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

CERTIFIED MAIL RETURN RECEIPT REQUESTED

JAN 13 2012

Messieurs: Daniel Watton
Principal Environmental Engineer
NSTAR Electric
One NSTAR Way
Westwood, MA 02090

and

Randy J. Meuse
Vice President Remediation Engineer
GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Construction Site Remediation and Restoration located at 300-316 North Beacon Street, Brighton, MA 02135, Suffolk County; Authorization # MAG910517

Dear Messieurs Watton and Meuse:

Based on the review of a Notice of Intent (NOI) submitted on behalf of NSTAR Electric (NSTAR) by the firm GZA GeoEnvironmental Inc. (GZA), for the site referenced above, the U.S. Environmental Protection Agency (EPA) hereby authorizes NSTAR as the Owner and Operator and GZA as the Co-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 you have marked: "Believed Present."

In addition, EPA is requiring monitoring and effluent limits for total petroleum hydrocarbons (TPH), total group I and group II polycyclic aromatic hydrocarbons (PAHs) and metals cadmium and lead in view of historic pollutant concentrations. You may request a deletion of these and any other compounds not present in the influent during the first six months to a year of continuously monitoring these compounds by filing a notice of change (NOC) request. Please see the notice of change (NOC) information under Appendix V on the RGP website.

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. For each parameter the dilution factor 71.0 for this site is within a dilution range greater than fifty to one hundred (>50-100), established in the RGP. (See the RGP Appendix IV for Massachusetts facilities). Therefore, the limits for cadmium of 10 ug/L, lead of 66 ug/L, zinc of 1,480 ug/L and iron of 5,000ug/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 March 20, 2012. If for any reason the discharge terminates sooner 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,

David M. Webster, Chief
Industrial Permits Branch

Enclosure

cc: Kathleen Keohane, MassDEP
Christopher Cronin, Public Works Acting Director
Michele Simoneaux, GZA GeoEnvironmental Inc.

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910517**
Authorization Issued:	January, 2012
Facility/Site Name:	Construction Site Remediation and Restoration
Facility/Site Address:	300-316 North Beacon Street, Brighton, Massachusetts, 02135, Suffolk County
	Email address of owner:danielwatton@nstar.com
Legal Name of Operator:	NSTAR Electric and GZA GeoEnvironmental/ Cooperator
Operator contact name, title, and Address:	Daniel Watton, Principal Environmental Engineer and Randy Meuse, Principal Vice President
	Email: Randy-Meuse@gza.com
Estimated Date of Completion:	March 20, 2012
Category and Sub-Category:	Category I. Petroleum Related Site Remediation. Sub category B. Fuel Oil and other Oil Sites
RGP Termination Date:	September 10, 2015
Receiving Water:	Charles River

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#60.2/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 0.1ug/L

	Metal parameter	Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12]	Minimum level=ML
		Freshwater	
	39. Antimony	5.6/ML 10	

	Metal parameter	Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12]		Minimum level=ML	
		Freshwater			
	40. Arsenic **	10/ML20			
√	41. Cadmium **	0.2/ML10			
	42. Chromium III (trivalent) **	48.8/ML15			
	43. Chromium VI (hexavalent) **	11.4/ML10			
	44. Copper **	5.2/ML15			
√	45. Lead **	1.3/ML20			
	46. Mercury **	0.9/ML0.2			
	47. Nickel **	29/ML20			
	48. Selenium **	5/ML20			
	49. Silver	1.2/ML10			
√	50. Zinc **	1,480/ML15			
√	51. Iron	5,000/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

GZA
GeoEnvironmental, Inc.

Engineers and
Scientists

December 21, 2011
File No. 1707879.10

Mr. Victor Alvarez
United States Environmental Protection Agency – Region 1
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

One Edgewater Drive
Norwood
Massachusetts
02062
781-278-3700
FAX 781-278-5701
http://www.gza.com

Re: **Submittal of Notice of Intent (NOI)**
Site Remediation and Restoration
300-316 North Beacon Street
Brighton, Massachusetts
MCP Remediation Project
MassDEP - RTN No. 3-19793

Dear Mr. Alvarez:

On behalf of NSTAR Electric (NSTAR), GZA GeoEnvironmental, Inc. (GZA) has prepared this Notice of Intent (NOI) for application of a National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) for proposed remediation activities at 300-316 North Beacon Street, Brighton, MA (the "Site"), which is shown on the Locus Plan on Figure 1. This NOI is being submitted for treatment and discharge of groundwater from excavation activities under the action chosen in the Release Abatement Measure (RAM) Plan to remove soil containing light, non-aqueous phase liquid (LNAPL) (Figure 3 and 4).

As there is a need to treat and discharge water generated from the dewatering of the areas to be excavated, the enclosed NOI form provides required information on the general site conditions, proposed treatment system, discharge location and receiving water, and analytical results for the proposed dewatering, treatment and discharge activities, which are shown in Figure 5 (Process Flow Diagram). The excavation, dewatering, and discharge of treated water are scheduled to begin during winter 2012. Discharge of treated groundwater to a City of Boston stormdrain is expected to be approximately ten (10) weeks in duration.

SITE DESCRIPTION

The Site is located at 300 to 316 North Beacon Street in a primarily residential and commercial area of the Brighton section of Boston, Massachusetts. The Site is abutted to the north by an elevated railroad easement beyond which is the Massachusetts Turnpike (Route 90); to the east by an automotive repair business; to the south by Electric Avenue, beyond which are a vacant lot and several commercial business, and to the west by Electric Avenue and a vegetated area, beyond which are the aforementioned railroad easement and Massachusetts Turnpike.

The Site is an approximately 49,310-square foot parcel improved with a one-story building (316 North Beacon Street) and a two-story building (300 North Beacon Street) which are connected by an enclosed walkway. The buildings are brick-faced and slab on grade construction and have a combined footprint of approximately 18,740 square feet. The remaining portions of the property are generally paved with either concrete or asphalt; however, a thin strip of vegetated land and a partial gravel driveway are present on the western edge of the property. The Site buildings are currently vacant and will be demolished as part of the RAM Plan.

PROPOSED ACTIVITIES

The project proposes to implement RAM Plan under the Massachusetts Contingency Plan (MCP) to address LNAPL present in soil. Phase I involves demolition of all existing buildings and foundations on-Site. The buildings contained asbestos and an asbestos removal plan is currently being carried out in order to prepare for the demolition. After the buildings are demolished and removed in weeks one through three, excavation of residual contaminated soil will be initiated and continue for approximately 10 weeks. Phase II will involve on-Site removal of soil containing LNAPL from an unknown source at a depth of 6-10 feet below ground surface from the eastern portion of the Site. This Phase of the project will also include characterizing and analyzing excavated soil and assessing treatment and disposal options.

The primary objective of the RAM work is to reduce the overall mass of contamination at the Site through the removal of LNAPL, and soil and groundwater containing petroleum constituents in the southeastern portion of the Site, in the area currently located beneath the on-Site buildings. The secondary objective of the RAM is to facilitate the excavation of foundations and other subsurface obstructions which may be located within areas of contamination at the Site.

The area to be excavated is based on the extent of separate phase oil shown on Figures 3 and 4. Based on observations made during investigations, it is anticipated that the upper 6 to 10 feet of soil over most of the area to be excavated will not be impacted by oil. Excavated soil will be stockpiled for reuse as backfill at the excavation location, assuming such soil is geotechnically suitable for reuse. Soil exhibiting visible evidence of hydraulic oil will be stockpiled on Site and covered with plastic, and characterized for appropriate disposal or recycling. Depending on the quantity of petroleum impacted soils encountered and the schedule for Site redevelopment, the soil may be treated on-Site through bioremediation and land farming. If land farming is more optimal, a RAM Modification which describes the details will be submitted.

RECEIVING WATERS

There are no surface water bodies or waterways on or immediately adjacent to the Site. There is a network of storm drains owned by the Boston Water and Sewer Commission on site that discharge via subsurface pipes north to the Charles River, which lies approximately 795’ (or 1125’ feet through City stormdrain system) north of the Site. Due to existing topography the majority of stormwater currently flowing off of the paved Site drains to a stormdrain located on Electric Avenue to the south of the Site.

Groundwater encountered during excavation of LNAPL-impacted soil will be treated through a temporary on-Site treatment system and discharged to City of Boston Outfall #SDO032 (Attachment 7). The Charles River is a perennial river that flows through 23 cities and towns and empties into the Boston Harbor. This section of the Charles River is classified as a stressed water body and is listed in the 303d Impaired Waterbodies document.

A Dewatering Discharge Permit will be obtained from the Boston Water and Sewer Commission prior to the commencement of discharge to a storm drain owned by the City of Boston.

TREATMENT SYSTEM

During the excavation of LNAPL groundwater will be encountered and pumped to an on Site treatment system consisting of two 20,000 gallon fractionation tanks, four particulate filtration units and two 10,000 pound liquid phase granular activated carbon units (Figure 5). The maximum flow is estimated to be 150 gallons per minute (gpm) and the minimum is estimated to be 100 gpm. Groundwater will be pumped from the LNAPL excavation area for approximately 10 weeks. A Notice of Termination will be sent to EPA when the excavation is complete and treated water is no longer being discharged.

Please do not hesitate to contact the undersigned at (781) 278-3700 if you have any questions or require further information.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Michele Simoneaux
Project Manager

Russell B. Parkman, P.E
Consultant/Reviewer

Gregg McBride, LSP
Principal

David E. Leone
Senior Project Manager

Attachments:

Attachment 1: Notice of Intent Form
Attachment 2: Figure 1 – Site Locus Map
Attachment 3: Figure 2 – Site Plan
Attachment 4: Figure 3- Remediation Phase Plan-SWPPP
Attachment 5: Figure 4- Remediation Phase Plan-SWPPP: LNAPL Excavation
Attachment 6: Figure 5- Process Flow Diagram
Attachment 7: Boston Water and Sewer Commission Outfall Map
Attachment 8: Laboratory Analytical Results
Attachment 9: Supplemental Information – Dilution Factor Calculations
Attachment 10: Copy of a letter from US Fish and Wildlife Services

cc: Daniel Watton, NSTAR
Joseph Mayall, NSTAR
Boston Water and Sewer Commission (BWSC)
MassDEP – Northeastern Region

ATTACHMENT 1

NOTICE OF INTENT FORM

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**: 300-316 North Beacon Street		**Facility/site** mailing address:		
Location of **facility/site**: longitude: 71°09' 58" latitude: 42°21'71"	Facility SIC code(s): 0	Street: 300-316 North Beacon Street		
b) Name of **facility/site owner:** NSTAR Electric		Town: Boston		
Email address of facility/site owner: daniel.watton@nstar.com		State: MA	Zip: 02135	County: Suffolk
Telephone no. of facility/site **owner**: 781-441-3805				
Fax no. of facility/site **owner**:		**Owner** is (check one): 1. Federal ○ 2. State/Tribal ○ 3. Private ◉ 4. Other ○ if so, describe:		
Address of **owner** (if different from site):				
Street: One NSTAR Way				
Town: Westwood	State: MA	Zip: 02090	County: Norfolk	
c) Legal name of **operator**:	**Operator** telephone no: 781-4413805			
NSTAR Electric	**Operator** fax no.:	**Operator** email: daniel.watton@nstar.com		
Operator contact name and title: Daniel Watton, Principal Environmental Engineer				
Address of **operator** (if different from owner):	Street: Note: GZA GeoEnvironmental, Inc. (Co-Operators) One Edgwater Drive Norwood, MA Randy Meuse - Randy.Meuse@gza.com			
Town:	State:	Zip:	County:	

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: Mass DEP RTN 3-19793
2. permit or license # assigned: N/A
3. state agency contact information: name, location, and telephone number:

Mass DEP
Northeast Region - Bureau of Waste Site Cleanup
205B Lowell Street - 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 groundwater (subsequent to treatment) from area of soil excavation activities to address presence of light non-aqueous phase liquid (LNAPL).

b) Provide the following information about each discharge:

1) Number of discharge points: 1

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)?
Max. flow 150 Is maximum flow a **design value**? Y ○ N ◉
Average flow (include units) 100 Is average flow a design value or estimate? estimate

3) Latitude and longitude of each discharge within 100 feet:
pt.1: lat 42°21'N long 71°9'N pt.2: lat. long. ;
pt.3: lat long pt.4: lat. long. ;
pt.5: lat long pt.6: lat. long. ;
pt.7: lat long pt.8: lat. long. ; etc.

4) If hydrostatic testing, total volume of the discharge (gals):

5) Is the discharge intermittent ○ or seasonal ◉ ?
Is discharge ongoing? Y ◉ N ○

c) Expected dates of discharge (mm/dd/yy): start Jan 10, 2012 end Mar 20, 2012

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). Attached as Figure 5

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)		☐	☐								
2. Total Residual Chlorine (TRC)		☐	☐								
3. Total Petroleum Hydrocarbons (TPH)		☒	☐	1	Grab	EPA 1664	0.5 mg/L	<500	0	<500	0
4. Cyanide (CN)	57125	☐	☐								
5. Benzene (B)	71432	☒	☐	1	Grab	EPA 8260	1.0 µg/L	<1.0	0	<1.0	0
6. Toluene (T)	108883	☐	☐								
7. Ethylbenzene (E)	100414	☐	☐								
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☐	☐								
9. Total BTEX [2]	n/a	☒	☐	1	Grab	EPA 8260	1.0 µg/L	<1.0	0	<1.0	0
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☐	☐								
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☐	☐								
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☐	☐								

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

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

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

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	☐	☐								
14. Naphthalene	91203	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
15. Carbon Tetrachloride	56235	☐	☐								
16. 1,2 Dichlorobenzene (o-DCB)	95501	☐	☐								
17. 1,3 Dichlorobenzene (m-DCB)	541731	☐	☐								
18. 1,4 Dichlorobenzene (p-DCB)	106467	☐	☐								
18a. Total dichlorobenzene		☐	☐								
19. 1,1 Dichloroethane (DCA)	75343	☐	☐								
20. 1,2 Dichloroethane (DCA)	107062	☐	☐								
21. 1,1 Dichloroethene (DCE)	75354	☐	☐								
22. cis-1,2 Dichloroethene (DCE)	156592	☐	☐								
23. Methylene Chloride	75092	☐	☐								
24. Tetrachloroethene (PCE)	127184	☐	☐								
25. 1,1,1 Trichloro-ethane (TCA)	71556	☐	☐								
26. 1,1,2 Trichloro-ethane (TCA)	79005	☐	☐								
27. Trichloroethene (TCE)	79016	☐	☐								

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	☐	☐								
29. Acetone	67641	☒	☐	1	Grab	EPA 8260	10 µg/L	<10	0	<10	0
30. 1,4 Dioxane	123911	☐	☐								
31. Total Phenols	108952	☐	☐								
32. Pentachlorophenol (PCP)	87865	☐	☐								
33. Total Phthalates (Phthalate esters) [4]		☐	☐								
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☐	☐								
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
a. Benzo(a) Anthracene	56553	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
b. Benzo(a) Pyrene	50328	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
c. Benzo(b)Fluoranthene	205992	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
d. Benzo(k)Fluoranthene	207089	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
e. Chrysene	21801	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
f. Dibenzo(a,h)anthracene	53703	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0

[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	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
i. Acenaphthylene	208968	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
j. Anthracene	120127	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
k. Benzo(ghi) Perylene	191242	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
l. Fluoranthene	206440	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
m. Fluorene	86737	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
n. Naphthalene	91203	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
o. Phenanthrene	85018	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
p. Pyrene	129000	☒	☐	2	Grab	MADEP	5.0 µg/L	<5.0	0	<5.0	0
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☐	☐								
38. Chloride	16887006	☐	☐								
39. Antimony	7440360	☐	☐								
40. Arsenic	7440382	☐	☐								
41. Cadmium	7440439	☐	☐								
42. Chromium III (trivalent)	16065831	☒	☐	1	Grab	EPA 6010C	0.0050 mg/L	<5.0	0	<5.0	0
43. Chromium VI (hexavalent)	18540299	☒	☐	1	Grab	SM 3500CrD	0.010 mg/L	<10	0	<10	0
44. Copper	7440508	☐	☐								
45. Lead	7439921	☐	☐								
46. Mercury	7439976	☐	☐								
47. Nickel	7440020	☒	☐	1	Grab	EPA 6010C	0.010 mg/L	<10	0	<10	0
48. Selenium	7782492	☐	☐								
49. Silver	7440224	☐	☐								
50. Zinc	7440666	☐	☒	1	Grab	EPA 6010C	0.010 mg/L	19		19	
51. Iron	7439896	☐	☒	1	Grab	EPA 6010C	0.025 mg/L	33,000		33,000	
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? Iron
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: Iron DF: 22 Metal: DF: Metal: DF: Metal: DF: Etc.	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ◉ N ○ If Y, list which metals: 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:

The treatment system is composed of two 20,000 gallon fractionation tanks, four particulate filtration units, and two 10,000 pound liquid-phase granular activated carbon units.

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 100 gpm Maximum flow rate of treatment system 150 gpm
Design flow rate of treatment system 150 gpm

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

None

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

a) Identify the discharge pathway:	Direct 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:
Remediation water to be discharged to municipal stormdrain north of Site. Storm drain discharges to Charles River.

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 303D - Category

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 23.3 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)? Pathogens and total phosphorus

Is there a final TMDL? Y ◉ N ○ If yes, for which pollutant(s)? Pathogens and total phosphorus

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.

Analytical reports (8/31/2011 and 9/12/2011) from groundwater samples taken per RGP requirements.

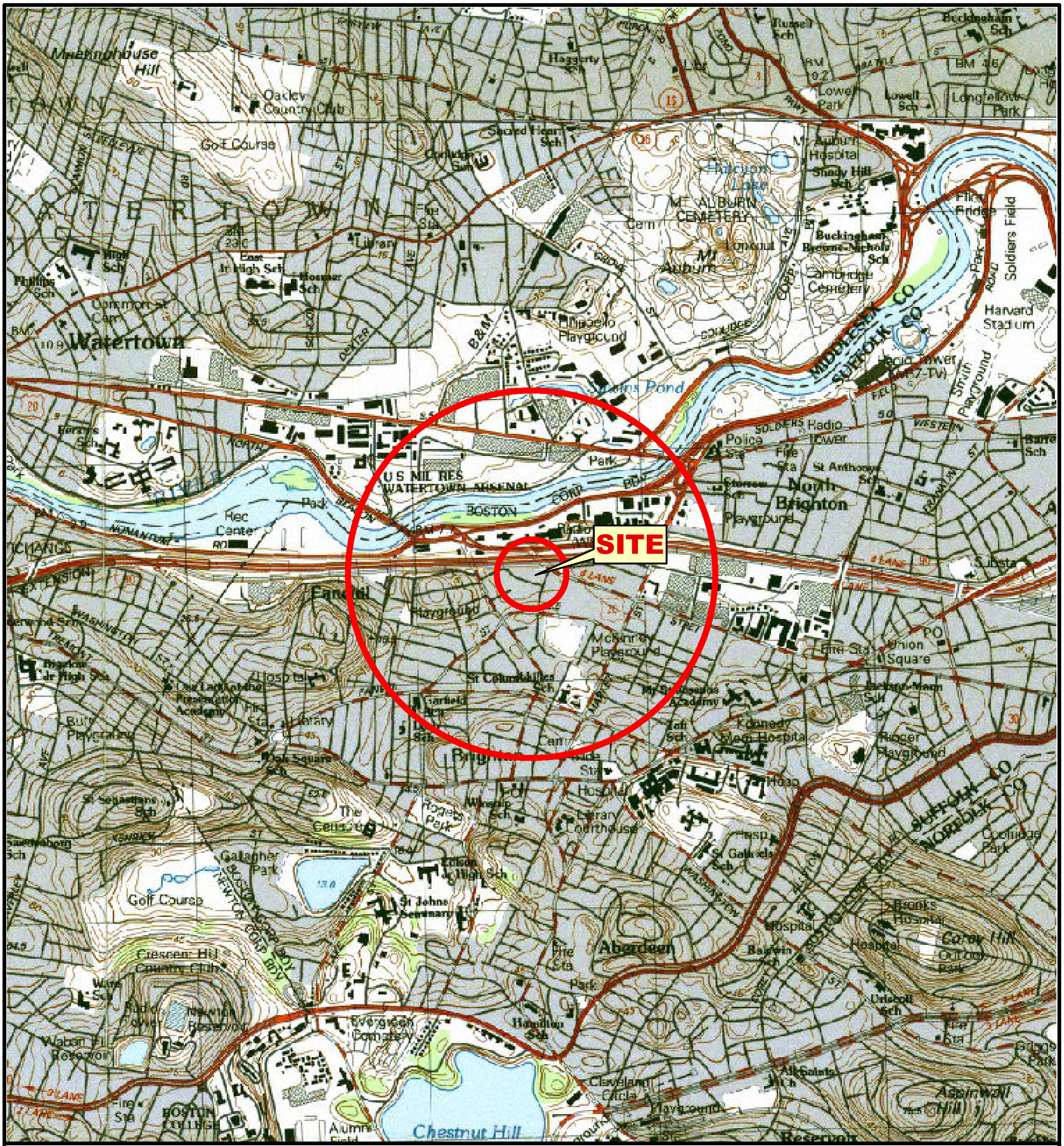
8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

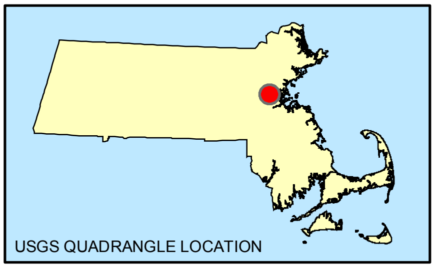
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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:	300-316 North Beacon Street, Boston MA
Operator signature:	Dan Watton
Printed Name &Title:	Daniel Watton, Principal Environmental Engineer
Date:	14 Dec 2011

ATTACHMENT 2

FIGURE 1 – SITE LOCUS MAP





SOURCE : SCANNED USGS TOPOGRAPHIC QUADRANGLES
SCANNED BY THE MASSACHUSETTS EXECUTIVE OFFICE OF
ENVIRONMENTAL AFFAIRS, MASSGIS. DISTRIBUTED JUNE, 2001.

Data Supplied by :

MASS GIS

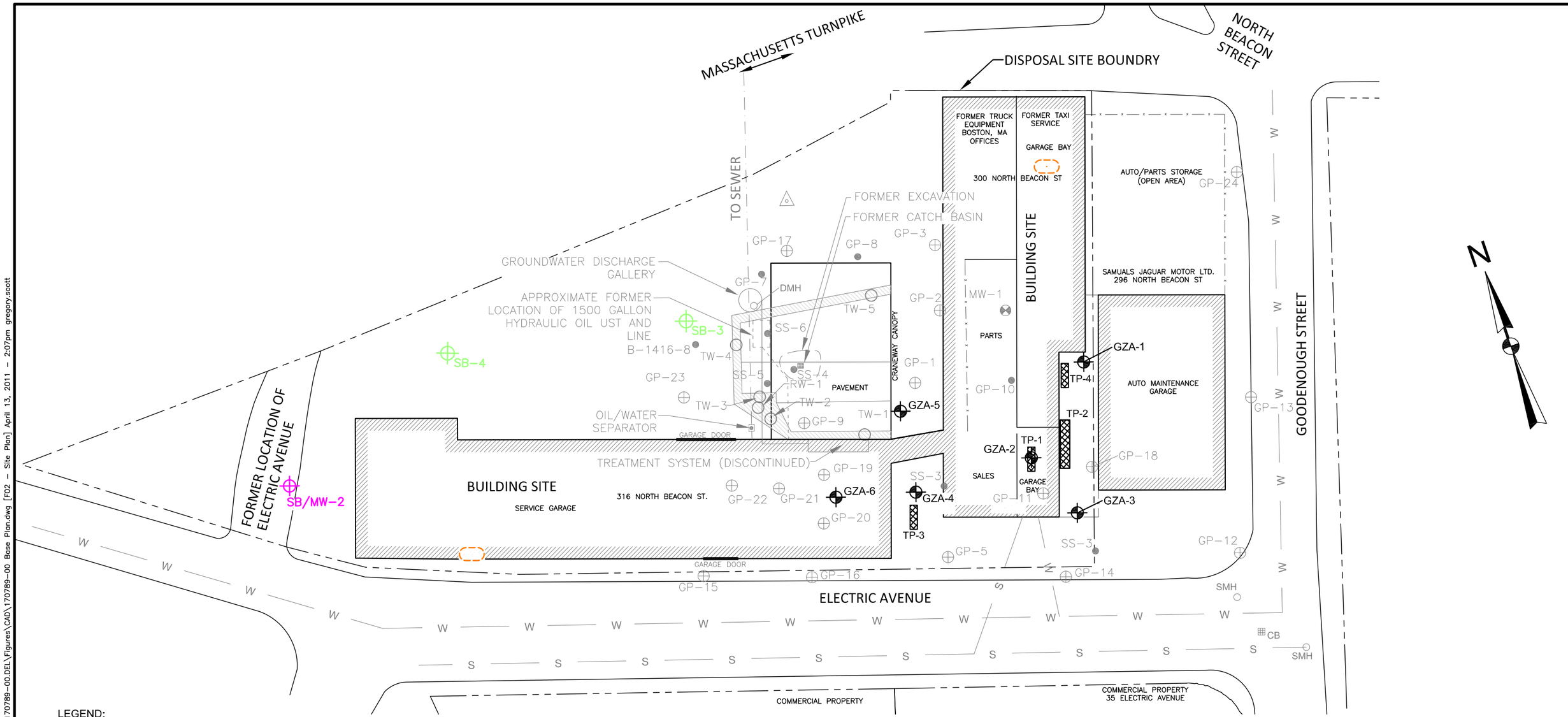
0 1,000 2,000 4,000 6,000 Feet

N W E S

GZA	PROJ. MGR.: DEL DESIGNED BY: EMD REVIEWED BY: DEL OPERATOR: GAS DATE: 04-13-2011	LOCUS PLAN SHOWING 500 FOOT & 1/2 MILE RADII FORMER TRUCK EQUIPMENT BOSTON INC. 300 NORTH BEACON STREET BRIGHTON, MASSACHUSETTS	JOB NO. 01.0170789.00 FIGURE NO. 1

ATTACHMENT 3

FIGURE 2 – SITE PLAN



LEGEND:

GZA-1	BORING COMPLETED AND 2" MONITORING WELL INSTALLED BY GEOSEARCH, INC ON 03/17/11 UNDER GZA OBSERVATION
TP-1	TEST PIT COMPLETED BY MARINI, INC ON 02/22/08 UNDER GZA OBSERVATION
SB-1	BORING COMPLETED BY GEOSEARCH, INC ON 03/28/08 UNDER GZA OBSERVATION
SB/MW-1	BORING COMPLETED AND MONITORING WELLS INSTALLED BY NEW HAMPSHIRE ON 04/10/08 UNDER GZA OBSERVATION
	PROPERTY BOUNDARY
	APPROXIMATE LOCATION OF SUSPECT FUEL OIL UST
SS-7	BORING LOCATION INSTALLED BY OTHERS
GP-1	1" DIAMETER MICRO MONITORING WELL INSTALLED BY OTHERS
TW-2	PVC TRENCH WELL INSTALLED BY OTHERS
MW-1	2" DIAMETER MONITORING WELL INSTALLED BY OTHERS

FENCE	
S	UNDERGROUND SEWER LINE
W	UNDERGROUND WATER LINE
SMH	SEWER MANHOLE
CB	CATCH BASIN

NOTES:

1. BASE PLAN DEVELOPED FROM ELECTRONIC FILE PROVIDED BY ECS NAMED "170789 ECS Figure 2.pdf" ENTITLED "SITE PLAN" DATED JANUARY 2010
2. ALL UTILITIES SHOWN ARE SUBSURFACE EXCEPT WHERE NOTED.
3. BUILDING INTERIOR PARTITION OR WALL LOCATIONS SHOWN MAY HAVE BEEN MODIFIED OR REMOVED, AND LOCATIONS ARE APPROXIMATE.
4. UTILITY LOCATIONS SHOWN ARE APPROXIMATE.

0 20' 40' 80'

SCALE: 1 INCH = 40 FEET

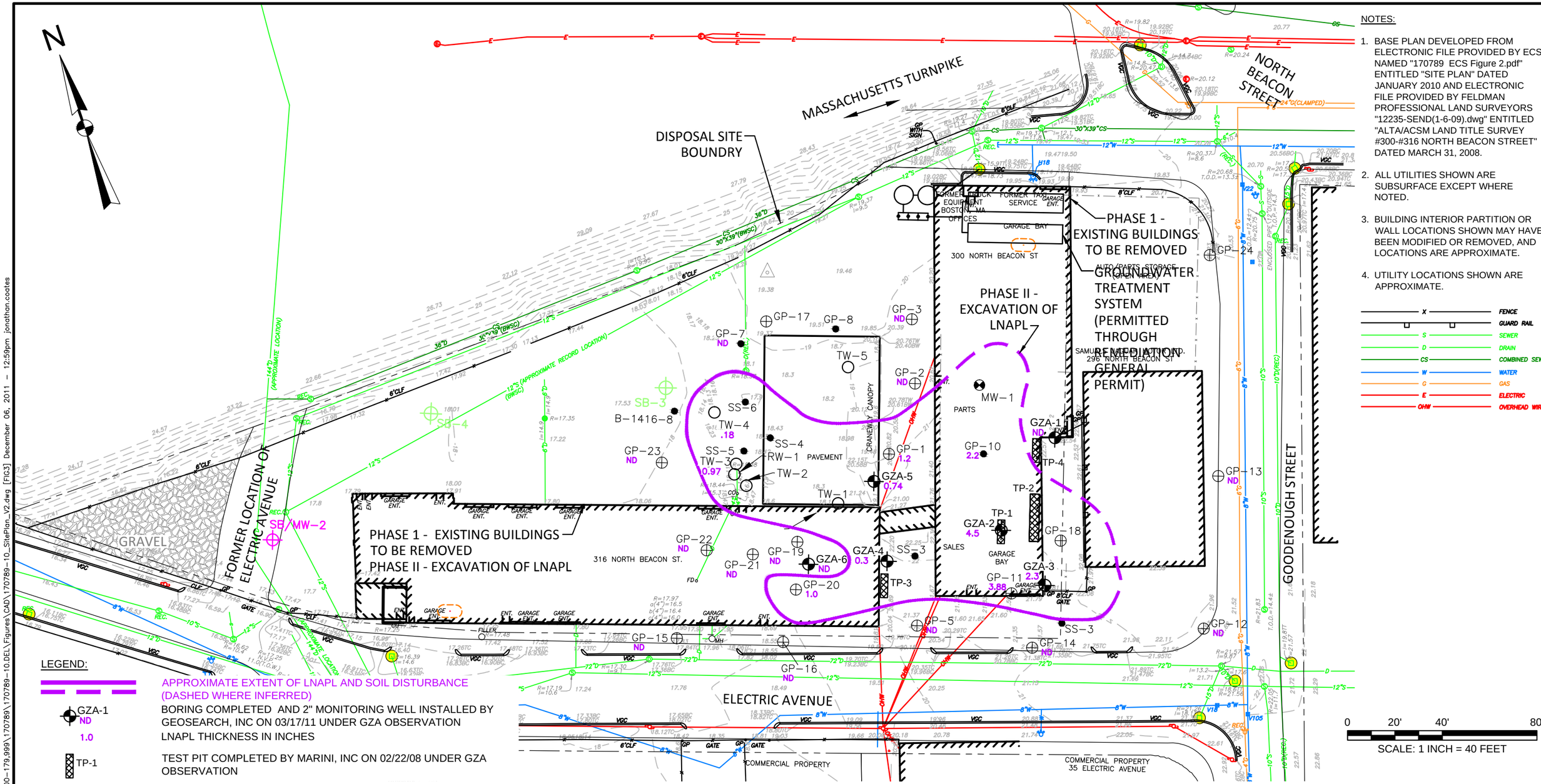
FORMER TRUCK EQUIPMENT BOSTON INC
300 NORTH BEACON STREET
BRIGHTON, MA
MASS DEP RTN 3-19793

SITE PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: NSTAR	
PROJ MGR: DEL	REVIEWED BY:	CHECKED BY:	FIGIRE: 2
DESIGNED BY: SGM	DRAWN BY: MVT	SCALE: 1"= 40'	
DATE: 04-13-2011	PROJECT NO. 170789.00	REVISION NO.	

ATTACHMENT 4

FIGURE 3- REMEDIATION PHASE PLAN-SWPPP



NOTES:

1. BASE PLAN DEVELOPED FROM ELECTRONIC FILE PROVIDED BY ECS NAMED "170789 ECS Figure 2.pdf" ENTITLED "SITE PLAN" DATED JANUARY 2010 AND ELECTRONIC FILE PROVIDED BY FELDMAN PROFESSIONAL LAND SURVEYORS "12235-SEND(1-6-09).dwg" ENTITLED "ALTA/ACSM LAND TITLE SURVEY #300-#316 NORTH BEACON STREET" DATED MARCH 31, 2008.
2. ALL UTILITIES SHOWN ARE SUBSURFACE EXCEPT WHERE NOTED.
3. BUILDING INTERIOR PARTITION OR WALL LOCATIONS SHOWN MAY HAVE BEEN MODIFIED OR REMOVED, AND LOCATIONS ARE APPROXIMATE.
4. UTILITY LOCATIONS SHOWN ARE APPROXIMATE.

X	FENCE
GUARD RAIL	GUARD RAIL
S	SEWER
D	DRAIN
CS	COMBINED SEWER
W	WATER
G	GAS
E	ELECTRIC
OHW	OVERHEAD WIRE

LEGEND:

	APPROXIMATE EXTENT OF LNAPL AND SOIL DISTURBANCE (DASHED WHERE INFERRED)
GZA-1 ND 1.0	BORING COMPLETED AND 2" MONITORING WELL INSTALLED BY GEOSEARCH, INC ON 03/17/11 UNDER GZA OBSERVATION LNAPL THICKNESS IN INCHES
TP-1	TEST PIT COMPLETED BY MARINI, INC ON 02/22/08 UNDER GZA OBSERVATION
SB-1	BORING COMPLETED BY GEOSEARCH, INC ON 03/28/08 UNDER GZA OBSERVATION
SB/MW-1	BORING COMPLETED AND MONITORING WELLS INSTALLED BY NEW HAMPSHIRE ON 04/10/08 UNDER GZA OBSERVATION
	PROPERTY BOUNDARY
	APPROXIMATE LOCATION OF SUSPECT FUEL OIL UST
SS-7	BORING LOCATION INSTALLED BY OTHERS
GP-1	1" DIAMETER MICRO MONITORING WELL INSTALLED BY OTHERS
TW-2	PVC TRENCH WELL INSTALLED BY OTHERS
MW-1	2" DIAMETER MONITORING WELL INSTALLED BY OTHERS

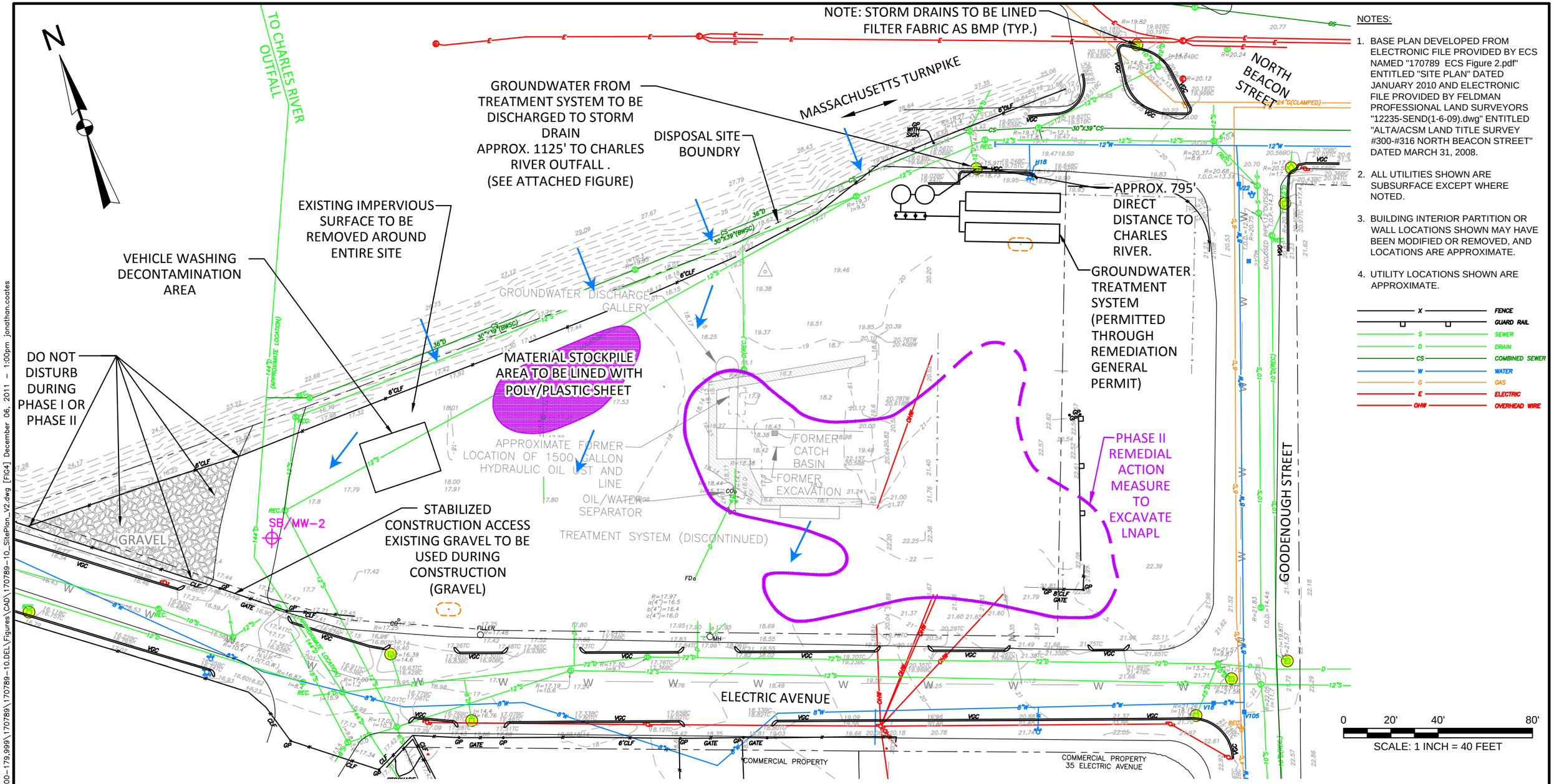
300-316 NORTH BEACON STREET
RAM PLAN IMPLEMENTATION
BRIGHTON, MA
MASS DEP RTN 3-19793

REMEDIATION PHASE PLAN
SWPPP

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: NSTAR ELECTRIC	
PROJ MGR: DEL	REVIEWED BY:	CHECKED BY:	FIGURE: 3
DESIGNED BY: MS	DRAWN BY: JRC	SCALE: 1"= 40'	
DATE: 12-06-2011	PROJECT NO. 170789.10	REVISION NO.	SHEET NO. 1-OF-1

ATTACHMENT 5

FIGURE 4- REMEDIATION PHASE PLAN-SWPPP: LNAPL EXCAVATION



NOTES:

1. BASE PLAN DEVELOPED FROM ELECTRONIC FILE PROVIDED BY ECS NAMED "170789 ECS Figure 2.pdf" ENTITLED "SITE PLAN" DATED JANUARY 2010 AND ELECTRONIC FILE PROVIDED BY FELDMAN PROFESSIONAL LAND SURVEYORS "12235-SEND(1-6-09).dwg" ENTITLED "ALTA/ACSM LAND TITLE SURVEY #300-#316 NORTH BEACON STREET" DATED MARCH 31, 2008.
2. ALL UTILITIES SHOWN ARE SUBSURFACE EXCEPT WHERE NOTED.
3. BUILDING INTERIOR PARTITION OR WALL LOCATIONS SHOWN MAY HAVE BEEN MODIFIED OR REMOVED, AND LOCATIONS ARE APPROXIMATE.
4. UTILITY LOCATIONS SHOWN ARE APPROXIMATE.

- FENCE
- GUARD RAIL
- SEWER
- DRAIN
- COMBINED SEWER
- WATER
- GAS
- ELECTRIC
- OHW OVERHEAD WIRE

LEGEND:

- ESTIMATED DIRECTION OF SURFACE WATER FLOW
- APPROXIMATE EXTENT OF LNAPL AND SOIL DISTURBANCE (DASHED WHERE INFERRED)
- SB/MW-1 BORING COMPLETED AND MONITORING WELLS INSTALLED BY NEW HAMPSHIRE ON 04/10/08 UNDER GZA OBSERVATION
- PROPERTY BOUNDARY
- APPROXIMATE LOCATION OF SUSPECT FUEL OIL UST

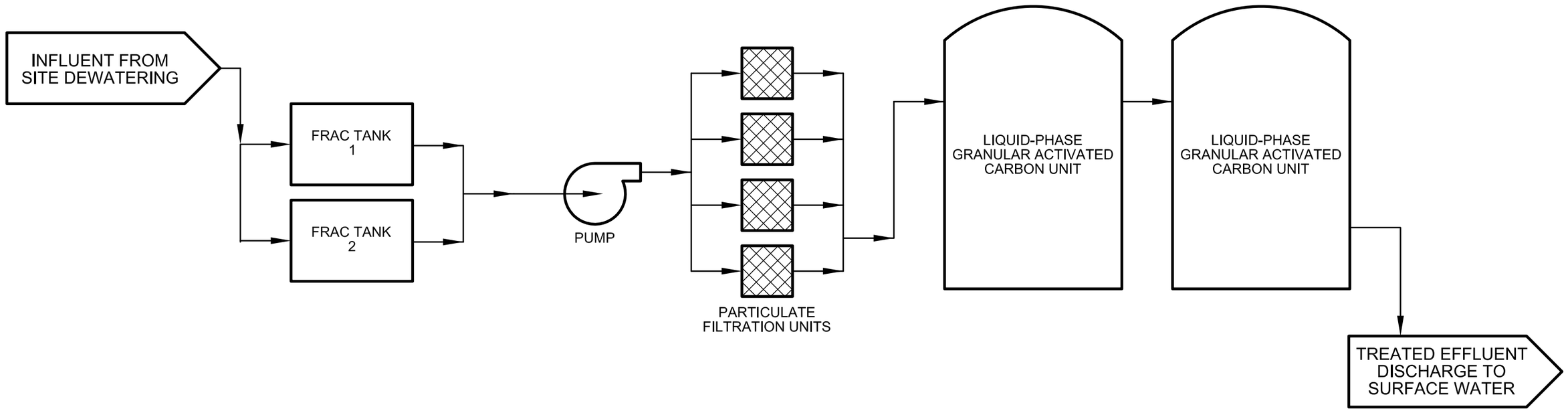
300-316 NORTH BEACON STREET
RAM PLAN IMPLEMENTATION
BRIGHTON, MA
MASS DEP RTN 3-19793

REMEDIATION PHASE PLAN - SWPPP
LNAPL EXCAVATION

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: NSTAR ELECTRIC	
PROJ MGR: DEL	REVIEWED BY: MS	CHECKED BY:	FIGURE: 4
DESIGNED BY: MS	DRAWN BY: JRC	SCALE: 1"= 40'	
DATE: 12-06-2011	PROJECT NO. 170789.10	REVISION NO.	SHEET NO. 1-OF-1

ATTACHMENT 6

FIGURE 5- PROCESS FLOW DIAGRAM



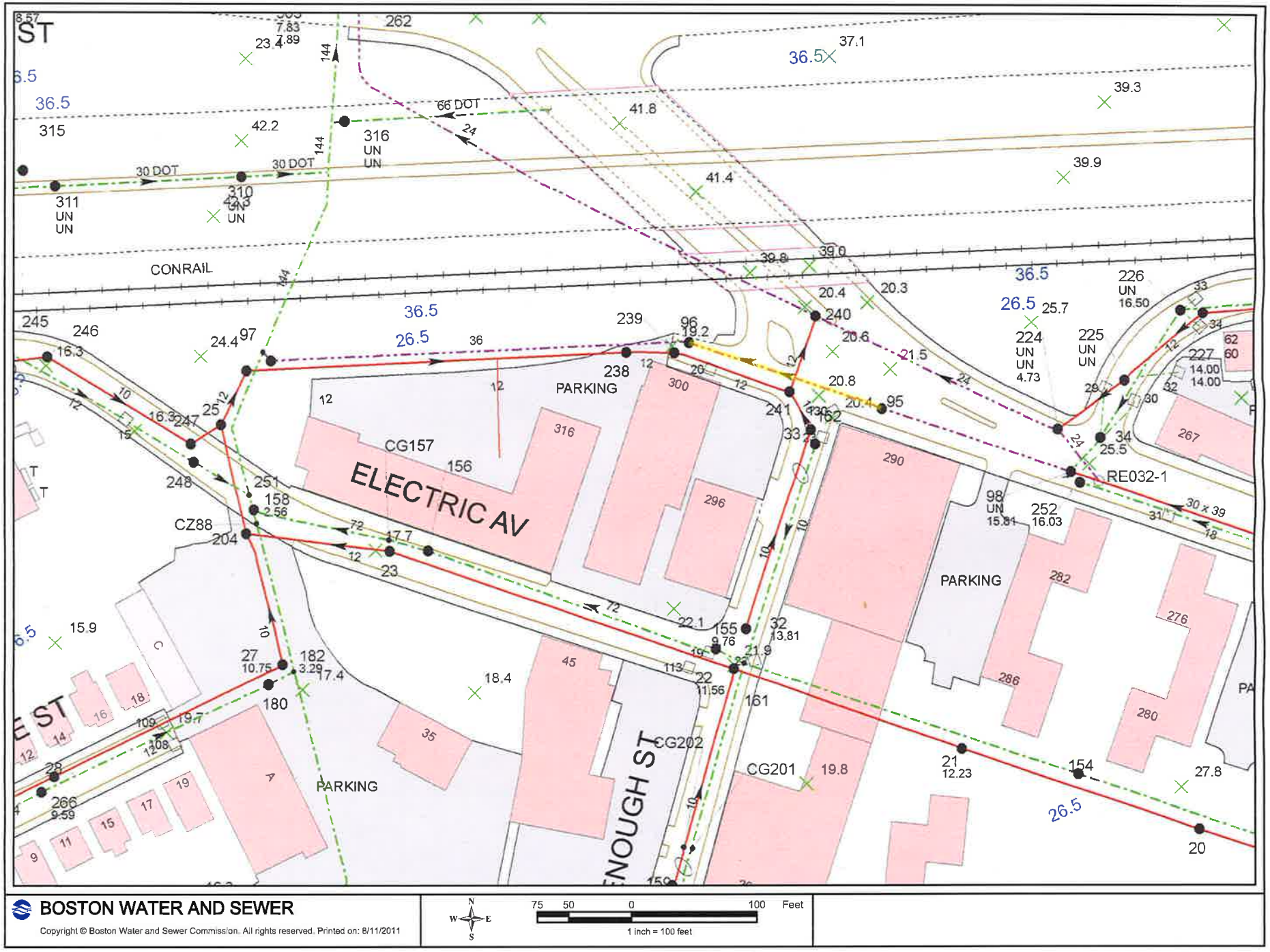
300-316 NORTH BEACON STREET
RAM PLAN IMPLEMENTATION
BRIGHTON, MA
MASS DEP RTN 3-19793

PROCESS FLOW DIAGRAM

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com		PREPARED FOR: NSTAR ELECTRIC	
PROJ MGR: DEL	REVIEWED BY: GWM	CHECKED BY: RJM	FIGURE: 5
DESIGNED BY: AG	DRAWN BY: EMD	SCALE: NOT TO SCALE	
DATE: 12-06-2011	PROJECT NO. 01.0170789.10	REVISION NO.	

ATTACHMENT 7

BOSTON WATER AND SEWER COMMISSION OUTFALL MAP



N W E S

75 50 0 100 Feet
1 inch = 100 feet

X → spot elev. (~~spot~~ spot elev. − Invert #) = Invert
↳ Depth To Bottom

ATTACHMENT 8

LABORATORY ANALYTICAL RESULTS

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

Laboratory Identification Numbers:
MA and ME: **MA092** NH: **2028**
CT: **PH0579** RI: **LAO00236**
NELAC - NYS DOH: **11063**

ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
781-278-3700

Project No.: **01.0170789.10**
Work Order No.: **1108-00154**
Date Received: **08/31/2011**
Date Reported: **09/07/2011**

David E. Leone

SAMPLE INFORMATION

Date Sampled	Matrix	Laboratory ID	Sample ID
08/31/2011	Aqueous	1108-00154 001	GZA-6

MassDEP Analytical Protocol Certification Form

Laboratory Name: **GZA GeoEnvironmental, Inc.** Project #: **01.0170789.10**

Project Location: **NSTAR Brighton** RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
1108-00154

Matrices: ☒ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A ☐	7470/7471 Hg CAM III B ☐	MassDEP VPH CAM IV A ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☒	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☒	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9014 Total Cyanide/PAC CAM VI A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☒ Yes ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☒ Yes ☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☒ Yes ☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☒ Yes ☐ No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☒ Yes ☐ No ☐ Yes ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☒ Yes ☐ No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☐ Yes ☒ No[1]

***Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	☒ Yes ☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes ☒ No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

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

Signature: _____ **Position:** Laboratory Supervisor

Printed Name: Andrew Yaroshefski **Date:** 09/07/11

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A N A L Y T I C A L R E P O R T

GZA GeoEnvironmental, Inc.
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Norwood, MA 02062
781-278-3700

David E. Leone

Project Name.: **NSTAR Brighton**
Project No.: **01.0170789.10**

Date Received: **08/31/2011**
Date Reported: **09/07/2011**
Work Order No.: **1108-00154**

PROJECT NARRATIVE:

1. Sample Receipt

The samples were received on 08/31/11 via __GZA courier, __EC, __FEDEX, or _x_hand delivered.
The samples were received intact for all requested analyses.

The following questions are answered upon sample receipt to determine compliance with MADEP Defined "Presumptive Certainty":

Were the samples received at <=6 degrees C (Temperature = 6.1 degrees C)? (x) yes ( ) no
Were any samples received above 6 degrees C, received within 8 hours of collection and on ice? (x) yes ( ) no ( ) n/a

Were the samples received with method specific preservatives within holding time? (x) yes ( ) no
* The chain of custody indicates that the samples, when required, were chemically preserved in accordance with the method they reference.

Were all constituents for the MCP Method(s) selected assigned on the COC? ( ) yes (x) no
* Full MCP14 Metals ( ) yes (x) no ( ) not assigned
* Full EPA 8270 SVOCs ( ) yes ( ) no (x) not assigned
* Full EPA 8260 VOCs ( ) yes (x) no ( ) not assigned

2. Method SM 18 3500 Cr(D) - Hexavalent Chromium

Attach QC HexCr - 08/31/11

3. EPA Method 6010C - Metals

Question I

Per the client's request, only a subset of the MCP analyte list for SW-846 Method 6010C Trace Metals by Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES) is reported.

Attach QC 6010C 09/01/11 - Aqueous

4. MADEP EXTRACTABLE PETROLEUM HYDROCARBONS (EPH)

Due to the concentration of petroleum present in the sample, not all reporting limits specified by the CAM were achieved.

Attach QC EPH 09/02/11 - Aqueous

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David E. Leone

Project Name.: **NSTAR Brighton**
Project No.: **01.0170789.10**

Date Received: **08/31/2011**
Date Reported: **09/07/2011**
Work Order No.: **1108-00154**

LABORATORY STATEMENTS:

GZA GeoEnvironmental, Inc. has NELAC validation for the following methods:
Wastewater: Methods 624,625,245.1,150.2,120.1, 200.7 (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti).
Aqueous: Methods 8260B, 8270D, 8081B, 8082A, 7470, 150.2, 120.1, 1311, 6010C (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti), 300.0 (Cl, Fl, SO4, NO3, NO2, Ophos), MA DEP EPH/VPH.
Soil: Methods 8260B, 8270D, 8081B, 8082A, 7471B, 9045, 1311, 6010C (PP13, RCRA8, and Fe, Mg, Mn, Al, V, Co, Mo, Sn, Ca), MA DEP VPH/EPH.

MA Certification: MA DEP certifies for wastewater and drinking water matrices only. GZA is certified by MA DEP for EPA Methods 624, 625, 245.1, 300.0 (Cl, SO4, NO3) and 200.7 (Sb, As, Be, Cd, Cr, Pb, Ni, Se, Ag, Tl, Zn, Al, Co, Fe, Mn, Mo, V.) The certification requirements were followed.

Abbreviations:
% R = % Recovery
DF = Dilution Factor
CF = Calculation Factor
DO = Diluted Out

Method Key:
Method 8260: The current version of the method is 8260B.
Method 8270: The current version of the method is 8270D.
Method 6010: The current version of the method is 6010C.
Method 8081: The current version of the method is 8081B.
Method 8082: The current version of the method is 8082A.
Method 7471: The current version of the method is 7471B.

The current Metals preparation methods are: 3010A (aqueous) and 3051 (solid).

Soil data is reported on a dry weight basis unless otherwise specified.

Matrix Spike / Matrix Spike Duplicate sets are performed as per method and are reported at the end of the analytical report if assigned on the Chain of Custody.

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David E. Leone

Project Name.: **NSTAR Brighton**
Project No.: **01.0170789.10**

Date Received: **08/31/2011**
Date Reported: **09/07/2011**
Work Order No.: **1108-00154**

Sample ID: **GZA-6** Sample No.: **001**

Sample Date: **08/31/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date	Analysis Time
METALS							
Hexavalent Chromium	SM 3500CrD	<0.010	0.010	mg/L	LLZ	08/31/11	16:24
Chromium	EPA 6010C	<0.0050	0.0050	mg/L	LLZ	09/02/11	14:01
Nickel	EPA 6010C	<0.010	0.010	mg/L	LLZ	09/02/11	14:01
Zinc	EPA 6010C	0.019	0.010	mg/L	LLZ	09/02/11	14:01
Iron	EPA 6010C	33	0.025	mg/L	LLZ	09/02/11	14:01
MA Excel Deliverables							
EPH	MADEP				KMM	09/07/11	
Unadjusted C11-C22 Aromatic	MADEP	3100	100	ug/L	KMM	09/07/11	2:19
C9-C18 Aliphatic Fraction	MADEP	10000	100	ug/L	KMM	09/07/11	1:36
C19-C36 Aliphatic Fraction	MADEP	690	100	ug/L	KMM	09/07/11	1:36
C11-C22 Aromatic Fraction	MADEP	3100	100	ug/L	KMM	09/07/11	2:19
Surrogates:	MADEP						
***1-Chloroctadecane	MADEP	49.7	40-140	%R	KMM	09/07/11	1:36
***o-Terphenyl (aromatic)	MADEP	74.6	40-140	%R	KMM	09/07/11	2:19
***2-Bromonaphthalene	MADEP	98.2	40-140	%R	KMM	09/07/11	2:19
TARGETED PAH ANALYTES	MADEP						
Naphthalene (Diesel PAH)	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
2-Methylnaphthalene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Acenaphthylene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Acenaphthene (Diesel PAH)	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Fluorene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Phenanthrene (Diesel PAH)	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Anthracene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Fluoranthene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Pyrene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Benzo [a] Anthracene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Chrysene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Benzo [b] Fluoranthene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Benzo [k] Fluoranthene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Benzo [a] Pyrene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Indeno [1,2,3-cd] Pyrene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Dibenzo [a,h] Anthracene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19
Benzo [g,h,i] Perylene	MADEP	<10	10	ug/L	KMM	09/07/11	2:19

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David E. Leone

Project Name.: **NSTAR Brighton**
Project No.: **01.0170789.10**

Date Received: **08/31/2011**
Date Reported: **09/07/2011**
Work Order No.: **1108-00154**

Sample ID: **GZA-6** Sample No.: **001**

Sample Date: **08/31/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date	Analysis Time
Extraction	EPA 3510C	1.0		DF	JCH	09/02/11	

GZA GEOENVIRONMENTAL, INC.
ENVIRONMENTAL CHEMISTRY LABORATORY
106 SOUTH ST, HOPKINTON, MA 01748
MASSACHUSETTS LABORATORY I.D. NO. MA092

EPA METHOD 7196A/SM 18 3500 CR (d) ANALYSIS
Hexavalent Chromium by Colorometric Method

QUALITY CONTROL - AQUEOUS

Date Prepared: 08/31/11

QC Sample	Method Blank	Lab Control Sample	Lab Control Sample Duplicate	LC/LCD Difference
Units	mg/L	% Recovery	% Recovery	RPD
Acceptance Limits	Results	80-120	80-120	20%
Analyte				
Hex Cr (Cr+6)	<0.010	100	100	0

RPD = Relative Percent Difference

GZA GEOENVIRONMENTAL, INC.
ENVIRONMENTAL CHEMISTRY LABORATORY
106 SOUTH ST, HOPKINTON, MA 01748
MASSACHUSETTS LABORATORY I.D. NO. MA092

EPA METHOD 6010C ANALYSIS
Metals by ICP

QUALITY CONTROL - AQUEOUS

DATE PREPARED: 9/1/2011

QC Sample	Method Blank	Lab Control Sample	LC Duplicate	LC/LCD Diff.
Units	mg/L	% Recovery	% Recovery	RPD
Acceptance Limits	Results	80-120	80-120	<20
Analyte				
Silver (Ag)	NA	NA	NA	NA
Aluminum (Al)	NA	NA	NA	NA
Arsenic (As)	NA	NA	NA	NA
Boron (B)	NA	NA	NA	NA
Barium (Ba)	NA	NA	NA	NA
Beryllium (Be)	NA	NA	NA	NA
Calcium (Ca)	NA	NA	NA	NA
Cadmium (Cd)	NA	NA	NA	NA
Cobalt (Co)	NA	NA	NA	NA
Chromium (Cr)	<0.0050	106	102	3.70
Copper (Cu)	NA	NA	NA	NA
Iron (Fe)	<0.025	107	103	3.84
Magnesium (Mg)	NA	NA	NA	NA
Manganese (Mn)	NA	NA	NA	NA
Molybdenum (Mo)	NA	NA	NA	NA
Nickel (Ni)	<0.010	109	105	3.82
Lead (Pb)	NA	NA	NA	NA
Antimony (Sb)	NA	NA	NA	NA
Selenium (Se)	NA	NA	NA	NA
Tin (Sn)	NA	NA	NA	NA
Titanium (Ti)	NA	NA	NA	NA
Thallium (Tl)	NA	NA	NA	NA
Vanadium (V)	NA	NA	NA	NA
Zinc (Zn)	<0.010	113	108	4.28

RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated
CRM = Certified Reference Material

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ENVIRONMENTAL CHEMISTRY LABORATORY
106 SOUTH STREET, HOPKINTON, MA 01748 (781) 278-4710
MASSACHUSETTS LABORATORY I.D. NO. MA092

MADEP EPH
EXTRACTABLES IN AQUEOUS AND/OR SOLID MATRIX

QUALITY CONTROL

EXT. DATE: 09/02/11 Aqueous

METHOD BLANK	**AQUEOUS** ug/L-PPB	**SOLID** mg/kg - PPM
UNWEIGHTED CONC.		
C9-C18 Aliphatics	<100	<5.0
C19-C36 Aliphatics	<100	<5.0
C10-C22 Aromatics	<100	<5.0
C10-C22 Aromatics (adjusted)	<100	<5.0
TARGET COMPOUNDS		
Naphthalene	<5.0	<0.30
2-Methylnaphthalene	<5.0	<0.30
Acenaphthylene	<5.0	<0.30
Acenaphthene	<5.0	<0.30
Fluorene	<5.0	<0.30
Phenanthrene	<5.0	<0.30
Anthracene	<5.0	<0.30
Fluoranthene	<5.0	<0.30
Pyrene	<5.0	<0.30
Benzo(a)anthracene	<5.0	<0.30
Chrysene	<5.0	<0.30
Benzo(b)fluoranthene	<5.0	<0.30
Benzo(k)fluoranthene	<5.0	<0.30
Benzo(a)pyrene	<5.0	<0.30
Indeno(1,2,3-c,d)pyrene	<5.0	<0.30
Dibenzo(a,h)anthracene	<5.0	<0.30
Benzo(g,h,i)perylene	<5.0	<0.30
Surrogate:	**Recovery (%)**	**Acceptance Limits**
***1-Chlorooctadecane (Aliphatic)**	70.6	**40-140**
***Terphenyl (Aromatic)**	88.2	**40-140**
Fractionation Surrogate:		
***2-Bromonaphthalene**	114	**40-140**

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MASSACHUSETTS LABORATORY I.D. NO. MA092

MADEP EPH
EXTRACTABLES IN AQUEOUS AND/OR SOLID MATRIX

QUALITY CONTROL

EXT. DATE: 09/02/11 Aqueous

LABORATORY CONTROL SAMPLE / DUPLICATE LCS	LCS Recovery (%)	LCS Dup Recovery (%)	Limits	RPD	Limits
Carbon Ranges:					
C9-C18 Aliphatic Fraction	47.2	50.5	**40-140**	6.76	**< 25**
C19-C36 Aliphatic Fraction	74.0	79.2	**40-140**	6.79	**< 25**
C10-C22 Aromatic Fraction	67.6	64.2	**40-140**	5.16	**< 25**
Aromatics:					
Naphthalene	51.9	51.9	**40-140**	0.00	**< 25**
2-Methylnaphthalene	51.1	52.2	**40-140**	2.13	**< 25**
Acenaphthylene	57.6	57.6	**40-140**	0.00	**< 25**
Acenaphthene	58.6	58.7	**40-140**	0.17	**< 25**
Fluorene	62.9	61.9	**40-140**	1.60	**< 25**
Phenanthrene	65.6	63.2	**40-140**	3.73	**< 25**
Anthracene	67.4	63.6	**40-140**	5.80	**< 25**
Fluoranthene	69.2	65.7	**40-140**	5.19	**< 25**
Pyrene	73.3	69.1	**40-140**	5.90	**< 25**
Benzo(a)anthracene	71.5	67.0	**40-140**	6.50	**< 25**
Chrysene	73.1	68.4	**40-140**	6.64	**< 25**
Benzo(b)fluoranthene	73.7	69.1	**40-140**	6.44	**< 25**
Benzo(k)fluoranthene	80.3	75.1	**40-140**	6.69	**< 25**
Benzo(a)pyrene	76.0	70.8	**40-140**	7.08	**< 25**
Indeno(1,2,3-c,d)pyrene	71.0	65.2	**40-140**	8.52	**< 25**
Dibenzo(a,h)anthracene	73.9	65.9	**40-140**	11.4	**< 25**
Benzo(g,h,i)perylene	72.4	66.4	**40-140**	8.65	**< 25**
Surrogates:					
***1-Chlorooctadecane (Aliphatic)**	68.1	67.7	**40-130**		
***Terphenyl (Aromatic)**	75.2	73.0	**40-130**		
Fractionation Surrogate:					
***2-Bromonaphthalene**	90.6	87.4	**40-140**		

FRACTIONATION CHECKS	STANDARD (pass/fail)	COLUMN LOT NO.	LCS % in Aliphatic	LCSD % in Aliphatic	Acceptance Limit
Cartridge check	pass	S212-57			
Naphthalene			0.0	0.0	**< 5**
2-Methylnaphthalene			0.0	0.0	**< 5**

W.O. # 1108-00154
(for lab use only)

CHAIN-OF-CUSTODY RECORD

Sample I.D.	Date/Time Sampled	Matrix (A=Air, S=Soil, GW=Ground W., SW=Surface W., WW=Waste W., DW=Drinking W., P=Product, Other (specify))	ANALYSIS REQUIRED	Total No. of Cont.	Note #
GZA-6	5/31/11 12:35	GW	☐ pH ☐ Cond.; GC Methane, Ethane, Ethene; EPA 8260; EPA 8260-8010 List (Chlor.); EPA 8260-8021 list; EPA 8021-8020 List (BTEX); EPA 524.2 DW VOCs; EPA 624 WW VOCs; ☐ 601 ☐ 602 WW VOCs; EPA 8270 FULL SVOCs; EPA 8270 ☐ PAH ☐ A ☐ BN; EPA 625 WW SVOCs; EPA 8082-PCBs; EPA 8081-Pest; TPH-GC (Mod. 8100); TPH-GC w/FING.; EPH (MA DEP) X; VPH (MA DEP); Metals ☐ PPM-13 ☐ R-8; MCP 14 Metals; Metals (List Below) ** Total X; TCLP - Specify Below; SPLP - Specify Below; EPA 300 ☐ Cl ☐ SO4; EPA 300 ☐ NO2 ☐ NO3	4	
PRESERVATIVE (Cl-HCl, M-Methanol, N-HNO3, S-H2SO4, Na-NaOH, O-Other) *			EPH (MA DEP): Cl		
CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, T-Teflon, O-Other)*			EPH (MA DEP): G; Metals (List Below) **: N/O P		

RELINQUISHED BY: _____ DATE/TIME: 8/31/11 15:00 RECEIVED BY: Mail 8/31/11 1500

RELINQUISHED BY: _____ DATE/TIME: _____ RECEIVED BY: _____

RELINQUISHED BY: _____ DATE/TIME: _____ RECEIVED BY: _____

NOTES: (Unless otherwise noted, all samples have been refrigerated to 4 +/- 2°C)
*Specify "Other" preservatives and container types in this space.
** Total chromium, hex chromium, nickel, zinc, and iron

Project Manager: David E. Leone

GZA GEOENVIRONMENTAL, INC.
Laboratory Division

106 South Street
Hopkinton, MA 01748
(781) 278-4700
FAX (508)435-9912

TURNAROUND TIME: (Standard) Rush ____ Days, Approved by: ____

LAB USE: TEMP. OF COOLER 6.1 °C Temp Blank ____ Cooler Air 1105

GZA FILE NO: 170789.10 TASK NO: 3 P.O. NO. ____

PROJECT NStar / Brighton

LOCATION Brighton, MA

COLLECTOR(S) Jamie Barbari SHEET 1 OF 1

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

Laboratory Identification Numbers:
MA and ME: **MA092** NH: **2028**
CT: **PH0579** RI: **LAO00236**
NELAC - NYS DOH: **11063**

ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
781-278-3700

Project No.: **01.0170789.10**
Work Order No.: **1109-00052**
Date Received: **09/12/2011**
Date Reported: **09/20/2011**

David E. Leone

SAMPLE INFORMATION

Date Sampled	Matrix	Laboratory ID	Sample ID
09/12/2011	Aqueous	1109-00052 001	GP-23
09/12/2011	Aqueous	1109-00052 002	GP-23 Dissolved Iron

MassDEP Analytical Protocol Certification Form

Laboratory Name: **GZA GeoEnvironmental, Inc.** Project #: **01.0170789.10**

Project Location: **NSTAR Brighton** RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
1109-00052

Matrices: ☒ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A ☒	7470/7471 Hg CAM III B ☐	MassDEP VPH CAM IV A ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☒	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☒	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9014 Total Cyanide/PAC CAM VI A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	☒ Yes ☐ No
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	☒ Yes ☐ No
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	☒ Yes ☐ No
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	☒ Yes ☐ No
E	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	☒ Yes ☐ No ☐ Yes ☐ No
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	☒ Yes ☐ No

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☒ Yes ☐ No[1]

***Data User Note**: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*

H	Were **all** QC performance standards specified in the CAM protocol(s) achieved?	☒ Yes ☐ No[1]
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☐ Yes ☒ No[1]

[1] *All negative responses must be addressed in an attached laboratory narrative.*

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

Signature: _____ **Position:** Laboratory Supervisor

Printed Name: Andrew Yaroshefski **Date:** 09/20/11

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

ANALYTICAL REPORT

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
781-278-3700

David E. Leone

Project Name.: **NSTAR Brighton**
Project No.: **01.0170789.10**

Date Received: **09/12/2011**
Date Reported: **09/20/2011**
Work Order No.: **1109-00052**

PROJECT NARRATIVE:

1. Sample Receipt

The samples were received on 09/12/11 via __GZA courier, __EC, __FEDEX, or _x_hand delivered.
The samples were received intact for all requested analyses.

The following questions are answered upon sample receipt to determine compliance with MADEP Defined "Presumptive Certainty":

Were the samples received at <=6 degrees C (Temperature = 3.8 degrees C)? (x) yes ( ) no
Were any samples received above 6 degrees C, received within 8 hours of collection and on ice? ( ) yes ( ) no (x) n/a

Were the samples received with method specific preservatives within holding time? (x) yes ( ) no
* The chain of custody indicates that the samples, when required, were chemically preserved in accordance with the method they reference.

Were all constituents for the MCP Method(s) selected assigned on the COC? ( ) yes (x) no
* Full MCP14 Metals ( ) yes (x) no ( ) not assigned
* Full EPA 8270 SVOCs ( ) yes ( ) no (x) not assigned
* Full EPA 8260 VOCs ( ) yes (x) no ( ) not assigned

2. Subcontracted Analyses

Analyses for TPH and TSS were performed by R.I. Analytical Laboratories, Inc, Warwick RI.

Certification MA: MA-RI015, NH: 253700 A&B, CT: PH-0508, ME: RI015, RI: RI-033, NY:11726

3. EPA Method 6010C - Metals

All samples were pre-concentrated 5 times in order to reach the required reporting limits for Fe (0.020 mg/L).

Question I

Per the client's request, only a subset of the MCP analyte list for SW-846 Method 6010C Trace Metals by Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES) is reported.

Attach QC 6010C 09/13/11 - Aqueous

4. EPA Method 8260 - VOCs

Question I

Per the Project Manager, a subset of the analyte list for Method 8260 (Volatile Organic Compounds by GC/MS) has been provided.

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Attach QC 8260 9/14/2011 "S" - Aqueous

5. MADEP EXTRACTABLE PETROLEUM HYDROCARBONS (EPH)

Question H

The Relative Percent Difference (RPD) between the Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) exceeded the acceptance criteria of <25. Specific outlier includes: benzo(a)pyrene (36.1%).

Attach QC EPH 09/16/11 - Aqueous

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

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Project Name.: **NSTAR Brighton**
Project No.: **01.0170789.10**

Date Received: **09/12/2011**
Date Reported: **09/20/2011**
Work Order No.: **1109-00052**

LABORATORY STATEMENTS:

GZA GeoEnvironmental, Inc. has NELAC validation for the following methods:
Wastewater: Methods 624,625,245.1,150.2,120.1, 200.7 (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti).
Aqueous: Methods 8260B, 8270D, 8081B, 8082A, 7470, 150.2, 120.1, 1311, 6010C (PP13, RCRA 8, and Fe, Mg, Mn, Al, Cr+6, V, Co, Mo, Sn, Ti), 300.0 (Cl, Fl, SO4, NO3, NO2, Ophos), MA DEP EPH/VPH.
Soil: Methods 8260B, 8270D, 8081B, 8082A, 7471B, 9045, 1311, 6010C (PP13, RCRA8, and Fe, Mg, Mn, Al, V, Co, Mo, Sn, Ca), MA DEP VPH/EPH.

MA Certification: MA DEP certifies for wastewater and drinking water matrices only. GZA is certified by MA DEP for EPA Methods 624, 625, 245.1, 300.0 (Cl, SO4, NO3) and 200.7 (Sb, As, Be, Cd, Cr, Pb, Ni, Se, Ag, Tl, Zn, Al, Co, Fe, Mn, Mo, V.) The certification requirements were followed.

Abbreviations:
% R = % Recovery
DF = Dilution Factor
CF = Calculation Factor
DO = Diluted Out

Method Key:
Method 8260: The current version of the method is 8260B.
Method 8270: The current version of the method is 8270D.
Method 6010: The current version of the method is 6010C.
Method 8081: The current version of the method is 8081B.
Method 8082: The current version of the method is 8082A.
Method 7471: The current version of the method is 7471B.

The current Metals preparation methods are: 3010A (aqueous) and 3051 (solid).

Soil data is reported on a dry weight basis unless otherwise specified.

Matrix Spike / Matrix Spike Duplicate sets are performed as per method and are reported at the end of the analytical report if assigned on the Chain of Custody.

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Norwood, MA 02062
781-278-3700

David E. Leone

Project Name.: **NSTAR Brighton**
Project No.: **01.0170789.10**

Date Received: **09/12/2011**
Date Reported: **09/20/2011**
Work Order No.: **1109-00052**

Sample ID: **GP-23** Sample No.: **001**

Sample Date: **09/12/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date	Analysis Time
EPH	MADEP				RJD	09/19/11	
Unadjusted C11-C22 Aromatic	MADEP	<100	100	ug/L	RJD	09/19/11	15:05
C9-C18 Aliphatic Fraction	MADEP	<100	100	ug/L	RJD	09/19/11	14:22
C19-C36 Aliphatic Fraction	MADEP	<100	100	ug/L	RJD	09/19/11	14:22
C11-C22 Aromatic Fraction	MADEP	<100	100	ug/L	RJD	09/19/11	15:05
Surrogates:	MADEP						
***1-Chloroctadecane	MADEP	67.2	40-140	%R	RJD	09/19/11	14:22
***o-Terphenyl (aromatic)	MADEP	89.3	40-140	%R	RJD	09/19/11	15:05
***2-Bromonaphthalene	MADEP	98.8	40-140	%R	RJD	09/19/11	15:05
_____							
TARGETED PAH ANALYTES	MADEP						
Naphthalene (Diesel PAH)	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
2-Methylnaphthalene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Acenaphthylene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Acenaphthene (Diesel PAH)	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Fluorene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Phenanthrene (Diesel PAH)	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Anthracene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Fluoranthene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Pyrene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Benzo [a] Anthracene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Chrysene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Benzo [b] Fluoranthene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Benzo [k] Fluoranthene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Benzo [a] Pyrene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Indeno [1,2,3-cd] Pyrene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Dibenzo [a,h] Anthracene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Benzo [g,h,i] Perylene	MADEP	<5.0	5.0	ug/L	RJD	09/19/11	15:05
Extraction	EPA 3510C	1.0		DF	JCH	09/16/11	
VOLATILE ORGANICS	EPA 8260				MQS	09/14/11	
Acetone	EPA 8260	<10	10	ug/L	MQS	09/14/11	18:49
Benzene	EPA 8260	<1.0	1.0	ug/L	MQS	09/14/11	18:49
Toluene	EPA 8260	<1.0	1.0	ug/L	MQS	09/14/11	18:49
Ethylbenzene	EPA 8260	<1.0	1.0	ug/L	MQS	09/14/11	18:49
m&p-Xylene	EPA 8260	<2.0	2.0	ug/L	MQS	09/14/11	18:49

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106 South Street
Hopkinton, MA 01748
(781) 278-4700

A N A L Y T I C A L R E P O R T

GZA GeoEnvironmental, Inc.
One Edgewater Drive
Norwood, MA 02062
781-278-3700

David E. Leone

Project Name.: **NSTAR Brighton**
Project No.: **01.0170789.10**

Date Received: **09/12/2011**
Date Reported: **09/20/2011**
Work Order No.: **1109-00052**

Sample ID: **GP-23** Sample No.: **001**

Sample Date: **09/12/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date	Analysis Time
o-Xylene	EPA 8260	<1.0	1.0	ug/L	MQS	09/14/11	18:49
Surrogates:	EPA 8260						
***1,2-Dichloroethane-D4	EPA 8260	113	70-130	% R	MQS	09/14/11	18:49
***Toluene-D8	EPA 8260	105	70-130	% R	MQS	09/14/11	18:49
***4-Bromofluorobenzene	EPA 8260	97.5	70-130	% R	MQS	09/14/11	18:49
Preparation	EPA 5030B	1.0		CF	MQS	09/14/11	
METALS							
Iron	EPA 6010C	5.0	0.0050	mg/L	LLZ	09/13/11	15:22
SUBCONTRACTED ANALYTES							
TPH via Method 1664	EPA 1664	<0.5	0.5	mg/L	XXX	09/15/11	14:39
Total Suspended Solids	SM-2540D	2.8	2.0	mg/L	XXX	09/14/11	14:39

GZA GeoEnvironmental, Inc.
106 South Street
Hopkinton, MA 01748
(781) 278-4700

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One Edgewater Drive
Norwood, MA 02062
781-278-3700

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Project Name.: **NSTAR Brighton**
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Date Received: **09/12/2011**
Date Reported: **09/20/2011**
Work Order No.: **1109-00052**

Sample ID: **GP-23 Dissolved Iron** Sample No.: **002**

Sample Date: **09/12/2011**

Test Performed	Method	Results	Reporting Limit	Units	Tech	Analysis Date	Analysis Time
DISSOLVED METALS							
Iron	EPA 6010C	4.7	0.0050	mg/L	LLZ	09/13/11	15:22

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106 SOUTH ST, HOPKINTON, MA 01748
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EPA METHOD 6010C ANALYSIS
Metals by ICP

QUALITY CONTROL - AQUEOUS

DATE PREPARED: 9/13/2011

QC Sample	Method Blank	Lab Control Sample	LC Duplicate	LC/LCD Diff.
Units	mg/L	% Recovery	% Recovery	RPD
Acceptance Limits	Results	80-120	80-120	<20
Analyte				
Silver (Ag)	NA	NA	NA	NA
Aluminum (Al)	NA	NA	NA	NA
Arsenic (As)	NA	NA	NA	NA
Boron (B)	NA	NA	NA	NA
Barium (Ba)	NA	NA	NA	NA
Beryllium (Be)	NA	NA	NA	NA
Calcium (Ca)	NA	NA	NA	NA
Cadmium (Cd)	NA	NA	NA	NA
Cobalt (Co)	NA	NA	NA	NA
Chromium (Cr)	NA	NA	NA	NA
Copper (Cu)	NA	NA	NA	NA
Iron (Fe)	<0.005	104	104	0.19
Magnesium (Mg)	NA	NA	NA	NA
Manganese (Mn)	NA	NA	NA	NA
Molybdenum (Mo)	NA	NA	NA	NA
Nickel (Ni)	NA	NA	NA	NA
Lead (Pb)	NA	NA	NA	NA
Antimony (Sb)	NA	NA	NA	NA
Selenium (Se)	NA	NA	NA	NA
Tin (Sn)	NA	NA	NA	NA
Titanium (Ti)	NA	NA	NA	NA
Thallium (Tl)	NA	NA	NA	NA
Vanadium (V)	NA	NA	NA	NA
Zinc (Zn)	NA	NA	NA	NA

RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated
CRM = Certified Reference Material

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EPA Method 8260 / 524.2 Aqueous Method Blank (MB) and Laboratory Control Sample/Duplicate (LCS/LCSD) Data

Method Blank			Laboratory Control Sample				Laboratory Control Sample Duplicate						
Date Analyzed:	**9/14/2011**		**Date Analyzed:**	**9/14/2011**			**9/14/2011**						
Volatile Organics	**Conc. ug/L**	**Acceptance Limit**	**Spike Concentration = 20ug/L**	**% Recovery**	**Acceptance Limits**	**Verdict**	**% Recovery**	**Acceptance Limits**	**Verdict**	**RPD**	**Limit**	**Verdict**
acetone	23	< 10	acetone	98.5	70-130	ok	103	70-130	ok	4.67	<25	ok
benzene	< 0.5	< 0.5	benzene	98.6	70-130	ok	102	70-130	ok	3.61	<25	ok
toluene	< 0.5	< 0.5	toluene	96.8	80-120	ok	105	70-130	ok	8.51	<25	ok
ethylbenzene	< 0.5	< 0.5	ethylbenzene	97.7	80-120	ok	103	70-130	ok	4.99	<25	ok
m&p-xylene	< 1.0	< 1.0	m&p-xylene	103	70-130	ok	105	70-130	ok	2.41	<25	ok
o-xylene	< 0.5	< 0.5	o-xylene	104	70-130	ok	103	70-130	ok	1.06	<25	ok

Surrogates:	**Recovery (%)**	**Acceptance Limits**	**Surrogates:**	**Recovery (%)**	**Acceptance Limits**	**Verdict**	**Recovery (%)**	**Acceptance Limits**	**Verdict**	**RPD**	**Acceptance Limits**	**Verdict**
DIBROMOFLUOROMETHANE	104	70-130	DIBROMOFLUOROMETHANE	99.9	70-130	ok	106	70-130	ok	5.97	<25	ok
1,2-DICHLOROETHANE-D4	106	70-130	1,2-DICHLOROETHANE-D4	102	70-130	ok	107	70-130	ok	5.46	<25	ok
TOLUENE-D8	104	70-130	TOLUENE-D8	101	70-130	ok	107	70-130	ok	6.01	<25	ok
4-BROMOFLUOROBENZENE	97.3	70-130	4-BROMOFLUOROBENZENE	104	70-130	ok	106	70-130	ok	2.34	<25	ok
1,2-DICHLOROBENZENE-D4	90.3	70-130	1,2-DICHLOROBENZENE-D4	106	70-130	ok	104	70-130	ok	2.15	<25	ok

Instrument: HP GC/MS "S"

GZA GEOENVIRONMENTAL, INC.
ENVIRONMENTAL CHEMISTRY LABORATORY
106 SOUTH STREET, HOPKINTON, MA 01748 (781) 278-4710
MASSACHUSETTS LABORATORY I.D. NO. MA092

MADEP EPH
EXTRACTABLES IN AQUEOUS AND/OR SOLID MATRIX

QUALITY CONTROL

EXT. DATE: 09/16/11 Aqueous

METHOD BLANK	**AQUEOUS** ug/L-PPB	**SOLID** mg/kg - PPM
UNWEIGHTED CONC.		
C9-C18 Aliphatics	<100	<5.0
C19-C36 Aliphatics	<100	<5.0
C10-C22 Aromatics	<100	<5.0
C10-C22 Aromatics (adjusted)	<100	<5.0
TARGET COMPOUNDS		
Naphthalene	<5.0	<0.30
2-Methylnaphthalene	<5.0	<0.30
Acenaphthylene	<5.0	<0.30
Acenaphthene	<5.0	<0.30
Fluorene	<5.0	<0.30
Phenanthrene	<5.0	<0.30
Anthracene	<5.0	<0.30
Fluoranthene	<5.0	<0.30
Pyrene	<5.0	<0.30
Benzo(a)anthracene	<5.0	<0.30
Chrysene	<5.0	<0.30
Benzo(b)fluoranthene	<5.0	<0.30
Benzo(k)fluoranthene	<5.0	<0.30
Benzo(a)pyrene	<5.0	<0.30
Indeno(1,2,3-c,d)pyrene	<5.0	<0.30
Dibenzo(a,h)anthracene	<5.0	<0.30
Benzo(g,h,i)perylene	<5.0	<0.30
Surrogate:	**Recovery (%)**	**Acceptance Limits**
***1-Chlorooctadecane (Aliphatic)**	113	**40-140**
***Terphenyl (Aromatic)**	76.2	**40-140**
Fractionation Surrogate:		
***2-Bromonaphthalene**	119	**40-140**

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MADEP EPH
EXTRACTABLES IN AQUEOUS AND/OR SOLID MATRIX

QUALITY CONTROL

EXT. DATE: 09/16/11 Aqueous

LABORATORY CONTROL SAMPLE / DUPLICATE LCS	LCS Recovery (%)	LCS Dup Recovery (%)	Limits	RPD	Limits
Carbon Ranges:					
C9-C18 Aliphatic Fraction	44.3	50.8	**40-140**	13.7	**< 25**
C19-C36 Aliphatic Fraction	76.4	85.0	**40-140**	10.7	**< 25**
C10-C22 Aromatic Fraction	83.3	76.0	**40-140**	9.17	**< 25**
Aromatics:					
Naphthalene	67.7	60.9	**40-140**	10.6	**< 25**
2-Methylnaphthalene	66.9	53.4	**40-140**	22.4	**< 25**
Acenaphthylene	70.0	61.9	**40-140**	12.3	**< 25**
Acenaphthene	83.0	66.0	**40-140**	22.8	**< 25**
Fluorene	76.1	67.3	**40-140**	12.3	**< 25**
Phenanthrene	82.4	97.9	**40-140**	17.2	**< 25**
Anthracene	75.2	80.8	**40-140**	7.18	**< 25**
Fluoranthene	89.6	79.0	**40-140**	12.6	**< 25**
Pyrene	97.4	88.5	**40-140**	9.58	**< 25**
Benzo(a)anthracene	87.8	80.5	**40-140**	8.67	**< 25**
Chrysene	101	87.7	**40-140**	14.1	**< 25**
Benzo(b)fluoranthene	77.9	73.5	**40-140**	5.81	**< 25**
Benzo(k)fluoranthene	113	97.3	**40-140**	14.9	**< 25**
Benzo(a)pyrene	91.2	63.3	**40-140**	36.1	**< 25**
Indeno(1,2,3-c,d)pyrene	58.4	53.7	**40-140**	8.39	**< 25**
Dibenzo(a,h)anthracene	99.6	84.8	**40-140**	16.1	**< 25**
Benzo(g,h,i)perylene	79.3	95.6	**40-140**	18.6	**< 25**
Surrogates:					
***1-Chlorooctadecane (Aliphatic)**	84.2	88.0	**40-130**		
***Terphenyl (Aromatic)**	87.6	82.3	**40-130**		
Fractionation Surrogate:					
***2-Bromonaphthalene**	109	52.0	**40-140**		

FRACTIONATION CHECKS	STANDARD (pass/fail)	COLUMN LOT NO.	LCS % in Aliphatic	LCSD % in Aliphatic	Acceptance Limit
Cartridge check	pass	S212-59			
Naphthalene			0.0	0.0	**< 5**
2-Methylnaphthalene			0.0	0.0	**< 5**

W.O. # 1109-00052 (for lab use only)

CHAIN-OF-CUSTODY RECORD

ANALYSIS REQUIRED

Sample I.D.	Date/Time Sampled	Matrix (A=Air, S=Soil, GW=Ground W., SW=Surface W., WW=Waste W., DW=Drinking W., P=Product, Other (specify))	☐ pH ☐ Cond.	GC Methane, Ethane, Ethene	EPA 8260 C*	EPA 8260-8010 List (Chlor.)	EPA 8260-8021 list	EPA 8021-8020 List (BTEX)	EPA 524.2 DW VOCs	EPA 624 WW VOCs	☐ 601 ☐ 602 WW VOCs	EPA 8270 FULL SVOCs	EPA 8270 ☐ PAH ☐ A ☐ BN	EPA 625 WW SVOCs	EPA 8082-PCBs	EPA 8081-Pest	TPH-GC (~~Mod. 8100~~) 1664A	TPH-GC w/FING.	EPH (MA DEP) ***	VPH (MA DEP)	Metals ☐ PPM-13 ☐ R-8	MCP 14 Metals	Metals (List Below) **	TCLP - Specify Below	SPLP - Specify Below	EPA 300 ☐ Cl ☐ SO4	EPA 300 ☐ NO2 ☐ NO3	~~hex Chrom 7196A~~	dissolved Iron	Total Suspended Solids		Total No. of Cont.	Note #
GP-23	9/12/11 11:32	GW			X												X		X				X					X	X	X		11	1
Trip Blank																																Extra Hold	
PRESERVATIVE (Cl-HCl, M-Methanol, N-HNO3, S-H2SO4, Na-NaOH, O-Other) *					CL												CL		CL				N					—	N	—		9/12 LL	
CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, T-Teflon, O-Other)*					V												G		G				P					P	P	P			

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
[signature]	9/12/11	[signature] 9/12/11 1245

NOTES: (Unless otherwise noted, all samples have been refrigerated to 4 +/- 2°C)
*Specify "Other" preservatives and container types in this space.

* EPA 8260C (Benzene, Toluene, Ethylbenzene, m,p,o xylenes Acetone)
** EPH see attached sheet ② cancel per FM 9/12 LL (email)
*** ~~chromium III, Nickel, zinc~~, Iron (9/12 LL)
1) See attached sheet for minimum detection Limits

Project Manager: Sue Bator
David E. Leone 9/12 LL

GZA GEOENVIRONMENTAL, INC.
Laboratory Division
106 South Street
Hopkinton, MA 01748
(781) 278-4700
FAX (508)435-9912

TURNAROUND TIME: (Standard) Rush ____ Days, Approved by: ____

LAB USE:
TEMP. OF COOLER 3.3 °C
Temp Blank 1105
Cooler Air

GZA FILE NO: 01.0170789.10 (9/12 LL) TASK NO: 3 P.O. NO. ____ 9/12/11 1250 LL

PROJECT NSTAR Brighton

LOCATION Brighton, MA

COLLECTOR(S) Jane Barberi SHEET 1 OF 1

ATTACHMENT 9

SUPPLEMENTAL INFORMATION – DILUTION FACTOR CALCULATIONS

File No. 170789.10
October 5, 2011

DILUTION FACTOR CALCULATIONS
NOTICE OF INTENT FOR THE REMEDIATION GENERAL PERMIT
300-316 North Beacon Street, Boston, Massachusetts

Where,

= Dilution Factor

= Maximum Flow Rate of the Discharge in cubic feet per second (cfs) (1.0 gpm = 0.00223 cfs)

= Receiving Water 7Q10 Flow (cfs) where,

7Q10 = Minimum Flow (cfs) for 7 Consecutive Days with a Recurrence Interval of 10 Years.

= 500 gpm = 1.114 cfs

= 23.3 cfs (M7D10Y on attached USGS Streamstats Ungaged Site Report)

J:\170,000-179,999\170789\170789-10.DEL\NPDES-RGP and CGP\RGP\170789.10_NSTAR_NorthBeacon_DF Calculations.docx

ATTACHMENT 10

COPY OF A LETTER FROM US FISH AND WILDLIFE SERVICES

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
http://www.fws.gov/newengland

January 3, 2011

To Whom It May Concern:

This project was reviewed for the presence of federally-listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

(http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm)

Based on the information currently available, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service (Service) are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required.

This concludes the review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Mr. Anthony Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office