



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

**5 Post Office Square, Suite 100
BOSTON, MA 02109-3912**

CERTIFIED MAIL RETURN RECEIPT REQUESTED

MAY 29 2014

Norm Lavigne
Water Quality Production Manager
29 Center St.
Burlington, MA 01803

Re: Authorization to discharge under the Remediation General Permit (RGP) –
MAG910000. Town of Burlington Vine Brook Well #4 site located at Middlesex
Turnpike Middlesex County; Authorization # MAG 910622

Dear Mr. Lavigne:

Based on the review of a Notice of Intent (NOI) submitted by William C. Beyer from Fay, Spofford & Thorndike, Inc., on behalf of the Town of Burlington for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named Owner and Operator, to discharge in accordance with the provisions of the RGP at that site. Your authorization number is listed above.

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

Please note the enclosed checklist includes volatile organic (VOC) parameters reported present in the intake water that exceeded the discharge limitation on Appendix III of the RGP.

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on a dilution factor range (DFR). With the absence of dilution to wet lands, EPA determined that the DFR for each parameter is in the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities) Therefore, the limit for iron of 1,770 ug/L, is required to achieve permit compliance at your site. Please note that this metal limitation has increased above the 0-5 dilution factor range. The reason for the increase has to do with the new RGP regulations which allows

for a limit increase based on the metal limit times the available dilution of the receiving stream not to exceed 5. The available dilution in this case is 1.77. See footnote eleven at the end of the "Summary of Monitoring Parameters" listed below for further explanation.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on October 31, 2014. You are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

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

Sincerely,



Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
John Sanches Burlington DPW

**2010 Remediation General Permit
Summary of Monitoring Parameters^[1]**

NPDES Authorization Number:		MAG910622
Authorization Issued:	May, 2014	
Facility/Site Name:	Town of Burlington -Vine Brook Well #4	
Facility/Site Address:	Middlesex Turnpike, Burlington, MA 01803, Middlesex County	
	Email address of owner: jsanchez@burlington.org	
Legal Name of Operator:	Town of Burlington	
Operator contact name, title, and Address:	Norm Levigne, Water Quality Production Manager. Consulting doing the filtration work is William Beyer from Fay, Spofford and Thorndike Telephone No. 781-221=1276	
	Email: Not Provided	
Estimated date of the site's Completion:	October 31, 2014	
Category and Sub-Category:	Category II- Non Petroleum Site Remediation. Subcategory A. Volatile Organic Compounds Only Sites.	
RGP Termination Date:	September 10, 2015	
Receiving Water:	Vine Brook	

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

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing ** Me#160.2/ML5ug/L
	2. Total Residual Chlorine (TRC) ¹	Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L
	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
	4. Cyanide (CN) ^{2, 3}	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L
	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) ⁴	100 ug/L/ Me#8260C/ ML 2ug/L
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	14. Naphthalene ⁵	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
✓	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
✓	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
✓	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
✓	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
✓	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L, Me#604 &625/ML 10ug/L
	33. Total Phthalates (Phthalate esters) ⁶	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L & Me#625/ML 5ug/L

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
	a. Benzo(a) Anthracene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	b. Benzo(a) Pyrene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	c. Benzo(b)Fluoranthene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	d. Benzo(k)Fluoranthene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	e. Chrysene ⁷	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	f. Dibenzo(a,h)anthracene ⁷	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	g. Indeno(1,2,3-cd) Pyrene ⁷	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML5ug/L
	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
	h. Acenaphthene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	i. Acenaphthylene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	j. Anthracene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	l. Fluoranthene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	m. Fluorene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	n. Naphthalene ⁵	20 ug/l / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	o. Phenanthrene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	p. Pyrene	X/Me#8270D/ML5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	37. Total Polychlorinated Biphenyls (PCBs) ^{8, 9}	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
✓	38. Chloride	Monitor only/Me# 300.0/ ML 100 ug/L

	Metal parameter	Total Recoverable MA/Metal Limit H¹⁰ = 50 mg/l CaCO₃, Units = ug/l^(11/12)		Minimum level=ML	
		Freshwater Limits			
	39. Antimony	5.6		ML	10
	40. Arsenic **	10		ML	20
	41. Cadmium **	0.2		ML	10
	42. Chromium III (trivalent) **	48.8		ML	15
	43. Chromium VI (hexavalent) **	11.4		ML	10
	44. Copper **	5.2		ML	15
	45. Lead **	1.3		ML	20
	46. Mercury **	0.9		ML	02
	47. Nickel **	29		ML	20
	48. Selenium **	5		ML	20
	49. Silver	1.2		ML	10
	50. Zinc **	66.6		ML	15
✓	51. Iron	1,770		ML	20

	Other Parameters	Limit
✓	52. Instantaneous Flow	Site specific in CFS
✓	53. Total Flow	Site specific in CFS
✓	54. pH Range for Class A & Class B Waters in MA	6.5-8.3; 1/Month/Grab ¹³
	55. pH Range for Class SA & Class SB Waters in MA	6.5-8.3; 1/Month/Grab ¹³
	56. pH Range for Class B Waters in NH	6.5-8; 1/Month/Grab ¹³
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab ¹⁴
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab ¹⁴
	59. Maximum Change in Temperature in MA - Any Class A water body	1.5°F; 1/Month/Grab ¹⁴
	60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water	5°F; 1/Month/Grab ¹⁴
	61. Maximum Change in Temperature in MA - Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab ¹⁴
	62. Maximum Change in Temperature in MA - Any Class SA water body - Coastal	1.5°F; 1/Month/Grab ¹⁴
	63. Maximum Change in Temperature in MA - Any Class SB water body - July to September	1.5°F; 1/Month/Grab ¹⁴
	64. Maximum Change in Temperature in MA -Any Class SB water body - October to June	4°F; 1/Month/Grab ¹⁴

Footnotes:

¹ Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).

² Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.

³ Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).

⁴ BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.

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

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

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

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

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

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

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

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

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

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

¹⁴ Temperature sampling per Method 170.1



May 15, 2014

EPA-Region 1
5 Post Office Square
Mail Code OEP06-4
Boston, Massachusetts, 02109-3912

Subject: Remediation General Permit
Notice of Intent
Town of Burlington Well #5

Attention: Mr. Victor Alvarez

Dear Mr. Alvarez:

The Town of Burlington would like to apply for authorization to discharge under the EPA's Remediation General Permit NPDES Permit No. MAG910000. The Town is coordinating with remedial efforts being undertaken by the responsible party for MassDEP RTN 3-0263, Northwest Park, Buildings 28 and 37, Burlington, MA. Chlorinated solvents from this property have migrated into the Vine Brook aquifer, a water supply for the Town. The Town proposes pumping its Well #4 to the Vine Brook. This will enhance the general groundwater remediation of the aquifer and protect the water quality at Well #3 and Well #5.

The contaminants of concern include Trichloroethene (TCE), 1,1 Dichloroethane (DCA), 1,1 Dichloroethene (DCE), and 1,4 Dioxane. The 15 µg/L TCE concentration exceeds the 5 µg/L RGP standard. No other detected contaminants exceeds the applicable standard. The Town proposes to aerate the discharge to reduce the concentration prior to its reaching Vine Brook.

Please call me at 781-221-1276 should you require additional information or wish to discuss any aspect of this NOI.

Very Truly,
Fay, Spofford & Thorndike, Inc.

A handwritten signature in blue ink that reads "William C. Beyer".

William C. Beyer, LSP.
Principal Hydrogeologist

Cc: John Sanchez, Town of Burlington

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

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

a) Name of facility/site :		Vine Brook Well #4		Facility/site mailing address:	
Location of facility/site :		Facility SIC code(s):		Street:	
Longitude:	-71.2236	4941		Middlesex Turnpike	
Latitude:	42.4934				
b) Name of facility/site owner :		Town: Burlington			
Email address of facility/site owner:		State:		Zip:	County:
jsanchez@burlington.org		MA		01803	Middlesex
Telephone no. of facility/site owner :		(781) 270-1672			
Fax no. of facility/site owner :		(781) 238-4695			
Address of owner (if different from site):		Owner is (check one): 1. Federal ☐ 2. State/Tribal ☐ 3. Private ☐ 4. Other ☒ if so, describe: Municipal			
Street: 29 Center St.					
Town:	Burlington	State:	MA	Zip:	01803
c) Legal name of operator :		Operator telephone no:		781-270-1648	
Town of Burlington		Operator fax no.:		781-229-5721	
Operator contact name and title:		Norm Lavigne, Water Quality Production Manager		Operator email: nlavigne@burlington.org	
Address of operator (if different from owner):		Street:			
Town:	Burlington	State:	MA	Zip:	01803
				County:	Middlesex

d) Check Y for "yes" or N for "no" for the following: 1. Has a prior NPDES permit exclusion been granted for the discharge? Y ☐ N ☒, if Y, number: 2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Y ☐ N ☒, if Y, date and tracking #: 3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Y ☒ N ☐ 4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ☒ N ☐	
e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ☐ N ☒ If Y, please list: 1. site identification # assigned by the state of NH or MA: 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number:	f) Is the site/facility covered by any other EPA permit, including: 1. Multi-Sector General Permit? Y ☐ N ☒, if Y, number: 2. Final Dewatering General Permit? Y ☐ N ☒, if Y, number: 3. EPA Construction General Permit? Y ☐ N ☒, if Y, number: 4. Individual NPDES permit? Y ☐ N ☒, if Y, number: 5. any other water quality related individual or general permit? Y ☐ N ☒, if Y, number:
g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ☐ N ☒	
h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.	
Activity Category I - Petroleum Related Site Remediation	Activity Sub-Category A. Gasoline Only Sites ☐ B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☐ C. Petroleum Sites with Additional Contamination ☐
II - Non Petroleum Site Remediation	A. Volatile Organic Compound (VOC) Only Sites ☒ B. VOC Sites with Additional Contamination ☐ C. Primarily Heavy Metal Sites ☐
III - Contaminated Construction Dewatering	A. General Urban Fill Sites ☐ B. Known Contaminated Sites ☐

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐
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2. Discharge information. Please provide information about the discharge, (attaching additional sheets as necessary) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage:																																	
The Town of Burlington wishes to pump its Well # 4, discharging to Vine Brook, to control migration of VOC plume toward other wells.																																	
b) Provide the following information about each discharge:																																	
1) Number of discharge points:	1																																
2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft ³ /s)?	Max. flow 0.45 Is maximum flow a design value? Y ☒ N ☐ Average flow (include units) 0.45 Is average flow a design value or estimate? Estimate																																
3) Latitude and longitude of each discharge within 100 feet:	<table border="1"> <tr> <td>pt.1: lat</td> <td>42.4931</td> <td>long</td> <td>-71.2184</td> <td>pt.2: lat</td> <td></td> <td>long</td> <td></td> </tr> <tr> <td>pt.3: lat</td> <td></td> <td>long</td> <td></td> <td>pt.4: lat</td> <td></td> <td>long</td> <td></td> </tr> <tr> <td>pt.5: lat</td> <td></td> <td>long</td> <td></td> <td>pt.6: lat</td> <td></td> <td>long</td> <td></td> </tr> <tr> <td>pt.7: lat</td> <td></td> <td>long</td> <td></td> <td>pt.8: lat</td> <td></td> <td>long</td> <td>etc.</td> </tr> </table>	pt.1: lat	42.4931	long	-71.2184	pt.2: lat		long		pt.3: lat		long		pt.4: lat		long		pt.5: lat		long		pt.6: lat		long		pt.7: lat		long		pt.8: lat		long	etc.
pt.1: lat	42.4931	long	-71.2184	pt.2: lat		long																											
pt.3: lat		long		pt.4: lat		long																											
pt.5: lat		long		pt.6: lat		long																											
pt.7: lat		long		pt.8: lat		long	etc.																										
4) If hydrostatic testing, total volume of the discharge (gals):	5) Is the discharge intermittent ☐ or seasonal ☒ ? Is discharge ongoing? Y ☐ N ☐																																
c) Expected dates of discharge (mm/dd/yy): start	June 1, 2014																																
end	October 31, 2014																																
d) Please attach a line drawing or flow schematic showing water flow through the facility including:																																	
1. sources of intake water. 2. contributing flow from the operation. 3. treatment units. and 4. discharge points and receiving waters(s):																																	

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
1. Total Suspended Solids (TSS)		☒	☐								
2. Total Residual Chlorine (TRC)		☒	☐								
3. Total Petroleum Hydrocarbons (TPH)		☒	☐								
4. Cyanide (CN)	57125	☒	☐								
5. Benzene (B)	71432	☒	☐								
6. Toluene (T)	108883	☒	☐								
7. Ethylbenzene (E)	100414	☒	☐								
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐								
9. Total BTEX ²	n/a	☒	☐								
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) ³	106934	☒	☐								
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐								
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐								

* Numbering system is provided to allow cross-referencing to Effluent Limits and Monitoring Requirements by Sub-Category included in Appendix III, as well as the Test Methods and Minimum Levels associated with each parameter provided in Appendix VI.

² BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

³ EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐								
14. Naphthalene	91203	☒	☐								
15. Carbon Tetrachloride	56235	☒	☐								
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐								
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐								
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐								
18a. Total dichlorobenzene		☒	☐								
19. 1,1 Dichloroethane (DCA)	75343	☐	☒	1	Grab	524.2	0.5	6.9	0.007	6.9	0.006
20. 1,2 Dichloroethane (DCA)	107062	☒	☐								
21. 1,1 Dichloroethene (DCE)	75354	☐	☒	1	Grab	524.2	0.5	2.8	0.003	2.8	0.003
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐								
23. Methylene Chloride	75092	☒	☐								
24. Tetrachloroethene (PCE)	127184	☒	☐								
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐								
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐								
27. Trichloroethene (TCE)	79016	☐	☒	1	Grab	524.2	0.5	15	0.015	15	0.013

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
28. Vinyl Chloride (Chloroethene)	75014	☒	☐								
29. Acetone	67641	☒	☐								
30. 1,4 Dioxane	123911	☐	☒	1	Grab	522	0.2	2.1	0.002	1.9	0.0018
31. Total Phenols	108952	☒	☐								
32. Pentachlorophenol (PCP)	87865	☒	☐								
33. Total Phthalates (Phthalate esters) ⁴		☒	☐								
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐								
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐								
a. Benzo(a) Anthracene	56553	☒	☐								
b. Benzo(a) Pyrene	50328	☒	☐								
c. Benzo(b)Fluoranthene	205992	☒	☐								
d. Benzo(k)Fluoranthene	207089	☒	☐								
e. Chrysene	21801	☒	☐								
f. Dibenzo(a,h)anthracene	53703	☒	☐								
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐								
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐								

⁴ The sum of individual phthalate compounds.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type</u> (e.g., grab)	<u>Analytical Method Used</u> (method #)	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration</u> (ug/l)	<u>mass</u> (kg)	<u>concentration</u> (ug/l)	<u>mass</u> (kg)
h. Acenaphthene	83329	☒	☐								
i. Acenaphthylene	208968	☒	☐								
j. Anthracene	120127	☒	☐								
k. Benzo(ghi) Perylene	191242	☒	☐								
l. Fluoranthene	206440	☒	☐								
m. Fluorene	86737	☒	☐								
n. Naphthalene	91203	☒	☐								
o. Phenanthrene	85018	☒	☐								
p. Pyrene	129000	☒	☐								
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐								
	38. Chloride	☒	☐								
	39. Antimony	☒	☐								
	40. Arsenic	☒	☐								
	41. Cadmium	☒	☐								
42. Chromium III (trivalent)	16065831	☒	☐								
43. Chromium VI (hexavalent)	18540299	☒	☐								
44. Copper	7440508	☒	☐								
45. Lead	7439921	☒	☐								
46. Mercury	7439976	☒	☐								
47. Nickel	7440020	☒	☐								
48. Selenium	7782492	☒	☐								
49. Silver	7440224	☒	☐								
50. Zinc	7440666	☒	☐								
51. Iron	7439896	☐	☒	2	Grab	200.7	10	149	0.146	149	0.132
Other (describe):		☐	☐								

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type</u> (e.g., grab)	<u>Analytical Method Used</u> (method #)	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
		☐	☐					<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
		☐	☐								

b) For discharges where **metals** are believed present, please fill out the following (attach results of any calculations):

<i>Step 1:</i> Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ☐ N ☒	If yes, which metals?
<i>Step 2:</i> For any metals which exceed the Appendix III limits, calculate the dilution factor (DF) using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metal: DF: Metal: DF: Metal: DF: Metal: DF: Etc.	Look up the limit calculated at the corresponding dilution factor in Appendix IV. Do any of the metals in the influent have the potential to exceed the corresponding effluent limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ☐ N ☐ If Y, list which metals:

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:					
Discharge will be aerated to reduce VOC content prior to reaching the stream.					
b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☐	Air stripper ☒	Oil/water separator ☐	Equalization tanks ☐	Bag filter ☐
	Chlorination ☐	De-chlorination ☐	Other (please describe):		
			GAC filter ☐		

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

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

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

a) Identify the discharge pathway:	Direct to receiving water ☒	Within facility (sewer) ☐	Storm drain ☐	Wetlands ☐	Other (describe):
b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters: Discharge will be aerated and then flow overland to Vine Brook					
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 discharges, indicate the location of the discharge to the indirect conveyance and the discharge to surface water The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.					
d) Provide the state water quality classification of the receiving water B					
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.35 (USGS Streamstats) cfs Please attach any calculation sheets used to support stream flow and dilution calculations.					
f) Is the receiving water a listed 303(d) water quality impaired or limited water? Y ☐ N ☒ If yes, for which pollutant(s)?					
Is there a final TMDL? Y ☐ N ☒ If yes, for which pollutant(s)?					

6. ESA and NHPA Eligibility.

Please provide the following information according to requirements of Permit Parts I.A.4 and I.A.5 Appendices II and VII.

- a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?
A ☒ B ☐ C ☐ D ☐ E ☐ F ☐
- b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ☐ N ☐ Underway ☐
- c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is “not likely to adversely affect” listed species or critical habitat received? Y ☐ N ☐
- d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.
- e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?
1 ☒ 2 ☐ 3 ☐
- f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

7. Supplemental information.

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

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:	Vine Brook Water-Treatment Facility
Operator signature:	
Printed Name & Title:	John G. Sanchez DPW Director
Date:	5/13/14

Figures



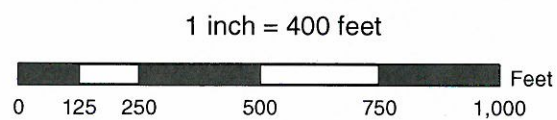
1 inch = 1,000 feet

0 250 500 1,000 1,500 2,000 Feet

Town of Burlington

RGP NOI

Well # 4 Locus Plan



Town of Burlington

RGP NOI

**Location Plan for
Well #4 & Discharge**

Aerial from MassGIS

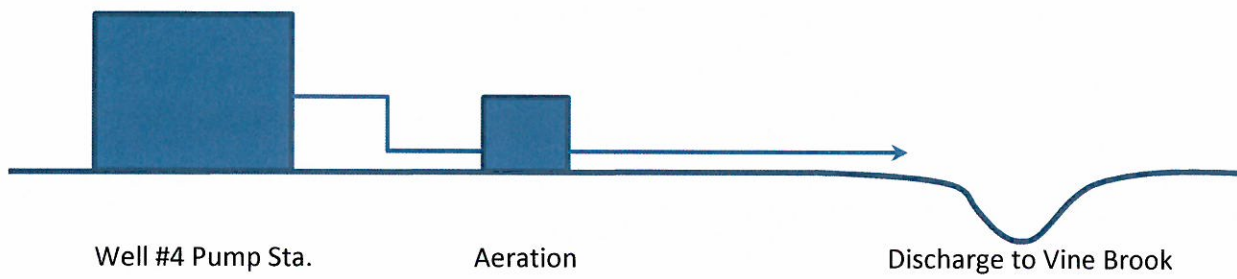
Fay, Spofford & Thorndike May 2014

Remediation General Permit NOI

NPDES Permit No. MAG910000

Well #4, Town of Burlington

Discharge & Treatment Line Drawing

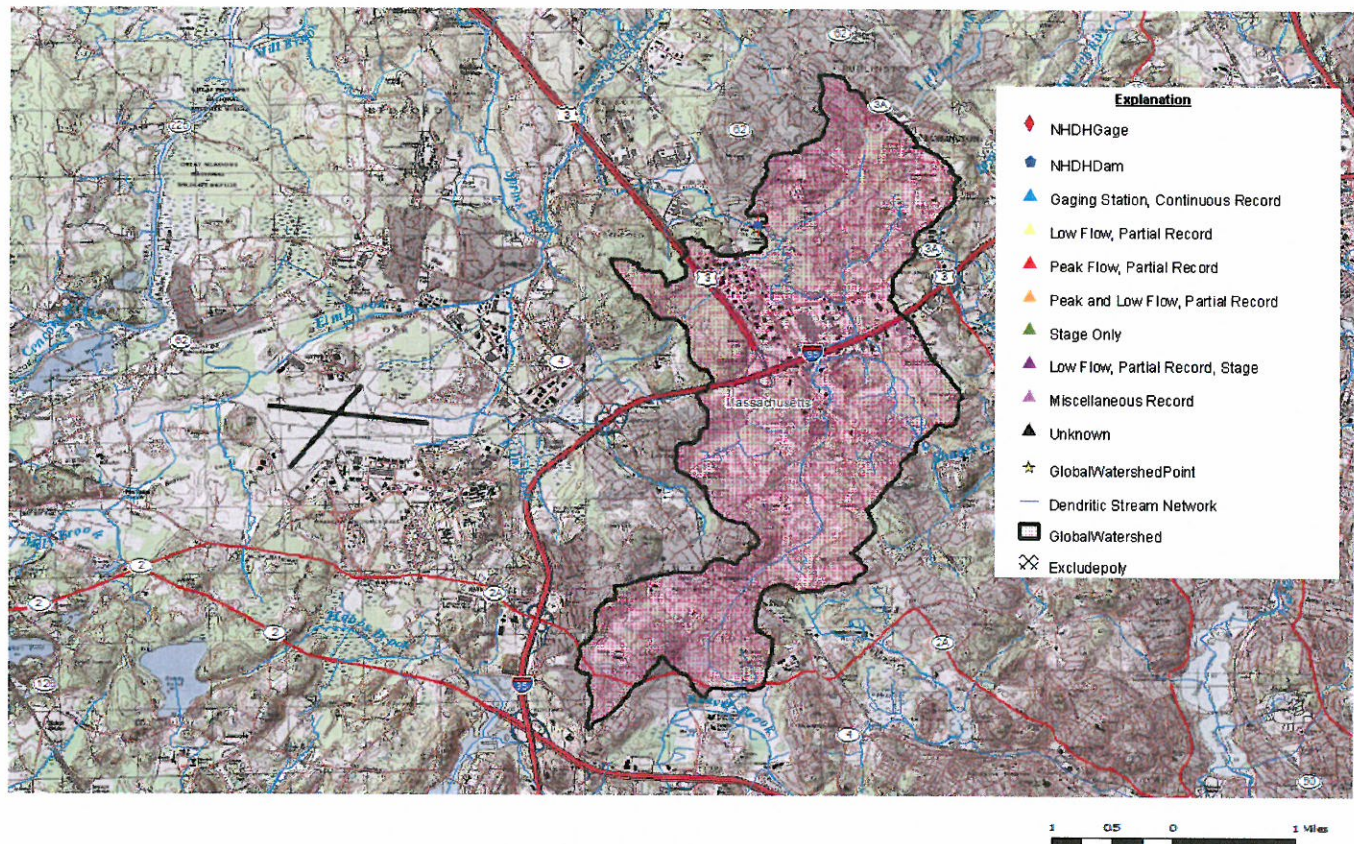


Stream Flow Calculations



Massachusetts StreamStats

Vine Brook Well #4



5/7/2014 4:05:49 PM



Massachusetts StreamStats

Streamstats Ungaged Site Report

Date: Wed May 7 2014 16:01:10 Mountain Daylight Time

Site Location: Massachusetts

NAD27 Latitude: 42.4958 (42 29 45)

NAD27 Longitude: -71.2221 (-71 13 20)

NAD83 Latitude: 42.4959 (42 29 45)

NAD83 Longitude: -71.2216 (-71 13 18)

ReachCode: 01070006000663

Measure: 89.95

Drainage Area: 8.52 mi²

Percent Urban: 68.8 %

Percent Impervious: 29.2 %

Low Flows Basin Characteristics			
100% Statewide Low Flow (8.52 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	8.52	1.61	149
Mean Basin Slope from 250K DEM (percent)	1.73	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.23	0	1.29
Massachusetts Region (dimensionless)	0	0	1

Probability of Perennial Flow Basin Characteristics			
100% Perennial Flow Probability (8.52 mi ²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	8.52 (above max value 1.99)	0.01	1.99
Percent Underlain By Sand And Gravel (percent)	45.84	0	100
Percent Forest (percent)	19.99	0	100
Massachusetts Region (dimensionless)	0	0	1

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

Low Flows Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
D50	8.49	18		4.71	15.2
D60	6.31	20		3.03	13.1
D70	4.04	24		1.98	8.16
D75	3.19	26		1.57	6.39
D80	2.53	28		1.23	5.12
D85	1.86	32		0.85	3.99
D90	1.39	37		0.6	3.11
D95	0.8	46		0.31	2.02
D98	0.52	60		0.17	1.5
D99	0.39	65		0.12	1.18
M7D2Y	0.87	50		0.33	2.24
AUGD50	2.04	33		0.91	4.46
M7D10Y	0.35	71		0.1	1.13

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

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

Laboratory Data

CERTIFICATE OF ANALYSIS

Town of Burlington MA
Attn: Mr. Norman Lavigne
DPW Building
25 Center Street
Burlington, MA 01803

Date Received: 3/12/14
Date Reported: 3/27/14
P.O. #:
Work Order #: 1403-05248

DESCRIPTION: 1,4 DIOXANE MONTHLY MONITORING

Subject sample(s) has/have been analyzed by our Warwick, R.I./Hudson, MA. laboratories and our subcontracted laboratory with the attached results.

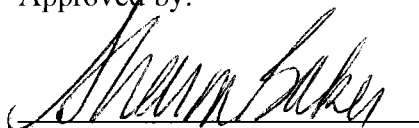
Reference: All parameters were analyzed by U.S. EPA approved methodologies.
The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.
The Certificate of Analysis shall not be reproduced except in full, without written approval of R. I. Analytical.
Results relate only to samples submitted to the laboratory for analysis.
Test results are not blank corrected.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, M-MA1117

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:



Sharon Baker
MIS / Data Reporting Manager

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

Town of Burlington MA
 Date Received: 3/12/14
 Work Order #: 1403-05248

Sample # 001
SAMPLE DESCRIPTION: PS #1 RAW
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/12/2014 @ 11:20

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
1,4-Dioxane	See Attached		ug/l	EPA 522 MOD	3/17/14 0:00	*TA

Sample # 002
SAMPLE DESCRIPTION: PS #2 RAW
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/12/2014 @ 11:22

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
1,4-Dioxane	See Attached		ug/l	EPA 522 MOD	3/17/14 0:00	*TA

Sample # 003
SAMPLE DESCRIPTION: PS #3 RAW
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/12/2014 @ 10:31

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
1,4-Dioxane	See Attached		ug/l	EPA 522 MOD	3/17/14 0:00	*TA

Sample # 004
SAMPLE DESCRIPTION: PS #4 RAW
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/12/2014 @ 10:38

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
1,4-Dioxane	See Attached		ug/l	EPA 522 MOD	3/17/14 0:00	*TA

Sample # 005
SAMPLE DESCRIPTION: PS #5 RAW
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/12/2014 @ 10:25

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
1,4-Dioxane	See Attached		ug/l	EPA 522 MOD	3/17/14 0:00	*TA

Sample # 006
SAMPLE DESCRIPTION: PS #10 RAW
SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/12/2014 @ 11:05

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
1,4-Dioxane	See Attached		ug/l	EPA 522 MOD	3/17/14 0:00	*TA

R.I. Analytical Laboratories, Inc.
CERTIFICATE OF ANALYSIS

Town of Burlington MA
Date Received: 3/12/14
Work Order #: 1403-05248

Sample # 007

SAMPLE DESCRIPTION: PS #11 RAW

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/12/2014 @ 11:06

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
1,4-Dioxane	See Attached		ug/l	EPA 522 MOD	3/17/14 0:00	*TA

Sample # 008

SAMPLE DESCRIPTION: VINEBROOK EFFLUENT

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/12/2014 @ 09:58

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
1,4-Dioxane	See Attached		ug/l	EPA 522 MOD	3/17/14 0:00	*TA

*TA - Analyzed by Test America.

ANALYTICAL REPORT

Job Number: 200-21385-1

SDG Number: 1403-05248

Job Description: Landfill Analysis

For:

R.I. Analytical Lab, Inc.

41 Illinois Avenue

Warwick, RI 02888

Attention: Data Reporting



Approved for release.
Kathryn A Kelly
Project Manager I
3/25/2014 3:39 PM

Kathryn A Kelly, Project Manager I
30 Community Drive, South Burlington, VT, 05403
kathryn.kelly@testamericainc.com
03/25/2014

The test results in this report relate only to sample(s) as received by the laboratory. These test results were derived under a quality system that adheres to the requirements of NELAC. Pursuant to NELAC, this report may not be produced in full without written approval from the laboratory

TestAmerica Laboratories, Inc.

TestAmerica Burlington 30 Community Drive, Suite 11, South Burlington, VT 05403

Tel (802) 660-1990 Fax (802) 660-1919 www.testamericainc.com



CASE NARRATIVE

Client: R.I. Analytical Lab, Inc.

Project: Landfill Analysis

Report Number: 200-21385-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 03/14/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.3° C.

1,4-DIOXANE

Samples PS #1 RAW, PS #2 RAW, PS #3 RAW, PS #4 RAW, PS #5 RAW, PS #10 RAW, PS #11 RAW and VINEBROOK EFFLUENT were analyzed for 1,4-Dioxane in accordance with EPA Method 522.1. The samples were prepared and analyzed on 03/17/2014.

No difficulties were encountered during the 1,4-Dioxane analysis.

All quality control parameters were within the acceptance limits.

EXECUTIVE SUMMARY - Detections

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
200-21385-1 1,4-Dioxane	PS #1 RAW	0.062	J	0.20	ug/L	522 MOD
200-21385-2 1,4-Dioxane	PS #2 RAW	0.10	J	0.20	ug/L	522 MOD
200-21385-3 1,4-Dioxane	PS #3 RAW	0.43		0.20	ug/L	522 MOD
200-21385-4 1,4-Dioxane	PS #4 RAW	2.1		0.20	ug/L	522 MOD
200-21385-5 1,4-Dioxane	PS #5 RAW	0.50		0.20	ug/L	522 MOD
200-21385-6 1,4-Dioxane	PS #10 RAW	0.27		0.20	ug/L	522 MOD
200-21385-7 1,4-Dioxane	PS #11 RAW	0.20		0.20	ug/L	522 MOD
200-21385-8 1,4-Dioxane	VINEBROOK EFFLUENT	0.16	J	0.20	ug/L	522 MOD

METHOD SUMMARY

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Description	Lab Location	Method	Preparation Method
Matrix: Water			
1,4 Dioxane (GC/MS SIM)	TAL BUR	EPA 522 MOD	
Solid Phase Extraction (SPE)	TAL BUR		SW846 3535A

Lab References:

TAL BUR = TestAmerica Burlington

Method References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Method	Analyst	Analyst ID
EPA 522 MOD	Weigel, Kenneth H	KHW

SAMPLE SUMMARY

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
200-21385-1	PS #1 RAW	Water	03/12/2014 1120	03/14/2014 1030
200-21385-2	PS #2 RAW	Water	03/12/2014 1122	03/14/2014 1030
200-21385-3	PS #3 RAW	Water	03/12/2014 1031	03/14/2014 1030
200-21385-4	PS #4 RAW	Water	03/12/2014 1038	03/14/2014 1030
200-21385-5	PS #5 RAW	Water	03/12/2014 1025	03/14/2014 1030
200-21385-6	PS #10 RAW	Water	03/12/2014 1105	03/14/2014 1030
200-21385-7	PS #11 RAW	Water	03/12/2014 1106	03/14/2014 1030
200-21385-8	VINEBROOK EFFLUENT	Water	03/12/2014 0958	03/14/2014 1030

SAMPLE RESULTS

Analytical Data

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Client Sample ID: PS #1 RAW

Lab Sample ID: 200-21385-1

Date Sampled: 03/12/2014 1120

Client Matrix: Water

Date Received: 03/14/2014 1030

522 MOD 1,4 Dioxane (GC/MS SIM)

Analysis Method:	522 MOD	Analysis Batch:	200-69560	Instrument ID:	CHZ.i
Prep Method:	3535A	Prep Batch:	200-69557	Lab File ID:	Z6576_026.D
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	03/17/2014 1727			Final Weight/Volume:	2000 uL
Prep Date:	03/17/2014 0848			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,4-Dioxane	0.062	J	0.040	0.20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,4-Dioxane-d8 (Surr)	91		70 - 130

Analytical Data

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Client Sample ID: PS #2 RAW

Lab Sample ID: 200-21385-2

Date Sampled: 03/12/2014 1122

Client Matrix: Water

Date Received: 03/14/2014 1030

522 MOD 1,4 Dioxane (GC/MS SIM)

Analysis Method:	522 MOD	Analysis Batch:	200-69560	Instrument ID:	CHZ.i
Prep Method:	3535A	Prep Batch:	200-69557	Lab File ID:	Z6576_027.D
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	03/17/2014 1758			Final Weight/Volume:	2000 uL
Prep Date:	03/17/2014 0848			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,4-Dioxane	0.10	J	0.040	0.20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,4-Dioxane-d8 (Surr)	95		70 - 130

Analytical Data

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Client Sample ID: PS #3 RAW

Lab Sample ID: 200-21385-3

Client Matrix: Water

Date Sampled: 03/12/2014 1031

Date Received: 03/14/2014 1030

522 MOD 1,4 Dioxane (GC/MS SIM)

Analysis Method:	522 MOD	Analysis Batch:	200-69560	Instrument ID:	CHZ.i
Prep Method:	3535A	Prep Batch:	200-69557	Lab File ID:	Z6576_028.D
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	03/17/2014 1813			Final Weight/Volume:	2000 uL
Prep Date:	03/17/2014 0848			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,4-Dioxane	0.43		0.040	0.20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,4-Dioxane-d8 (Surr)	88		70 - 130

Analytical Data

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Client Sample ID: PS #4 RAW

Lab Sample ID: 200-21385-4

Client Matrix: Water

Date Sampled: 03/12/2014 1038

Date Received: 03/14/2014 1030

522 MOD 1,4 Dioxane (GC/MS SIM)

Analysis Method: 522 MOD

Analysis Batch: 200-69560

Instrument ID: CHZ.i

Prep Method: 3535A

Prep Batch: 200-69557

Lab File ID: Z6576_029.D

Dilution: 1.0

Initial Weight/Volume: 100 mL

Analysis Date: 03/17/2014 1828

Final Weight/Volume: 2000 uL

Prep Date: 03/17/2014 0848

Injection Volume: 2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,4-Dioxane	2.1		0.040	0.20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,4-Dioxane-d8 (Surr)	87		70 - 130

Analytical Data

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Client Sample ID: PS #5 RAW

Lab Sample ID: 200-21385-5

Client Matrix: Water

Date Sampled: 03/12/2014 1025

Date Received: 03/14/2014 1030

522 MOD 1,4 Dioxane (GC/MS SIM)

Analysis Method:	522 MOD	Analysis Batch:	200-69560	Instrument ID:	CHZ.i
Prep Method:	3535A	Prep Batch:	200-69557	Lab File ID:	Z6576_030.D
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	03/17/2014 1844			Final Weight/Volume:	2000 uL
Prep Date:	03/17/2014 0848			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,4-Dioxane	0.50		0.040	0.20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,4-Dioxane-d8 (Surr)	86		70 - 130

Analytical Data

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Client Sample ID: PS #10 RAW

Lab Sample ID: 200-21385-6

Date Sampled: 03/12/2014 1105

Client Matrix: Water

Date Received: 03/14/2014 1030

522 MOD 1,4 Dioxane (GC/MS SIM)

Analysis Method:	522 MOD	Analysis Batch:	200-69560	Instrument ID:	CHZ.i
Prep Method:	3535A	Prep Batch:	200-69557	Lab File ID:	Z6576_031.D
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	03/17/2014 1859			Final Weight/Volume:	2000 uL
Prep Date:	03/17/2014 0848			Injection Volume:	2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,4-Dioxane	0.27		0.040	0.20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,4-Dioxane-d8 (Surr)	88		70 - 130

Analytical Data

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Client Sample ID: PS #11 RAW

Lab Sample ID: 200-21385-7

Client Matrix: Water

Date Sampled: 03/12/2014 1106

Date Received: 03/14/2014 1030

522 MOD 1,4 Dioxane (GC/MS SIM)

Analysis Method: 522 MOD

Analysis Batch: 200-69560

Instrument ID: CHZ.i

Prep Method: 3535A

Prep Batch: 200-69557

Lab File ID: Z6576_032.D

Dilution: 1.0

Initial Weight/Volume: 100 mL

Analysis Date: 03/17/2014 1915

Final Weight/Volume: 2000 uL

Prep Date: 03/17/2014 0848

Injection Volume: 2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,4-Dioxane	0.20		0.040	0.20
Surrogate	%Rec	Qualifier	Acceptance Limits	
1,4-Dioxane-d8 (Surr)	89		70 - 130	

Analytical Data

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Client Sample ID: VINEBROOK EFFLUENT

Lab Sample ID: 200-21385-8

Date Sampled: 03/12/2014 0958

Client Matrix: Water

Date Received: 03/14/2014 1030

522 MOD 1,4 Dioxane (GC/MS SIM)

Analysis Method: 522 MOD

Analysis Batch: 200-69560

Instrument ID: CHZ.i

Prep Method: 3535A

Prep Batch: 200-69557

Lab File ID: Z6576_033.D

Dilution: 1.0

Initial Weight/Volume: 100 mL

Analysis Date: 03/17/2014 1930

Final Weight/Volume: 2000 uL

Prep Date: 03/17/2014 0848

Injection Volume: 2 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,4-Dioxane	0.16	J	0.040	0.20

Surrogate	%Rec	Qualifier	Acceptance Limits
1,4-Dioxane-d8 (Surr)	84		70 - 130

DATA REPORTING QUALIFIERS

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Lab Section	Qualifier	Description
GC/MS Semi VOA	U	Indicates the analyte was analyzed for but not detected.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

QUALITY CONTROL RESULTS

Quality Control Results

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 200-69557					
LCS 200-69557/2-A	Lab Control Sample	T	Water	3535A	
MB 200-69557/1-A	Method Blank	T	Water	3535A	
200-21385-1	PS #1 RAW	T	Water	3535A	
200-21385-2	PS #2 RAW	T	Water	3535A	
200-21385-3	PS #3 RAW	T	Water	3535A	
200-21385-4	PS #4 RAW	T	Water	3535A	
200-21385-5	PS #5 RAW	T	Water	3535A	
200-21385-6	PS #10 RAW	T	Water	3535A	
200-21385-7	PS #11 RAW	T	Water	3535A	
200-21385-8	VINEBROOK EFFLUENT	T	Water	3535A	
Analysis Batch:200-69560					
LCS 200-69557/2-A	Lab Control Sample	T	Water	522 MOD	200-69557
MB 200-69557/1-A	Method Blank	T	Water	522 MOD	200-69557
200-21385-1	PS #1 RAW	T	Water	522 MOD	200-69557
200-21385-2	PS #2 RAW	T	Water	522 MOD	200-69557
200-21385-3	PS #3 RAW	T	Water	522 MOD	200-69557
200-21385-4	PS #4 RAW	T	Water	522 MOD	200-69557
200-21385-5	PS #5 RAW	T	Water	522 MOD	200-69557
200-21385-6	PS #10 RAW	T	Water	522 MOD	200-69557
200-21385-7	PS #11 RAW	T	Water	522 MOD	200-69557
200-21385-8	VINEBROOK EFFLUENT	T	Water	522 MOD	200-69557

Report Basis

T = Total

Quality Control Results

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Surrogate Recovery Report

522 MOD 1,4 Dioxane (GC/MS SIM)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DXE %Rec
200-21385-1	PS #1 RAW	91
200-21385-2	PS #2 RAW	95
200-21385-3	PS #3 RAW	88
200-21385-4	PS #4 RAW	87
200-21385-5	PS #5 RAW	86
200-21385-6	PS #10 RAW	88
200-21385-7	PS #11 RAW	89
200-21385-8	VINEBROOK EFFLUENT	84
MB 200-69557/1-A		96
LCS 200-69557/2-A		90

Surrogate	Acceptance Limits
DXE = 1,4-Dioxane-d8 (Surr)	70-130

Quality Control Results

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

Sdg Number: 1403-05248

Method Blank - Batch: 200-69557

Method: 522 MOD
Preparation: 3535A

Lab Sample ID: MB 200-69557/1-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/17/2014 1711
Prep Date: 03/17/2014 0848
Leach Date: N/A

Analysis Batch: 200-69560
Prep Batch: 200-69557
Leach Batch: N/A
Units: ug/L

Instrument ID: CHZ.i
Lab File ID: Z6576_025.D
Initial Weight/Volume: 100 mL
Final Weight/Volume: 2000 uL
Injection Volume: 2 uL

Analyte	Result	Qual	MDL	RL
1,4-Dioxane	0.20	U	0.040	0.20

Surrogate	% Rec	Acceptance Limits
1,4-Dioxane-d8 (Surr)	96	70 - 130

Lab Control Sample - Batch: 200-69557

Method: 522 MOD
Preparation: 3535A

Lab Sample ID: LCS 200-69557/2-A
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/17/2014 1656
Prep Date: 03/17/2014 0848
Leach Date: N/A

Analysis Batch: 200-69560
Prep Batch: 200-69557
Leach Batch: N/A
Units: ug/L

Instrument ID: CHZ.i
Lab File ID: Z6576_024.D
Initial Weight/Volume: 100 mL
Final Weight/Volume: 2000 uL
Injection Volume: 2 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,4-Dioxane	2.00	1.67	83	70 - 130	

Surrogate	% Rec	Acceptance Limits
1,4-Dioxane-d8 (Surr)	90	70 - 130

State Form Information

PWS Name:	Town of Burlington
Location:	Burlington, MA
PWS ID#:	3048000
PWS Class:	COM

Sampled By:	Russell Makiej
Date Collected:	3/12/2014

For RIAL WO#: 1403-05248

Sample Location	Source Code	Location Code	Source Treated?	Collected after Treatment?	Manifolded?	Sample Type	Routine or Special	Original, Resub. or Confirm.	Multiple or Single?	Raw or Finished?
PS #1 Raw	3048000	N/A	N/A	N/A	N/A	RS	Routine	Original	Single	Raw
PS #2 Raw	3048000	N/A	N/A	N/A	N/A	RS	Routine	Original	Single	Raw
PS #3 Raw	3048000	N/A	N/A	N/A	N/A	RS	Routine	Original	Single	Raw
PS #4 Raw	3048000	N/A	N/A	N/A	N/A	RS	Routine	Original	Single	Raw
PS #5 Raw	3048000	N/A	N/A	N/A	N/A	RS	Routine	Original	Single	Raw
PS #10 Raw	3048000	N/A	N/A	N/A	N/A	RS	Routine	Original	Single	Raw
PS #11 Raw	3048000	N/A	N/A	N/A	N/A	RS	Routine	Original	Single	Raw
Vine Brook Finished	3048000	10094	Yes	Yes	No	RS	Routine	Original	Multiple	Finished

Login Sample Receipt Checklist

Client: R.I. Analytical Lab, Inc.

Job Number: 200-21385-1

SDG Number: 1403-05248

Login Number: 21385

List Source: TestAmerica Burlington

List Number: 1

Creator: Marion, Greg T

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	CUSTODY SEAL TAPE
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	2.3°C IR GUN ID 181/CF=-0.1
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

R.I. Analytical Laboratories, Inc.

41 Illinois Avenue
Warwick, RI 02888-3007
Tel: 800-937-2580
Fax: 401-738-1970

131 Coolidge St, Suite 105
Hudson, MA 01749-1331
Tel: 800-937-2580
Fax: 978-568-0078

[illegible]

Project Information

Company Name: **Town of Burlington MA**

Project Name: 1, 4 Dioxane Monthly Monitoring

Mailing Address: DPW Building, 25 Center Street

P.O. Number: _____ Project Number: _____

City / State / Zip: Burlington. MA 01803

Report To: **Norman Lavigne.**

Telephone: _____

Fax: 781-229-5721

Email report

Wilmington

Contact Person:

Norman Laviane

to these
addresses:

rmakiei@burlington.org

Relinquished By Signatures

Date	Time
------	------

Received By Signatures

Time

Turn Around Time

James Thompson
22 Feb 1901

3/13/14	11:57
3/13/14	1:30
3/13/14	1:55

Mr. G. G. G. G.

3/12/14	1830
3/12/14	1950

Project Comments

Circle if applicable: GW-1, GW-2, GW-3, S-1, S-2, S-3

MCP Data Enhancement QC Package?

No

Lab Use Only

✓	Sample Pick Up Only
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Shipped on ice	
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Workorder No: 1423-5-2-2X

Containers: P=Poly, G=Glass, AG=Amber Glass, V=Vial, St=Sterile Preservatives: A=Ascorbic Acid, NH₄=NH₄Cl, H=HCl, M=MeOH, N=NaOH, T=Na₂S₂O₃, Z=ZnOAc
Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SL=Sludge, A=Air, B=Bulk/Solid, WP=Wipe, O=



CERTIFICATE OF ANALYSIS

Town of Burlington MA
Attn: Mr. Norman Lavigne
DPW Building
25 Center Street
Burlington, MA 01803

Date Received: 3/20/14
Date Reported: 3/27/14
P.O. #:
Work Order #: 1403-05897

DESCRIPTION: PS #4 VOC MONITORING

Subject sample(s) has/have been analyzed by our Warwick, R.I. and/or our Hudson, MA. laboratories with the attached results.

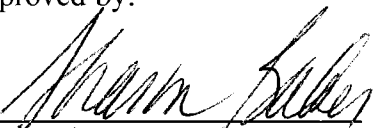
Reference: All parameters were analyzed by U.S. EPA approved methodologies.
The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.
The Certificate of Analysis shall not be reproduced except in full, without written approval of R. I. Analytical.
Results relate only to samples submitted to the laboratory for analysis.
Test results are not blank corrected.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, M-MA1117

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:


Sharon Baker
MIS / Data Reporting Manager

enc: Chain of Custody

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Town of Burlington MA
 Date Received: 3/20/14
 Work Order #: 1403-05897

Sample # 001

SAMPLE DESCRIPTION: PS #4 RAW

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/19/2014 @ 11:03

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Volatile Organic Compounds						
Bromodichloromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Bromoform	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Dibromochloromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Chloroform	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,2-Dibromoethane(EDB)	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Benzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Carbon Tetrachloride	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,2-Dichloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Trichloroethene	15	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,4-Dichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,1-Dichloroethane	6.9	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,1,1-Trichloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Vinyl Chloride	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Bromobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Bromomethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Chlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Chloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Chloromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
2-Chlorotoluene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
4-Chlorotoluene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Dibromomethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,3-Dichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,2-Dichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Trans-1,2-Dichloroethene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
cis-1,2-Dichloroethene	23	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Methylene Chloride	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,1-Dichloroethene	2.8	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,1-Dichloropropene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,2-Dichloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,3-Dichloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
cis-1,3-Dichloropropene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
trans-1,3-Dichloropropylene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
2,2-Dichloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Ethylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Styrene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,1,2-Trichloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Town of Burlington MA
 Date Received: 3/20/14
 Work Order #: 1403-05897

Sample # 001

SAMPLE DESCRIPTION: PS #4 RAW

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/19/2014 @ 11:03

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
1,1,1,2-Tetrachloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,1,2,2-Tetrachloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Tetrachloroethene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,2,3-Trichloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Toluene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
o-Xylene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
m,p-Xylene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Xylenes	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,2-Dibromo-3-Chloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Bromochloromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
n-Butylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Dichlorodifluoromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Trichlorofluoromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Isopropylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Hexachlorobutadiene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
p-Isopropyltoluene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Naphthalene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
n-Propylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Sec-butylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
tert-Butylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,2,3-Trichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,2,4-Trichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,2,4-Trimethylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
1,3,5-Trimethylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
MTBE	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
n-Hexane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 11:38	KAC
Surrogates			RANGE	EPA 524.2	3/21/14 11:38	KAC
4-Bromofluorobenzene	99		80-120%	EPA 524.2	3/21/14 11:38	KAC
1,2-Dichlorobenzene-d4	101		80-120%	EPA 524.2	3/21/14 11:38	KAC

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Town of Burlington MA
 Date Received: 3/20/14
 Work Order #: 1403-05897

Sample # 002

SAMPLE DESCRIPTION: TRIP BLANK

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/19/2014

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED	ANALYST
Volatile Organic Compounds						
Bromodichloromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Bromoform	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Dibromochloromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Chloroform	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,2-Dibromoethane(EDB)	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Benzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Carbon Tetrachloride	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,2-Dichloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Trichloroethene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,4-Dichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,1-Dichloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,1,1-Trichloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Vinyl Chloride	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Bromobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Bromomethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Chlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Chloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Chloromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
2-Chlorotoluene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
4-Chlorotoluene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Dibromomethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,3-Dichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,2-Dichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Trans-1,2-Dichloroethene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
cis-1,2-Dichloroethene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Methylene Chloride	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,1-Dichloroethene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,1-Dichloropropene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,2-Dichloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,3-Dichloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
cis-1,3-Dichloropropene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
trans-1,3-Dichloropropylene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
2,2-Dichloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Ethylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
Styrene	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC
1,1,2-Trichloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14 14:54	KAC

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Town of Burlington MA
 Date Received: 3/20/14
 Work Order #: 1403-05897

Sample # 002

SAMPLE DESCRIPTION: TRIP BLANK

SAMPLE TYPE: GRAB

SAMPLE DATE/TIME: 3/19/2014

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE/TIME ANALYZED		ANALYST
1,1,1,2-Tetrachloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
1,1,2,2-Tetrachloroethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Tetrachloroethene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
1,2,3-Trichloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Toluene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
o-Xylene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
m,p-Xylene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Xylenes	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
1,2-Dibromo-3-Chloropropane	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Bromochloromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
n-Butylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Dichlorodifluoromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Trichlorofluoromethane	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Isopropylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Hexachlorobutadiene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
p-Isopropyltoluene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Naphthalene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
n-Propylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Sec-butylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
tert-Butylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
1,2,3-Trichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
1,2,4-Trichlorobenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
1,2,4-Trimethylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
1,3,5-Trimethylbenzene	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
MTBE	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
n-Hexane	<0.5	0.5	ug/l	EPA 524.2	3/21/14	14:54	KAC
Surrogates			RANGE	EPA 524.2	3/21/14	14:54	KAC
4-Bromofluorobenzene	94		80-120%	EPA 524.2	3/21/14	14:54	KAC
1,2-Dichlorobenzene-d4	104		80-120%	EPA 524.2	3/21/14	14:54	KAC

