ug/L	0.5
75-00-3	Chloroethane	BRL		ug/L	0.5
75-69-4	Trichlorofluoromethane	BRL		ug/L	0.5
60-29-7	Diethyl Ether	BRL		ug/L	2
75-35-4	1,1-Dichloroethene	BRL		ug/L	0.5
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	5
67-64-1	Acetone	BRL		ug/L	10
75-15-0	Carbon Disulfide	BRL		ug/L	5
75-09-2	Methylene Chloride	BRL		ug/L	2.5
156-60-5	trans- 1,2-Dichloroethene	BRL		ug/L	0.5
1634-04-4	Methyl tert- butyl Ether (MTBE)	BRL		ug/L	0.5
75-34-3	1,1-Dichloroethane	BRL		ug/L	0.5
594-20-7	2,2-Dichloropropane	BRL		ug/L	0.5
156-59-2	cis- 1,2-Dichloroethene	BRL		ug/L	0.5
78-93-3	2-Butanone (MEK)	BRL		ug/L	5
74-97-5	Bromochloromethane	BRL		ug/L	0.5
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	5
67-66-3	Chloroform	BRL		ug/L	0.5
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	0.5
56-23-5	Carbon Tetrachloride	BRL		ug/L	0.5
563-58-6	1,1-Dichloropropene	BRL		ug/L	0.5
71-43-2	Benzene	BRL		ug/L	0.5
107-06-2	1,2-Dichloroethane	BRL		ug/L	0.5
79-01-6	Trichloroethene	BRL		ug/L	0.5
78-87-5	1,2-Dichloropropane	BRL		ug/L	0.5
74-95-3	Dibromomethane	BRL		ug/L	0.5
75-27-4	Bromodichloromethane	BRL		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	cis- 1,3-Dichloropropene	BRL		ug/L	0.5
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	5
108-88-3	Toluene	BRL		ug/L	0.5
10061-02-6	trans- 1,3-Dichloropropene	BRL		ug/L	0.5
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	0.5
127-18-4	Tetrachloroethene	BRL		ug/L	0.5
142-28-9	1,3-Dichloropropane	BRL		ug/L	0.5
591-78-6	2-Hexanone	BRL		ug/L	5
124-48-1	Dibromochloromethane	BRL		ug/L	0.5
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.5
108-90-7	Chlorobenzene	BRL		ug/L	0.5
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	0.5
100-41-4	Ethylbenzene	BRL		ug/L	0.5
108-38-3/106-42-3	meta- Xylene and para- Xylene	BRL		ug/L	0.5
95-47-6	ortho- Xylene	BRL		ug/L	0.5
100-42-5	Styrene	BRL		ug/L	0.5
75-25-2	Bromoform	BRL		ug/L	0.5
98-82-8	Isopropylbenzene	BRL		ug/L	0.5

Quality Control Report Method Blank

Category: EPA Method 8260B
QC Batch ID: VM7-2636-WB
Matrix: Aqueous

Instrument ID: MS-7 Agilent 6890
Analyzed: 09-26-07 22:37
Analyst: CCT

Page: 2 of 2

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
108-86-1	Bromobenzene	BRL		ug/L	0.5
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	0.5
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	0.5
103-65-1	n-Propylbenzene	BRL		ug/L	0.5
95-49-8	2-Chlorotoluene	BRL		ug/L	0.5
108-67-8	1,3,5-Trimethylbenzene	BRL		ug/L	0.5
106-43-4	4-Chlorotoluene	BRL		ug/L	0.5
98-06-6	tert-Butylbenzene	BRL		ug/L	0.5
95-63-6	1,2,4-Trimethylbenzene	BRL		ug/L	0.5
135-98-8	sec-Butylbenzene	BRL		ug/L	0.5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	0.5
99-87-6	4-Isopropyltoluene	BRL		ug/L	0.5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	0.5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	0.5
104-51-8	n-Butylbenzene	BRL		ug/L	0.5
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	0.5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	0.5
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
91-20-3	Naphthalene	BRL		ug/L	0.5
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	0.5
75-65-0	tert-Butyl Alcohol (TBA)	BRL		ug/L	20
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	0.5
637-92-3	Ethyl tert-butyl Ether (ETBE)	BRL		ug/L	0.5
994-05-8	tert-Amyl Methyl Ether (TAME)	BRL		ug/L	0.5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	12	117 %	70 - 130 %
1,2-Dichloroethane-d ₄	10	12	115 %	70 - 130 %
Toluene-d ₈	10	12	119 %	70 - 130 %
4-Bromofluorobenzene	10	11	110 %	70 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample preparation performed by EPA Method 5030B.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

Quality Control Report Laboratory Control Samples

Category: **EPA Method 8270C PAHs**
QC Batch ID: **SV-2141-L**
Matrix: **Aqueous**
Units: **ug/L**

LCS
Extracted: **MS-6 HP 6890**
Analyzed: **09-26-07 16:30**
Analyst: **09-28-07 02:27**
MJB

LCSD
Instrument ID: **MS-6 HP 6890**
Extracted: **09-26-07 16:30**
Analyzed: **09-28-07 03:08**
Analyst: **MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	5.0	3.8	76 %	5.0	3.7	74 %	2 %	40 - 140 %	25 %
91-57-6	2-Methylnaphthalene	5.0	3.8	76 %	5.0	3.6	72 %	5 %	40 - 140 %	25 %
208-96-8	Acenaphthylene	5.0	4.6	91 %	5.0	4.6	92 %	0 %	40 - 140 %	25 %
83-32-9	Acenaphthene	5.0	4.3	86 %	5.0	4.3	86 %	1 %	40 - 140 %	25 %
86-73-7	Fluorene	5.0	4.6	92 %	5.0	4.6	92 %	1 %	40 - 140 %	25 %
85-01-8	Phenanthrene	5.0	4.5	90 %	5.0	4.3	87 %	3 %	40 - 140 %	25 %
120-12-7	Anthracene	5.0	4.8	95 %	5.0	4.7	95 %	0 %	40 - 140 %	25 %
206-44-0	Fluoranthene	5.0	4.5	91 %	5.0	4.5	90 %	0 %	40 - 140 %	25 %
129-00-0	Pyrene	5.0	4.4	89 %	5.0	4.5	89 %	0 %	40 - 140 %	25 %
56-55-3	Benzo[a]anthracene	5.0	4.4	88 %	5.0	4.5	90 %	2 %	40 - 140 %	25 %
218-01-9	Chrysene	5.0	4.3	87 %	5.0	4.4	89 %	2 %	40 - 140 %	25 %
205-99-2	Benzo[b]fluoranthene	5.0	4.8	95 %	5.0	4.9	97 %	2 %	40 - 140 %	25 %
207-08-9	Benzo[k]fluoranthene	5.0	4.8	97 %	5.0	4.7	94 %	3 %	40 - 140 %	25 %
50-32-8	Benzo[a]pyrene	5.0	4.5	90 %	5.0	4.5	90 %	0 %	40 - 140 %	25 %
193-39-5	Indeno[1,2,3-c,d]pyrene	5.0	4.9	98 %	5.0	5.0	100 %	2 %	40 - 140 %	25 %
53-70-3	Dibenzo[a,h]anthracene	5.0	5.0	100 %	5.0	5.0	101 %	1 %	40 - 140 %	25 %
191-24-2	Benzo[g,h,i]perylene	5.0	5.0	99 %	5.0	5.0	100 %	1 %	40 - 140 %	25 %

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	10	7.8	78 %	10	7.9	79 %	30 - 130 %
2-Fluorobiphenyl	10	7.5	75 %	10	7.7	77 %	30 - 130 %
Terphenyl-d14	10	8.6	86 %	10	8.6	86 %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Sample extraction performed by EPA Method 3520C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

Quality Control Report Method Blank

Category: EPA Method 8270C-SIM PAHs
QC Batch ID: SV-2141-L
Matrix: Aqueous

Instrument ID: MS-6 HP 6890
Extracted: 09-26-07 16:30
Analyzed: 09-28-07 03:48
Analyst: MJB

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/L	0.5
91-57-6	2-Methylnaphthalene	BRL		ug/L	0.5
208-96-8	Acenaphthylene	BRL		ug/L	0.5
83-32-9	Acenaphthene	BRL		ug/L	0.5
86-73-7	Fluorene	BRL		ug/L	0.5
85-01-8	Phenanthrene	BRL		ug/L	0.5
120-12-7	Anthracene	BRL		ug/L	0.5
206-44-0	Fluoranthene	BRL		ug/L	0.5
129-00-0	Pyrene	BRL		ug/L	0.5
56-55-3	Benzo[a]anthracene	BRL		ug/L	0.1
218-01-9	Chrysene	BRL		ug/L	0.1
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	0.1
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	0.1
50-32-8	Benzo[a]pyrene	BRL		ug/L	0.1
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	0.1
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	0.1
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	0.1

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	10	7.8	78 %	30 - 130 %
2-Fluorobiphenyl	10	8.0	80 %	30 - 130 %
Terphenyl-d14	10	9.0	91 %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3520C.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

<http://www.groundwateranalytical.com/qualifications.htm>

CONNECTICUT

Department of Health Services, PH-0586

Potable Water, Wastewater, Solid Waste and Soil

http://www.dph.state.ct.us/BRS/Environmental_Lab/out_state.pdf

MAINE

Department of Health and Human Services, MA0103

Drinking Water and Wastewater

<http://www.maine.gov/dhhs/eng/water/Templates/LabCertification/LabCertification.htm>

Department of Environmental Protection, LB-0072

Asbestos Analytical Laboratory (Bulk)

MASSACHUSETTS

Department of Environmental Protection, M-MA-103

Potable Water and Non-Potable Water

<http://public.dep.state.ma.us/labcert/labcert.aspx>

Department of Labor,

Asbestos Analytical Services, Class A

Division of Occupational Safety, AA000195

http://www.mass.gov/dos/forms/la-rpt_list_aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 2027

Drinking Water and Wastewater

<http://www.des.state.nh.us/asp/NHELAP/labsview.asp>

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1

Bulk Asbestos Fiber Analysis (PLM)

<http://ts.nist.gov/Standards/scopes/plmtm.htm>

NEW YORK

Department of Health, 11754

Potable Water, Non-Potable Water and Solid Waste

<http://www.wadsworth.org/labcert/elap/comm.html>

RHODE ISLAND

Department of Health,

Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry

Division of Laboratories, LAO00054

<http://www.health.ri.gov/labs/outofstatelabs.pdf>

Department of Health,

Asbestos Analytical Service, Polarized Light Microscopy (PLM)

Office of Occupational and Radiological Health, AAL-11083

<http://www.health.ri.gov/environment/occupational/asbestos/licensees/AsbestosAnalyticalLabs.pdf>

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921

Foreign soil import permit

VERMONT

Department of Health, VT87643

Drinking Water Microbiological, Inorganic and Organic Analyses

http://healthvermont.gov/enviro/ph_lab/documents/certified_labs.pdf