Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Sandwich, MA • 02563
Tel: 508-833-6600 • Fax: 508-833-3150 • www.horsleywitten.com

October 13, 2009

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

VIA EMAIL

To whom it may concern;

Horsley Witten Group, Inc. (HW) has prepared the enclosed Notice of Intent (NOI) for coverage under the Remediation General Permit (RGP) on behalf of the Taunton Municipal Lighting Plant (TMLP), Taunton, Massachusetts. In accordance with Massachusetts Department of Environmental Protection (DEP) Bureau of Resource Protection Watershed Permitting Program form BRP WM 12, the appropriate permit application fee has been submitted under transmittal number X230269. A copy of the transmittal form and check are included with the NOI submittal package.

TMLP seeks coverage under the RGP to discharge approximately 700,000 gallons of treated water to a drainage channel that subsequently discharges to the Taunton River. The source of the water is a 1.8 million gallon above ground storage tank (AST) used to store No. 2 fuel oil. Municipally supplied water was utilized to raise the level of the AST roof to facilitate necessary repairs to its sidewalls.

Laboratory analysis of untreated discharge samples collected from the AST indicates the presence of petroleum related contaminants, including volatile organic compounds (VOCs) and lead. A treatment system incorporating an oil water separator (O/WS) and granular activated carbon (GAC) treatment system is proposed to remove petroleum-related contaminants and VOCs. As a conservative measure, the discharge will pass through a second O/WS just prior to discharge to the drainage channel. The second O/WS will facilitate visual inspection of discharge water quality and provide further resource protection in the event of treatment system failure. Moran Environmental Recovery (Moran) of Randolph, Massachusetts, will be coordinating the discharge monitoring and treatment system installation and operation. During the proposed discharge, Moran will maintain continuous staff coverage at the facility.

During laboratory analysis of the untreated discharge samples, the presence of petroleum related compounds and VOCs prevented the laboratory instrumentation from achieving the reporting limits established in Appendix VI of the RGP. The laboratory was able to achieve the Appendix VI reporting limits in samples collected from the municipal source water. During discharge sampling, the laboratory should be able to achieve the Appendix VI reporting limits as the bulk

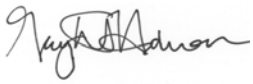
of expected contaminants will be removed through the O/WS and GAC treatment. A dilution factor calculation in accordance with Part I.A.3.c (Step 2) of the NOI instructions indicates sufficient dilution of lead present in the untreated discharge to meet the Appendix III standards.

In preparation for TMLP's Stormwater Pollution Prevention Plan (SWPPP), the Massachusetts Historical Commission determined that the TMLP is "unlikely to affect significant historic or archaeological resources", and the United States Fish and Wildlife Service determined that "no federally-listed or proposed, threatened or endangered species or critical habitat…are known to occur in the project area(s)". The proposed discharge is unlikely to alter these determinations.

HW is pleased to submit this NOI on behalf of TMLP, and looks forward to your review. Please contact the undersigned with any questions or concerns.

Sincerely,

HORSLEY WITTEN GROUP, INC.



Joseph E. Longo
Associate Principal

Gary W.T. Hedman
Project Scientist

Cc:
U.S. Environmental Protection Agency
RGP-NOC Processing

Mr. Steve Cote
Taunton Municipal Lighting Plant

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**: Taunton Municipal Lighting Plant		**Facility/site** address: 1314 Somerset Avenue, Taunton, MA 02780		
Location of **facility/site**: longitude: -71.106117 latitude: 41.865234	Facility SIC code(s): se	Street: 1314 Somerset Avenue		
b) Name of **facility/site owner:** Taunton Municipal Lighting Plant		Town: Taunton		
Email address of owner:		State: Massachusetts	Zip: 02780	County: Bristol
Telephone no.of facility/site **owner**:				
Fax no. of facility/site **owner**:		**Owner** is (check one): 1. Federal____ 2. State/Tribal____ 3. Private_____ 4. other, if so, describe: Municipal		
Address of **owner** (if different from site):				
Street:				
Town:	State:	Zip:	County:	
c) Legal name of **operator**: Taunton Municipal Lighting Plant	**Operator** telephone no: 508-824-3159			
	Operator fax no.: 508-822-3782		**Operator** email: billnickerson@tmlp.com	
Operator contact name and title: William Nickerson, Power Production Manager				
Address of **operator** (if different from owner):	Street:			
Town:	State:	Zip:	County:	

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: 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number:	f) Is the site/facility covered by any other EPA permit, including: 1. multi-sector storm water general permit? Y_✔_ N___, if Y, number: MA002241 2. phase I or II construction storm water general permit? Y___ N_✔_, if Y, number: 3. individual NPDES permit? Y___ N_✔_, if Y, number: 4. any other water quality related permit? Y___ N_✔_, if Y, number:

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

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

Discharge of approximately 700,000 gallons of treated effluent from an above ground fuel oil storage tank. Municipally supplied water was used to displace fuel oil and raise the lid of the tank to facilitate repairs to the tank walls.

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, ft3/s)? Max. flow 0.44 CFS Average flow 0.22 cfs 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.

3) Latitude and longitude of each discharge within 100 feet: pt.1:long. -71.106373 lat. 41.86377; 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): 700,000	5) Is the discharge intermittent_✔_ or seasonal_____? Is discharge ongoing Yes____ No_✔_?

c) Expected dates of discharge (mm/dd/yy): start 10/28/09 end 11/08/09

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

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

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

Gasoline Only	VOC Only	Primarily Metals	Urban Fill Sites	Contaminated Sumps	Mixed Contaminants	Aquifer Testing
Fuel Oils (and 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 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)
1. Total Suspended Solids	✔		1	grab	Sm 2540 D	2000	0			
2. Total Residual Chlorine		✔	1	grab	SM 4500-CL	4	9			
3. Total Petroleum Hydrocarbons		✔	1	grab	EPA 8015B	1,000	58,000			
4. Cyanide	✔		1	grab	EPA 335.3	10	0			
5. Benzene		✔	1	grab	EPA 8260B	25	180			
6. Toluene		✔	1	grab	EPA 8260B	25	670			
7. Ethylbenzene		✔	1	grab	EPA 8260B	25	160			
8. (m,p,o) Xylenes		✔	1	grab	EPA 8260B	25	820			
9. Total BTEX[4]		✔	1	grab	EPA 8260B	25	1830			

[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	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide [5] (1,2- Dibromo-methane)	✔		1	grab	EPA 8011	0.02	0			
11. Methyl-tert-Butyl Ether (MtBE)		✔	1	grab	EPA 8260B	25	2800			
12. tert-Butyl Alcohol (TBA)	✔		1	grab	EPA 8260B	1000	0			
13. tert-Amyl Methyl Ether (TAME)		✔	1	grab	EPA 8260B	25	270			
14. Naphthalene		✔	1	grab	EPA 8260B	25	650			
15. Carbon Tetra-chloride	✔		1	grab	EPA 8260B	25	0			
16. 1,4 Dichlorobenzene	✔		1	grab	EPA 8260B	25	0			
17. 1,2 Dichlorobenzene	✔		1	grab	EPA 8260B	25	0			
18. 1,3 Dichlorobenzene	✔		1	grab	EPA 8260B	25	0			
19. 1,1 Dichloroethane	✔		1	grab	EPA 8260B	25	0			
20. 1,2 Dichloroethane	✔		1	grab	EPA 8260B	25	0			
21. 1,1 Dichloroethylene	✔		1	grab	EPA 8260B	25	0			
22. cis-1,2 Dichloro-ethylene	✔		1	grab	EPA 8260B	25	0			
23. Dichloromethane (Methylene Chloride)	✔		1	grab	EPA 8260B	130	0			
24. Tetrachloroethylene	✔		1	grab	EPA 8260B	25	0			

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

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)
25. 1,1,1 Trichloroethane	✔		1	grab	EPA 8260B	25	0			
26. 1,1,2 Trichloroethane	✔		1	grab	EPA 8260B	25	0			
27. Trichloroethylene	✔		1	grab	EPA 8260B	25	0			
28. Vinyl Chloride	✔		1	grab	EPA 8260B	25	0			
29. Acetone	✔		1	grab	EPA 8260B	500	0			
30. 1,4 Dioxane	✔		1	grab	EPA 8260B	25,000	0			
31. Total Phenols		✔	1	grab	EPA 8270C	50	1008			
32. Pentachlorophenol	✔		1	grab	EPA 8270C	50	0			
33. Total Phthalates [6] (Phthalate esthers)	✔		1	grab	EPA 8270C	50	0			
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✔		1	grab	EPA 8270C	50	0			
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✔		1	grab	EPA 8270C	5.0	0			
a. Benzo(a) Anthracene	✔		1	grab	EPA 8270C	5.0	0			
b. Benzo(a) Pyrene	✔		1	grab	EPA 8270C	5.0	0			
c. Benzo(b)Fluoranthene	✔		1	grab	EPA 8270C	5.0	0			
d. Benzo(k) Fluoranthene	✔		1	grab	EPA 8270C	5.0	0			
e. Chrysene	✔		1	grab	EPA 8270C	5.0	0			

[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	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	✔		1	grab	EPA 8270C	5	0			
g. Indeno(1,2,3-cd) Pyrene	✔		1	grab	EPA 8270C	5	0			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		✔	1	grab	EPA 8270C	25	394			
h. Acenaphthene	✔		1	grab	EPA 8270C	25	0			
i. Acenaphthylene	✔		1	grab	EPA 8270C	25	0			
j. Anthracene	✔		1	grab	EPA 8270C	25	0			
k. Benzo(ghi) Perylene	✔		1	grab	EPA 8270C	5	0			
l. Fluoranthene	✔		1	grab	EPA 8270C	25	0			
m. Fluorene		✔	1	grab	EPA 8270C	25	32			
n. Naphthalene-		✔	1	grab	EPA 8270C	25	310			
o. Phenanthrene		✔	1	grab	EPA 8270C	25	52			
p. Pyrene	✔		1	grab	EPA 8270C	25	0			
37. Total Polychlorinated Biphenyls (PCBs)	✔		1	grab	EPA 608	0.2	0			
***3*8. Antimony**	✔		1	grab	EPA 600	3	0			
39. Arsenic	✔		1	grab	EPA 600	5	0			
40. Cadmium	✔		1	grab	EPA 600	4	0			
41. Chromium III	✔		1	grab	EPA 600	10	0			
42. Chromium VI	✔		1	grab	EPA 600	10	0			

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	✔		1	grab	EPA 600	2.5	0			
44. Lead		✔	1	grab	EPA 600	1	11			
45. Mercury	✔		1	grab	EPA 600	0.2	0			
46. Nickel	✔		1	grab	EPA 600	40	0			
47. Selenium	✔		1	grab	EPA 600	5	0			
48. Silver	✔		1	grab	EPA 600	7	0			
49. Zinc	✔		1	grab	EPA 600	200	0			
50. Iron		✔	1	grab	EPA 600	100	100			
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? lead
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? Metals: lead DF: 57	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:						
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 100 gpm Maximum flow rate of treatment system 200 gpm Design flow rate of treatment system 100 gpm						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets): none, other than GAC						

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: discharge will be located in a stormwater/cooling water drainage channel discharging to the Taunton River and subject to tidal fluctuation.						
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 SB / Segment ID MA62-48-2008,						
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 24.6 cfs Please attach any calculation sheets used to support stream flow and dilution calculations.						
f) Is the receiving water a listed 303(d) water quality impaired or limited water? Yes No ✔ If yes, for which pollutant(s)? Is there a TMDL? Yes No ✔ If yes, for which pollutant(s)?						

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

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes____ No✓
Has any consultation with the federal services been completed ? 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: Taunton Municipal Lighting Plant

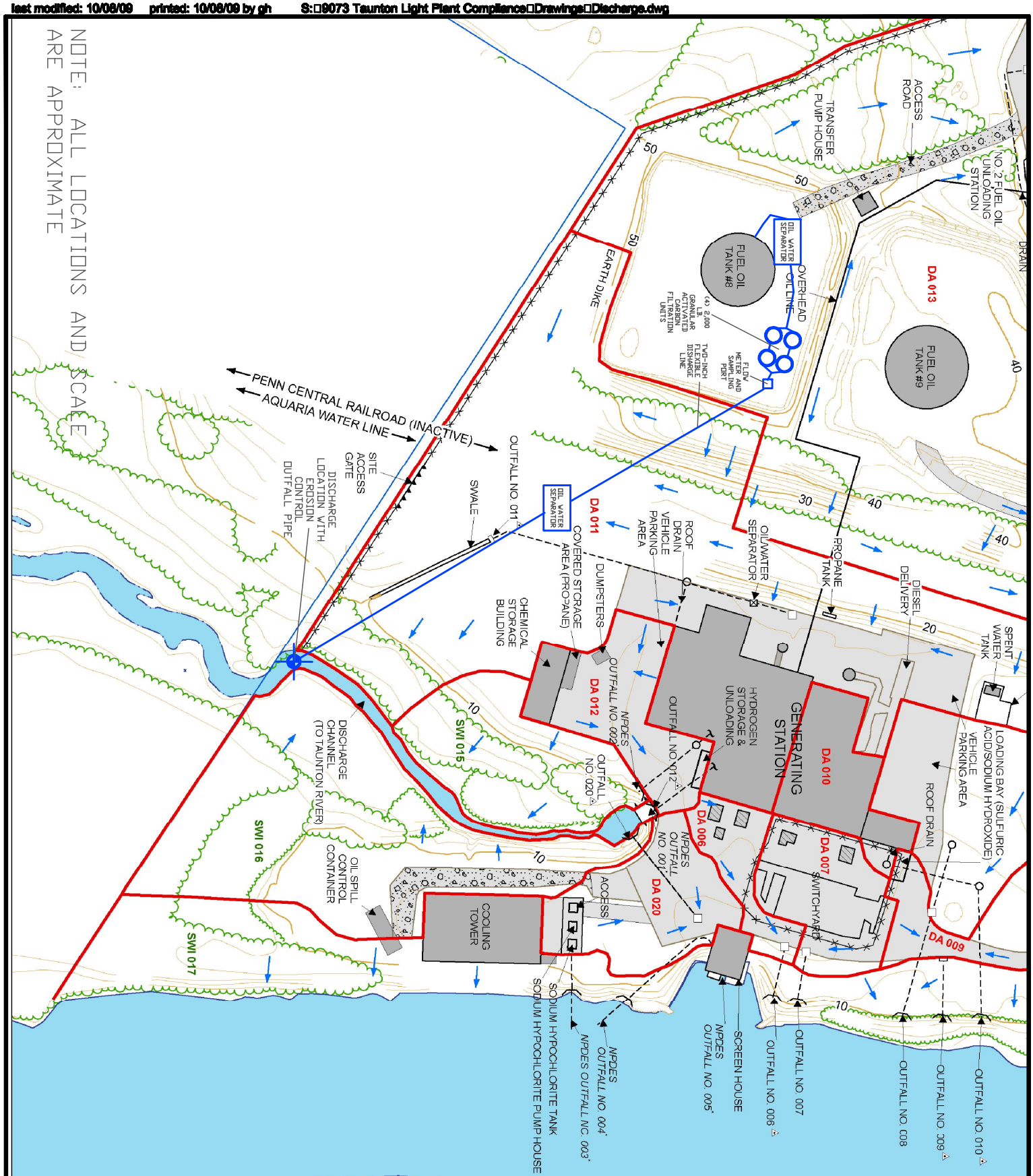
Operator signature: William L. Nickerson WILLIAM L. NICKERSON

Title: Power Production Manager

Date: 10/13/09

FIGURES

last modified: 10/08/09 printed: 10/08/09 by gh S:□9073 Taunton Light Plant Compliance□Drawings□Discharge.dwg



Project Number:	Registration:	Prepared For:	Plan Set:	
9073		Taunton Municipal Lighting Plant 1314 Somerset Avenue Taunton, MA, 02780	TAUNTON MUNICIPAL LIGHTING PLANT TAUNTON, MASSACHUSETTS	Horsley Witten Group, Inc. Sustainable Environmental Solutions 90 Route 6A Sandwich, MA 02563 508-833-6600 voice 508-833-6150 fax
Figure: 1				

Dilution Calculations

Taunton Municipal Lighting Plant
Remediation General Permit Notice of Intent
Dilution Calculation

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

Where:
DF = Dilution Factor
Qd = Maximum flow rate of the discharge (cfs)
Qs = Receiving water 7Q10 flow (cfs) where,
7Q10 = The minimum flow (cfs) for 7 consecutive days with a recurrence interval of 10 years

Qd = 0.44 cfs (200 gallons per minutre (gpm))
Qs = 24.6 cfs[1]

$$DF = (0.44 + 24.6) / 0.44$$

$$DF = 25.04 / 0.44$$

$$DF = 56.91$$

Notes:
cfs = cubic feet per second
gpm = gallons per minute
1. Based on United States Geological Survey (USGS) stream flow statistics for the Taunton River near Bridgewater, Massachusetts (USGS 01108000), located approximately 15 miles upstream of the proposed discharge location.
Minimum flow data from USGS 01108000 for period of record (1929-1976, 1985-1988, and 1996-1997).
Stream flow data derived from *Section 316(a) Demonstration Document, NPDES Permit No. MA0002241,* January 2004, prepared for Taunton Municipal Lighting Plant by Earth Tech, Inc., Concord, Massachusetts.

Estimated 7Q10 at point of discharge is 37.7 cfs, yielding a dilution factor of 86.68.

Transmittal Form X230269

Enter your transmittal number → X230269 (Transmittal Number)

Your unique Transmittal Number can be accessed online: http://mass.gov/dep/service/online/trasmfrm.shtml or call MassDEP's InfoLine at 617-338-2255 or 800-462-0444 (from 508, 781, and 978 area codes).

Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

Copy 1 - the original must accompany your permit application. **Copy 2** must accompany your fee payment. **Copy 3** should be retained for your records

4. Both fee-paying and exempt applicants must mail a copy of this transmittal form to:

MassDEP
P.O. Box 4062
Boston, MA
02211

*** Note:**
For BWSC Permits, enter the LSP.

A. Permit Information

1. Permit Code: 7 or 8 character code from permit instructions	2. Name of Permit Category
BRP WM 12	Surface Water Discharge

3. Type of Project or Activity: Discharge of water associated with fuel oil tank repair

B. Applicant Information – Firm or Individual

1. Name of Firm - Or, if party needing this approval is an individual enter name below: Moran Environmental Recovery

2. **Last Name** of Individual	3. **First Name** of Individual	4. MI

5. Street Address: 75-D York Avenue

6. City/Town	7. State	8. Zip Code	9. Telephone #	10. Ext. #
Randolph	MA	02368	781-815-1100	

11. Contact Person	12. e-mail address (optional)
John Silva	jsilva@moranenvironmental.com

C. Facility, Site or Individual Requiring Approval

1. Name of Facility, Site Or Individual: Taunton Municipal Lighting Plant

2. Street Address: 1314 Somerset Avenue

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Taunton	MA	02780	508-824-3159	

8. DEP Facility Number (if Known)	9. Federal I.D. Number (if Known)	10. BWSC Tracking # (if Known)

D. Application Prepared by (if different from Section B)*

1. Name of Firm Or Individual: Horsley Witten Group, Inc.

2. Address: 90 Route 6A

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Sandwich	MA	02563	508-833-6600	157

8. Contact Person	9. LSP Number (BWSC Permits only)
Gary Hedman	

E. Permit - Project Coordination

1. Is this project subject to MEPA review? ☐ yes ☒ no
   If yes, enter the project's EOEA file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number

F. Amount Due

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Special Provisions:

1. ☐ **Fee** Exempt (city, town or municipal housing authority)(state agency if fee is $100 or less).
   There are no fee exemptions for BWSC permits, regardless of applicant status.
2. ☐ Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).
3. ☐ Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).
4. ☐ Homeowner (according to 310 CMR 4.02).

Check Number	Dollar Amount	Date

MORAN ENVIRONMENTAL RECOVERY, L.L.C.

Remittance Advice

Check: 013028
Date: 10/08/09
Amount: 775.00

Paid by: Moran Environmental Recovery
Paid to: Commonwealth of Massachusetts

Our Account #:
Vendor Code: COMMO3

Inv. Date	Invoice No.	Job Number	Inv. Amount	Discount	Amount Paid	Retention	Remarks
10/08/09	X230269	09RMSD0168	775.00	0.00	775.00	0.00	Permit Fee
Check Totals			**775.00**	**0.00**	**775.00**	**0.00**	

DETACH AND RETAIN THIS STATEMENT REORDER FORM NO.524-LG1 USE WITH COMPANION ENVELOPE #40-224

WARNING: THIS DOCUMENT HAS A COLORED BACKGROUND, A MICROPRINT BORDER AND AN ARTIFICIAL WATERMARK ON THE BACK

MORAN ENVIRONMENTAL RECOVERY, L.L.C.
75D YORK AVE.
RANDOLPH, MA 02368

SOVEREIGN
5-7515
0110

DATE 10/08/09

CHECK NO. 013028

013028

PAY **SEVEN HUNDRED SEVENTY-FIVE AND XX / 100 DOLLARS

$ ** 775.00

TO THE ORDER OF
Commonwealth of Massachusetts
Dept of Env Protection
P.O. Box 4062
Boston, MA 02211

MORAN ENVIRONMENTAL RECOVERY, L.L.C.
AUTHORIZED SIGNATURE
VOID AFTER 90 DAYS

⑈013028⑈ ⑆011075150⑆ 100208048 28⑈

Supporting Documentation

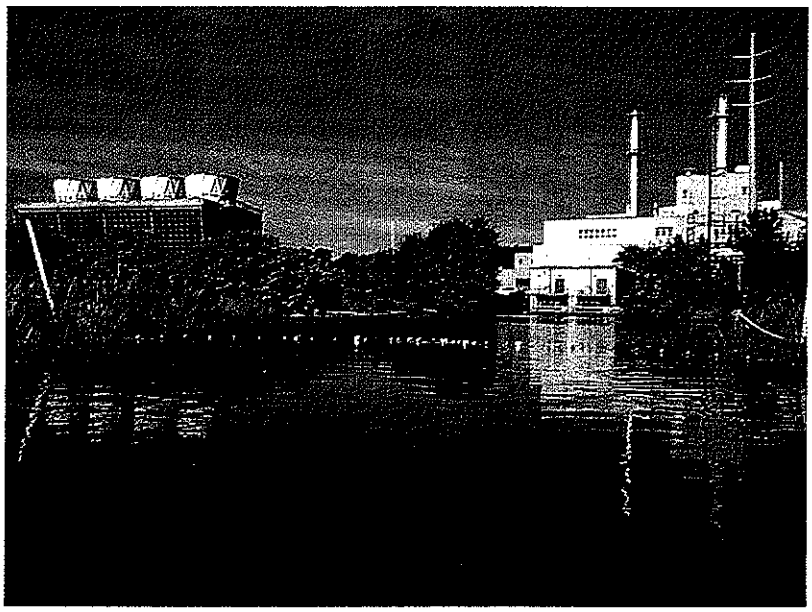
United States Environmental Protection Agency – Region 1
Office of Ecosystems Protection

Taunton Municipal Lighting Plant Cleary-Flood Station
NPDES Permit Renewal Application - Supplemental Information Request:

SECTION 316 (a) DEMONSTRATION DOCUMENT

NPDES Permit No. MA0002241

January 2004



Prepared For:

TMLP

Taunton Municipal Lighting Plant
Taunton, Massachusetts

Prepared By:

Earth Tech, Inc.
Concord, Massachusetts

and

Marine Research, Inc.
Falmouth, Massachusetts

4.0 DESCRIPTION OF LOCAL ECOSYSTEM AFFECTED BY DISCHARGE

4.1 Taunton River Basin

4.1.1 Description of the Physical and Chemical Environment

4.1.1.1 Physical Description

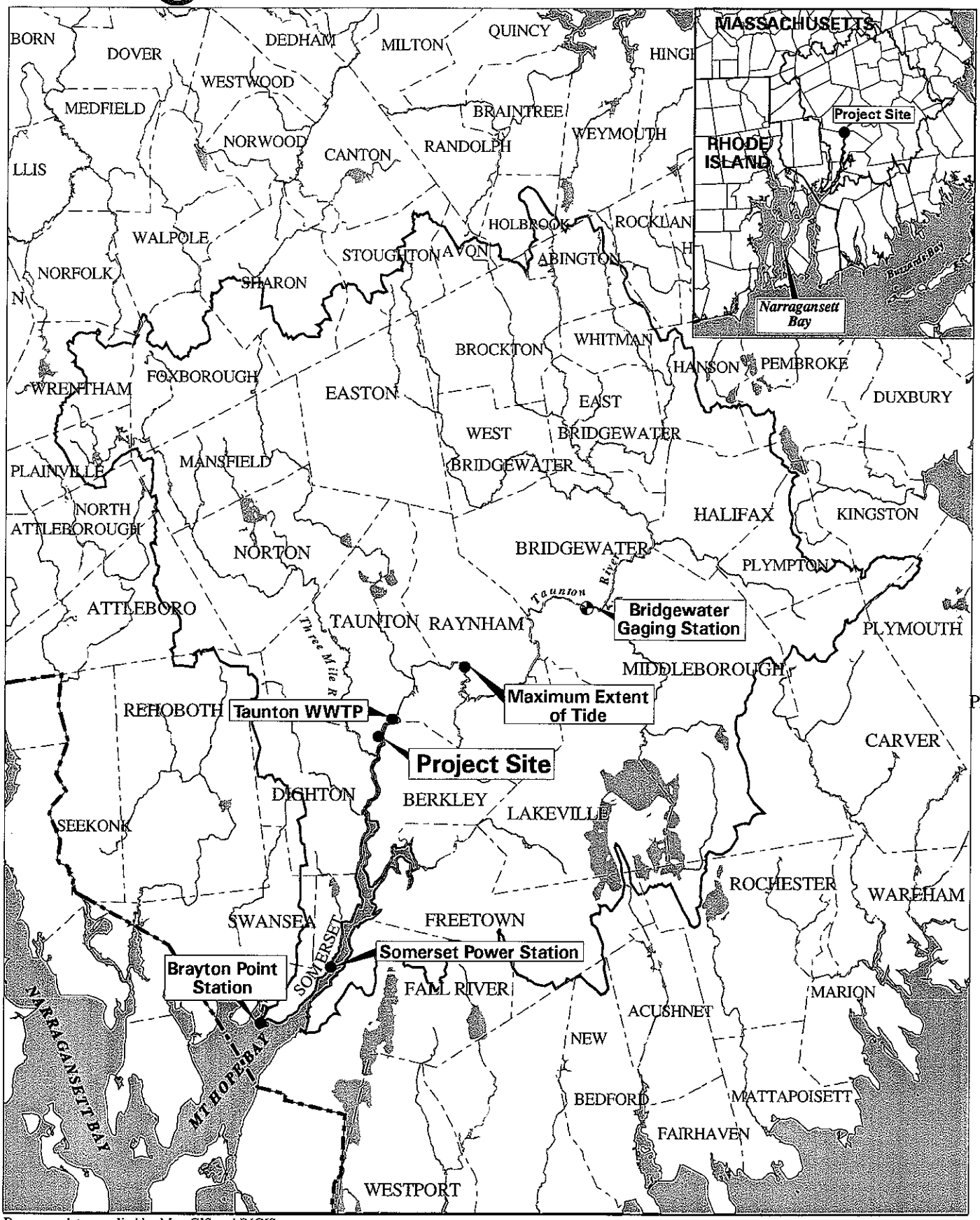
The Taunton River basin, the largest watershed in southeastern Massachusetts, covering approximately 562 square miles, is the second largest basin in Massachusetts; only the Connecticut River Basin is larger (Bickford and Dymon, 1990). It is formed by the confluence of the Matfield and Town Rivers in Bridgewater and flows into Mount Hope Bay in the northeast corner of Narragansett Bay. Over 94 square miles of wetlands are found in the Taunton River basin including cranberry bogs, lakes and ponds. Major tributaries joining the Taunton upstream of TMLP include the Mill, Winnetuxet and Nemasket Rivers while the Three Mile River, Segreganset River and Assonet River converge with the Taunton downstream of the site (see Figure 4-1, Taunton River Basin). The river basin was shaped by glaciation, giving it a relatively flat topography, falling only 21 feet throughout its 38-mile course. Tidal fluctuations are present as far as 18 miles upstream of the river mouth.

4.1.1.2 Hydrology

Flow in the Taunton River in the vicinity of the Station is dominated by fluctuations in the tide. The river becomes tidal as it passes to the east of Taunton center. Further downstream at the Station, the difference between the estimated mean low and high tides in the Taunton River is about 4.2 feet (Woodlot Alternatives 2002).

Although no flow gaging information is available for the Taunton River at the Station, the estimated 7-day, 10-year (7Q10) low flow for the Taunton River at the Bridgewater gaging station, which is approximately 15 miles upstream from the Station and measures flow from a drainage area of 261 square miles, is 24.6 cubic feet per second (cfs) for the period of record from October 1929 to April 1976, April 1985 to May 1988, and October 1996 to 1997. Monthly mean flows are compared with the median flow and the 7Q10 flow for the period of record in Figure 4-2. Typically, the lowest river flows are experienced during the month of August and the highest during the month of March.

The Taunton River drainage area upstream of the Station is approximately 400 square miles. In order to derive estimated flow statistics for this location in the absence of gaging data, the 7Q10 flow at Bridgewater is multiplied by the ratio of the drainage area at the Station to the drainage area at the gaging station, which yields an



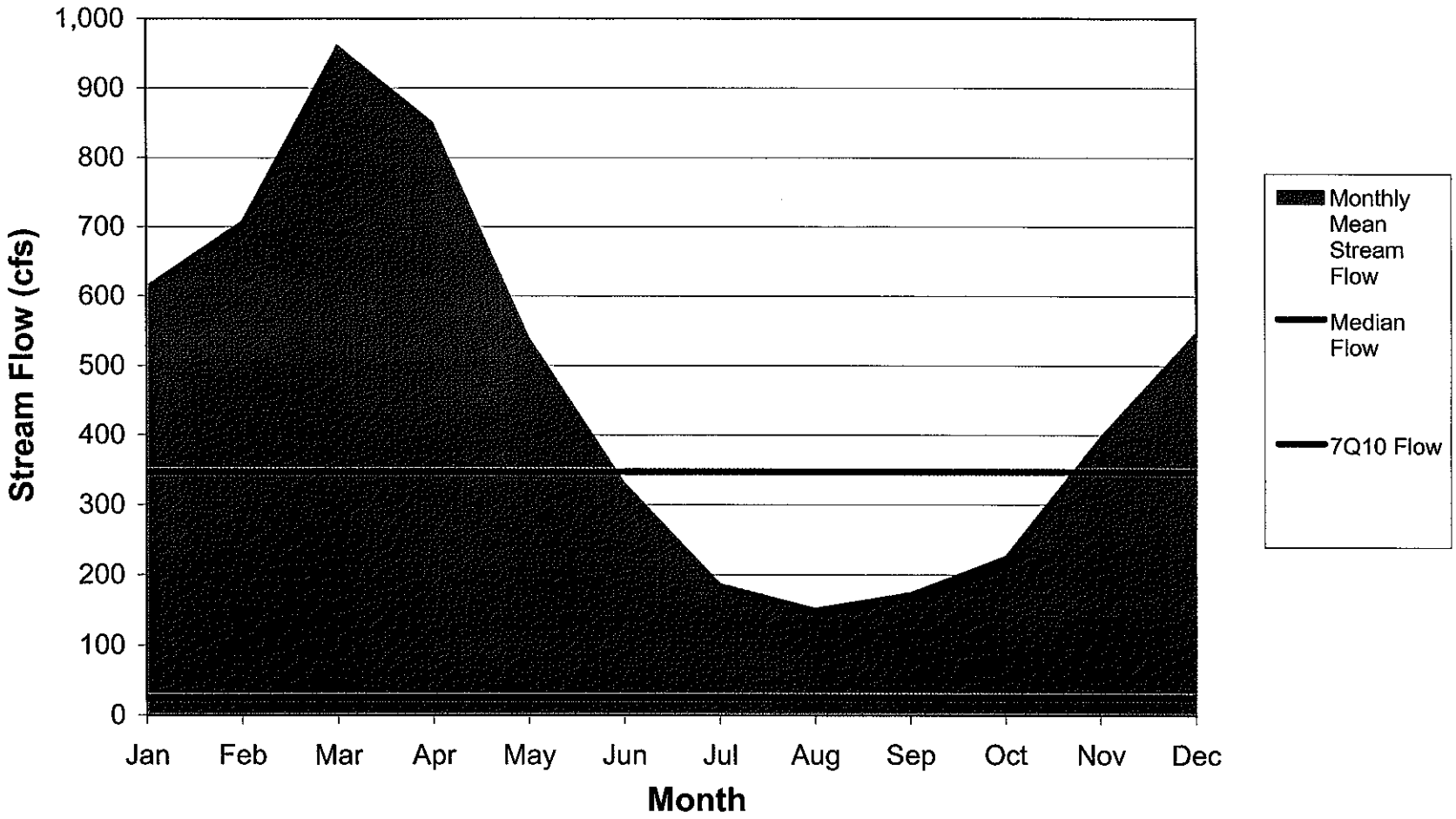
Base map data supplied by MassGIS and RIGIS.

0 5 10
Miles

Date: 23 Dec 03 13:45:58 Tuesday
/usr2/tmp/basin.map

Figure 4 - 1
Taunton River Basin

Figure 4-2
Taunton River Flow at Bridgewater Gaging Station for Period of Record



estimated 7Q10 low flow and an average daily mean flow at TMLP of approximately 37.7 cfs, or 24.4 mgd, and 726 cfs, or 469 mgd, respectively. These estimated flows are compared with statistics for actual flows measured at the Bridgewater Gaging Station in Table 4-1.

Table 4-1: Estimates of Taunton River Flow at Station

Flow Statistic[1]	Taunton River at Station[2]	Taunton River at Bridgewater Gaging Station
Average Daily Mean Flow (cfs)	726 (469 mgd)	473 (306 mgd)[3a]
Median Flow (cfs)	532 (344 mgd)	347 (224 mgd)[3b]
August Mean Flow (cfs)	233 (151 mgd)	152 (98 mgd)[3a]
7Q10 (cfs)	37.7 (24.4 mgd)	24.6 (15.9 mgd)[3b]
Unit 8 Average Daily Discharge[4] (cfs)	13 cfs (8.4 mgd)	n/a

[1] Based upon United States Geological Survey (USGS) stream flow statistics for the Taunton River near Bridgewater, Massachusetts (USGS 01108000)

[2] Estimate

[3a] For period of record (1929-1976, 1985-1988, and 1996-2002)

[3b] For period of record (1929-1976, 1985-1988, and 1996-1997)

[4] NPDES DMR data for TMLP Station, March 1999 to March 2000

4.1.1.3 Water Quality

Taunton River water quality is affected by surface water inputs from its tributaries, groundwater inputs, and the tidal influence of Narragansett Bay. The Massachusetts Surface Water Quality Standards (MSWQS) provide classifications, based upon intended water use, for all inland, coastal, and marine surface waters of the state. As described in the MSWQS, the TMLP Station is located along a segment of the Taunton River that has a coastal and marine classification of "SB." SB waters are designated as a habitat for fish, other aquatic life and wildlife, and for primary and secondary contact recreation. While improvements have been realized in recent years, the Taunton River has suffered historically from poor water quality due to a variety of municipal and industrial wastewater discharges; there are currently 23 discharges to the river with a NPDES permit, including seven municipal sewage treatment plants (Epsilon, 1997). Additionally, the water quality of the Taunton River is recognized as being impacted by sources typically associated with urbanized watersheds, including combined sewer overflows (CSOs), septic tank seepage, and storm drain runoff (DWPC, 1981).

Although recent studies (Epsilon, 1997) suggest that the river is essentially freshwater under most tidal and flow regimes in the vicinity of the TMLP Discharge Channel, historical data from July 1970 (DWPC, 1973) indicates that significant

Laboratory Analytical Results

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:	Gary Hedman	From:	e-mail reporting GWA
	Horsley & Witten, Inc.	Pages:	51
e-mail:	ghedman@horsleywitten.	Date:	10/06/2009 17:06:40
Re:	128435	CC:	

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply

- Comments:

Final Project Report for Taunton NPDES/9073, Lab ID 128435, Received 09-30-09

Confidential

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
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228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

October 6, 2009

Mr. Gary Hedman
Horsley & Witten, Inc.
90 Route 6A (Tutor Hill)
Sextant Hill
Sandwich, MA 02563

LABORATORY REPORT

Project: **Taunton NPDES/9073**
Lab ID: **128435**
Received: **09-30-09**

Dear Gary:

Enclosed are the analytical results for the above referenced project. The project was processed for Rush 4 Business Day 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,

Karyn E. Raymond

Karyn E. Raymond
Project Manager

KER/kh
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **Taunton NPDES/9073**
Client: **Horsley & Witten, Inc.**
Lab ID: **128435**

Delivery: **Hand**
Airbill: **n/a**
Lab Receipt: **09-30-09**

Temperature: **5.6ºC**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-1	Discharge		Aqueous	9/30/09 10:20	EPA 8260B Volatile Organics with Oxygenates				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1226338	40 mL VOA Vial	Proline	BX34631	HCL	R-5885B	09-17-09	n/a		
C1226337	40 mL VOA Vial	Proline	BX34631	HCL	R-5885B	09-17-09	n/a		
C1226336	40 mL VOA Vial	Proline	BX34631	HCL	R-5885B	09-17-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-2	Source		Aqueous	9/30/09 11:00	EPA 8260B Volatile Organics with Oxygenates				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1226329	40 mL VOA Vial	Proline	BX34631	HCL	R-5885B	09-17-09	n/a		
C1226328	40 mL VOA Vial	Proline	BX34631	HCL	R-5885B	09-17-09	n/a		
C1226327	40 mL VOA Vial	Proline	BX34631	HCL	R-5885B	09-17-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-3	Discharge		Aqueous	9/30/09 10:20	EPA 8011 EDB and DBCP by GC/ECD				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1222309	40 mL VOA Vial	Proline	BX34888	None	n/a	n/a	n/a		
C1222308	40 mL VOA Vial	Proline	BX34888	None	n/a	n/a	n/a		
C1222307	40 mL VOA Vial	Proline	BX34888	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-4	Source		Aqueous	9/30/09 11:00	EPA 8011 EDB and DBCP by GC/ECD				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1222306	40 mL VOA Vial	Proline	BX34888	None	n/a	n/a	n/a		
C1222305	40 mL VOA Vial	Proline	BX34888	None	n/a	n/a	n/a		
C1222304	40 mL VOA Vial	Proline	BX34888	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-5	Discharge		Aqueous	9/30/09 10:20	EPA 8270C Semivolatile Organics (Low Level)				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1242821	1 L Amber Glass	Proline	BX34758	None	n/a	n/a	n/a		
C1242818	1 L Amber Glass	Proline	BX34758	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-6	Source		Aqueous	9/30/09 11:00	EPA 8270C Semivolatile Organics (Low Level)				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1238144	1 L Amber Glass	n/a	n/a	None	n/a	n/a	n/a		
C1238143	1 L Amber Glass	n/a	n/a	None	n/a	n/a	n/a		
C1238142	1 L Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-7	Discharge		Aqueous	9/30/09 10:20	EPA 608 PCBs				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1242820	1 L Amber Glass	Proline	BX34758	None	n/a	n/a	n/a		
C1242819	1 L Amber Glass	Proline	BX34758	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-8	Source		Aqueous	9/30/09 11:00	EPA 608 PCBs				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1242822	1 L Amber Glass	Proline	BX34758	None	n/a	n/a	n/a		
C1242817	1 L Amber Glass	Proline	BX34758	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Sample Receipt Report (Continued)

Project: **Taunton NPDES/9073**
Client: **Horsley & Witten, Inc.**
Lab ID: **128435**

Delivery: **Hand**
Airbill: **n/a**
Lab Receipt: **09-30-09**

Temperature: **5.6ºC**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-9	Discharge		Aqueous	9/30/09 10:20	TPH by GC EPA 8015B Mod				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1242610	1 L Amber Glass	Proline	BX34732	H2SO4	R-5914A	09-22-09	n/a		
C1242607	1 L Amber Glass	Proline	BX34732	H2SO4	R-5914A	09-22-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-10	Source		Aqueous	9/30/09 11:00	TPH by GC EPA 8015B Mod				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1242615	1 L Amber Glass	Proline	BX34732	H2SO4	R-5914A	09-22-09	n/a		
C1242613	1 L Amber Glass	Proline	BX34732	H2SO4	R-5914A	09-22-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-11	Discharge		Aqueous	9/30/09 10:20	SM 4500-Cl G Total Residual Chlorine SM 3500-Cr D Hexavalent Chromium SM 2540 D Total Suspended Solids				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1239670	1 L Plastic	Proline	BX34674	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-12	Source		Aqueous	9/30/09 11:00	SM 4500-Cl G Total Residual Chlorine SM 3500-Cr D Hexavalent Chromium SM 2540 D Total Suspended Solids				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1239539	1 L Plastic	Proline	BX34673	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-13	Discharge		Aqueous	9/30/09 10:20	Lachat 10-204-00-1-A (EPA 335.3) Total Cyanide				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1185603	500 mL Plastic	Proline	BX33920	NaOH	R-5945B	09-25-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-14	Source		Aqueous	9/30/09 11:00	Lachat 10-204-00-1-A (EPA 335.3) Total Cyanide				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1185533	500 mL Plastic	Proline	BX33920	NaOH	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-15	Discharge		Aqueous	9/30/09 10:20	EPA 200.7 Ag Cd Cr Cu Fe Ni Se Zn Total EPA 200.8 As Pb Sb Total EPA 245.1 Hg Total				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1170218	250 mL Plastic	Proline	BX33982	HNO3	R-5913A	09-04-09	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
128435-16	Source		Aqueous	9/30/09 11:00	EPA 200.7 Ag Cd Cr Cu Fe Ni Se Zn Total EPA 200.8 As Pb Sb Total EPA 245.1 Hg Total				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1170251	250 mL Plastic	Proline	BX33982	HNO3	R-5913A	09-04-09	n/a		

GROUNDWATER ANALYTICAL

Data Certification

Project: **Taunton NPDES/9073** Lab ID: **128435**
Client: **Horsley & Witten, Inc.** Received: **09-30-09 12:45**

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: 128435-1,-2 EPA 8270C: 128435-5,-6						
Sample Matrices:	Groundwater (X)	Soil/Sediment ( )	Drinking Water ( )	Other ( )		
MCP SW-846 Methods Used	8260B (X)	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )	
	8270C (X)	8081A ( )	VPH ( )	6020A ( )	9012A[2] ( )	
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S[3] ( )	Other ( )	
	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, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	n/a

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?	Yes

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: Karyn E. Raymond Position: Project Manager
Printed Name: Karyn E. Raymond Date: 10-06-09

GROUNDWATER ANALYTICAL

EPA Method 8260B
Volatile Organics by GC/MS

Field ID:	**Discharge**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**40 mL VOA Vial**
Client:	**Horsley & Witten, Inc.**	Preservation:	**HCl/ Cool**
Laboratory ID:	**128435-1**	QC Batch ID:	**VM7-3269-W**
Sampled:	**09-30-09 10:20**	Instrument ID:	**MS-7 HP 6890**
Received:	**09-30-09 12:45**	Sample Volume:	**25 mL**
Analyzed:	**10-01-09 10:32**	Dilution Factor:	**50**
Analyst:	**LMG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
75-71-8	Dichlorodifluoromethane	BRL		ug/L	25
74-87-3	Chloromethane	BRL		ug/L	25
75-01-4	Vinyl Chloride	BRL		ug/L	25
74-83-9	Bromomethane	BRL		ug/L	25
75-00-3	Chloroethane	BRL		ug/L	25
75-69-4	Trichlorofluoromethane	BRL		ug/L	25
60-29-7	Diethyl Ether	BRL		ug/L	100
75-35-4	1,1-Dichloroethene	BRL		ug/L	25
76-13-1	1,1,2-Trichlorotrifluoroethane	BRL		ug/L	250
67-64-1	Acetone	BRL		ug/L	500
75-15-0	Carbon Disulfide	BRL		ug/L	250
75-09-2	Methylene Chloride	BRL		ug/L	130
107-13-1	Acrylonitrile	BRL		ug/L	25
156-60-5	*trans*-1,2-Dichloroethene	BRL		ug/L	25
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	**2,800**		ug/L	25
75-34-3	1,1-Dichloroethane	BRL		ug/L	25
594-20-7	2,2-Dichloropropane	BRL		ug/L	25
156-59-2	*cis*-1,2-Dichloroethene	BRL		ug/L	25
78-93-3	2-Butanone (MEK)	BRL		ug/L	250
74-97-5	Bromochloromethane	BRL		ug/L	25
109-99-9	Tetrahydrofuran (THF)	BRL		ug/L	250
67-66-3	Chloroform	BRL		ug/L	25
71-55-6	1,1,1-Trichloroethane	BRL		ug/L	25
56-23-5	Carbon Tetrachloride	BRL		ug/L	25
563-58-6	1,1-Dichloropropene	BRL		ug/L	25
71-43-2	Benzene	**180**		ug/L	25
107-06-2	1,2-Dichloroethane	BRL		ug/L	25
79-01-6	Trichloroethene	BRL		ug/L	25
78-87-5	1,2-Dichloropropane	BRL		ug/L	25
74-95-3	Dibromomethane	BRL		ug/L	25
75-27-4	Bromodichloromethane	BRL		ug/L	25
123-91-1	1,4-Dioxane	BRL		ug/L	25,000
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	20
108-10-1	4-Methyl-2-Pentanone (MIBK)	BRL		ug/L	250
108-88-3	Toluene	**670**		ug/L	25
10061-02-6	*trans*-1,3-Dichloropropene	BRL		ug/L	20
79-00-5	1,1,2-Trichloroethane	BRL		ug/L	25
127-18-4	Tetrachloroethene	BRL		ug/L	25
142-28-9	1,3-Dichloropropane	BRL		ug/L	25
591-78-6	2-Hexanone	BRL		ug/L	250
124-48-1	Dibromochloromethane	BRL		ug/L	25
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	25
108-90-7	Chlorobenzene	BRL		ug/L	25
630-20-6	1,1,1,2-Tetrachloroethane	BRL		ug/L	25
100-41-4	Ethylbenzene	**160**		ug/L	25
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	**530**		ug/L	25

GROUNDWATER ANALYTICAL

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

Field ID:	**Discharge**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**40 mL VOA Vial**
Client:	**Horsley & Witten, Inc.**	Preservation:	**HCl/ Cool**
Laboratory ID:	**128435-1RA1**	QC Batch ID:	**VM7-3269-W**
Sampled:	**09-30-09 10:20**	Instrument ID:	**MS-7 HP 6890**
Received:	**09-30-09 12:45**	Sample Volume:	**25 mL**
Analyzed:	**10-01-09 10:32**	Dilution Factor:	**50**
Analyst:	**LMG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
95-47-6	*ortho*-Xylene	**290**		ug/L	25
100-42-5	Styrene	BRL		ug/L	25
75-25-2	Bromoform	BRL		ug/L	25
98-82-8	Isopropylbenzene	**26**		ug/L	25
108-86-1	Bromobenzene	BRL		ug/L	25
79-34-5	1,1,2,2-Tetrachloroethane	BRL		ug/L	25
96-18-4	1,2,3-Trichloropropane	BRL		ug/L	25
110-57-6	*trans*-1,4-Dichloro-2-butene	BRL		ug/L	1,300
103-65-1	*n*-Propylbenzene	**48**		ug/L	25
95-49-8	2-Chlorotoluene	BRL		ug/L	25
108-67-8	1,3,5-Trimethylbenzene	**84**		ug/L	25
106-43-4	4-Chlorotoluene	BRL		ug/L	25
98-06-6	*tert*-Butylbenzene	BRL		ug/L	25
95-63-6	1,2,4-Trimethylbenzene	**340**		ug/L	25
135-98-8	*sec*-Butylbenzene	BRL		ug/L	25
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	25
99-87-6	4-Isopropyltoluene	BRL		ug/L	25
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	25
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	25
104-51-8	*n*-Butylbenzene	BRL		ug/L	25
96-12-8	1,2-Dibromo-3-chloropropane	BRL		ug/L	25
108-70-3	1,3,5-Trichlorobenzene	BRL		ug/L	25
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	25
87-68-3	Hexachlorobutadiene	BRL		ug/L	25
91-20-3	Naphthalene	**650**		ug/L	25
87-61-6	1,2,3-Trichlorobenzene	BRL		ug/L	25
75-65-0	*tert*-Butyl Alcohol (TBA)	BRL		ug/L	1,000
108-20-3	Di-isopropyl Ether (DIPE)	BRL		ug/L	25
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	BRL		ug/L	25
994-05-8	*tert*-Amyl Methyl Ether (TAME)	**270**		ug/L	25

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Dibromofluoromethane	10	10	**98** %	70 - 130 %
1,2-Dichloroethane-d_4	10	9	**93** %	70 - 130 %
Toluene-d_8	10	10	**95** %	70 - 130 %
4-Bromofluorobenzene	10	9	**95** %	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.

GROUNDWATER ANALYTICAL

EPA Method 8260B
Volatile Organics by GC/MS

Field ID:	**Source**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**40 mL VOA Vial**
Client:	**Horsley & Witten, Inc.**	Preservation:	**HCl/ Cool**
Laboratory ID:	**128435-2**	QC Batch ID:	**VM7-3269-W**
Sampled:	**09-30-09 11:00**	Instrument ID:	**MS-7 HP 6890**
Received:	**09-30-09 12:45**	Sample Volume:	**25 mL**
Analyzed:	**10-01-09 11:08**	Dilution Factor:	**1**
Analyst:	**LMG**		

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	3
107-13-1	Acrylonitrile	BRL		ug/L	0.5
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	**36**		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	**8**		ug/L	0.5
123-91-1	1,4-Dioxane	BRL		ug/L	500
10061-01-5	*cis*-1,3-Dichloropropene	BRL		ug/L	0.4
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	0.4
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	**0.8**		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

GROUNDWATER ANALYTICAL

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

Field ID:	**Source**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**40 mL VOA Vial**
Client:	**Horsley & Witten, Inc.**	Preservation:	**HCl/ Cool**
Laboratory ID:	**128435-2RA1**	QC Batch ID:	**VM7-3269-W**
Sampled:	**09-30-09 11:00**	Instrument ID:	**MS-7 HP 6890**
Received:	**09-30-09 12:45**	Sample Volume:	**25 mL**
Analyzed:	**10-01-09 11:08**	Dilution Factor:	**1**
Analyst:	**LMG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
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
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
110-57-6	*trans*-1,4-Dichloro-2-butene	BRL		ug/L	25
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
108-70-3	1,3,5-Trichlorobenzene	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	9	**95** %	70 - 130 %
1,2-Dichloroethane-d_4	10	10	**97** %	70 - 130 %
Toluene-d_8	10	9	**89** %	70 - 130 %
4-Bromofluorobenzene	10	9	**93** %	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.

GROUNDWATER ANALYTICAL

EPA Method 8011
EDB and DBCP by GC/ECD

Field ID:	**Discharge**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**40 mL VOA Vial**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-03**	QC Batch ID:	**PV-0970-E**
Sampled:	**09-30-09 10:20**	Instrument ID:	**GC-5 HP 5890**
Received:	**09-30-09 12:45**	Sample Volume:	**36 mL**
Extracted:	**10-01-09 17:00**	Final Volume:	**2 mL**
Analyzed:	**10-01-09 18:43**	Dilution Factor:	**1**
Analyst:	**AWG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	BRL		ug/L	0.02

Method Reference: 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.

GROUNDWATER ANALYTICAL

EPA Method 8011
EDB and DBCP by GC/ECD

Field ID:	**Source**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**40 mL VOA Vial**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-04**	QC Batch ID:	**PV-0970-E**
Sampled:	**09-30-09 11:00**	Instrument ID:	**GC-5 HP 5890**
Received:	**09-30-09 12:45**	Sample Volume:	**35 mL**
Extracted:	**10-01-09 17:00**	Final Volume:	**2 mL**
Analyzed:	**10-01-09 19:13**	Dilution Factor:	**1**
Analyst:	**AWG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	BRL		ug/L	0.02

Method Reference: 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.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**Discharge**	Matrix:	**Aqueous**
Project:	**Taunton NPDES / 9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-5**	QC Batch ID:	**SV-2429-F**
Sampled:	**09-30-09 10:20**	Instrument ID:	**MS-3 HP 5890**
Received:	**09-30-09 12:45**	Sample Volume:	**1,000 mL**
Extracted:	**10-02-09 13:30**	Final Volume:	**1 mL**
Analyzed:	**10-05-09 17:25**	Dilution Factor:	**10**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	50
110-86-1	Pyridine	BRL		ug/L	50
108-95-2	Phenol	**98**		ug/L	50
62-53-3	Aniline	**250**		ug/L	50
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	50
95-57-8	2-Chlorophenol	BRL		ug/L	50
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	50
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	50
100-51-6	Benzyl Alcohol	BRL		ug/L	50
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	50
95-48-7	2-Methylphenol	**630**		ug/L	50
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	50
108-39-4/106-44-5	3 and 4-Methylphenol *	**130**		ug/L	50
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	50
98-86-2	Acetophenone	BRL		ug/L	50
67-72-1	Hexachloroethane	BRL		ug/L	50
98-95-3	Nitrobenzene	BRL		ug/L	50
78-59-1	Isophorone	BRL		ug/L	50
88-75-5	2-Nitrophenol	BRL		ug/L	50
105-67-9	2,4-Dimethylphenol	**150**		ug/L	50
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	50
120-83-2	2,4-Dichlorophenol	BRL		ug/L	50
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	50
106-47-8	4-Chloroaniline	BRL		ug/L	50
87-68-3	Hexachlorobutadiene	BRL		ug/L	50
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	50
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	50
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	50
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	50
91-58-7	2-Chloronaphthalene	BRL		ug/L	50
88-74-4	2-Nitroaniline	BRL		ug/L	50
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	50
131-11-3	Dimethyl phthalate	BRL		ug/L	50
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	50
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	50
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	50
99-09-2	3-Nitroaniline	BRL		ug/L	50
51-28-5	2,4-Dinitrophenol	BRL		ug/L	50
100-02-7	4-Nitrophenol	BRL		ug/L	50
132-64-9	Dibenzofuran	BRL		ug/L	50
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	50
84-66-2	Diethyl phthalate	BRL		ug/L	50
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	50
100-01-6	4-Nitroaniline	BRL		ug/L	50
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	50

GROUNDWATER ANALYTICAL

EPA Method 8270C (Continued)
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**Discharge**	Matrix:	**Aqueous**
Project:	**Taunton NPDES / 9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-5**	QC Batch ID:	**SV-2429-F**
Sampled:	**09-30-09 10:20**	Instrument ID:	**MS-3 HP 5890**
Received:	**09-30-09 12:45**	Sample Volume:	**1,000 mL**
Extracted:	**10-02-09 13:30**	Final Volume:	**1 mL**
Analyzed:	**10-05-09 17:25**	Dilution Factor:	**10**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine †	BRL		ug/L	50
122-66-7	1,2-Diphenylhydrazine ◊	BRL		ug/L	50
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	50
86-74-8	Carbazole	BRL		ug/L	50
84-74-2	Di-*n*-butyl phthalate	BRL		ug/L	50
85-68-7	Butyl benzyl phthalate	BRL		ug/L	50
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	50
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	50
117-84-0	Di-*n*-octyl phthalate	BRL		ug/L	50

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	n/a	d	15 - 110 %
Phenol-d5	20	n/a	d	15 - 110 %
Nitrobenzene-d5	10	n/a	d	30 - 130 %
2-Fluorobiphenyl	10	n/a	d	30 - 130 %
2,4,6-Tribromophenol	20	n/a	d	15 - 110 %
Terphenyl-d14	10	n/a	d	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 3510C.

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.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

d Surrogate recovery not measurable due to required sample dilution.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Semivolatile Organics by GC/MS-SIM (Part 2)

Field ID:	**Discharge**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-05**	QC Batch ID:	**EP-2429-F**
Sampled:	**09-30-09 10:20**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-30-09 12:45**	Sample Volume:	**1,000 mL**
Extracted:	**10-02-09 13:30**	Final Volume:	**1 mL**
Analyzed:	**10-05-09 23:35**	Dilution Factor:	**50**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	**310**		ug/L	25
91-57-6	2-Methylnaphthalene	**400**		ug/L	25
208-96-8	Acenaphthylene	BRL		ug/L	25
83-32-9	Acenaphthene	BRL		ug/L	25
86-73-7	Fluorene	**32**		ug/L	25
85-01-8	Phenanthrene	**52**		ug/L	25
120-12-7	Anthracene	BRL		ug/L	25
206-44-0	Fluoranthene	BRL		ug/L	25
129-00-0	Pyrene	BRL		ug/L	25
56-55-3	Benzo[a]anthracene	BRL		ug/L	5.0
218-01-9	Chrysene	BRL		ug/L	5.0
205-99-2	Benzo[b]fluoranthene	BRL		ug/L	5.0
207-08-9	Benzo[k]fluoranthene	BRL		ug/L	5.0
50-32-8	Benzo[a]pyrene	BRL		ug/L	5.0
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/L	5.0
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/L	5.0
191-24-2	Benzo[g,h,i]perylene	BRL		ug/L	5.0
87-68-3	Hexachlorobutadiene	BRL		ug/L	25
118-74-1	Hexachlorobenzene	BRL		ug/L	25
87-86-5	Pentachlorophenol	BRL		ug/L	50

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	na	d	15 - 110 %
Phenol-d5	20	na	d	15 - 110 %
Nitrobenzene-d5	10	na	d	30 - 130 %
2-Fluorobiphenyl	10	na	d	30 - 130 %
2,4,6-Tribromophenol	20	na	d	15 - 110 %
Terphenyl-d14	10	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 3510C.

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.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**Source**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-06**	QC Batch ID:	**SV-2429-F**
Sampled:	**09-30-09 11:00**	Instrument ID:	**MS-3 HP 5890**
Received:	**09-30-09 12:45**	Sample Volume:	**1,000 mL**
Extracted:	**10-02-09 13:30**	Final Volume:	**1 mL**
Analyzed:	**10-05-09 15:20**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	5
110-86-1	Pyridine	BRL		ug/L	5
108-95-2	Phenol	BRL		ug/L	5
62-53-3	Aniline	BRL		ug/L	5
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	5
95-57-8	2-Chlorophenol	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
100-51-6	Benzyl Alcohol	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
95-48-7	2-Methylphenol	BRL		ug/L	5
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	5
108-39-4/106-44-5	3 and 4-Methylphenol *	BRL		ug/L	5
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	5
98-86-2	Acetophenone	BRL		ug/L	5
67-72-1	Hexachloroethane	BRL		ug/L	5
98-95-3	Nitrobenzene	BRL		ug/L	5
78-59-1	Isophorone	BRL		ug/L	5
88-75-5	2-Nitrophenol	BRL		ug/L	5
105-67-9	2,4-Dimethylphenol	BRL		ug/L	5
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	5
120-83-2	2,4-Dichlorophenol	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
106-47-8	4-Chloroaniline	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	5
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	5
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	5
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	5
91-58-7	2-Chloronaphthalene	BRL		ug/L	5
88-74-4	2-Nitroaniline	BRL		ug/L	5
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	5
131-11-3	Dimethyl phthalate	BRL		ug/L	5
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	5
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	5
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	5
99-09-2	3-Nitroaniline	BRL		ug/L	5
51-28-5	2,4-Dinitrophenol	BRL		ug/L	5
100-02-7	4-Nitrophenol	BRL		ug/L	5
132-64-9	Dibenzofuran	BRL		ug/L	5
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	5
84-66-2	Diethyl phthalate	BRL		ug/L	5
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	5
100-01-6	4-Nitroaniline	BRL		ug/L	5
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	5

GROUNDWATER ANALYTICAL

EPA Method 8270C (Continued)
Semivolatile Organics by GC/MS (Part 1)

Field ID:	**Source**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-06**	QC Batch ID:	**SV-2429-F**
Sampled:	**09-30-09 11:00**	Instrument ID:	**MS-3 HP 5890**
Received:	**09-30-09 12:45**	Sample Volume:	**1,000 mL**
Extracted:	**10-02-09 13:30**	Final Volume:	**1 mL**
Analyzed:	**10-05-09 15:20**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine †	BRL		ug/L	5
122-66-7	1,2-Diphenylhydrazine ◊	BRL		ug/L	5
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	5
86-74-8	Carbazole	BRL		ug/L	5
84-74-2	Di-*n*-butyl phthalate	BRL		ug/L	5
85-68-7	Butyl benzyl phthalate	BRL		ug/L	5
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	5
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	5
117-84-0	Di-*n*-octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery		QC Limits
2-Fluorophenol	20	7	**33** %		15 - 110 %
Phenol-d5	20	3	**14** %	q	15 - 110 %
Nitrobenzene-d5	10	6	**65** %		30 - 130 %
2-Fluorobiphenyl	10	6	**64** %		30 - 130 %
2,4,6-Tribromophenol	20	13	**67** %		15 - 110 %
Terphenyl-d14	10	7	**70** %		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 3510C.

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.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

q Surrogate recovery outside recommended limits.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Semivolatile Organics by GC/MS-SIM (Part 2)

Field ID:	**Source**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-06**	QC Batch ID:	**EP-2429-F**
Sampled:	**09-30-09 11:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**09-30-09 12:45**	Sample Volume:	**1,000 mL**
Extracted:	**10-02-09 13:30**	Final Volume:	**1 mL**
Analyzed:	**10-05-09 22:14**	Dilution Factor:	**1**
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
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
118-74-1	Hexachlorobenzene	BRL		ug/L	0.5
87-86-5	Pentachlorophenol	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	6.9	**34** %	15 - 110 %
Phenol-d5	20	3.2	**16** %	15 - 110 %
Nitrobenzene-d5	10	5.9	**59** %	30 - 130 %
2-Fluorobiphenyl	10	6.3	**63** %	30 - 130 %
2,4,6-Tribromophenol	20	14	**71** %	15 - 110 %
Terphenyl-d14	10	5.8	**58** %	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 3510C.

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.

GROUNDWATER ANALYTICAL

EPA Method 608
Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	**Discharge**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-07**	QC Batch ID:	**PB-2542-F**
Sampled:	**09-30-09 10:20**	Instrument ID:	**GC-11 Agilent 6890**
Received:	**09-30-09 12:45**	Sample Weight:	**1000 mL**
Extracted:	**10-05-09 08:00**	Final Volume:	**10 mL**
Cleaned Up:	**10-05-09 13:00**	Dilution Factor:	**1**
Analyzed:	**10-06-09 12:20**		
Analyst:	**AWG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro-*m*-xylene	0.20	0.12	**60** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.16	**82** %	30 - 150 %
Second	Tetrachloro-*m*-xylene	0.20	0.10	**50** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.17	**85** %	30 - 150 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, US EPA, 40 C.F.R. 136, Appendix A, (1986). Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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.

GROUNDWATER ANALYTICAL

EPA Method 608
Polychlorinated Biphenyls (PCBs) by GC/ECD

Field ID:	**Source**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**Cool**
Laboratory ID:	**128435-08**	QC Batch ID:	**PB-2542-F**
Sampled:	**09-30-09 11:00**	Instrument ID:	**GC-11 Agilent 6890**
Received:	**09-30-09 12:45**	Sample Weight:	**1000 mL**
Extracted:	**10-05-09 08:00**	Final Volume:	**10 mL**
Cleaned Up:	**10-05-09 13:00**	Dilution Factor:	**1**
Analyzed:	**10-06-09 13:07**		
Analyst:	**AWG**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.2
11104-28-2	Aroclor 1221	BRL		ug/L	0.2
11141-16-5	Aroclor 1232	BRL		ug/L	0.2
53469-21-9	Aroclor 1242	BRL		ug/L	0.2
12672-29-6	Aroclor 1248	BRL		ug/L	0.2
11097-69-1	Aroclor 1254	BRL		ug/L	0.2
11096-82-5	Aroclor 1260	BRL		ug/L	0.2

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First	Tetrachloro-*m*-xylene	0.20	0.16	**81** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.16	**78** %	30 - 150 %
Second	Tetrachloro-*m*-xylene	0.20	0.16	**81** %	30 - 150 %
Column	Decachlorobiphenyl	0.20	0.16	**78** %	30 - 150 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, US EPA, 40 C.F.R. 136, Appendix A, (1986). Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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.

GROUNDWATER ANALYTICAL

EPA Method 8015B (Modified)
Total Petroleum Hydrocarbons by GC/FID

Field ID:	**Discharge**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**H2SO4/ Cool**
Laboratory ID:	**128435-9**	QC Batch ID:	**HF-2156-F**
Sampled:	**09-30-09 10:20**	Instrument ID:	**GC4 HP 5890**
Received:	**09-30-09 12:45**	Sample Volume:	**1,000 mL**
Extracted:	**10-01-09 09:00**	Final Volume:	**1 mL**
Analyzed:	**10-03-09 06:08**	Dilution Factor:	**5**
Analyst:	**MB**		

Analyte	Concentration	Notes	Units	Reporting Limit
Total Petroleum Hydrocarbons	**58**		mg/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	0.040	n/a	**d**	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

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.

GROUNDWATER ANALYTICAL

EPA Method 8015B (Modified)
Total Petroleum Hydrocarbons by GC/FID

Field ID:	**Source**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**1 L Amber Glass**
Client:	**Horsley & Witten, Inc.**	Preservation:	**H2SO4/ Cool**
Laboratory ID:	**128435-10**	QC Batch ID:	**HF-2156-F**
Sampled:	**09-30-09 11:00**	Instrument ID:	**GC4 HP 5890**
Received:	**09-30-09 12:45**	Sample Volume:	**1,000 mL**
Extracted:	**10-01-09 09:00**	Final Volume:	**1 mL**
Analyzed:	**10-01-09 22:59**	Dilution Factor:	**1**
Analyst:	**CM**		

Analyte	Concentration	Notes	Units	Reporting Limit
Total Petroleum Hydrocarbons	BRL		mg/L	0.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	0.040	0.032	**81** %	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

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.

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **Discharge** Matrix: **Aqueous**
Project: **Taunton NPDES/9073** Received: **09-30-09 12:45**
Client: **Horsley & Witten, Inc.**

Lab ID: **128435-11** Sampled: **09-30-09 10:20** Container: **1 L Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	1	500 mL	10-02-09 08:55	TSS-1683-W	SM 2540 D	3	JR
Chlorine, Total Residual	**0.09**	mg/L	0.04	2	2.5 mL	10-01-09 08:00	TRC-0811-W	SM 4500-Cl G	2	DEB
Chromium, Hexavalent	BRL	mg/L	0.01	1	5 mL	10-01-09 10:00	HC-0167-W	SM 3500-Cr D	2	JK

Lab ID: **128435-13** Sampled: **09-30-09 10:20** Container: **500 mL Plastic** Preservation: **NaOH/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Cyanide, Total	BRL	mg/L	0.01	1	50 mL	10-01-09 12:12	TCN-1522-W	Lachat 10-204-00-1-A (EPA 335.3)	1	JR

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: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Inorganic Chemistry

Field ID: **Source** Matrix: **Aqueous**
Project: **Taunton NPDES/9073** Received: **09-30-09 12:45**
Client: **Horsley & Witten, Inc.**

Lab ID: **128435-12** Sampled: **09-30-09 11:00** Container: **1 L Plastic** Preservation: **Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Solids, Total Suspended	BRL	mg/L	2	1	500 mL	10-02-09 08:55	TSS-1683-W	SM 2540 D	3	JR
Chlorine, Total Residual	**4**	mg/L	1	50	0.1 mL	10-01-09 08:00	TRC-0811-W	SM 4500-Cl G	2	DEB
Chromium, Hexavalent	BRL	mg/L	0.01	1	5 mL	10-01-09 10:00	HC-0167-W	SM 3500-Cr D	2	JK

Lab ID: **128435-14** Sampled: **09-30-09 11:00** Container: **500 mL Plastic** Preservation: **NaOH/Cool**

Analyte	Result	Units	RL	DF	Volume	Analyzed	QC Batch	Method	Inst	Analyst
Cyanide, Total	BRL	mg/L	0.01	1	50 mL	10-01-09 12:16	TCN-1522-W	Lachat 10-204-00-1-A (EPA 335.3)	1	JR

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: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**Discharge**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**250 mL Plastic**
Client:	**Horsley & Witten, Inc.**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**128435-15**	Preserved:	**09-30-09 10:20**
Sampled:	**09-30-09 10:20**		
Received:	**09-30-09 12:45**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.8[1]	MB-3880-W	EPA 200.8	10-01-09 09:14	50 mL	ICPMS-1 ELAN 9000	MFP
EPA 200.7[2]	MB-3880-W	EPA 200.7	10-01-09 09:14	50 mL	ICP-1 PE 3000	MFP
EPA 245.1[3]	MP-2230-W	EPA 245.1	10-02-09 09:30	25 mL	CVAA-1 PE FIMS	MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony, Total	BRL		mg/L	0.003	1	10-02-09 22:50	EPA 200.8[1]
7440-38-2	Arsenic, Total	BRL		mg/L	0.005	1	10-02-09 22:50	EPA 200.8[1]
7440-43-9	Cadmium, Total	BRL		mg/L	0.004	1	10-01-09 20:39	EPA 200.7[2]
7440-47-3	Chromium, Total	BRL		mg/L	0.01	1	10-01-09 20:39	EPA 200.7[2]
7440-50-8	Copper, Total	BRL		mg/L	0.025	1	10-02-09 22:48	EPA 200.7[2]
7439-89-6	Iron, Total	**0.1**		mg/L	0.1	1	10-01-09 20:39	EPA 200.7[2]
7439-92-1	Lead, Total	**0.011**		mg/L	0.001	1	10-02-09 22:50	EPA 200.8[1]
7439-97-6	Mercury, Total	BRL		mg/L	0.0002	1	10-02-09 21:06	EPA 245.1[3]
7440-02-0	Nickel, Total	BRL		mg/L	0.04	1	10-01-09 20:39	EPA 200.7[2]
7782-49-2	Selenium, Total	BRL		mg/L	0.005	1	10-02-09 22:50	EPA 200.8[1]
7440-22-4	Silver, Total	BRL		mg/L	0.007	1	10-01-09 20:39	EPA 200.7[2]
7440-28-0	Thallium, Total	BRL		mg/L	0.001	1	10-01-09 20:39	EPA 200.8[1]
7440-66-6	Zinc, Total	BRL		mg/L	0.2	1	10-02-09 22:50	EPA 200.7[2]

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

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.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Trace Metals

Field ID:	**Source**	Matrix:	**Aqueous**
Project:	**Taunton NPDES/9073**	Container:	**250 mL Plastic**
Client:	**Horsley & Witten, Inc.**	Preservation:	**HNO3 / Cool**
Laboratory ID:	**128435-16**	Preserved:	**09-30-09 11:00**
Sampled:	**09-30-09 11:00**		
Received:	**09-30-09 12:45**		

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.8[1]	MB-3880-W	EPA 200.8	10-01-09 09:14	50 mL	ICPMS-1 ELAN 9000	MFP
EPA 200.7[2]	MB-3880-W	EPA 200.7	10-01-09 09:14	50 mL	ICP-1 PE 3000	MFP
EPA 245.1[3]	MP-2230-W	EPA 245.1	10-02-09 09:30	25 mL	CVAA-1 PE FIMS	MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony, Total	BRL		mg/L	0.003	1	10-02-09 22:55	EPA 200.8[1]
7440-38-2	Arsenic, Total	BRL		mg/L	0.005	1	10-02-09 22:55	EPA 200.8[1]
7440-43-9	Cadmium, Total	BRL		mg/L	0.004	1	10-01-09 20:43	EPA 200.7[2]
7440-47-3	Chromium, Total	BRL		mg/L	0.01	1	10-01-09 20:43	EPA 200.7[2]
7440-50-8	Copper, Total	BRL		mg/L	0.025	1	10-02-09 22:52	EPA 200.7[2]
7439-89-6	Iron, Total	BRL		mg/L	0.1	1	10-01-09 20:43	EPA 200.7[2]
7439-92-1	Lead, Total	BRL		mg/L	0.001	1	10-02-09 22:55	EPA 200.8[1]
7439-97-6	Mercury, Total	BRL		mg/L	0.0002	1	10-02-09 21:12	EPA 245.1[3]
7440-02-0	Nickel, Total	BRL		mg/L	0.04	1	10-01-09 20:43	EPA 200.7[2]
7782-49-2	Selenium, Total	BRL		mg/L	0.005	1	10-02-09 22:55	EPA 200.8[1]
7440-22-4	Silver, Total	BRL		mg/L	0.007	1	10-01-09 20:43	EPA 200.7[2]
7440-28-0	Thallium, Total	BRL		mg/L	0.001	1	10-02-09 22:55	EPA 200.8[1]
7440-66-6	Zinc, Total	BRL		mg/L	0.2	1	10-01-09 20:43	EPA 200.7[2]

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

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.

DF Dilution Factor.

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Project Narrative

Project:	**Taunton NPDES/9073**	Lab ID:	**128435**
Client:	**Horsley & Witten, Inc.**	Received:	**09-30-09 12:45**

A. Documentation and Client Communication

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

1 . No documentation discrepancies, changes, or amendments were noted.

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 128435-1. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration.

2 . EPA 8270C Modification: Samples 128435-5,-6. Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method. GC/MS-SIM was used to achieve low quantification limits necessary for regulatory compliance.

3 . EPA 8270C Non-conformance: Samples 128435-05 and -06.Laboratory control sample (LCS) had analytes Pyridine and Pentahlorophenol with RPD recoveries above recommended recovery limits for QC Batch SV-2429-F.

4 . EPA 8270C Note: Sample 128435-05. Sample was diluted prior to analysis. Dilution was required to keep all target analytes within calibration.

5 . TPH by GC/FID Note: Sample 128435-09. Sample was diluted prior to analysis. Dilution was required due to presence of non-target analyte interference.

6 . TPH by GC/FID Note: Sample 128435-09. Sample had surrogate recovery outside recommended limits due to required sample dilution.

7 . EPA 8270C Non-conformance: Sample 128435-06. Sample had surrogate recovery outside recommended limits due to sample matrix interference.

8 . EPA 8270C Non-conformance: Sample 128435-05. Sample did not have measureable surrogate recoveries due to required sample dilution.

9 . EPA 8260B Non-conformance: Samples 128435-01 and -02.Laboratory control sample (LCS) had analytes Dichlorodifluoromethane and Trichlorofluoromethane below recommended recovery limtis and Trichlorofluoromethane with RPD recovery above recommended recovery limits for QC Batch VM7-3269-W.

GROUNDWATER ANALYTICAL

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Buzzards Bay, MA 02532
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CHAIN-OF-CUSTODY RECORD AND WORK ORDER

* PLEASE REFER TO NPDES APPENDIX III REQUIREMENTS
CALL GARY HEDMAN 508-833-6600 W/ QUESTIONS

Project Name: TAUNTON NPDES	Firm: HORSLEY WITTEN
Project Number: 9073	Address: 90 ROUTE 6A
Sampler Name: G. Hedman	City / State / Zip:: Sandwich, MA, 02563
Project Manager: G. Hedman	Telephone: 508-833-6600

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

TURNAROUND

- ☐ 10 Business Days
- ☐ 5 Business Days
- ☒ RUSH (RAN- 609) (Rush requires Rush Authorization Number)
- ☐ Please Email to: ghedman@horsleywitten.com
- ☐ Please FAX to:

BILLING

- ☐ Purchase Order No.:
- ☐ Third Party Billing:
- ☐ GWA Quote:

ANALYSIS REQUEST

OPTIONS: ☐ TIC Search
SDWA: ☐ 524.2
NPDES: ☐ 624
RCRA/21E: ☐ 8260B TCL+MTBE ☒ 8260B

Volatiles: ☐ 602+MTBE ☐ 8260B Aromatics ☐ 8260B Halocarbons ☐ 8021B Vermont
Semivolatiles: ☐ Acid Only ☐ B/N Only ☐ TIC Search ☐ 625.2 ☐ 625 ☒ 8270C ☐ 8270C PAHs only ☐ 625 PAHs only
Pest/Herb/PCBs Extractable: ☐ 505 ☐ 508 ☐ 608 Pesticides ☐ 608 PCBs ☐ 8081A Pesticides ☒ 8082 PCBs ☐ 8151A Herbicides
Pest/Herb/PCBs Vol.: ☐ 531.1 ☐ 515.3 ☒ 504.1 EDB/DBCP ☐ 8011 EDB/DBCP
Metals: Specify For Water Samples ☐ Total ☐ Dissolved ☐ Lead and Copper ☐ 13 Priority Pollutant ☐ 8 RCRA ☐ 5 RCRA ☐ 14 MA DEP Metals ☐ 23 TAL ☐ Specify NPDES APPENDIX III
Petroleum Hydrocarbon Ext. TPH: ☐ Diesel Range Organics (DRO) ☐ ME DRO ☐ CT ETPH ☐ MA DEP EPH w/all targets ☐ EPH Carbon Ranges only ☐ EPH w/4 PAHs ☐ Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00 Mod.)
Petroleum Hydrocarbon Vol. TPH: ☒ TPH by GC/FID (8015B Mod) Quantitative Only ☐ Gasoline Range Organics (GRO) ☐ ME GRO ☐ MA DEP VPH w/all targets ☐ VPH Carbon ranges only
Haz. Waste: ☐ TCLP ☐ SPLP ☐ 6 Metals ☐ Phs only ☐ VOA ☐ Semi VOA ☐ Pesticides ☐ Herbicides ☐ Corrosivity (as pH) ☐ Reactivity ☐ Ignitability ☐ Conductivity ☐ Paint Filter ☐ MA Basic Disposal: 8260B/TCL TPH; PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity ☐ MA Extended Disposal 8260B, 8270C; TPH; PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity
General Chemistry: ☐ Nitrate ☐ Nitrite ☐ Chlorine ☐ Fluoride ☐ Sulfate ☐ Dissolved Phosphorus ☐ Ammonia ☐ TKN ☐ Total Phosphorus as P ☐ Total N (as N02/N03/TKN) ☐ Oil & Grease ☐ COD ☐ TOC ☐ BOD ☐ CBOD ☐ TSS ☐ TDS ☐ Alkalinity ☐ Total Cyanide ☐ Physiologically Available Cyanide ☐ Available Cyanide
Other: ☐ pH ☐ Dissolved Oxygen ☐ Turbidity ☐ Total Coliform ☐ Fecal Coliform ☐ HPC ☐ MA DEP Asbestos (in Soil ☐ Asbestos (PLM)

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
9/30	1020	DISCHARGE	OIL/ORGANIC LIQUID: WATER	COMPOSITE: X; GRAB: X	NUMBER: 15; 40mL VOA Vial: X; 250mL/16 oz Glass: X; 1L/32 oz Amber Glass: X	HCl: X; HNO3: X; H2SO4: X; NaOH: X	YES: X; NO: X	
9/30	1100	SOURCE	OIL/ORGANIC LIQUID: WATER	COMPOSITE: X; GRAB: X	NUMBER: 16; 40mL VOA Vial: X; 250mL/16 oz Glass: X; 1L/32 oz Amber Glass: X	HCl: X; HNO3: X; H2SO4: X; NaOH: X	YES: X; NO: X	

REMARKS / SPECIAL INSTRUCTIONS

- ☐ 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 CT RCP Data Certification required.

Signature:

DATA QUALITY OBJECTIVES

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	
☐	☒ NPDES App. III	

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
- ☐ Sample Duplicate
- ☐ Matrix Spike
- ☐ Matrix Spike Duplicate

Selection of QC Sample
- ☐ Please use sample:

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by Sampler:	Date	Time	Received by:	Receipt Temperature:
	9/30	1245		☐ Ice ☐ Refrigerated 4-6°C Recommended 5.6°C
Relinquished by:	Date	Time	Received by:	Container Count:
Relinquished by:	Date	Time	Received by Laboratory:	Shipping/Airbill Number:

Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____ 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.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category:	**EPA 8015B Mod TPH**	Instrument ID:	**GC4 HP 5890**
QC Batch ID:	**HF-2156-F**	Extracted:	**10-01-09 09:00**
Matrix:	**Aqueous**	Analyzed:	**10-01-09 23:48**
Units:	**mg/L**	Analyst:	**CM**

Analyte	Spiked	Measured	Recovery	QC Limits
Fuel Oil No. 2	2.0	0.98	**49** %	60 - 140 %

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	0.040	0.023	**57** %	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

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.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA 8015B Mod TPH**	Instrument ID:	**GC4 HP 5890**
QC Batch ID:	**HF-2156-F**	Extracted:	**10-01-09 09:00**
Matrix:	**Aqueous**	Analyzed:	**10-01-09 22:53**
		Analyst:	**CM**

Analyte	Concentration	Notes	Units	Reporting Limit
Total Petroleum Hydrocarbons	BRL		mg/L	0.2

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	0.040	0.033	**82** %	60 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified to quantify total petroleum hydrocarbons in the range n-C 9 through n-C 36. Results are quantified on the basis of a series of aromatic and aliphatic hydrocarbons, using 5-alpha-androstane as an internal standard.
Sample extraction performed by EPA Method 3510C.

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.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category:	**EPA Method 608 PCBs**	Instrument ID:	**GC-11 Agilent 6890**
QC Batch ID:	**PB-2542-F**	Extracted:	**10-05-09 08:00**
Matrix:	**Aqueous**	Cleaned Up:	**10-05-09 13:00**
Units:	**ug/L**	Analyzed:	**10-06-09 11:57**
		Analyst:	**AWG**

CAS Number	Analyte	Spiked	Measured		Recovery		QC Limits
			1st Column	2nd Column	1st Column	2nd Column	
12674-11-2	Aroclor 1016	5.0	4.7	4.3	**94** %	**87** %	40 - 140 %
11096-82-5	Aroclor 1260	5.0	3.5	3.3	**70** %	**65** %	40 - 140 %

QC Surrogate Compound	Spiked	Measured		Recovery		QC Limits
Tetrachloro-*m*-xylene	0.20	0.16	0.16	**81** %	**81** %	30 - 150 %
Decachlorobiphenyl	0.20	0.20	0.21	**102** %	**103** %	30 - 150 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, US EPA, 40 C.F.R. 136, Appendix A, (1986). Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 608 PCBs**	Instrument ID:	**GC-11 Agilent 6890**
QC Batch ID:	**PB-2542-F**	Extracted:	**10-05-09 08:00**
Matrix:	**Aqueous**	Cleaned Up:	**10-05-09 13:00**
		Analyzed:	**10-06-09 11:09**
		Analyst:	**AWG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
12674-11-2	Aroclor 1016	BRL		ug/L	0.20
11104-28-2	Aroclor 1221	BRL		ug/L	0.20
11141-16-5	Aroclor 1232	BRL		ug/L	0.20
53469-21-9	Aroclor 1242	BRL		ug/L	0.20
12672-29-6	Aroclor 1248	BRL		ug/L	0.20
11097-69-1	Aroclor 1254	BRL		ug/L	0.20
11096-82-5	Aroclor 1260	BRL		ug/L	0.20

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
First Column	Tetrachloro-*m*-xylene	0.20	0.16	**80** %	30 - 150 %
	Decachlorobiphenyl	0.20	0.20	**98** %	30 - 150 %
Second Column	Tetrachloro-*m*-xylene	0.20	0.16	**79** %	30 - 150 %
	Decachlorobiphenyl	0.20	0.19	**95** %	30 - 150 %

Method Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, US EPA, 40 C.F.R. 136, Appendix A, (1986). Sample extraction performed by EPA Method 3510C. Cleanup performed by EPA Method 3660B and EPA Method 3665A.

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.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category:	**EPA Method 8011**	Instrument ID:	**GC-5 HP 5890**
QC Batch ID:	**PV-0970-E**	Extracted:	**10-01-09 11:00**
Matrix:	**Aqueous**	Analyzed:	**10-01-09 14:10**
Units:	**ug/L**	Analyst:	**AWG**

CAS Number	Analyte	Spiked	Measured		Recovery		QC Limits
			1st Column	2nd Column	1st Column	2nd Column	
106-93-4	1,2-Dibromoethane (EDB)	0.20	0.20	0.21	**99** %	**104** %	70 - 130 %
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	0.20	0.19	0.20	**96** %	**101** %	70 - 130 %

Method Reference: 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.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8011**	Instrument ID:	**GC-5 HP 5890**
QC Batch ID:	**PV-0970-E**	Extracted:	**10-01-09 11:00**
Matrix:	**Aqueous**	Analyzed:	**10-01-09 15:41**
		Analyst:	**AWG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
106-93-4	1,2-Dibromoethane (EDB)	BRL		ug/L	0.02
96-12-8	1,2-Dibromo-3-Chloropropane (DBCP)	BRL		ug/L	0.02

Method Reference: 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.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Sample

Category: **Metals**
Matrix: **Aqueous**
Units: **mg/L**

Analysis Method	QC Batch ID	Prep Method	Prepared	Instrument ID	Analyst
EPA 200.7	MB-3880-WL	EPA 200.7	10-01-09 09:14	ICP-1 PE3000XL	MFP
EPA 200.8	MB-3880-WL	EPA 200.8	10-01-09 09:14	ICPMS-1 ELAN 9000	MFP
EPA 245.1	MP-2230-WL	EPA 245.1	10-02-09 09:30	CVAA-1 PE FIMS	MFP

CAS Number	Analyte	Spiked	Measured	Recovery	QC Limits	Analyzed	Method
7440-36-0	Antimony	0.050	0.048	**96** %	85-115 %	10-02-09 22:35	EPA 200.8
7440-38-2	Arsenic	0.050	0.044	**88** %	85-115 %	10-02-09 22:35	EPA 200.8
7440-41-7	Beryllium	1.0	1.00	**100** %	85-115 %	10-01-09 19:13	EPA 200.7
7440-43-9	Cadmium	0.010	0.011	**110** %	85-115 %	10-02-09 22:35	EPA 200.8
7440-47-3	Chromium	1.0	1.0	**99** %	85-115 %	10-01-09 19:13	EPA 200.7
7440-50-8	Copper	0.050	0.055	**110** %	85-115 %	10-02-09 22:35	EPA 200.8
7439-92-1	Lead	0.050	0.0510	**102** %	85-115 %	10-02-09 22:35	EPA 200.8
7439-97-6	Mercury	0.0010	0.0010	**103** %	85-115 %	10-02-09 19:51	EPA 245.1
7440-02-0	Nickel	0.050	0.051	**102** %	85-115 %	10-02-09 22:35	EPA 200.8
7782-49-2	Selenium	0.050	0.043	**86** %	85-115 %	10-02-09 22:35	EPA 200.8
7440-22-4	Silver	0.010	0.012	**115** %	85-115 %	10-02-09 22:35	EPA 200.8
7440-28-0	Thallium	0.050	0.0525	**105** %	85-115 %	10-02-09 22:35	EPA 200.8
7440-66-6	Zinc	1.0	1.0	**100** %	85-115 %	10-01-09 19:13	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

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.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **Metals**
Matrix: **Aqueous**

Analysis Method	QC Batch ID	Prep Method	Prepared	Sample Volume	Instrument ID	Analyst
EPA 200.7	MB-3880-WB	EPA 200.7	10-01-09 09:14	50 mL	ICP-1 PE3000XL	MFP
EPA 200.8	MB-3880-WB	EPA 200.8	10-01-09 09:14	50 mL	ICPMS-1 ELAN 9000	MFP
EPA 245.1	MP-2230-WB	EPA 245.1	10-02-09 09:30	25 mL	CVAA-1 PE FIMS	MFP

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit	DF	Analyzed	Method
7440-36-0	Antimony	BRL		mg/L	0.006	1	10-02-09 22:35	EPA 200.8
7440-38-2	Arsenic	BRL		mg/L	0.005	1	10-02-09 22:35	EPA 200.8
7440-41-7	Beryllium	BRL		mg/L	0.004	1	10-01-09 19:09	EPA 200.7
7440-43-9	Cadmium	BRL		mg/L	0.0002	1	10-02-09 22:35	EPA 200.8
7440-47-3	Chromium	BRL		mg/L	0.01	1	10-01-09 19:09	EPA 200.7
7440-50-8	Copper	BRL		mg/L	0.003	1	10-02-09 22:35	EPA 200.8
7439-92-1	Lead	BRL		mg/L	0.0005	1	10-02-09 22:35	EPA 200.8
7439-97-6	Mercury	BRL		mg/L	0.0002	1	10-02-09 19:51	EPA 245.1
7440-02-0	Nickel	BRL		mg/L	0.008	1	10-02-09 22:35	EPA 200.8
7782-49-2	Selenium	BRL		mg/L	0.005	1	10-02-09 22:35	EPA 200.8
7440-22-4	Silver	BRL		mg/L	0.0004	1	10-02-09 22:35	EPA 200.8
7440-28-0	Thallium	BRL		mg/L	0.001	1	10-02-09 22:35	EPA 200.8
7440-66-6	Zinc	BRL		mg/L	0.2	1	10-01-09 19:09	EPA 200.7

Method Reference: Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised (1983), and Methods for the Determination of Metals in Environmental Samples, Supplement I, EPA-600/R-94-111, (1994), and 40 C.F.R. 136, Appendix C (1990).

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.

DF Dilution Factor.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA Method 8260B**	Instrument ID:	**MS-7 HP 6890**	Instrument ID:	**MS-7 HP 6890**
QC Batch ID:	**VM7-3269-W**	Analyzed:	**10-01-09 06:56**	Analyzed:	**10-01-09 07:32**
Matrix:	**Aqueous**	Analyst:	**LMG**	Analyst:	**LMG**
Units:	**ug/L**				

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
75-71-8	Dichlorodifluoromethane	10	7.3	**73** %	10	6.8	**68** % q	**8** %	70 - 130 %	25%
74-87-3	Chloromethane	10	9.2	**92** %	10	8.9	**89** %	**4** %	70 - 130 %	25%
75-01-4	Vinyl Chloride	10	11	**114** %	10	11	**105** %	**7** %	70 - 130 %	25%
74-83-9	Bromomethane	10	11	**108** %	10	10	**103** %	**4** %	70 - 130 %	25%
75-00-3	Chloroethane	10	11	**112** %	10	11	**108** %	**3** %	70 - 130 %	25%
75-69-4	Trichlorofluoromethane	10	8.8	**88** %	10	6.8	**68** % q	**26** % q	70 - 130 %	25%
60-29-7	Diethyl Ether	20	21	**106** %	20	20	**101** %	**5** %	70 - 130 %	25%
75-35-4	1,1-Dichloroethene	10	10	**104** %	10	9.6	**96** %	**8** %	70 - 130 %	25%
76-13-1	1,1,2-Trichlorotrifluoroethane	20	19	**93** %	20	18	**88** %	**6** %	70 - 130 %	25%
67-64-1	Acetone	20	22	**108** %	20	20	**101** %	**7** %	70 - 130 %	25%
75-15-0	Carbon Disulfide	20	17	**85** %	20	16	**80** %	**6** %	70 - 130 %	25%
75-09-2	Methylene Chloride	10	10	**101** %	10	10	**102** %	**1** %	70 - 130 %	25%
107-13-1	Acrylonitrile	10	11	**112** %	10	11	**108** %	**4** %	70 - 130 %	25%
156-60-5	*trans*-1,2-Dichloroethene	10	10	**104** %	10	9.6	**96** %	**8** %	70 - 130 %	25%
1634-04-4	Methyl *tert*-butyl Ether (MTBE)	10	9.9	**99** %	10	9.9	**99** %	**1** %	70 - 130 %	25%
75-34-3	1,1-Dichloroethane	10	10	**102** %	10	9.8	**98** %	**4** %	70 - 130 %	25%
594-20-7	2,2-Dichloropropane	10	10	**100** %	10	9.7	**97** %	**3** %	70 - 130 %	25%
156-59-2	*cis*-1,2-Dichloroethene	10	11	**108** %	10	10	**104** %	**4** %	70 - 130 %	25%
78-93-3	2-Butanone (MEK)	20	20	**100** %	20	19	**95** %	**6** %	70 - 130 %	25%
74-97-5	Bromochloromethane	10	11	**108** %	10	10	**104** %	**4** %	70 - 130 %	25%
109-99-9	Tetrahydrofuran (THF)	20	21	**106** %	20	21	**104** %	**1** %	70 - 130 %	25%
67-66-3	Chloroform	10	10	**102** %	10	10	**100** %	**2** %	70 - 130 %	25%
71-55-6	1,1,1-Trichloroethane	10	9.5	**95** %	10	9.2	**92** %	**4** %	70 - 130 %	25%
56-23-5	Carbon Tetrachloride	10	9.3	**93** %	10	9.0	**90** %	**3** %	70 - 130 %	25%
563-58-6	1,1-Dichloropropene	10	9.9	**99** %	10	9.3	**93** %	**6** %	70 - 130 %	25%
71-43-2	Benzene	10	11	**108** %	10	10	**103** %	**5** %	70 - 130 %	25%
107-06-2	1,2-Dichloroethane	10	9.6	**96** %	10	9.7	**97** %	**1** %	70 - 130 %	25%
79-01-6	Trichloroethene	10	10	**102** %	10	9.6	**96** %	**6** %	70 - 130 %	25%
78-87-5	1,2-Dichloropropane	10	11	**106** %	10	10	**102** %	**4** %	70 - 130 %	25%
74-95-3	Dibromomethane	10	10	**103** %	10	10	**103** %	**1** %	70 - 130 %	25%
75-27-4	Bromodichloromethane	10	11	**107** %	10	10	**104** %	**2** %	70 - 130 %	25%
123-91-1	1,4-Dioxane	200	250	**125** %	200	240	**120** %	**4** %	70 - 130 %	25%
10061-01-5	*cis*-1,3-Dichloropropene	10	10	**105** %	10	10	**103** %	**1** %	70 - 130 %	25%
108-10-1	4-Methyl-2-Pentanone (MIBK)	20	20	**100** %	20	21	**103** %	**3** %	70 - 130 %	25%
108-88-3	Toluene	10	11	**109** %	10	10	**103** %	**6** %	70 - 130 %	25%
10061-02-6	*trans*-1,3-Dichloropropene	10	10	**100** %	10	9.8	**98** %	**2** %	70 - 130 %	25%
79-00-5	1,1,2-Trichloroethane	10	11	**111** %	10	11	**107** %	**3** %	70 - 130 %	25%
127-18-4	Tetrachloroethene	10	11	**108** %	10	9.6	**96** %	**11** %	70 - 130 %	25%
142-28-9	1,3-Dichloropropane	10	11	**110** %	10	11	**107** %	**2** %	70 - 130 %	25%
591-78-6	2-Hexanone	20	22	**110** %	20	22	**109** %	**1** %	70 - 130 %	25%
124-48-1	Dibromochloromethane	10	11	**109** %	10	11	**107** %	**2** %	70 - 130 %	25%
106-93-4	1,2-Dibromoethane (EDB)	10	11	**111** %	10	11	**105** %	**5** %	70 - 130 %	25%
108-90-7	Chlorobenzene	10	11	**111** %	10	10	**105** %	**6** %	70 - 130 %	25%
630-20-6	1,1,1,2-Tetrachloroethane	10	11	**110** %	10	10	**104** %	**6** %	70 - 130 %	25%
100-41-4	Ethylbenzene	10	11	**113** %	10	10	**105** %	**8** %	70 - 130 %	25%
108-38-3/106-42-3	*meta*-Xylene and *para*-Xylene	20	23	**115** %	20	22	**108** %	**6** %	70 - 130 %	25%
95-47-6	*ortho*-Xylene	10	11	**113** %	10	10	**104** %	**8** %	70 - 130 %	25%
100-42-5	Styrene	10	11	**114** %	10	11	**108** %	**5** %	70 - 130 %	25%
75-25-2	Bromoform	10	11	**106** %	10	10	**104** %	**2** %	70 - 130 %	25%

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA Method 8260B**	Instrument ID:	**MS-7 HP 6890**	Instrument ID:	**MS-7 HP 6890**
QC Batch ID:	**VM7-3269-W**	Analyzed:	**10-01-09 06:56**	Analyzed:	**10-01-09 07:32**
Matrix:	**Aqueous**	Analyst:	**LMG**	Analyst:	**LMG**
Units:	**ug/L**				

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
98-82-8	Isopropylbenzene	10	10	**102** %	10	9.6	**96** %	**7** %	70 - 130 %	25%
108-86-1	Bromobenzene	10	11	**114** %	10	11	**109** %	**4** %	70 - 130 %	25%
79-34-5	1,1,2,2-Tetrachloroethane	10	11	**115** %	10	11	**113** %	**2** %	70 - 130 %	25%
96-18-4	1,2,3-Trichloropropane	10	13	**126** %	10	12	**123** %	**2** %	70 - 130 %	25%
110-57-6	*trans*-1,4-Dichloro-2-butene	200	240	**121** %	200	240	**119** %	**2** %	70 - 130 %	25%
103-65-1	*n*-Propylbenzene	10	11	**114** %	10	11	**107** %	**6** %	70 - 130 %	25%
95-49-8	2-Chlorotoluene	10	11	**112** %	10	11	**107** %	**5** %	70 - 130 %	25%
108-67-8	1,3,5-Trimethylbenzene	10	12	**116** %	10	11	**108** %	**7** %	70 - 130 %	25%
106-43-4	4-Chlorotoluene	10	11	**112** %	10	11	**106** %	**6** %	70 - 130 %	25%
98-06-6	*tert*-Butylbenzene	10	11	**113** %	10	11	**105** %	**7** %	70 - 130 %	25%
95-63-6	1,2,4-Trimethylbenzene	10	12	**117** %	10	11	**109** %	**7** %	70 - 130 %	25%
135-98-8	*sec*-Butylbenzene	10	11	**112** %	10	11	**105** %	**7** %	70 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	10	11	**110** %	10	10	**104** %	**5** %	70 - 130 %	25%
99-87-6	4-Isopropyltoluene	10	11	**112** %	10	10	**105** %	**7** %	70 - 130 %	25%
106-46-7	1,4-Dichlorobenzene	10	11	**109** %	10	10	**103** %	**5** %	70 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	10	11	**110** %	10	10	**105** %	**5** %	70 - 130 %	25%
104-51-8	*n*-Butylbenzene	10	11	**112** %	10	10	**104** %	**8** %	70 - 130 %	25%
96-12-8	1,2-Dibromo-3-chloropropane	10	11	**109** %	10	11	**108** %	**1** %	70 - 130 %	25%
108-70-3	1,3,5-Trichlorobenzene	10	12	**123** %	10	11	**114** %	**8** %	70 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	10	12	**119** %	10	11	**109** %	**9** %	70 - 130 %	25%
87-68-3	Hexachlorobutadiene	10	12	**115** %	10	10	**102** %	**12** %	70 - 130 %	25%
91-20-3	Naphthalene	10	12	**117** %	10	11	**113** %	**4** %	70 - 130 %	25%
87-61-6	1,2,3-Trichlorobenzene	10	12	**116** %	10	11	**110** %	**5** %	70 - 130 %	25%
75-65-0	*tert*-Butyl Alcohol (TBA)	200	230	**117** %	200	210	**105** %	**11** %	70 - 130 %	25%
108-20-3	Di-isopropyl Ether (DIPE)	10	9.4	**94** %	10	9.1	**91** %	**4** %	70 - 130 %	25%
637-92-3	Ethyl *tert*-butyl Ether (ETBE)	10	9.7	**97** %	10	9.7	**97** %	**0** %	70 - 130 %	25%
994-05-8	*tert*-Amyl Methyl Ether (TAME)	10	9.8	**98** %	10	9.8	**98** %	**1** %	70 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Dibromofluoromethane	10	8	**85** %	10	9	**85** %		70 - 130 %
1,2-Dichloroethane-d_4	10	9	**90** %	10	9	**91** %		70 - 130 %
Toluene-d_8	10	9	**90** %	10	9	**91** %		70 - 130 %
4-Bromofluorobenzene	10	9	**92** %	10	9	**91** %		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.

q Recovery outside recommended limits.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM7-3269-W**
Matrix: **Aqueous**

Instrument ID: **MS-7 HP 6890**
Analyzed: **10-01-09 08:07**
Analyst: **LMG**

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	3
107-13-1	Acrylonitrile	BRL		ug/L	0.5
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	0.4
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	0.4
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

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8260B**
QC Batch ID: **VM7-3269-W**
Matrix: **Aqueous**
Instrument ID: **MS-7 HP 6890**
Analyzed: **10-01-09 08:07**
Analyst: **LMG**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
98-82-8	Isopropylbenzene	BRL		ug/L	0.5
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
110-57-6	*trans*-1,4-Dichloro-2-butene	BRL		ug/L	25
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
108-70-3	1,3,5-Trichlorobenzene	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	9	**90** %	70 - 130 %
1,2-Dichloroethane-d_4	10	10	**99** %	70 - 130 %
Toluene-d_8	10	10	**95** %	70 - 130 %
4-Bromofluorobenzene	10	10	**97** %	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.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 1)**	Instrument ID:	**MS-3 HP 5890**	Instrument ID:	**MS-3 HP 5890**
QC Batch ID:	**SV-2429-F**	Extracted:	**10-02-09 13:30**	Extracted:	**10-02-09 13:30**
Matrix:	**Aqueous**	Analyzed:	**10-05-09 12:35**	Analyzed:	**10-05-09 13:16**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
62-75-9	N-Nitrosodimethylamine	50	29	**58** %	50	26	**53** %	**9** %	40 - 140 %	25%
110-86-1	Pyridine	50	27	**54** %	50	20	**40** %	**29** % q	40 - 140 %	25%
108-95-2	Phenol	50	20	**40** %	50	21	**42** %	**3** %	30 - 130 %	25%
62-53-3	Aniline	50	42	**84** %	50	42	**83** %	**1** %	40 - 140 %	25%
111-44-4	Bis(2-chloroethyl) ether	50	35	**69** %	50	37	**74** %	**6** %	40 - 140 %	25%
95-57-8	2-Chlorophenol	50	31	**63** %	50	32	**63** %	**0** %	30 - 130 %	25%
541-73-1	1,3-Dichlorobenzene	50	33	**67** %	50	33	**65** %	**2** %	40 - 140 %	25%
106-46-7	1,4-Dichlorobenzene	50	32	**63** %	50	32	**65** %	**2** %	40 - 140 %	25%
100-51-6	Benzyl Alcohol	50	40	**81** %	50	42	**83** %	**3** %	30 - 130 %	25%
95-50-1	1,2-Dichlorobenzene	50	33	**66** %	50	35	**69** %	**5** %	40 - 140 %	25%
95-48-7	2-Methylphenol	50	34	**69** %	50	34	**69** %	**0** %	30 - 130 %	25%
108-60-1	Bis(2-chloroisopropyl) ether	50	36	**72** %	50	36	**73** %	**1** %	40 - 140 %	25%
106-44-5	4-Methylphenol	50	27	**54** %	50	28	**57** %	**5** %	30 - 130 %	25%
621-64-7	N-Nitrosodi-n-propylamine	50	38	**76** %	50	40	**79** %	**5** %	40 - 140 %	25%
98-86-2	Acetophenone	50	40	**79** %	50	42	**85** %	**7** %	40 - 140 %	25%
67-72-1	Hexachloroethane	50	33	**66** %	50	34	**68** %	**2** %	40 - 140 %	25%
98-95-3	Nitrobenzene	50	37	**74** %	50	39	**79** %	**6** %	40 - 140 %	25%
78-59-1	Isophorone	50	38	**76** %	50	42	**83** %	**9** %	40 - 140 %	25%
88-75-5	2-Nitrophenol	50	35	**71** %	50	36	**71** %	**1** %	30 - 130 %	25%
105-67-9	2,4-Dimethylphenol	50	35	**71** %	50	39	**78** %	**10** %	30 - 130 %	25%
111-91-1	Bis(2-chloroethoxy) methane	50	37	**74** %	50	40	**80** %	**7** %	40 - 140 %	25%
120-83-2	2,4-Dichlorophenol	50	34	**68** %	50	37	**74** %	**9** %	30 - 130 %	25%
120-82-1	1,2,4-Trichlorobenzene	50	33	**67** %	50	35	**71** %	**6** %	40 - 140 %	25%
106-47-8	4-Chloroaniline	50	39	**79** %	50	41	**82** %	**5** %	40 - 140 %	25%
87-68-3	Hexachlorobutadiene	50	32	**65** %	50	35	**69** %	**6** %	40 - 140 %	25%
59-50-7	4-Chloro-3-methylphenol	50	37	**74** %	50	41	**82** %	**10** %	30 - 130 %	25%
77-47-4	Hexachlorocyclopentadiene	50	31	**62** %	50	33	**65** %	**5** %	40 - 140 %	25%
88-06-2	2,4,6-Trichlorophenol	50	35	**70** %	50	37	**74** %	**5** %	30 - 130 %	25%
95-95-4	2,4,5-Trichlorophenol	50	35	**69** %	50	39	**79** %	**12** %	30 - 130 %	25%
91-58-7	2-Chloronaphthalene	50	38	**77** %	50	40	**80** %	**5** %	40 - 140 %	25%
88-74-4	2-Nitroaniline	50	42	**85** %	50	47	**93** %	**10** %	40 - 140 %	25%
100-25-4	1,4-Dinitrobenzene	50	42	**84** %	50	45	**91** %	**8** %	40 - 140 %	25%
131-11-3	Dimethyl phthalate	50	41	**83** %	50	45	**90** %	**9** %	40 - 140 %	25%
99-65-0	1,3-Dinitrobenzene	50	47	**93** %	50	49	**97** %	**4** %	40 - 140 %	25%
606-20-2	2,6-Dinitrotoluene	50	40	**80** %	50	45	**90** %	**11** %	40 - 140 %	25%
528-29-0	1,2-Dinitrobenzene	50	39	**79** %	50	44	**88** %	**12** %	40 - 140 %	25%
99-09-2	3-Nitroaniline	50	44	**88** %	50	45	**89** %	**2** %	40 - 140 %	25%
51-28-5	2,4-Dinitrophenol	50	36	**72** %	50	36	**72** %	**1** %	30 - 130 %	25%
100-02-7	4-Nitrophenol	50	24	**49** %	50	26	**52** %	**6** %	30 - 130 %	25%
132-64-9	Dibenzofuran	50	39	**77** %	50	43	**85** %	**10** %	40 - 140 %	25%
121-14-2	2,4-Dinitrotoluene	50	42	**83** %	50	45	**89** %	**7** %	40 - 140 %	25%
84-66-2	Diethyl phthalate	50	42	**85** %	50	44	**89** %	**5** %	40 - 140 %	25%
7005-72-3	4-Chlorophenyl phenyl ether	50	39	**78** %	50	42	**84** %	**7** %	40 - 140 %	25%
100-01-6	4-Nitroaniline	50	45	**90** %	50	46	**92** %	**3** %	40 - 140 %	25%
534-52-1	4,6-Dinitro-2-methylphenol	50	37	**73** %	50	41	**82** %	**11** %	30 - 130 %	25%
86-30-6	N-Nitrosodiphenylamine †	50	52	**103** %	50	57	**114** %	**10** %	40 - 140 %	25%
122-66-7	1,2-Diphenylhydrazine à	50	42	**85** %	50	45	**91** %	**7** %	40 - 140 %	25%
101-55-3	4-Bromophenyl phenyl ether	50	40	**80** %	50	42	**84** %	**5** %	40 - 140 %	25%

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 1)**	Instrument ID:	**MS-3 HP 5890**	Instrument ID:	**MS-3 HP 5890**
QC Batch ID:	**SV-2429-F**	Extracted:	**10-02-09 13:30**	Extracted:	**10-02-09 13:30**
Matrix:	**Aqueous**	Analyzed:	**10-05-09 12:35**	Analyzed:	**10-05-09 13:16**
Units:	**ug/L**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
86-74-8	Carbazole	50	43	**87** %	50	46	**93** %	**7** %	40 - 140 %	25%
84-74-2	Di-*n*-butyl phthalate	50	45	**90** %	50	48	**96** %	**6** %	40 - 140 %	25%
85-68-7	Butyl benzyl phthalate	50	46	**92** %	50	48	**95** %	**4** %	40 - 140 %	25%
91-94-1	3,3'-Dichlorobenzidine	50	42	**84** %	50	44	**89** %	**5** %	40 - 140 %	25%
117-81-7	Bis(2-ethylhexyl) phthalate	50	44	**89** %	50	47	**94** %	**6** %	40 - 140 %	25%
117-84-0	Di-*n*-octyl phthalate	50	46	**92** %	50	48	**96** %	**5** %	40 - 140 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
2-Fluorophenol	20	8.9	**45** %	20	8.7	**44** %		15 - 110 %
Phenol-d5	20	7.4	**37** %	20	7.8	**39** %		15 - 110 %
Nitrobenzene-d5	10	6.8	**68** %	10	6.8	**68** %		30 - 130 %
2-Fluorobiphenyl	10	6.6	**66** %	10	7.0	**70** %		30 - 130 %
2,4,6-Tribromophenol	20	14	**72** %	20	16	**81** %		15 - 110 %
Terphenyl-d14	10	6.8	**68** %	10	7.4	**74** %		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 3510C.

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.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

q Recovery outside recommended limits.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category: **EPA Method 8270C (Part 1)**
QC Batch ID: **SV-2429-F**
Matrix: **Aqueous**

Instrument ID: **MS-3 HP 5890**
Extracted: **10-02-09 13:30**
Analyzed: **10-05-09 13:57**
Analyst: **MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
62-75-9	N-Nitrosodimethylamine	BRL		ug/L	5
110-86-1	Pyridine	BRL		ug/L	5
108-95-2	Phenol	BRL		ug/L	5
62-53-3	Aniline	BRL		ug/L	5
111-44-4	Bis(2-chloroethyl) ether	BRL		ug/L	5
95-57-8	2-Chlorophenol	BRL		ug/L	5
541-73-1	1,3-Dichlorobenzene	BRL		ug/L	5
106-46-7	1,4-Dichlorobenzene	BRL		ug/L	5
100-51-6	Benzyl Alcohol	BRL		ug/L	5
95-50-1	1,2-Dichlorobenzene	BRL		ug/L	5
95-48-7	2-Methylphenol	BRL		ug/L	5
108-60-1	Bis(2-chloroisopropyl) ether	BRL		ug/L	5
108-39-4/106-44-5	3 and 4-Methylphenol *	BRL		ug/L	5
621-64-7	N-Nitrosodi-n-propylamine	BRL		ug/L	5
98-86-2	Acetophenone	BRL		ug/L	5
67-72-1	Hexachloroethane	BRL		ug/L	5
98-95-3	Nitrobenzene	BRL		ug/L	5
78-59-1	Isophorone	BRL		ug/L	5
88-75-5	2-Nitrophenol	BRL		ug/L	5
105-67-9	2,4-Dimethylphenol	BRL		ug/L	5
111-91-1	Bis(2-chloroethoxy) methane	BRL		ug/L	5
120-83-2	2,4-Dichlorophenol	BRL		ug/L	5
120-82-1	1,2,4-Trichlorobenzene	BRL		ug/L	5
106-47-8	4-Chloroaniline	BRL		ug/L	5
87-68-3	Hexachlorobutadiene	BRL		ug/L	5
59-50-7	4-Chloro-3-methylphenol	BRL		ug/L	5
77-47-4	Hexachlorocyclopentadiene	BRL		ug/L	5
88-06-2	2,4,6-Trichlorophenol	BRL		ug/L	5
95-95-4	2,4,5-Trichlorophenol	BRL		ug/L	5
91-58-7	2-Chloronaphthalene	BRL		ug/L	5
88-74-4	2-Nitroaniline	BRL		ug/L	5
100-25-4	1,4-Dinitrobenzene	BRL		ug/L	5
131-11-3	Dimethyl phthalate	BRL		ug/L	5
99-65-0	1,3-Dinitrobenzene	BRL		ug/L	5
606-20-2	2,6-Dinitrotoluene	BRL		ug/L	5
528-29-0	1,2-Dinitrobenzene	BRL		ug/L	5
99-09-2	3-Nitroaniline	BRL		ug/L	5
51-28-5	2,4-Dinitrophenol	BRL		ug/L	5
100-02-7	4-Nitrophenol	BRL		ug/L	5
132-64-9	Dibenzofuran	BRL		ug/L	5
121-14-2	2,4-Dinitrotoluene	BRL		ug/L	5
84-66-2	Diethyl phthalate	BRL		ug/L	5
7005-72-3	4-Chlorophenyl phenyl ether	BRL		ug/L	5
100-01-6	4-Nitroaniline	BRL		ug/L	5
534-52-1	4,6-Dinitro-2-methylphenol	BRL		ug/L	5

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Part 1)**	Instrument ID:	**MS-3 HP 5890**
QC Batch ID:	**SV-2429-F**	Extracted:	**10-02-09 13:30**
Matrix:	**Aqueous**	Analyzed:	**10-05-09 13:57**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
86-30-6	N-Nitrosodiphenylamine †	BRL		ug/L	5
122-66-7	1,2-Diphenylhydrazine ◊	BRL		ug/L	5
101-55-3	4-Bromophenyl phenyl ether	BRL		ug/L	5
86-74-8	Carbazole	BRL		ug/L	5
84-74-2	Di-*n*-butyl phthalate	BRL		ug/L	5
85-68-7	Butyl benzyl phthalate	BRL		ug/L	5
91-94-1	3,3'-Dichlorobenzidine	BRL		ug/L	5
117-81-7	Bis(2-ethylhexyl) phthalate	BRL		ug/L	5
117-84-0	Di-*n*-octyl phthalate	BRL		ug/L	5

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	9	**46** %	15 - 110 %
Phenol-d5	20	8	**39** %	15 - 110 %
Nitrobenzene-d5	10	8	**76** %	30 - 130 %
2-Fluorobiphenyl	10	7	**68** %	30 - 130 %
2,4,6-Tribromophenol	20	14	**72** %	15 - 110 %
Terphenyl-d14	10	7	**73** %	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 3510C.

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.

* Analyzed as 4-Methylphenol.

† Reported as sum of N-Nitrosodiphenylamine and Diphenylamine.

◊ Analyzed as Azobenzene.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C (Part 2)**	Instrument ID:	**MS-6 HP 6890**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2429-F**	Extracted:	**10-02-09 13:30**	Extracted:	**10-02-09 13:30**
Matrix:	**Aqueous**	Analyzed:	**10-05-09 20:14**	Analyzed:	**10-05-09 20:54**
Units:	**ug/L**	Analyst:	**MJB**	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	3.0	**60** %	5.0	3.0	**60** %	**1** %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	5.0	3.2	**64** %	5.0	3.1	**63** %	**2** %	40 - 140 %	25%
208-96-8	Acenaphthylene	5.0	3.3	**66** %	5.0	3.2	**65** %	**2** %	40 - 140 %	25%
83-32-9	Acenaphthene	5.0	3.2	**64** %	5.0	3.0	**60** %	**6** %	40 - 140 %	25%
86-73-7	Fluorene	5.0	3.4	**68** %	5.0	3.2	**64** %	**6** %	40 - 140 %	25%
85-01-8	Phenanthrene	5.0	3.3	**67** %	5.0	3.2	**64** %	**4** %	40 - 140 %	25%
120-12-7	Anthracene	5.0	3.6	**72** %	5.0	3.6	**73** %	**1** %	40 - 140 %	25%
206-44-0	Fluoranthene	5.0	3.4	**69** %	5.0	3.4	**68** %	**2** %	40 - 140 %	25%
129-00-0	Pyrene	5.0	3.6	**71** %	5.0	3.4	**68** %	**4** %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	5.0	3.8	**76** %	5.0	3.6	**72** %	**6** %	40 - 140 %	25%
218-01-9	Chrysene	5.0	3.7	**73** %	5.0	3.5	**71** %	**3** %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	5.0	4.0	**80** %	5.0	3.9	**78** %	**3** %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	5.0	3.9	**78** %	5.0	3.8	**76** %	**3** %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	5.0	4.2	**85** %	5.0	4.2	**83** %	**2** %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	5.0	4.0	**80** %	5.0	3.9	**78** %	**3** %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	5.0	4.0	**80** %	5.0	3.8	**77** %	**4** %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	5.0	3.9	**78** %	5.0	3.7	**75** %	**4** %	40 - 140 %	25%
87-68-3	Hexachlorobutadiene	5.0	2.9	**58** %	5.0	2.9	**59** %	**1** %	40 - 140 %	25%
118-74-1	Hexachlorobenzene	5.0	3.7	**75** %	5.0	3.7	**74** %	**1** %	40 - 140 %	25%
87-86-5	Pentachlorophenol	5.0	2.9	**58** %	5.0	2.1	**43** %	**31** % q	30 - 130 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
2-Fluorophenol	20	9.0	**45** %	20	9.3	**46** %		15 - 110 %
Phenol-d5	20	8.1	**41** %	20	7.9	**40** %		15 - 110 %
Nitrobenzene-d5	10	6.5	**65** %	10	6.8	**68** %		30 - 130 %
2-Fluorobiphenyl	10	6.4	**64** %	10	6.4	**64** %		30 - 130 %
2,4,6-Tribromophenol	20	16	**82** %	20	16	**82** %		15 - 110 %
Terphenyl-d14	10	6.5	**65** %	10	6.3	**63** %		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 3510C.

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.

q Recovery outside recommended limits.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Part 2)**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2429-F**	Extracted:	**10-02-09 13:30**
Matrix:	**Aqueous**	Analyzed:	**10-05-09 21:34**
		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
87-68-3	Hexachlorobutadiene	BRL		ug/L	0.5
118-74-1	Hexachlorobenzene	BRL		ug/L	0.5
87-86-5	Pentachlorophenol	BRL		ug/L	1.0

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
2-Fluorophenol	20	9.3	**47** %	15 - 110 %
Phenol-d5	20	8.2	**41** %	15 - 110 %
Nitrobenzene-d5	10	6.6	**66** %	30 - 130 %
2-Fluorobiphenyl	10	6.8	**68** %	30 - 130 %
2,4,6-Tribromophenol	20	14	**71** %	15 - 110 %
Terphenyl-d14	10	6.0	**60** %	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 3510C.

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.

GROUNDWATER ANALYTICAL

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	80	72	**91 %**	80 - 120 %	10-02-09 08:55	TSS-1683-W	SM 2540 D	3	JR
Chlorine, Total Residual	mg/L	0.05	0.05	**92 %**	80 - 120 %	10-01-09 08:00	TRC-0811-W	SM 4500-Cl G	2	DEB
Chromium, Hexavalent	mg/L	0.1	0.11	**105 %**	80 - 120 %	01-18-02 00:00	HC-0167-W	SM 3500-Cr D	2	AVB
Cyanide, Total	mg/L	0.45	0.48	**106 %**	80 - 120 %	10-01-09 11:56	TCN-1522-W	Lachat 10-204-00-1-A (EPA 335.3)	1	JR

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: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

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	10-02-09 08:55	TSS-1683-W	SM 2540 D	3	JR
Chlorine, Total Residual	BRL	mg/L	0.02	10-01-09 08:00	TRC-0811-W	SM 4500-Cl G	2	DEB
Chromium, Hexavalent	BRL	mg/L	0.01	01-18-02 00:00	HC-0167-W	SM 3500-Cr D	2	AVB
Cyanide, Total	BRL	mg/L	0.01	10-01-09 11:56	TCN-1522-W	Lachat 10-204-00-1-A (EPA 335.3)	1	JR

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: Lachat 8000 Autoanalyzer

2 Instrument ID: Thermo Electron Genesys 20

3 Instrument ID: Mettler AT 200 Balance

GROUNDWATER ANALYTICAL

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.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/Out State.pdf

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,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt list aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 202708 — Potable Water, Non-Potable Water, Solid and Chemical Materials
http://www4.egov.nh.gov/DES/NHELAP

NEW YORK

Department of Health, 11754 — Potable Water, Non-Potable Water, Solid and Hazardous Waste
http://www.wadsworth.org/labcert/elap/comm.html

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

VERMONT

Department of Health, VT-87643 — Potable Water
http://healthvermont.gov/enviro/ph_lab/water_test.aspx#cert

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS **Department of Environmental Protection, M-MA-103**

Groundwater Analytical maintains MassDEP environmental laboratory certification for only the methods and analytes listed below. Analyses for certified analytes are conducted in accordance with MassDEP certification standards, except as may be specifically noted in the project narrative.

Potable Water (Drinking Water)

Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Alkalinity, Total	SM 2320-B
Antimony	EPA 200.8
Antimony	EPA 200.9
Arsenic	EPA 200.8
Arsenic	EPA 200.9
Barium	EPA 200.7
Barium	EPA 200.8
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chlorine, Residual Free	SM 4500-CL-G
Chromium	EPA 200.7
Copper	EPA 200.7
Copper	EPA 200.8
Cyanide, Total	Lachat 10-204-00-1-A
E. Coli (Treatment and Distribution)	EC-MUG SM 9221-F
E. Coli (Treatment and Distribution)	Enz. Sub. SM 9223
E. Coli (Treatment and Distribution)	NA-MUG SM 9222-G
Fecal Coliform (Source Water)	MF SM 9222-D
Fluoride	EPA 300.0
Fluoride	SM 4500-F-C
Heterotrophic Plate Count	SM 9215-B
Lead	EPA 200.8
Lead	EPA 200.9
Mercury	EPA 245.1
Nickel	EPA 200.7
Nickel	EPA 200.8
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Nitrite-N	EPA 300.0
Nitrite-N	Lachat 10-107-04-1-C
pH	SM 4500-H-B
Selenium	EPA 200.8
Selenium	EPA 200.9
Silver	EPA 200.7
Silver	EPA 200.8
Sodium	EPA 200.7
Sulfate	EPA 300.0
Thallium	EPA 200.8
Thallium	EPA 200.9
Total Coliform (Treatment and Distribution)	Enz. Sub. SM 9223
Total Coliform (Treatment and Distribution)	MF SM 9222-B
Total Dissolved Solids	SM 2540-C
Trihalomethanes	EPA 524.2
Turbidity	SM 2130-B
Volatile Organic Compounds	EPA 524.2

Non-Potable Water (Wastewater)

Analyte	Method
Aldrin	EPA 608
Alkalinity, Total	Lachat 10-303-31-1-A
Alpha-BHC	EPA 608
Aluminum	EPA 200.7
Aluminum	EPA 200.8

Non-Potable Water (Wastewater)

Analyte	Method
Ammonia-N	Lachat 10-107-06-1-B
Antimony	EPA 200.7
Antimony	EPA 200.8
Antimony	EPA 200.9
Arsenic	EPA 200.7
Arsenic	EPA 200.8
Arsenic	EPA 200.9
Beryllium	EPA 200.7
Beryllium	EPA 200.8
Beta-BHC	EPA 608
Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.7
Cadmium	EPA 200.8
Calcium	EPA 200.7
Chemical Oxygen Demand	SM 5220-D
Chlordane	EPA 608
Chloride	EPA 300.0
Chlorine, Total Residual	SM 4500-CL-G
Chromium	EPA 200.7
Chromium	EPA 200.8
Cobalt	EPA 200.7
Cobalt	EPA 200.8
Copper	EPA 200.7
Copper	EPA 200.8
Copper	EPA 200.9
Cyanide, Total	Lachat 10-204-00-1-A
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
Delta-BHC	EPA 608
Dieldrin	EPA 608
Endosulfan I	EPA 608
Endosulfan II	EPA 608
Endosulfan Sulfate	EPA 608
Endrin	EPA 608
Endrin Aldehyde	EPA 608
Fluoride	EPA 300.0
Gamma-BHC	EPA 608
Hardness (CaCO3), Total	EPA 200.7
Hardness (CaCO3), Total	SM 2340-B
Heptachlor	EPA 608
Heptachlor Epoxide	EPA 608
Iron	EPA 200.7
Kjeldahl-N	Lachat 10-107-06-02-D
Lead	EPA 200.7
Lead	EPA 200.9
Magnesium	EPA 200.7
Manganese	EPA 200.7
Manganese	EPA 200.8
Mercury	EPA 245.1
Molybdenum	EPA 200.7
Molybdenum	EPA 200.8
Nickel	EPA 200.7
Nickel	EPA 200.8
Nickel	EPA 200.9
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Non-Filterable Residue	SM 2540-D
Oil and Grease	EPA 1664

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Non-Potable Water (Wastewater)

Analyte	Method
Orthophosphate	Lachat 10-115-01-1-A
pH	SM 4500-H-B
Phenolics, Total	EPA 420.4
Phenolics, Total	Lachat 10-210-00-1-B
Phosphorus, Total	Lachat 10-115-01-1-C
Phosphorus, Total	SM 4500-P-B,E
Polychlorinated Biphenyls (Oil)	EPA 600/4-81-045
Polychlorinated Biphenyls (Water)	EPA 608
Potassium	EPA 200.7
Selenium	EPA 200.7
Selenium	EPA 200.8
Selenium	EPA 200.9
Silver	EPA 200.7
Sodium	EPA 200.7
Specific Conductivity	SM 2510-B
Strontium	EPA 200.7
Sulfate	EPA 300.0
SVOC-Acid Extractables	EPA 625
SVOC-Base/Neutral Extractables	EPA 625
Thallium	EPA 200.7
Thallium	EPA 200.8
Thallium	EPA 200.9
Titanium	EPA 200.7
Total Dissolved Solids	SM 2540-C
Total Organic Carbon	SM 5310-B
Toxaphene	EPA 608
Vanadium	EPA 200.7
Vanadium	EPA 200.8
Volatile Aromatics	EPA 602
Volatile Aromatics	EPA 624
Volatile Halocarbons	EPA 624
Zinc	EPA 200.7
Zinc	EPA 200.8