UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
5 Post Office Square, Suite 100
BOSTON, MA 02109-3912

CERTIFIED MAIL RETURN RECEIPT REQUESTED

APR 18 2014

Katie Gibbs,
Project Senior Manager
Shawmut Design & Construction
560 Harrison Avenue
Boston, MA 02118

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Boston Medical Center (BMC) - Moakley building addition site located at 830 Harrison Avenue, Boston, MA 02118, Suffolk County; Authorization # MAG910613

Dear Ms. Gibbs:

Based on the review of a Notice of Intent (NOI) submitted by Heather B. Haley, from GEI Consultants, Inc., on behalf of Boston Medical Center (BMC), for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes you, as the named 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 parameters your consulting has marked "Believed Present".

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on selected dilution ranges and technology-based ceiling limitations. With the absence of dilution of freshwater into tidal water, EPA determined that the Dilution Factor Range (DFR) for each parameter for this site is in the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities). Therefore, the limits for arsenic of 36 ug/L, copper of 3.7 ug/L, nickel of 8.2 ug/L,

selenium of 71 ug/L, and iron of 1,000 ug/L, are required to achieve permit compliance at your site.

Finally, please note the checklist of pollutants attached to this authorization is subject to a recertification if the operations at the site result in a discharge lasting longer than six months. A recertification can be submitted to EPA within six (6) to twelve (12) months of operations in accordance with the 2010 RGP regulations.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on 10/31/2014. 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

Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Paul Canavan, BWSC
Ileen Gladstone, GEI Consultants

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910613**
Authorization Issued:	April, 2014
Facility/Site Name:	Boston Medical Center Moakley building addition
Facility/Site Address:	830 Harrison Avenue, Boston, MA 02118
	Email address of owner: Brendan,Whalen@bmc.org
Legal Name of Operator:	Shawmut Design and Construction
Operator contact name, title, and Address:	Katie Gibbs, Project Senior Manager, 560 Harrison Avenue, Boston, MA 02118.
	Email: kgibbs@shawmut.com 617 622 8659
Estimated date of The Project Completion:	10/31/214
Category and Sub-Category:	Contaminated Construction Dewatering. Sub-category A. General Urban Fill Sites
RGP Termination Date:	September 10, 2015
Receiving Water:	Boston 4 Point channel

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

	Parameter	**Effluent Limit/Method#/ML** (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
	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes	100 ug/L/ Me#8260C/ ML 2ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	(BTEX) [4]	
	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
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	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 Parameters	Total Recoverable MA/Metal Limit H [10] = 50 mg/l CaCO3, Units = ug/l [11/12]	Saltwater Limits	Minimum level=ML	
	39. Antimony	5.6		ML	10
√	40. Arsenic **		36	ML	20
	41. Cadmium **		8.9	ML	10
	42. Chromium III (trivalent) **		100	ML	15
	43. Chromium VI (hexavalent) **		50.3	ML	10
√	44. Copper **		3.7	ML	15
	45. Lead **		8.5	ML	20
	46. Mercury **		1.1	ML	02
√	47. Nickel **		8.2	ML	20
√	48. Selenium **		71	ML	20
	49. Silver		2.2	ML	10
	50. Zinc **		85.6	ML	15
√	51. Iron	1,000		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 x 1,000ug/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 x 2 =2,000 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

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

March 17, 2014
Project 132894-2

Via E-mail: NPDES.Generalpermits.epa.gov

Environmental Protection Agency
RGP NOI Processing
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, MA 02109-3912

Dear Sir or Madam:

Re: Notice of Intent
NPDES Remediation General Permit
Moakley Building Addition
Boston Medical Center
Boston, Massachusetts

On behalf of Boston Medical Center (BMC), GEI Consultants, Inc. has prepared this Notice of Intent (NOI) for coverage under the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP), Massachusetts General Permit (MAG910000). This NOI was prepared in accordance with the general requirements of the NPDES RGP under Federal Register, Vol. 75, No. 174, dated September 9, 2010, and related guidance documentation provided by the U.S. Environmental Protection Agency (EPA). The completed NOI form is provided in Appendix A.

Site Information

This NOI has been prepared for the discharge of dewatering effluent during construction of the proposed Moakley Building Addition (Moakley Addition) located on East Concord Street within the BMC campus in Boston, Massachusetts (the Property; Fig. 1). The Property is bounded by the existing Moakley building to the southwest, East Concord Street to the northeast, a driveway and the Surgical Building to the southeast, and a parking area and 800 Harrison Avenue to the northwest (Figs. 1 and 2). The Property is currently a landscaped area with a brick walkway (Fig. 2).

The work will occur within the Massachusetts Department of Environmental Protection (MassDEP) disposal site tracked under Release Tracking Number (RTN) 3-32042 (the Site). Concentrations of polycyclic aromatic hydrocarbons (PAHs) and lead exceeded the applicable Reportable Concentrations for soil category S-1 (RCS-1), as defined by the Massachusetts Contingency Plan (MCP; 310 CMR 40.0315(2)), and required reporting to the MassDEP on March 6, 2014. Soil and groundwater management activities that are planned at the Site will be conducted as a Release Abatement Measure (RAM) per the MCP.

GEI Consultants, Inc.
400 Unicorn Park Drive, Woburn, MA 01801
781.721.4000 fax: 781.721.4073

Discharge and Receiving Surface Water Information

Some construction dewatering will be necessary to keep excavations dry. The intent of the project is to recharge groundwater on site. However, if this is not possible, it will be discharged to the nearby storm water drainage system in accordance with the RGP permit.

We evaluated the proposed influent by collecting a groundwater sample from the Site. We collected the groundwater sample from monitoring well B1(MW) on February 4, 2014 (Fig. 2). The water sample was analyzed for the parameters required under the NPDES RGP. The laboratory data reports for these samples are provided in Appendix B. In addition, the pH of the proposed influent was measured in the field to evaluate existing conditions.

The analytical results indicated the presence of chloride, total residual chlorine (TRC), total cyanide, and metals including copper, iron, nickel, and selenium. Petroleum compounds including PAHs, a contaminant of concern in soil at the Site, were not detected above laboratory reporting limits. We are conservatively assuming that PAHs and petroleum hydrocarbons could be detected in the influent; however, this is not anticipated based on the sampling results provided in Appendix B. The measured pH of the groundwater within the project site was approximately 6.9 standard units (s.u.). The pH range detected is within the RGP effluent limit for Massachusetts waters (6.5 to 8.3 s.u.).

During construction, the collected water will be treated to remove suspended solids, and, if necessary, volatile organic compounds (VOCs), cyanide, and metals prior to discharge. The proposed conceptual treatment system is shown in the process flow diagram in Fig. 3.

The treated water will be discharged to one or more storm drains near the Site. The storm drains are identified in Fig. 2 and the plan in Appendix C as Proposed Discharge Points 1 through 3. Proposed Discharge Points 1 and 2 are catch basins located north and south of the project area, respectively, on BMC property, but connect to the storm drains on East Concord Street. Proposed Discharge Point 3 is a catch basin on East Concord Street. According to plans we reviewed at the Boston Water and Sewer Commission (BWSC) on February 6, 2014, these storm drains are part of the BWSC storm water drainage system that joins the combined sewer overflow (CSO) that discharges to two outfalls (CSO070 and CSO071) at the Fort Point Channel, approximately 0.75 mile from the Site. An annotated copy of the BWSC plan showing the discharge path and ultimate discharge outfall(s) at the Fort Point Channel is in Appendix C. Although the ultimate discharge is to a CSO outfall operated by the Massachusetts Water Resource Authority (MWRA), we have confirmed with the MWRA during past work at BMC that the discharge through the system is not under jurisdiction of the MWRA and should be permitted under the NPDES. We will submit a BWSC Dewatering Permit prior to beginning work.

Consultation with Federal Services

We reviewed the online electronic data viewers and databases from the Massachusetts Geographical Information System (MassGIS), the Massachusetts Division of Fisheries and Wildlife (MassWildlife; Natural Heritage and Endangered Species Program), and the U.S. National Parks Service Natural Historic Places (NPS). Based on this review, neither the Site nor the point where the proposed discharge reaches the receiving surface water body are Areas of Critical Environmental Concern (ACEC), Habitats of Rare Wetland Wildlife, Habitats of Rare Species or Estimated Habitats of Rare Wildlife, or listed as a National Historic Place. A copy of the most current City of Boston endangered species list is in Appendix D. Based on this information, consultation with federal and/or state officials was deemed not necessary.

Coverage Under NPDES RGP

It is our opinion that the proposed discharge is eligible for coverage under the NPDES RGP based on the requirements of the NPDES RGP and our evaluation of the available site-specific information. The current intent of project dewatering activities is to recharge groundwater on site. However, if this is not possible, it will be discharged to the nearby storm water drainage system after treatment. On behalf of BMC, we are requesting coverage under the NPDES RGP for the discharge of treated construction dewatering effluent to the surface waters of the Fort Point Channel via the BWSC storm water drainage system.

The enclosed NOI form provides required information on the general site conditions, discharge, treatment system, receiving water, and consultation with federal services (Appendix A). For this project, BMC is the owner and has operational control over the construction plans and specifications, including the ability to make modifications to those plans and specifications. Shawmut Design and Construction of Boston, Massachusetts, contracted by BMC, is the operator and will direct the personnel responsible for the implementation and day-to-day operations and activities that are necessary to ensure compliance with the NPDES RGP, including operation, inspection, monitoring, and reporting.

Discharge of treated water is scheduled to begin in April 2014, although recharge to on-site recharge pits is planned if possible.

The excavation and dewatering will be conducted as a RAM in accordance with the MCP (310 CMR 40.0000). Therefore, completion and submittal of the MassDEP Bureau of Resource Protection Water Management (BRP WM 12) form and fee payment to the Commonwealth of Massachusetts are not required.

Please contact me at 781.721.4012 or igladstone@geiconsultants.com if you have any questions.

Very truly yours,

GEI CONSULTANTS, INC.

Ileen S. Gladstone, P.E., LSP, LEED AP
Vice President

HBH:jam
Enclosures
c: Brendan Whelan, BMC
Lorrie Adamz, DPM
Katie Gibbs, Shawmut
Division of Watershed Management, MassDEP
Francis McLaughlin, BWSC

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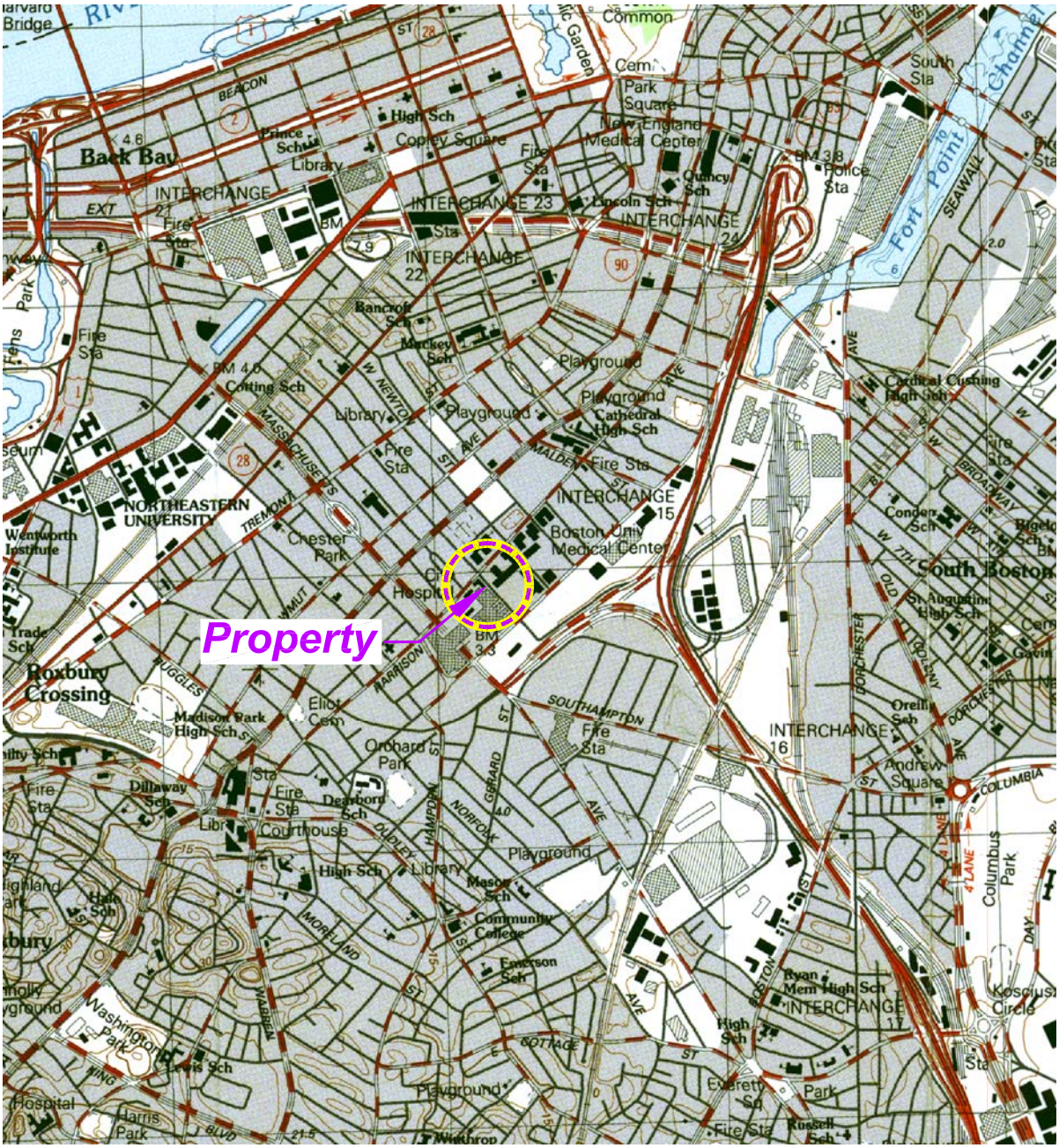

This Image provided by MassGIS is from U.S.G.S.
Topographic 7.5 X 15 Minute Series
Boston South, MA Quadrangle, 1987.
Datum is National Geodetic Vertical Datum (NGVD).
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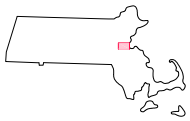

MASSACHUSETTS
QUADRANGLE LOCATION

RGP - Notice of Intent Boston Medical Center - Moakley Building Addition Boston, Massachusetts	GEI Consultants	PROPERTY LOCATION MAP
Boston Medical Center Boston, Massachusetts	Project 132894-2	March 2014 Fig. 1

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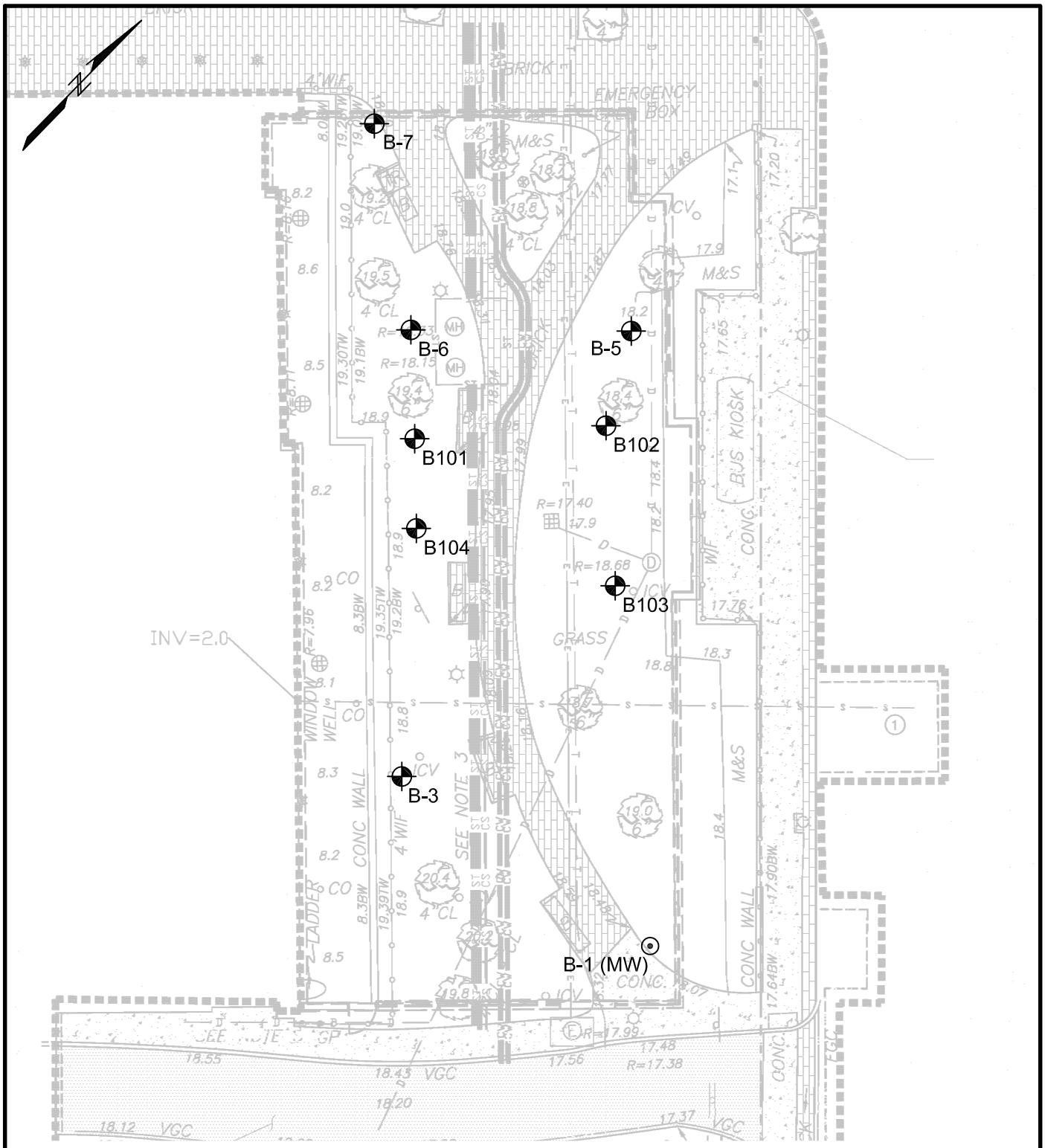

LEGEND:

- BORING
- BORING WITH MONITORING WELL

NOTES:

1. BASE PLAN FROM DRAWING TITLED *"EXISTING CONDITIONS/SITE PREPARATION PLAN"* BY TSOI/KOBUS & ASSOCIATES, INC. DATED DECEMBER 20, 2013.

0 20 40

SCALE, FEET

RGP - Notice of Intent Boston Medical Center - Moakley Building Addition Boston, Massachusetts	GEI Consultants	BORING LOCATION PLAN
Boston Medical Center Boston, Massachusetts	Project 132894-2	March 2014 Fig. 2

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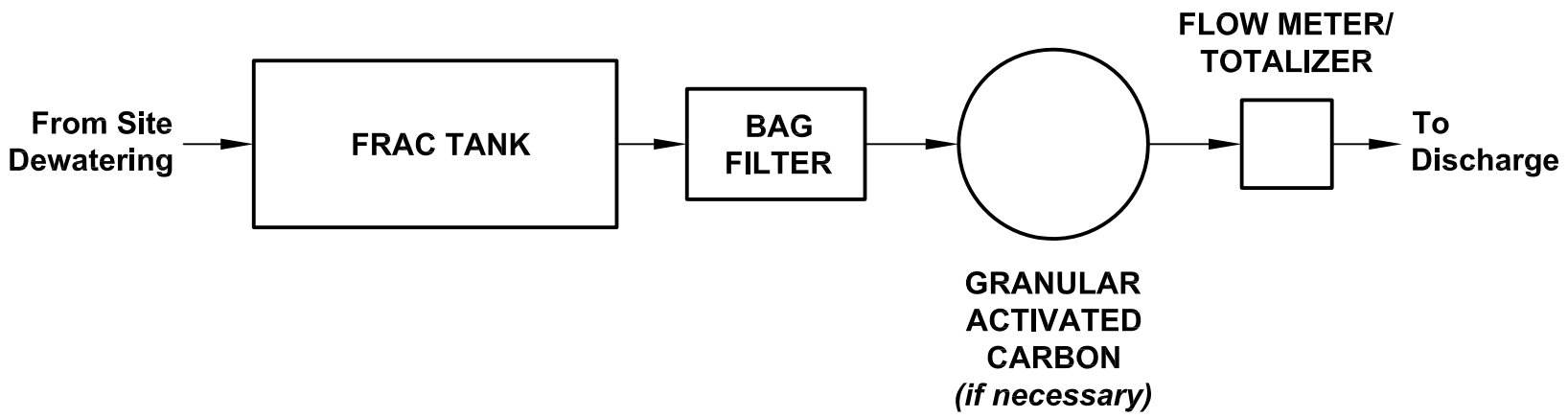

PROCESS FLOW DIAGRAM

Not to Scale

RGP - Notice of Intent Boston medical Center - Moakley Building Addition Boston, Massachusetts	GEI Consultants	PROCESS FLOW DIAGRAM
Boston Medical Center Boston, Massachusetts	Project 132894-2	March 2014 Fig. 3

M:\DRAFTING\2013\132894 BMC Moakley\132894-2\1328942-06

Appendix A

Remediation General Permit
Notice of Intent

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**: BMC – Moakley Building Addition		**Facility/site** mailing address:		
Location of **facility/site**: longitude: 71.072344 latitude: 42.33575	Facility SIC code(s): 8062	Street: 830 Harrison Avenue		
b) Name of **facility/site owner:** Boston Medical Center		Town: Boston		
Email address of facility/site owner: Brendan.Whalen@bmc.org		State: MA	Zip: 02118	County: Suffolk
Telephone no. of facility/site **owner**: (617) 414-2183				
Fax no. of facility/site **owner**: Not Available		**Owner** is (check one): 1. Federal____ 2. State/Tribal____ 3. Private ☒ 4. Other ____ if so, describe:		
Address of **owner** (if different from site):				
Street: Power Plant – First Floor, 750 Albany Street				
Town: Boston	State: MA	Zip: 02118	County: Suffolk	
c) Legal name of **operator**: Shawmut Design & Construction	**Operator** telephone no: (617) 622-7659			
	Operator fax no.: (617) 622-8659		**Operator** email: kgibbs@shawmut.com	
Operator contact name and title: Katie Gibbs, Project Senior Manager				
Address of **operator** (if different from owner):	Street: 560 Harrison Avenue			
Town: Boston	State: MA	Zip: 02118	County: Suffolk	

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:_____RTN 3-32042_____ 2. permit or license # assigned:____N/A_____ 3. state agency contact information: name, location, and telephone number: MassDEP – NERO Wilmington, MA 01887 (978) 694-3200	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	**Activity Sub-Category**
I - Petroleum Related Site Remediation	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) ____

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: Discharge of water recovered during construction-related dewatering and construction.	
b) Provide the following information about each discharge:	
1) Number of discharge points: 3	2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)? Max. flow___0.222_____ Is maximum flow a **design value**? Y___ N_☒___ Average flow (include units) __0.167 cfs_____ Is average flow a design value or estimate? __estimate_____
3) Latitude and longitude of each discharge within 100 feet: pt.1: lat._42.335736___ long.__71.072439___; pt.2: lat._42.335389___ long.71.072161____; pt.3: lat._42.335653___ long.71.072225_____; 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):___N/A_____	5) Is the discharge intermittent _☒___ or seasonal____? Is discharge ongoing? Y ____ N ☒
c) Expected dates of discharge (mm/dd/yy): start___04/01/2014_____ end____10/31/2014_____	
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). See attached report.	

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.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
1. Total Suspended Solids (TSS)		☐	☒	1	Grab	2540D	5,000 ug/l	16,000	42.3	16,000	31.7
2. Total Residual Chlorine (TRC)		☒	☐	1	Grab	4500CL-E	10 ug/l	< 10	< 0.03	< 10	< 0.02
3. Total Petroleum Hydrocarbons (TPH)		☒	☐	1	Grab	1664A	5,000 ug/l	< 5000	< 13.2	< 5,000	< 9.91
4. Cyanide (CN)	57125	☐	☒	1	Grab	4500 CN CE	5,000 ug/l	6.3	0.02	6.3	0.02
5. Benzene (B)	71432	☒	☐	1	Grab	8260B	2 ug/l	< 1	< 0.003	< 1	< 0.002
6. Toluene (T)	108883	☒	☐	1	Grab	8260B	2 ug/l	< 1	< 0.003	< 1	< 0.002
7. Ethylbenzene (E)	100414	☒	☐	1	Grab	8260B	2 ug/l	< 1	< 0.003	< 1	< 0.002
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	1	Grab	8260B	4 ug/l	< 2	< 0.006	< 2	< 0.004
9. Total BTEX [2]	n/a	☒	☐	1	Grab	8260B	4 ug/l	< 2	< 0.006	< 2	< 0.004
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐	1	Grab	504.1	0.01 ug/l	< 0.015	< 0.00004	< 0.015	< 0.00003
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	1	Grab	8260B	10 ug/l	< 1	< 0.003	< 1	< 0.002
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1	Grab	8260B	10 ug/l	< 25	< 0.066	< 25	< 0.050

***** 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.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	1	Grab	8260B	10 ug/l	< 1	< 0.003	< 1	< 0.002
14. Naphthalene	91203	☒	☐	1	Grab	8260B	2 ug/l	< 1	< 0.003	< 1	< 0.002
15. Carbon Tetrachloride	56235	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
18a. Total dichlorobenzene		☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
23. Methylene Chloride	75092	☒	☐	1	Grab	8260B	5 ug/l	< 2	< 0.006	< 2	< 0.004
24. Tetrachloroethene (PCE)	127184	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
27. Trichloroethene (TCE)	79016	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
28. Vinyl Chloride (Chloroethene)	75014	☒	☐	1	Grab	8260B	5 ug/l	< 1	< 0.003	< 1	< 0.002
29. Acetone	67641	☒	☐	1	Grab	8260B	50 ug/l	< 10	< 0.03	< 10	< 0.02
30. 1,4 Dioxane	123911	☒	☐	1	Grab	8270D	50 ug/l	< 0.2	< 0.0005	< 0.2	< 0.0004
31. Total Phenols	108952	☒	☐	1	Grab	420.1	2 ug/l	< 100	< 0.3	< 100	< 0.2
32. Pentachlorophenol (PCP)	87865	☒	☐	1	Grab	8270C-SIM	5 ug/l	< 0.84	< 0.003	< 0.84	< 0.002
33. Total Phthalates (Phthalate esters) [4]		☒	☐	1	Grab	8270C-SIM	5 ug/l	< 2.34	< 0.007	< 2.34	< 0.005
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1	Grab	8270C-SIM	5 ug/l	< 2.34	< 0.007	< 2.34	< 0.005
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	Grab	8270C-SIM	N/A	N/A	N/A	N/A	N/A
a. Benzo(a) Anthracene	56553	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.05	< 0.0002	< 0.05	< 0.0001
b. Benzo(a) Pyrene	50328	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.05	< 0.0002	< 0.05	< 0.0001
c. Benzo(b)Fluoranthene	205992	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.05	< 0.0002	< 0.05	< 0.0001
d. Benzo(k)Fluoranthene	207089	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.05	< 0.0002	< 0.05	< 0.0001
e. Chrysene	21801	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.05	< 0.0002	< 0.05	< 0.0001
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.05	< 0.0002	< 0.05	< 0.0001
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.05	< 0.0002	< 0.05	< 0.0001
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	Grab	8270C-SIM	N/A	N/A	N/A	N/A	N/A

[4] The sum of individual phthalate compounds.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
h. Acenaphthene	83329	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.19	< 0.0005	< 0.19	< 0.0004
i. Acenaphthylene	208968	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.19	< 0.0005	< 0.19	< 0.0004
j. Anthracene	120127	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.19	< 0.0005	< 0.19	< 0.0004
k. Benzo(ghi) Perylene	191242	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.19	< 0.0005	< 0.19	< 0.0004
l. Fluoranthene	206440	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.19	< 0.0005	< 0.19	< 0.0004
m. Fluorene	86737	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.19	< 0.0005	< 0.19	< 0.0004
n. Naphthalene	91203	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.19	< 0.0005	< 0.19	< 0.0004
o. Phenanthrene	85018	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.19	< 0.0005	< 0.19	< 0.0004
p. Pyrene	129000	☒	☐	1	Grab	8270C-SIM	0.1 ug/l	< 0.19	< 0.0005	< 0.19	< 0.0004
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1	Grab	8082A	0.5 ug/l	< 0.09	< 0.0003	< 0.09	< 0.0002
38. Chloride	16887006	☐	☒	1	Grab	300.0	100 ug/l	1,800	4,755	1,800	3,566
39. Antimony	7440360	☒	☐	1	Grab	6020A	0.5 ug/l	< 0.4	< 0.002	< 0.4	< 0.0008
40. Arsenic	7440382	☐	☒	1	Grab	6020A	1 ug/l	17.1	0.045	17.1	0.034
41. Cadmium	7440439	☒	☐	1	Grab	6020A	0.2 ug/l	< 0.2	< 0.0006	< 0.2	< 0.0004
42. Chromium III (trivalent)	16065831	☒	☐	1	Grab	6020A	1 ug/l	< 20	< 0.053	< 20	< 0.04
43. Chromium VI (hexavalent)	18540299	☒	☐	1	Grab	7196A	10 ug/l	< 10	< 0.026	< 10	< 0.020
44. Copper	7440508	☐	☒	1	Grab	6020A	0.5 ug/l	15.6	0.041	15.6	0.031
45. Lead	7439921	☒	☐	1	Grab	6020A	0.2 ug/l	< 0.4	< 0.001	< 0.4	< 0.0008
46. Mercury	7439976	☒	☐	1	Grab	7470A	0.2 ug/l	< 0.2	< 0.0005	< 0.2	< 0.0004
47. Nickel	7440020	☐	☒	1	Grab	6020A	0.2 ug/l	11.3	0.030	11.3	0.022
48. Selenium	7782492	☐	☒	1	Grab	6020A	2 ug/l	22.9	0.061	22.9	0.045
49. Silver	7440224	☒	☐	1	Grab	6020A	0.2 ug/l	< 0.2	< 0.0005	< 0.2	< 0.0004
50. Zinc	7440666	☒	☐	1	Grab	6010B	5 ug/l	< 25	< 0.066	< 25	< 0.050
51. Iron	7439896	☐	☒	1	Grab	6010B	50 ug/l	6,170	16.3	6,170	12.2
Other (describe):		☐	☐								

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (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)
		☐	☐								
		☐	☐								

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

Step 1: 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? Copper, Iron, and Nickel
Step 2: 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:____Copper_____DF:__520 Metal:_____Iron_____DF:_5,000_ Metal:_____Nickel_____DF:_2,380 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: Iron

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

a) A description of the treatment system, including a schematic of the proposed or existing treatment system:

See attached report.

b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☒	Air stripper	Oil/water separator	Equalization tanks	Bag filter ☒	GAC filter ☒
	Chlorination	De chlorination	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____50_____ gpm Maximum flow rate of treatment system ___75_____ gpm
Design flow rate of treatment system ___75_____ gpm

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

None planned.

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 through off-site catch basins to the Fort Point Channel.

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(CSO)_____

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water _____0.2_____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)?
___fecal coliform, pathogens, PCB, and other causes
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.

See attached report.

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:	Boston Medical Center – Moakley Building Addition
Operator signature:	Katie Gibbs
Printed Name &Title:	Katie Gibbs, Senior Project Manager, Shawmut Design and Construction
Date:	3/17/14

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:	Boston Medical Center – Moakley Building Addition
Owner signature:	
Printed Name &Title:	Brendan Whalen, Director, Design & Construction, Boston Medical Center
Date:	3/19/14

Dilution Factor Calculation

Approach

The discharge dilution factor was calculated in accordance with Appendix V of the Remediation General Permit (RGP) application.

Formula

DF = (Qd + Qs)/Qd

DF = dilution factor

Qd = flow of discharge into receiving water body

Qs = estimated flow of receiving water body

Assumptions

Qs = *estimated flow of receiving water body*

Qs = tidal flow

Flow per ebb or flood tide = approximately 11,000,000 cubic feet of water

Duration of tidal ebb or flood tide = approximately 6 hours

Qs = 510 cubic feet per second (cfs)

Qd = flow of discharge into receiving water body

Qd = 90 gallons per minute (gpm) = 0.2 cfs

Calculation

DF = (Qd + Qs)/Qd

DF = (0.2 + 510)/(0.2)

DF = 2,551

DF >>100

RSH:adl

Appendix B

Laboratory Data Reports

CERTIFICATE OF ANALYSIS

Ryan Hoffman
GEI Consultants, Inc.
400 Unicorn Park Drive
Woburn, MA 01801

RE: BMC Moakley Addition - RGP (132894-0)
ESS Laboratory Work Order Number: 1401473

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:48 pm, Feb 03, 2014

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP

ESS Laboratory Work Order: 1401473

SAMPLE RECEIPT

The following samples were received on January 27, 2014 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the 2010 Remediation General Permit under the National Pollutant Discharge Elimination System (NPDES).

Lab Number	Sample Name	Matrix	Analysis
1401473-01	1328942 - B1	Ground Water	1664A, 2540D, 300.0, 420.1, 4500 CN CE, 4500-Cl E, 504.1, 6010B, 6020A, 7196A, 7470A, 8082A, 8260B, 8270C SIM, 8270D, Calc

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP

ESS Laboratory Work Order: 1401473

PROJECT NARRATIVE

8270C(SIM) Polynuclear Aromatic Hydrocarbons

CA43005-BS1 **Blank Spike recovery is above upper control limit (B+).**
Butylbenzylphthalate (143% @ 40-140%), Pentachlorophenol (135% @ 30-130%)

CA43005-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Butylbenzylphthalate (143% @ 40-140%), Pentachlorophenol (135% @ 30-130%)

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

CXA0313-CCV1 **Continuing Calibration recovery is above upper control limit (C+).**
1,4-Dioxane-d8 (124% @ 80-120%)

Classical Chemistry

1401473-01 **The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.**

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP

ESS Laboratory Work Order: 1401473

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015D - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP
Client Sample ID: 1328942 - B1
Date Sampled: 01/27/14 12:40
Percent Solids: N/A

ESS Laboratory Work Order: 1401473
ESS Laboratory Sample ID: 1401473-01
Sample Matrix: Ground Water
Units: ug/L

Extraction Method: 3005A

Total Metals Aqueous

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.4)		6020A		2	LLZ	01/30/14 12:38	50	50	CA42901
Arsenic	**17.1** (0.2)		6020A		1	JP	01/29/14 15:11	50	50	CA42901
Cadmium	ND (0.2)		6020A		1	LLZ	01/29/14 15:11	50	50	CA42901
Chromium (III)	ND (20)		Calc		1	EEM	01/28/14 16:43	1	1	[CALC]
Copper	**15.6** (0.4)		6020A		1	LLZ	01/29/14 15:11	50	50	CA42901
Iron	**6170** (50)		6010B		1	LLZ	01/28/14 16:43	50	25	CA42728
Lead	ND (0.4)		6020A		2	LLZ	01/30/14 12:38	50	50	CA42901
Mercury	ND (0.20)		7470A		1	KJK	01/28/14 18:22	20	40	CA42804
Nickel	**11.3** (1.0)		6020A		1	LLZ	01/29/14 15:11	50	50	CA42901
Selenium	**22.9** (1.0)		6020A		1	JP	01/29/14 15:11	50	50	CA42901
Silver	ND (0.2)		6020A		1	LLZ	01/29/14 15:11	50	50	CA42901
Zinc	ND (25)		6010B		1	KJK	01/28/14 16:43	50	25	CA42728

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP
Client Sample ID: 1328942 - B1
Date Sampled: 01/27/14 12:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1401473
ESS Laboratory Sample ID: 1401473-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: TAJ
Prepared: 1/28/14 13:25
Cleanup Method: 3665A

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.09)		8082A		1	01/30/14 9:01		CA43028
Aroclor 1221	ND (0.09)		8082A		1	01/30/14 9:01		CA43028
Aroclor 1232	ND (0.09)		8082A		1	01/30/14 9:01		CA43028
Aroclor 1242	ND (0.09)		8082A		1	01/30/14 9:01		CA43028
Aroclor 1248	ND (0.09)		8082A		1	01/30/14 9:01		CA43028
Aroclor 1254	ND (0.09)		8082A		1	01/30/14 9:01		CA43028
Aroclor 1260	ND (0.09)		8082A		1	01/30/14 9:01		CA43028
Aroclor 1262	ND (0.09)		8082A		1	01/30/14 9:01		CA43028
Aroclor 1268	ND (0.09)		8082A		1	01/30/14 9:01		CA43028

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*100 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*72 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*84 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP
Client Sample ID: 1328942 - B1
Date Sampled: 01/27/14 12:40
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1401473
ESS Laboratory Sample ID: 1401473-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1-Trichloroethane	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
1,1,2-Trichloroethane	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
1,1-Dichloroethane	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
1,1-Dichloroethene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
1,2-Dichlorobenzene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
1,2-Dichloroethane	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
1,3-Dichlorobenzene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
1,4-Dichlorobenzene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Acetone	ND (10.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Benzene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Carbon Tetrachloride	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
cis-1,2-Dichloroethene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Ethylbenzene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Methyl tert-Butyl Ether	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Methylene Chloride	ND (2.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Naphthalene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Tertiary-amyl methyl ether	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Tertiary-butyl Alcohol	ND (25.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Tetrachloroethene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Toluene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Trichloroethene	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Vinyl Chloride	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Xylene O	ND (1.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828
Xylene P,M	ND (2.0)		8260B		1	01/28/14 14:16	CXA0264	CA42828

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*97 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*100 %*		*70-130*
Surrogate: Dibromofluoromethane	*101 %*		*70-130*
Surrogate: Toluene-d8	*104 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP
Client Sample ID: 1328942 - B1
Date Sampled: 01/27/14 12:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1401473
ESS Laboratory Sample ID: 1401473-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 1/29/14 19:00

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,4-Dioxane IS	ND (0.2)		8270D		1	01/31/14 12:24	CXA0313	CA42933

	%Recovery	Qualifier	Limits
Surrogate: 1,4-Dioxane-d8	*99 %*		*15-115*

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP
Client Sample ID: 1328942 - B1
Date Sampled: 01/27/14 12:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 0.25
Extraction Method: 3510C

ESS Laboratory Work Order: 1401473
ESS Laboratory Sample ID: 1401473-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: IBM
Prepared: 1/30/14 12:18

8270C(SIM) Polynuclear Aromatic Hydrocarbons

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Acenaphthene	ND (0.19)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Acenaphthylene	ND (0.19)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Anthracene	ND (0.19)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Benzo(a)anthracene	ND (0.05)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Benzo(a)pyrene	ND (0.05)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Benzo(b)fluoranthene	ND (0.05)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Benzo(g,h,i)perylene	ND (0.19)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Benzo(k)fluoranthene	ND (0.05)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
bis(2-Ethylhexyl)phthalate	ND (2.34)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Butylbenzylphthalate	ND (2.34)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Chrysene	ND (0.05)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Dibenzo(a,h)Anthracene	ND (0.05)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Diethylphthalate	ND (2.34)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Dimethylphthalate	ND (2.34)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Di-n-butylphthalate	ND (2.34)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Di-n-octylphthalate	ND (2.34)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Fluoranthene	ND (0.19)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Fluorene	ND (0.19)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Indeno(1,2,3-cd)Pyrene	ND (0.05)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Naphthalene	ND (0.19)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Pentachlorophenol	ND (0.84)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Phenanthrene	ND (0.19)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005
Pyrene	ND (0.19)		8270C SIM		1	01/30/14 22:25	CXA0303	CA43005

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichlorobenzene-d4	*32 %*		*30-130*
Surrogate: 2,4,6-Tribromophenol	*71 %*		*15-110*
Surrogate: 2-Fluorobiphenyl	*61 %*		*30-130*
Surrogate: Nitrobenzene-d5	*61 %*		*30-130*
Surrogate: p-Terphenyl-d14	*77 %*		*30-130*

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP
Client Sample ID: 1328942 - B1
Date Sampled: 01/27/14 12:40
Percent Solids: N/A

ESS Laboratory Work Order: 1401473
ESS Laboratory Sample ID: 1401473-01
Sample Matrix: Ground Water

Classical Chemistry

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	Units	Batch
Chloride	**1800** (500)		300.0		1000	EEM	01/31/14 15:06	mg/L	CA43114
Dissolved Hexavalent Chromium	ND (10)		7196A		1	EEM	01/27/14 17:40	ug/L	CA42726
Hexavalent Chromium	ND (10)		7196A		1	EEM	01/27/14 17:40	ug/L	CA42726
Phenols	ND (100)		420.1		1	EEM	01/30/14 15:00	ug/L	CA43014
Total Cyanide (LL)	**0.0063** (0.0050)		4500 CN CE		1	JLK	01/29/14 11:17	mg/L	CA42918
Total Petroleum Hydrocarbon	ND (5)		1664A		1	CRR	01/29/14 10:20	mg/L	CA42929
Total Residual Chlorine	ND (10)		4500-Cl E		1	EEM	01/27/14 17:25	ug/L	CA42725
Total Suspended Solids	**16** (5)		2540D		1	EEM	01/28/14 15:15	mg/L	CA42820

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP
Client Sample ID: 1328942 - B1
Date Sampled: 01/27/14 12:40
Percent Solids: N/A
Initial Volume: 35
Final Volume: 2
Extraction Method: 504/8011

ESS Laboratory Work Order: 1401473
ESS Laboratory Sample ID: 1401473-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: ML
Prepared: 1/31/14 15:30

504.1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,2-Dibromoethane	ND (0.015)		504.1		1	01/31/14 16:47		CA43112

	%Recovery	Qualifier	Limits
Surrogate: Pentachloroethane	*90 %*		*30-150*
Surrogate: Pentachloroethane [2C]	*92 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP

ESS Laboratory Work Order: 1401473

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals Aqueous										
Batch CA42728 - 3005A										
Blank										
Iron	ND	50	ug/L							
Zinc	ND	25	ug/L							
Blank										
Zinc	ND	50	ug/L							
LCS										
Iron	1190	50	ug/L	1250		96	80-120			
Zinc	232	25	ug/L	250.0		93	80-120			
LCS Dup										
Iron	1180	50	ug/L	1250		95	80-120	1	20	
Zinc	229	25	ug/L	250.0		92	80-120	1	20	
Batch CA42804 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.97	0.20	ug/L	6.000		100	80-120			
LCS Dup										
Mercury	5.87	0.20	ug/L	6.000		98	80-120	2	20	
Batch CA42901 - 3005A										
Blank										
Antimony	ND	0.2	ug/L							
Arsenic	ND	0.2	ug/L							
Cadmium	ND	0.2	ug/L							
Copper	ND	0.4	ug/L							
Lead	ND	0.2	ug/L							
Nickel	ND	1.0	ug/L							
Selenium	ND	1.0	ug/L							
Silver	ND	0.2	ug/L							
LCS										
Antimony	50.9	0.2	ug/L	50.00		102	80-120			
Arsenic	48.0	0.2	ug/L	50.00		96	80-120			
Cadmium	48.8	0.2	ug/L	50.00		98	80-120			
Copper	49.5	0.4	ug/L	50.00		99	80-120			
Lead	51.7	0.2	ug/L	50.00		103	80-120			
Nickel	49.4	1.0	ug/L	50.00		99	80-120			
Selenium	49.2	1.0	ug/L	50.00		98	80-120			
Silver	50.7	0.2	ug/L	50.00		101	80-120			
LCS Dup										
Antimony	50.9	0.2	ug/L	50.00		102	80-120	0.05	20	
Arsenic	49.5	0.2	ug/L	50.00		99	80-120	3	20	
Cadmium	49.6	0.2	ug/L	50.00		99	80-120	2	20	
Copper	51.3	0.4	ug/L	50.00		103	80-120	4	20	
Lead	50.7	0.2	ug/L	50.00		101	80-120	2	20	

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP

ESS Laboratory Work Order: 1401473

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals Aqueous										
Batch CA42901 - 3005A										
Nickel	50.5	1.0	ug/L	50.00		101	80-120	2	20	
Selenium	48.7	1.0	ug/L	50.00		97	80-120	1	20	
Silver	50.9	0.2	ug/L	50.00		102	80-120	0.4	20	
8082A Polychlorinated Biphenyls (PCB)										
Batch CA43028 - 3510C										
Blank										
Aroclor 1016	ND	0.10	ug/L							
Aroclor 1016 (1)	ND	0.10	ug/L							
Aroclor 1016 (1) [2C]	ND	0.10	ug/L							
Aroclor 1016 (2)	ND	0.10	ug/L							
Aroclor 1016 (2) [2C]	ND	0.10	ug/L							
Aroclor 1016 (3)	ND	0.10	ug/L							
Aroclor 1016 (3) [2C]	ND	0.10	ug/L							
Aroclor 1016 (4)	ND	0.10	ug/L							
Aroclor 1016 (4) [2C]	ND	0.10	ug/L							
Aroclor 1016 (5)	ND	0.10	ug/L							
Aroclor 1016 (5) [2C]	ND	0.10	ug/L							
Aroclor 1221	ND	0.10	ug/L							
Aroclor 1221 (1)	ND	0.10	ug/L							
Aroclor 1221 (1) [2C]	ND	0.10	ug/L							
Aroclor 1221 (2)	ND	0.10	ug/L							
Aroclor 1221 (2) [2C]	ND	0.10	ug/L							
Aroclor 1221 (3)	ND	0.10	ug/L							
Aroclor 1221 (3) [2C]	ND	0.10	ug/L							
Aroclor 1221 (4)	ND	0.10	ug/L							
Aroclor 1221 (4) [2C]	ND	0.10	ug/L							
Aroclor 1221 (5)	ND	0.10	ug/L							
Aroclor 1221 (5) [2C]	ND	0.10	ug/L							
Aroclor 1232	ND	0.10	ug/L							
Aroclor 1232 (1)	ND	0.10	ug/L							
Aroclor 1232 (1) [2C]	ND	0.10	ug/L							
Aroclor 1232 (2)	ND	0.10	ug/L							
Aroclor 1232 (2) [2C]	ND	0.10	ug/L							
Aroclor 1232 (3)	ND	0.10	ug/L							
Aroclor 1232 (3) [2C]	ND	0.10	ug/L							
Aroclor 1232 (4)	ND	0.10	ug/L							
Aroclor 1232 (4) [2C]	ND	0.10	ug/L							
Aroclor 1232 (5)	ND	0.10	ug/L							
Aroclor 1232 (5) [2C]	ND	0.10	ug/L							
Aroclor 1242	ND	0.10	ug/L							
Aroclor 1242 (1)	ND	0.10	ug/L							
Aroclor 1242 (1) [2C]	ND	0.10	ug/L							
Aroclor 1242 (2)	ND	0.10	ug/L							
Aroclor 1242 (2) [2C]	ND	0.10	ug/L							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CA43028 - 3510C										
Aroclor 1242 (3)	ND	0.10	ug/L							
Aroclor 1242 (3) [2C]	ND	0.10	ug/L							
Aroclor 1242 (4)	ND	0.10	ug/L							
Aroclor 1242 (4) [2C]	ND	0.10	ug/L							
Aroclor 1242 (5)	ND	0.10	ug/L							
Aroclor 1242 (5) [2C]	ND	0.10	ug/L							
Aroclor 1248	ND	0.10	ug/L							
Aroclor 1248 (1)	ND	0.10	ug/L							
Aroclor 1248 (1) [2C]	ND	0.10	ug/L							
Aroclor 1248 (2)	ND	0.10	ug/L							
Aroclor 1248 (2) [2C]	ND	0.10	ug/L							
Aroclor 1248 (3)	ND	0.10	ug/L							
Aroclor 1248 (3) [2C]	ND	0.10	ug/L							
Aroclor 1248 (4)	ND	0.10	ug/L							
Aroclor 1248 (4) [2C]	ND	0.10	ug/L							
Aroclor 1248 (5)	ND	0.10	ug/L							
Aroclor 1248 (5) [2C]	ND	0.10	ug/L							
Aroclor 1254	ND	0.10	ug/L							
Aroclor 1254 (1)	ND	0.10	ug/L							
Aroclor 1254 (1) [2C]	ND	0.10	ug/L							
Aroclor 1254 (2)	ND	0.10	ug/L							
Aroclor 1254 (2) [2C]	ND	0.10	ug/L							
Aroclor 1254 (3)	ND	0.10	ug/L							
Aroclor 1254 (3) [2C]	ND	0.10	ug/L							
Aroclor 1254 (4)	ND	0.10	ug/L							
Aroclor 1254 (4) [2C]	ND	0.10	ug/L							
Aroclor 1254 (5)	ND	0.10	ug/L							
Aroclor 1254 (5) [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 (1)	ND	0.10	ug/L							
Aroclor 1260 (1) [2C]	ND	0.10	ug/L							
Aroclor 1260 (2)	ND	0.10	ug/L							
Aroclor 1260 (2) [2C]	ND	0.10	ug/L							
Aroclor 1260 (3)	ND	0.10	ug/L							
Aroclor 1260 (3) [2C]	ND	0.10	ug/L							
Aroclor 1260 (4)	ND	0.10	ug/L							
Aroclor 1260 (4) [2C]	ND	0.10	ug/L							
Aroclor 1260 (5)	ND	0.10	ug/L							
Aroclor 1260 (5) [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 (1)	ND	0.10	ug/L							
Aroclor 1262 (1) [2C]	ND	0.10	ug/L							
Aroclor 1262 (2)	ND	0.10	ug/L							
Aroclor 1262 (2) [2C]	ND	0.10	ug/L							
Aroclor 1262 (3)	ND	0.10	ug/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CA43028 - 3510C										
Aroclor 1262 (3) [2C]	ND	0.10	ug/L							
Aroclor 1262 (4)	ND	0.10	ug/L							
Aroclor 1262 (4) [2C]	ND	0.10	ug/L							
Aroclor 1262 (5)	ND	0.10	ug/L							
Aroclor 1262 (5) [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Aroclor 1268 (1)	ND	0.10	ug/L							
Aroclor 1268 (1) [2C]	ND	0.10	ug/L							
Aroclor 1268 (2)	ND	0.10	ug/L							
Aroclor 1268 (2) [2C]	ND	0.10	ug/L							
Aroclor 1268 (3)	ND	0.10	ug/L							
Aroclor 1268 (3) [2C]	ND	0.10	ug/L							
Aroclor 1268 (4)	ND	0.10	ug/L							
Aroclor 1268 (4) [2C]	ND	0.10	ug/L							
Aroclor 1268 (5)	ND	0.10	ug/L							
Aroclor 1268 (5) [2C]	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	*0.0424*		ug/L	*0.05000*		*85*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0430*		ug/L	*0.05000*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0261*		ug/L	*0.05000*		*52*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0301*		ug/L	*0.05000*		*60*	*30-150*			
LCS										
Aroclor 1016	0.86	0.10	ug/L	1.000		86	40-140			
Aroclor 1260	0.86	0.10	ug/L	1.000		86	40-140			
Surrogate: Decachlorobiphenyl	*0.0478*		ug/L	*0.05000*		*96*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0525*		ug/L	*0.05000*		*105*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0353*		ug/L	*0.05000*		*71*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0394*		ug/L	*0.05000*		*79*	*30-150*			
LCS Dup										
Aroclor 1016	0.82	0.10	ug/L	1.000		82	40-140	5	20	
Aroclor 1260	0.81	0.10	ug/L	1.000		81	40-140	6	20	
Surrogate: Decachlorobiphenyl	*0.0438*		ug/L	*0.05000*		*88*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0426*		ug/L	*0.05000*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0330*		ug/L	*0.05000*		*66*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0368*		ug/L	*0.05000*		*74*	*30-150*			
8260B Volatile Organic Compounds										
Batch CA42828 - 5030B										
Blank										
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA42828 - 5030B										
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	1.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
cis-1,2-Dichloroethene	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Methyl tert-Butyl Ether	ND	1.0	ug/L							
Methylene Chloride	ND	2.0	ug/L							
Naphthalene	ND	1.0	ug/L							
Tertiary-amyl methyl ether	ND	1.0	ug/L							
Tertiary-butyl Alcohol	ND	25.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Toluene	ND	1.0	ug/L							
Trichloroethene	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	*24.0*		ug/L	*25.00*		*96*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*26.4*		ug/L	*25.00*		*105*	*70-130*			
Surrogate: Dibromofluoromethane	*24.8*		ug/L	*25.00*		*99*	*70-130*			
Surrogate: Toluene-d8	*26.2*		ug/L	*25.00*		*105*	*70-130*			
LCS										
1,1,1-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1,2-Trichloroethane	10.5		ug/L	10.00		105	70-130			
1,1-Dichloroethane	11.1		ug/L	10.00		111	70-130			
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130			
1,2-Dichlorobenzene	11.4		ug/L	10.00		114	70-130			
1,2-Dichloroethane	11.4		ug/L	10.00		114	70-130			
1,3-Dichlorobenzene	11.4		ug/L	10.00		114	70-130			
1,4-Dichlorobenzene	11.5		ug/L	10.00		115	70-130			
Acetone	47.6		ug/L	50.00		95	70-130			
Benzene	10.9		ug/L	10.00		109	70-130			
Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130			
cis-1,2-Dichloroethene	10.9		ug/L	10.00		109	70-130			
Ethylbenzene	11.2		ug/L	10.00		112	70-130			
Methyl tert-Butyl Ether	10.1		ug/L	10.00		101	70-130			
Methylene Chloride	10.5		ug/L	10.00		105	70-130			
Naphthalene	11.2		ug/L	10.00		112	70-130			
Tertiary-amyl methyl ether	9.5		ug/L	10.00		95	70-130			
Tertiary-butyl Alcohol	48.3		ug/L	50.00		97	70-130			
Tetrachloroethene	8.4		ug/L	10.00		84	70-130			
Toluene	10.9		ug/L	10.00		109	70-130			

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CA42828 - 5030B										
Trichloroethene	10.1		ug/L	10.00		101	70-130			
Vinyl Chloride	10.8		ug/L	10.00		108	70-130			
Xylene O	10.6		ug/L	10.00		106	70-130			
Xylene P,M	22.2		ug/L	20.00		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	*25.5*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.3*		ug/L	*25.00*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*26.8*		ug/L	*25.00*		*107*	*70-130*			
Surrogate: Toluene-d8	*26.5*		ug/L	*25.00*		*106*	*70-130*			
LCS Dup										
1,1,1-Trichloroethane	10.1		ug/L	10.00		101	70-130	0	25	
1,1,2-Trichloroethane	10.5		ug/L	10.00		105	70-130	0.4	25	
1,1-Dichloroethane	10.8		ug/L	10.00		108	70-130	3	25	
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130	2	25	
1,2-Dichlorobenzene	11.3		ug/L	10.00		113	70-130	1	25	
1,2-Dichloroethane	10.7		ug/L	10.00		107	70-130	7	25	
1,3-Dichlorobenzene	10.5		ug/L	10.00		105	70-130	8	25	
1,4-Dichlorobenzene	10.6		ug/L	10.00		106	70-130	8	25	
Acetone	44.2		ug/L	50.00		88	70-130	7	25	
Benzene	10.7		ug/L	10.00		107	70-130	2	25	
Carbon Tetrachloride	10.1		ug/L	10.00		101	70-130	5	25	
cis-1,2-Dichloroethene	10.6		ug/L	10.00		106	70-130	2	25	
Ethylbenzene	11.3		ug/L	10.00		113	70-130	0.9	25	
Methyl tert-Butyl Ether	9.9		ug/L	10.00		99	70-130	2	25	
Methylene Chloride	10.5		ug/L	10.00		105	70-130	0.2	25	
Naphthalene	10.7		ug/L	10.00		107	70-130	4	25	
Tertiary-amyl methyl ether	9.5		ug/L	10.00		95	70-130	0.2	25	
Tertiary-butyl Alcohol	49.0		ug/L	50.00		98	70-130	1	25	
Tetrachloroethene	8.4		ug/L	10.00		84	70-130	0.4	25	
Toluene	10.8		ug/L	10.00		108	70-130	1	25	
Trichloroethene	10.6		ug/L	10.00		106	70-130	5	25	
Vinyl Chloride	10.7		ug/L	10.00		107	70-130	1	25	
Xylene O	11.1		ug/L	10.00		111	70-130	5	25	
Xylene P,M	22.4		ug/L	20.00		112	70-130	0.7	25	
Surrogate: 1,2-Dichloroethane-d4	*25.6*		ug/L	*25.00*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*25.8*		ug/L	*25.00*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*26.6*		ug/L	*25.00*		*106*	*70-130*			
Surrogate: Toluene-d8	*27.6*		ug/L	*25.00*		*111*	*70-130*			
8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution										
Batch CA42933 - 3520C										
Blank										
1,4-Dioxane IS	ND	0.2	ug/L							
Surrogate: 1,4-Dioxane-d8	*10.3*		ug/L	*10.00*		*103*	*15-115*			
LCS										
1,4-Dioxane IS	6.9	0.2	ug/L	10.00		69	40-140			

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8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution										
Batch CA42933 - 3520C										
Surrogate: 1,4-Dioxane-d8	*9.71*		ug/L	*10.00*		*97*	*15-115*			
LCS Dup										
1,4-Dioxane IS	5.6	0.2	ug/L	10.00		56	40-140	20	20	
Surrogate: 1,4-Dioxane-d8	*9.62*		ug/L	*10.00*		*96*	*15-115*			
8270C(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CA43005 - 3510C										
Blank										
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
bis(2-Ethylhexyl)phthalate	ND	2.50	ug/L							
Butylbenzylphthalate	ND	2.50	ug/L							
Chrysene	ND	0.05	ug/L							
Dibenzo(a,h)Anthracene	ND	0.05	ug/L							
Diethylphthalate	ND	2.50	ug/L							
Dimethylphthalate	ND	2.50	ug/L							
Di-n-butylphthalate	ND	2.50	ug/L							
Di-n-octylphthalate	ND	2.50	ug/L							
Fluoranthene	ND	0.20	ug/L							
Fluorene	ND	0.20	ug/L							
Indeno(1,2,3-cd)Pyrene	ND	0.05	ug/L							
Naphthalene	ND	0.20	ug/L							
Pentachlorophenol	ND	0.90	ug/L							
Phenanthrene	ND	0.20	ug/L							
Pyrene	ND	0.20	ug/L							
Surrogate: 1,2-Dichlorobenzene-d4	*1.73*		ug/L	*2.500*		*69*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*2.64*		ug/L	*3.750*		*70*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*2.08*		ug/L	*2.500*		*83*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.52*		ug/L	*2.500*		*101*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.33*		ug/L	*2.500*		*93*	*30-130*			
LCS										
Acenaphthene	2.71	0.20	ug/L	2.500		108	40-140			
Acenaphthylene	2.60	0.20	ug/L	2.500		104	40-140			
Anthracene	3.00	0.20	ug/L	2.500		120	40-140			
Benzo(a)anthracene	3.02	0.05	ug/L	2.500		121	40-140			
Benzo(a)pyrene	2.83	0.05	ug/L	2.500		113	40-140			
Benzo(b)fluoranthene	3.00	0.05	ug/L	2.500		120	40-140			
Benzo(g,h,i)perylene	3.07	0.20	ug/L	2.500		123	40-140			

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Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CA43005 - 3510C										
Benzo(k)fluoranthene	3.25	0.05	ug/L	2.500		130	40-140			
bis(2-Ethylhexyl)phthalate	3.40	2.50	ug/L	2.500		136	40-140			
Butylbenzylphthalate	3.58	2.50	ug/L	2.500		143	40-140			B+
Chrysene	3.05	0.05	ug/L	2.500		122	40-140			
Dibenzo(a,h)Anthracene	3.07	0.05	ug/L	2.500		123	40-140			
Diethylphthalate	3.01	2.50	ug/L	2.500		121	40-140			
Dimethylphthalate	3.10	2.50	ug/L	2.500		124	40-140			
Di-n-butylphthalate	2.87	2.50	ug/L	2.500		115	40-140			
Di-n-octylphthalate	3.47	2.50	ug/L	2.500		139	40-140			
Fluoranthene	3.23	0.20	ug/L	2.500		129	40-140			
Fluorene	2.94	0.20	ug/L	2.500		118	40-140			
Indeno(1,2,3-cd)Pyrene	3.14	0.05	ug/L	2.500		126	40-140			
Naphthalene	2.65	0.20	ug/L	2.500		106	40-140			
Pentachlorophenol	3.37	0.90	ug/L	2.500		135	30-130			B+
Phenanthrene	2.93	0.20	ug/L	2.500		117	40-140			
Pyrene	3.20	0.20	ug/L	2.500		128	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	*1.93*		ug/L	*2.500*		*77*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.70*		ug/L	*3.750*		*99*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*2.23*		ug/L	*2.500*		*89*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.55*		ug/L	*2.500*		*102*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.44*		ug/L	*2.500*		*97*	*30-130*			
LCS Dup										
Acenaphthene	2.70	0.20	ug/L	2.500		108	40-140	0.09	20	
Acenaphthylene	2.60	0.20	ug/L	2.500		104	40-140	0.03	20	
Anthracene	3.02	0.20	ug/L	2.500		121	40-140	0.5	20	
Benzo(a)anthracene	3.09	0.05	ug/L	2.500		123	40-140	2	20	
Benzo(a)pyrene	2.83	0.05	ug/L	2.500		113	40-140	0.2	20	
Benzo(b)fluoranthene	3.15	0.05	ug/L	2.500		126	40-140	5	20	
Benzo(g,h,i)perylene	3.06	0.20	ug/L	2.500		122	40-140	0.5	20	
Benzo(k)fluoranthene	3.02	0.05	ug/L	2.500		121	40-140	7	20	
bis(2-Ethylhexyl)phthalate	3.37	2.50	ug/L	2.500		135	40-140	0.8	20	
Butylbenzylphthalate	3.57	2.50	ug/L	2.500		143	40-140	0.5	20	B+
Chrysene	3.17	0.05	ug/L	2.500		127	40-140	4	20	
Dibenzo(a,h)Anthracene	3.11	0.05	ug/L	2.500		124	40-140	1	20	
Diethylphthalate	3.02	2.50	ug/L	2.500		121	40-140	0.2	20	
Dimethylphthalate	3.11	2.50	ug/L	2.500		125	40-140	0.5	20	
Di-n-butylphthalate	2.89	2.50	ug/L	2.500		116	40-140	0.7	20	
Di-n-octylphthalate	3.48	2.50	ug/L	2.500		139	40-140	0.4	20	
Fluoranthene	3.21	0.20	ug/L	2.500		129	40-140	0.4	20	
Fluorene	2.91	0.20	ug/L	2.500		117	40-140	1	20	
Indeno(1,2,3-cd)Pyrene	3.10	0.05	ug/L	2.500		124	40-140	1	20	
Naphthalene	2.63	0.20	ug/L	2.500		105	40-140	1	20	
Pentachlorophenol	3.38	0.90	ug/L	2.500		135	30-130	0.4	20	B+
Phenanthrene	2.97	0.20	ug/L	2.500		119	40-140	1	20	
Pyrene	3.22	0.20	ug/L	2.500		129	40-140	0.8	20	

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP

ESS Laboratory Work Order: 1401473

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270C(SIM) Polynuclear Aromatic Hydrocarbons										
Batch CA43005 - 3510C										
Surrogate: 1,2-Dichlorobenzene-d4	*1.51*		ug/L	*2.500*		*60*	*30-130*			
Surrogate: 2,4,6-Tribromophenol	*3.06*		ug/L	*3.750*		*82*	*15-110*			
Surrogate: 2-Fluorobiphenyl	*1.79*		ug/L	*2.500*		*72*	*30-130*			
Surrogate: Nitrobenzene-d5	*2.12*		ug/L	*2.500*		*85*	*30-130*			
Surrogate: p-Terphenyl-d14	*2.02*		ug/L	*2.500*		*81*	*30-130*			
Classical Chemistry										
Batch CA42725 - General Preparation										
Blank										
Total Residual Chlorine	ND	10	ug/L							
LCS										
Total Residual Chlorine	0.8		mg/L	0.7300		104	85-115			
Batch CA42726 - General Preparation										
Blank										
Dissolved Hexavalent Chromium	ND	10	ug/L							
Hexavalent Chromium	ND	10	ug/L							
LCS										
Dissolved Hexavalent Chromium	0.5		mg/L	0.4998		99	90-110			
Hexavalent Chromium	0.5		mg/L	0.4998		99	90-110			
LCS Dup										
Dissolved Hexavalent Chromium	0.5		mg/L	0.4998		99	90-110	0.5	20	
Hexavalent Chromium	0.5		mg/L	0.4998		99	90-110	0.5	20	
Batch CA42820 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	62		mg/L	65.00		95	80-120			
Batch CA42918 - TCN Prep										
Blank										
Total Cyanide (LL)	ND	0.0050	mg/L							
LCS										
Total Cyanide (LL)	0.0219	0.0050	mg/L	0.02006		109	90-110			
LCS										
Total Cyanide (LL)	0.154	0.0050	mg/L	0.1504		102	90-110			
LCS Dup										
Total Cyanide (LL)	0.153	0.0050	mg/L	0.1504		102	90-110	0.9	20	
Batch CA42929 - General Preparation										
Blank										
Total Petroleum Hydrocarbon	ND	5	mg/L							
LCS										

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP

ESS Laboratory Work Order: 1401473

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Classical Chemistry										
Batch CA42929 - General Preparation										
Total Petroleum Hydrocarbon	13	5	mg/L	19.38		67	66-114			
Batch CA43014 - General Preparation										
Blank										
Phenols	ND	100	ug/L							
LCS										
Phenols	107	100	ug/L	100.0		107	80-120			
LCS										
Phenols	1040	100	ug/L	1000		104	80-120			
Batch CA43114 - General Preparation										
Blank										
Chloride	ND	0.5	mg/L							
LCS										
Chloride	2.7		mg/L	2.500		107	90-110			
504.1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane										
Batch CA43112 - 504/8011										
Blank										
1,2-Dibromoethane	ND	0.015	ug/L							
1,2-Dibromoethane [2C]	ND	0.015	ug/L							
Surrogate: Pentachloroethane	*0.190*		ug/L	*0.2000*		*95*	*30-150*			
Surrogate: Pentachloroethane [2C]	*0.185*		ug/L	*0.2000*		*93*	*30-150*			
LCS										
1,2-Dibromoethane	0.202	0.015	ug/L	0.2000		101	70-130			
1,2-Dibromoethane [2C]	0.193	0.015	ug/L	0.2000		96	70-130			
Surrogate: Pentachloroethane	*0.188*		ug/L	*0.2000*		*94*	*30-150*			
Surrogate: Pentachloroethane [2C]	*0.189*		ug/L	*0.2000*		*94*	*30-150*			
LCS										
1,2-Dibromoethane	0.083	0.015	ug/L	0.08000		104	70-130			
1,2-Dibromoethane [2C]	0.081	0.015	ug/L	0.08000		101	70-130			
Surrogate: Pentachloroethane	*0.0858*		ug/L	*0.08000*		*107*	*30-150*			
Surrogate: Pentachloroethane [2C]	*0.0884*		ug/L	*0.08000*		*110*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP
ESS Laboratory Work Order: 1401473

Notes and Definitions

U	Analyte included in the analysis, but not detected
HT	The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.
D	Diluted.
C+	Continuing Calibration recovery is above upper control limit (C+).
B+	Blank Spike recovery is above upper control limit (B+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report

CERTIFICATE OF ANALYSIS

Client Name: GEI Consultants, Inc.
Client Project ID: BMC Moakley Addition - RGP

ESS Laboratory Work Order: 1401473

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)
A2LA Accredited: Testing Cert# 2864.01
http://www.a2la.org/scopepdf/2864-01.pdf

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/labcert/labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
http://www.A2LA.org/dirsearchnew/newsearch.cfm

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
http://www.cpsc.gov/cgi-bin/labapplist.aspx

Sample and Cooler Receipt Checklist

Client: GEI Consultants Inc
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 14010473
Date Project Due: 2/3/14
Days For Project: 5 Day

Items to be checked upon receipt:

1. Air Bill Manifest Present? *** No**
   Air No.:
2. Were Custody Seals Present? **No**
3. Were Custody Seals Intact? **N/A**
4. Is Radiation count < 100 CPM? **Yes**
5. Is a cooler present? **Yes**
   Cooler Temp: **5.4**
   Iced With: **Ice**
6. Was COC included with samples? **Yes**
7. Was COC signed and dated by client? **Yes**
8. Does the COC match the sample **Yes**
9. Is COC complete and correct? **Yes**
10. Are the samples properly preserved? **Yes**
11. Proper sample containers used? **Yes**
12. Any air bubbles in the VOA vials? **No**
13. Holding times exceeded? **No**
14. Sufficient sample volumes? **Yes**
15. Any Subcontracting needed? **No**
16. Are ESS labels on correct containers? **Yes | No**
17. Were samples received intact? **Yes | No**

ESS Sample IDs: _____
Sub Lab: _____
Analysis: _____
TAT: _____

18. Was there need to call project manager to discuss status? If yes, please explain.
Preserved bottles appear clearer in color than non preserved.
Customer is aware. Suspect sample matrix.

Who was called?: Heather Haley 1/24/14 By whom? Christine T.

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative	pH
1	Yes	1 L Glass	3	H2SO4	
1	Yes	1 L Glass	7	NP	
1	Yes	1 L Plastic	1	NP	
1	Yes	250 ml Plastic	2	HNO3	
1	Yes	250 ml Plastic	1	NaOH	— 10 * cs 1/27/14
1	Yes	250 ml Plastic	2	NP	
1	Yes	40 ml - VOA	3	HCL	

Completed By: [signature] Date/Time: 1/27/14 1615
Reviewed By: [signature] Date/Time: 1/27/14 1715

1401473

Chain-of-Custody Record

Laboratory: ESS

Laboratory Job # (Lab use only)

GEI Consultants
400 Unicorn Park Drive
Woburn, MA 01801
PH: 781.721.4000
FX: 781.721.4073

Project Information

Project Name: BMC Moakley Addition
Project Location: Boston, MA
Project Number: 132894-0
Project Manager: R. Hoffman

Send Report to: Sarah Moseley

Send EDD to: labdata@geiconsultants.com

MCP PRESUMPTIVE CERTAINTY REQUIRED – YES NO

If Yes, Are MCP Analytical Methods Required? YES NO NA
If Yes, Are Drinking Water Samples Submitted? YES NO NA
If Yes, Have You Met Minimum Field QC Requirements? YES NO NA

Sample Handling

Samples Field Filtered: YES NO NA

Sampled Shipped With Ice: YES NO

Lab Sample Number	GEI Sample ID	Collection Date	Collection Time	Matrix	No. of Bottles	Sampler(s) Initials	VOCs with DBE, TAME, and TBA	SVOCs w/PAHs by SIM	PCBs	TPH (1664)	TSS, TRC, Chloride	Hex. CR	Dissolved Hex. CR(2)	Total Cyanide	Total Metals(1)	Dissolved Metals(1,2)	Total Phenols	Sample Specific Remarks
							HCl	None	None	HCl	None	None	None	NAOH+ ASC	HNO3	HNO3	H2SO4	
1	1328942-B1	1/27/14	12:40	GW	19	AKF	x	x	x	x	x	x	x	x	x	x	x	Do not run dissolved metals until authorized by GEI, but do run dissolved hex Cr.

MCP Level Needed: GEI requires the most stringent Method 1 MCP standard be met for all analytes whenever possible.

Relinquished by sampler: (signature)	Date:	Time:	Received by: (signature)
1. [signature]	1/27/14	14:10	1. [signature]
2. K. Hallahan	1/27/14	16:00	2. [signature] 1600 1/27/14
3.			3.
4.			4.

Turnaround Time (Business days):

Normal ____ Other ____
10-Day ____ 7-Day ____
5-Day __X__ 3-Day ____

Before submitting rush turnaround samples, you must notify the laboratory to confirm that the TAT can be achieved.

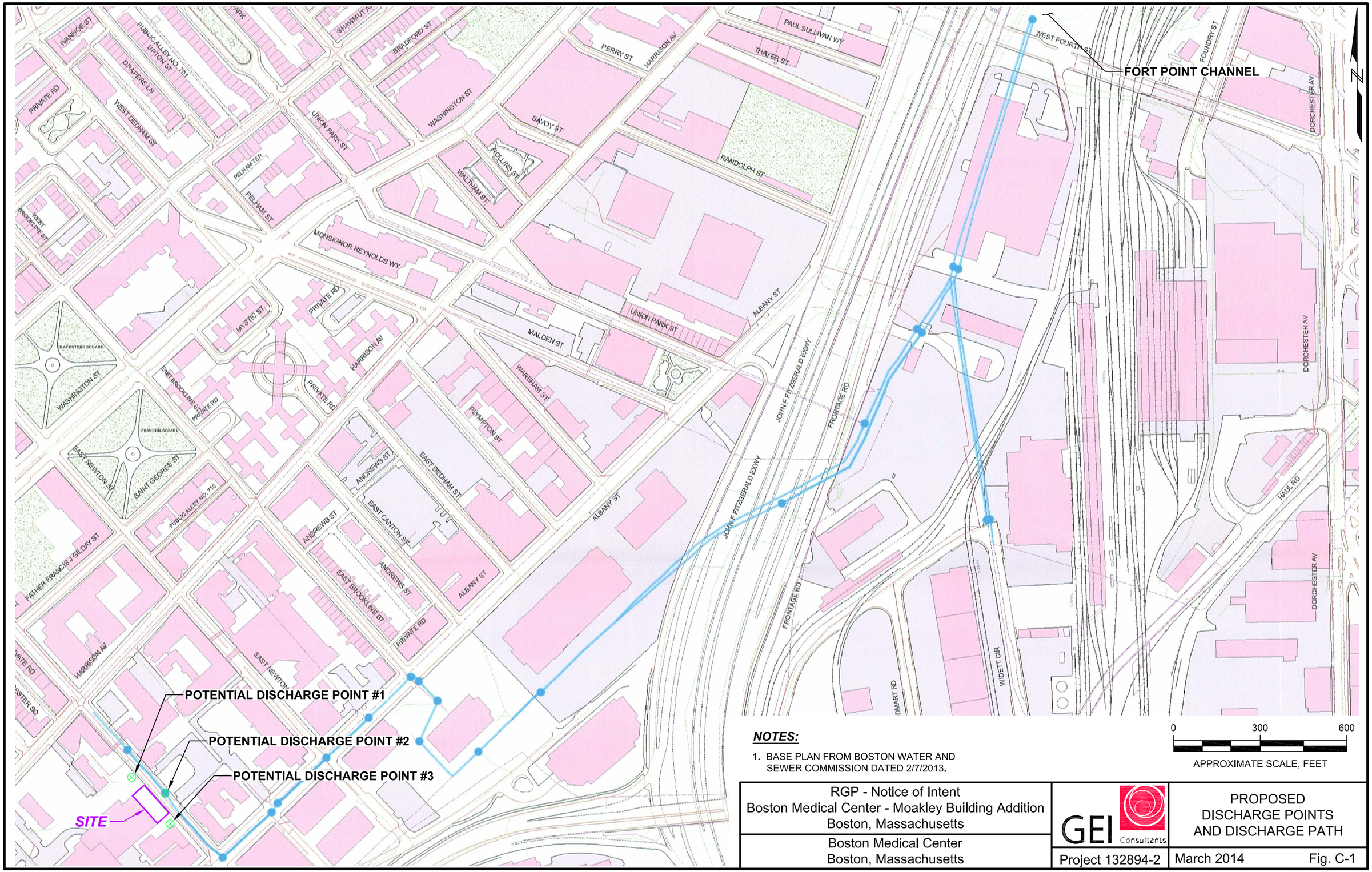
Additional Requirements/Comments/Remarks:

(1) Metals: antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, and iron.
(2) Dissolved metals and dissolved hex. CR field filtered.
(3) Please use EPA Remediaton General Permit (RGP) methods and detection limits specified in attached
Appendix V of the RGP Permit

5.4° ice
CJ 1/27/14

Appendix C

Detailed Plans of Proposed Discharge Points



NOTES:

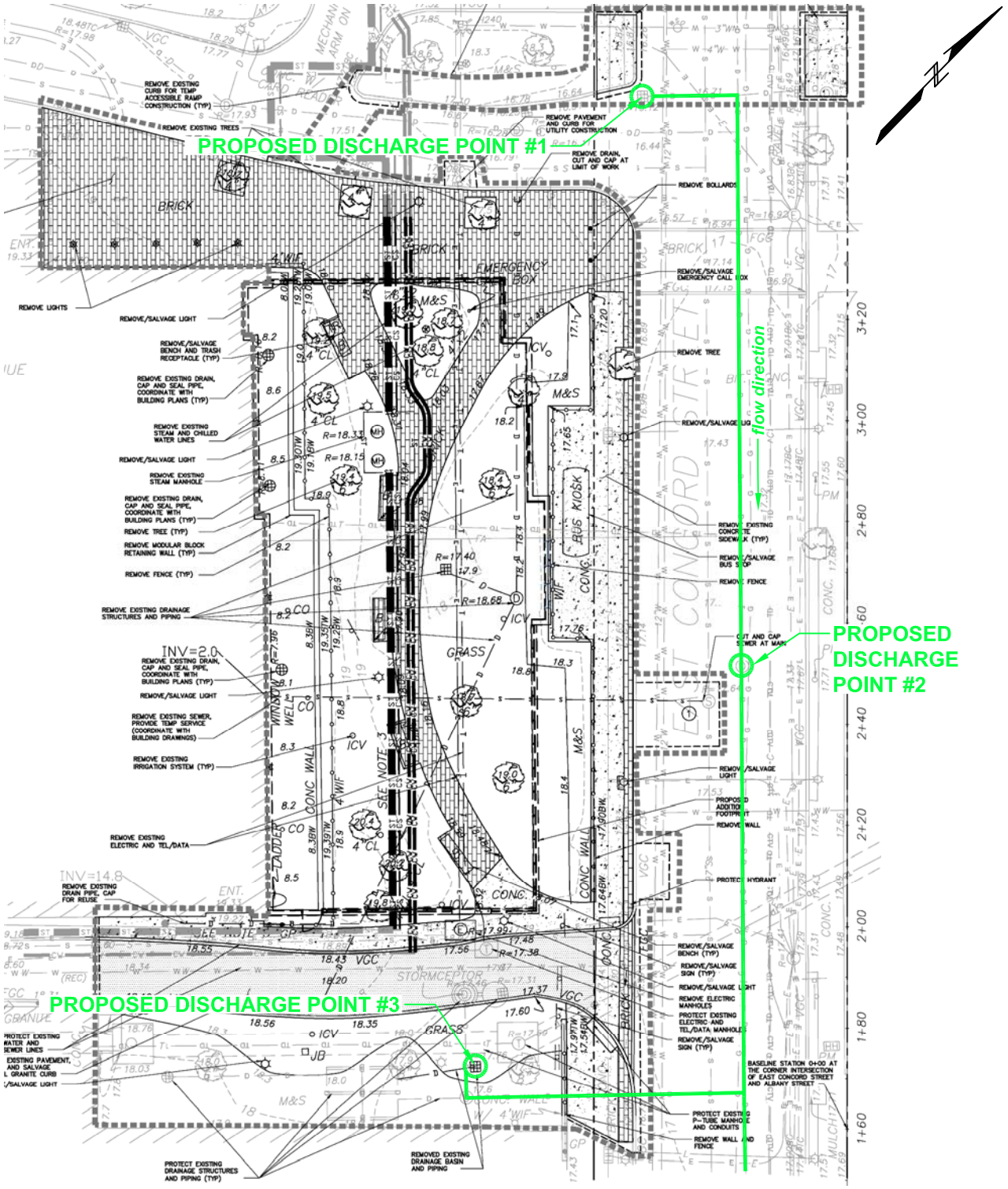
1. BASE PLAN FROM BOSTON WATER AND SEWER COMMISSION DATED 2/7/2013.

0 300 600

APPROXIMATE SCALE, FEET

RGP - Notice of Intent Boston Medical Center - Moakley Building Addition Boston, Massachusetts	GEI Consultants	PROPOSED DISCHARGE POINTS AND DISCHARGE PATH
Boston Medical Center Boston, Massachusetts	Project 132894-2	March 2014 Fig. C-1

M:\DRAFTING\2013\132894 BMC Moakley\132894-2\1328942-07



NOTES:

1. BASE PLAN FROM DRAWING TITLED *"EXISTING CONDITIONS/SITE PREPARATION PLAN SITE PLAN #, SCHEMATIC DESIGN,"* PREPARED BY TK&A DATED 12/20/2013.

RGP - Notice of Intent Boston Medical Center - Moakley Building Addition Boston, Massachusetts	GEI Consultants	PROPOSED DISCHARGE POINTS ON BMC PROPERTY
Boston Medical Center Boston, Massachusetts	Project 132894-2	March 2014 Fig. C-2

M:\DRAFTING\2013\132894 BMC Moakley\132894-2\1328942-07

Appendix D

City of Boston Endangered Species List

Town	Taxonomic Group	ScientificName	CommonName	Status	Federal Status	Most Recent Observation
BOSTON	Butterfly/Moth	Abagrotis nefascia	Coastal Heathland Cutworm	SC		2001
BOSTON	Bird	Accipiter striatus	Sharp-shinned Hawk	SC		1898
BOSTON	Vascular Plant	Ageratina aromatica	Lesser Snakeroot	E		1896
BOSTON	Amphibian	Ambystoma laterale	Blue-spotted Salamander	SC		2011
BOSTON	Bird	Ammodramus savannarum	Grasshopper Sparrow	T		1993
BOSTON	Butterfly/Moth	Apodrepanulatrix liberaria	New Jersey Tea Inchworm	E		Historic
BOSTON	Vascular Plant	Aristida purpurascens	Purple Needlegrass	T		1800s
BOSTON	Vascular Plant	Aristida tuberculosa	Seabeach Needlegrass	T		1877
BOSTON	Vascular Plant	Asclepias verticillata	Linear-leaved Milkweed	T		1878
BOSTON	Bird	Bartramia longicauda	Upland Sandpiper	E		1993
BOSTON	Vascular Plant	Boechera missouriensis	Green Rock-cress	T		1930
BOSTON	Vascular Plant	Carex striata	Walter's Sedge	E		Historic
BOSTON	Bird	Charadrius melodus	Piping Plover	T	T	2011
BOSTON	Beetle	Cicindela duodecimguttata	Twelve-spotted Tiger Beetle	SC		1910
BOSTON	Beetle	Cicindela purpurea	Cow Path Tiger Beetle	SC		1928
BOSTON	Beetle	Cicindela rufiventris hentzii	Eastern Red-bellied Tiger Beetle	T		1927
BOSTON	Vascular Plant	Desmodium cuspidatum	Large-bracted Tick-trefoil	T		1896
BOSTON	Vascular Plant	Eriophorum gracile	Slender Cottongrass	T		1885
BOSTON	Bird	Falco peregrinus	Peregrine Falcon	E		2010
BOSTON	Fish	Gasterosteus aculeatus	Threespine Stickleback	T		2000
BOSTON	Bird	Gavia immer	Common Loon	SC		1824
BOSTON	Vascular Plant	Houstonia longifolia	Long-leaved Bluet	E		1918
BOSTON	Vascular Plant	Liatris scariosa var. novae-angliae	New England Blazing Star	SC		1933
BOSTON	Mussel	Ligumia nasuta	Eastern Pondmussel	SC		1841
BOSTON	Vascular Plant	Linum medium var. texanum	Rigid Flax	T		1909
BOSTON	Vascular Plant	Lycopus rubellus	Gypsywort	E		1896
BOSTON	Butterfly/Moth	Metarranthis apiciaria	Barrens Metarranthis	E		1934
BOSTON	Vascular Plant	Myriophyllum alterniflorum	Alternate-flowered Water-milfoil	E		Historic
BOSTON	Vascular Plant	Ophioglossum pusillum	Adder's-tongue Fern	T		1884
BOSTON	Vascular Plant	Platanthera flava var. herbiola	Pale Green Orchis	T		1908
BOSTON	Bird	Pooecetes gramineus	Vesper Sparrow	T		1985
BOSTON	Butterfly/Moth	Pyrrhia aurantiago	Orange Sallow Moth	SC		1988
BOSTON	Vascular Plant	Ranunculus micranthus	Tiny-flowered Buttercup	E		1891
BOSTON	Vascular Plant	Rumex pallidus	Seabeach Dock	T		1984
BOSTON	Vascular Plant	Sanicula odorata	Long-styled Sanicle	T		Historic
BOSTON	Amphibian	Scaphiopus holbrookii	Eastern Spadefoot	T		1932
BOSTON	Vascular Plant	Scirpus longii	Long's Bulrush	T		1907
BOSTON	Vascular Plant	Setaria parviflora	Bristly Foxtail	SC		2001
BOSTON	Dragonfly/Damselfly	Somatochlora linearis	Mocha Emerald	SC		2009
BOSTON	Bird	Sterna hirundo	Common Tern	SC		2012
BOSTON	Bird	Sternula antillarum	Least Tern	SC		2012
BOSTON	Vascular Plant	Suaeda calceoliformis	American Sea-blite	SC		1909
BOSTON	Reptile	Terrapene carolina	Eastern Box Turtle	SC		1939
BOSTON	Bird	Tyto alba	Barn Owl	SC		1989
BOSTON	Bird	Vermivora chrysoptera	Golden-winged Warbler	E		Historic
BOSTON	Vascular Plant	Viola brittoniana	Britton's Violet	T		1909