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

CERTIFIED MAIL RETURN RECEIPT REQUESTED

DEC 12 2011

Kris Leonard
Senior Project Manager
Walsh Brothers, Inc.
210 Commercial Street
Boston, MA 02109

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Dewatering activities at the site located at 130 Brookline Street, Cambridge, MA 02139, Middlesex County; Authorization # MAG910510

Dear Mr. Leonard:

Based on the review of a Notice of Intent (NOI) submitted on behalf of The Massachusetts Institute of Technology (MIT) the firm McPhail Associates, Inc., 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 that exceeded Appendix III limits. The checklist also includes other parameters for which your laboratory reports indicated there was insufficient sensitivity to detect these parameters at the minimum levels established in Appendix VI of the RGP.

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 37.9 for this site is within a dilution range greater than 10 to 50, established in the RGP. (See the RGP Appendix IV for Massachusetts facilities). Therefore, the limits for antimony of 60 ug/L, copper of 52

ug/L, lead of 13ug/L, nickel of 290ug/L, selenium of 50ug/L, silver of 12ug/L, zinc of 666ug/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 06/13/2012. 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
Lisa Peterson, Commissioner, Cambridge DPW
William J. Burns, McPhail Associates, Inc.

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910510**
Authorization Issued:	December, 2011
Facility/Site Name:	Dewatering Activities
Facility/Site Address:	130 Brookline Street, Cambridge, MA 02139, Middlesex County
	Email address of owner: ken.williams@mit.edu
Legal Name of Operator:	Walsh Brothers, Inc.
Operator contact name, title, and Address:	Kris Leonard, Senior Project Manager 210 Commercial Street, Boston, MA 02109
	Email: kleonard@walshbrothers.com
Estimated Date of Completion:	06/31/2012
Category and Sub-Category:	Category III- Contaminated Construction Dewatering. Sub-category B. Known Contaminated 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 (BTEX) [4]	100 ug/L/ Me#8260C/ ML 2ug/L
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L

	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)
	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
	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

	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)
	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			
√	40. Arsenic **	100/ML20			
	41. Cadmium **	0.2/ML10			
√	42. Chromium III (trivalent) **	489/ML15			

	Metal parameter	Total Recoverable Metal Limit @ H [10]= 50 mg/l CaCO3 for discharges in Massachusetts (ug/l) [11/12]		Minimum level=ML	
		Freshwater			
	43. Chromium VI (hexavalent) **	11.4/ML10			
√	44. Copper **	52/ML15			
	45. Lead **	1.3/ML20			
	46. Mercury **	0.9/ML0.2			
√	47. Nickel **	290/ML20			
	48. Selenium **	5/ML20			
	49. Silver	1.2/ML10			
	50. Zinc **	66.6/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

McPHAIL ASSOCIATES, INC

Geotechnical Engineers

NOTICE OF INTENT FOR DISCHARGE UNDER MASSACHUSETTS REMEDIAL GENERAL PERMIT MAG910000

130 BROOKLINE STREET

CAMBRIDGE MASSACHUSETTS

to

U.S. Environmental Protection Agency

November 18, 2011

Project No. 3570

McPHAIL ASSOCIATES, INC

Geotechnical Engineers

November 18, 2011

U.S Environmental Protection Agency
RGP-NOC Processing Municipal Assistance Unit (CMU)
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Attention: RGP-NOC Processing

Reference: 130 Brookline Street; Cambridge, Massachusetts
Notice of Intent for Construction Dewatering Discharge Under Massachusetts
Remedial General Permit MAG910000

Ladies and Gentlemen:

The purpose of this letter report is to provide a summary of the site and groundwater quality information in support of an application for approval from the U.S. Environmental Protection Agency (EPA) for the temporary discharge of groundwater into the Charles River via a storm drain system during construction at the above referenced site. Refer to **Figure 1** Project Location Plan for the general site locus.

These services were performed and this permit application was prepared with the authorization of MIT 130 Brookline LLC. These services are subject to the limitations contained in **Attachment A**.

The required Notice of Intent Form contained in the RGP permit is included in **Appendix B**.

Applicant/Operator

The applicant for the Notice of Intent-Remedial General Permit is:

Walsh Brothers Inc.
210 Commercial Street
Boston, MA 02109

Attention: Mr. Kris Leonard

Tel: 617-878-4800
Fax: 617-720-6116

Existing Conditions

Fronting onto Brookline Street to the northwest, the subject site is bounded by Tudor Street to the northeast, Emily Street to the southwest and commercial property at 27 Tudor Street to the southeast. The site is occupied by an unoccupied 2-story concrete-framed commercial building with a footprint of about 22,330 square feet in area. The remainder of the subject site is covered by an approximately 1,300 square-foot asphalt paved forecourt which is located on the Brookline Street frontage adjoining the building. The limits of the subject site are shown on **Figure 2**, which is based on a plan entitled Subsurface Investigation Plan.

2269 Massachusetts Avenue
Cambridge, Massachusetts 02140
617- 868-1420
617- 868-1423 (Fax)

The subject site and surrounding area are serviced by public utilities including municipal water, sewer and natural gas. Catch basins located in Brookline Street, Emily Street and Tudor Street control surface drainage.

Site Environmental Setting and Surrounding Historical Places

Based on the current Massachusetts Geographic Information Systems (GIS) DEP Priority Resources Map of Cambridge, the subject site is not located within the boundaries of a Potentially Productive Aquifer or within a Zone II, Interim Wellhead Protection Area as defined by the Massachusetts Department of Environmental Protection. There are no known public or private drinking water supply wells, no Areas of Critical Environmental Concern, no fish habitats, no habitats of Species of Special Concern or Threatened or Endangered Species within 500 feet of the subject site. There are no surface water bodies or wetland areas located at the subject site. The nearest surface water body is the Charles River, classified by the DEP as a Class B Surface Water Body, that is located approximately 0.5 miles to the southeast of the subject site. No areas designated as solid waste facilities (landfills) are located within 0.5 miles of the subject site. A copy of the DEP Priority Resources Map depicting the location of the subject property is included in **Appendix C**.

A review of the most recent federal listing of threatened and endangered species published by the U.S. Fish and Wildlife Service identified no threatened and/or endangered species at or in the vicinity of the discharge location and/or discharge outfall. In addition, a review of the Massachusetts Division of Fisheries and Wildlife on-line database identified no threatened or endangered species at the point of discharge and/or the discharge outfall. A list of threatened and endangered species from the U.S. Fish and Wildlife Services and Massachusetts Division of Fisheries on-line databases is included in **Appendix C**.

A review of the most recent National Register of Historical Places for Middlesex County in Cambridge, Massachusetts did not identify records or addresses of Historic Places that exist in the immediate vicinity of the subject property and/or outfall location.

Release History

The presence of petroleum hydrocarbons, metals and non-aqueous phase liquid have been identified in soil and groundwater at the subject site which exceed the applicable reporting thresholds established in 310 CMR 40.0000, the Massachusetts Contingency Plan (MCP). These MCP release conditions are documented with the DEP under Release Tracking Numbers (RTNs) 3-19114 and 3-26697. Based upon the response actions that were previously completed at each MCP release site in conjunction with the post-remedial analysis of soil and groundwater samples, Response Action Outcome Statements (i.e. MCP closure statements) were filed with the DEP for each RTN. The following is summary of assessment activities, response actions and MCP status associated with each release site.

RTN 3-19114

In December 1999, the DEP was notified of a release of nickel and petroleum hydrocarbons in soil and groundwater at the subject site. The source of the petroleum-related contamination was identified as a former historic underground storage tank (UST) located beneath the asphalt paved forefront adjacent to Brookline Street. The source of the nickel release was identified as the historic usage of the northern corner of the existing building for automotive nickel electroplating. During 2000, a Release Abatement

Measure (RAM) was performed which included the removal and off-site disposal of the UST and associated petroleum contaminated soil. Subsequent to the completion of the RAM in 2000, a Method 3 Risk Characterization was performed in conjunction with the completion of Response Action Outcome (RAO) Statement by McPhail Associates, Inc. for the releases of the petroleum hydrocarbons and nickel. The results of the Method 3 Risk Characterization indicated that a condition of No Significant Risk, as defined in Section 40.0993(7) of the MCP, had been achieved for the petroleum and nickel releases. Based upon the results of the Method 3 Risk Characterization, a Permanent Solution had been achieved for the petroleum release. However, pursuant to Section 40.1036(5) of the MCP, since some of the Exposure Point Concentrations for the nickel in groundwater exceeded the Method 3 Upper Concentration Limit for nickel, a Permanent Solution was not considered to exist for the nickel release. As a result, on April 30, 2007, a Class C-1 RAO Statement was filed with the DEP for the release to which RTN 3-19114 was assigned.

RTN 3-26697

The MCP site listed under RTN 3-26697 pertains to a release non-aqueous phase liquid (NAPL) that was detected in one groundwater monitoring well located within the southern corner of the existing building. The release of NAPL was reported as a 72-hour release condition to the DEP on March 26, 2007 at which time NAPL recovery commenced as an Immediate Response Action (IRA). Recovery of NAPL was performed on a continuous basis until June 2007 at which time NAPL was no longer identified at the site. During July 2007, a subsurface investigation was performed at the subject site which encountered a previously unknown 500-gallon UST, located beneath the public sidewalk along Emily Street. The UST and approximately 6 cubic yards of petroleum contaminated soil surrounding the UST were removed and disposed off-site in November 2007. Utilizing the results of post-remedial soil and groundwater data obtained from subsurface investigations performed at the site, a Method 3 Risk Characterization was performed for the release by LaGoy Risk Analysis Inc. The results of the Method 3 Risk Characterization indicated that a condition of No Significant Risk of harm to human health, public safety and welfare, and the environment exists at the RTN 3-26697 MCP site and for all current and unrestricted future site use. As a result, a Class A-2 Response Action Outcome Statement was filed with the DEP indicating that a Permanent Solution was achieved for the release.

Proposed Scope of Site Development

It is understood that redevelopment of the existing building will consist of renovating the existing structure for laboratory usage and the addition of a mechanical penthouse. Renovations of the existing structure are understood to include installation of new grade beams to connect the existing interior building columns, replacement of the existing slab-on-grade, installation of sub-slab utilities and construction of an elevator and tenant mechanical pit. In addition, drilled piles will be installed at each existing column location to support additional loading of the foundation system from the proposed renovations.

Construction Site Dewatering

As a result of the planned redevelopment of the subject site, it is anticipated that excavation for the proposed elevator pit and tenant mechanical pit will extend below the surface of the groundwater. Furthermore, a remedial excavation is planned to remove nickel contaminated soil beneath the northern portion of the existing building. Excavation to construct the elevator pit and tenant mechanical pit and to remove contaminated soil is planned to extend to depths ranging from 7 to 9 feet below the top of the existing building slab. The surface of groundwater has been measured in on-site groundwater monitoring

wells at depths ranging from approximately 6 to 9.5 feet below the top of the building floor slab surface. Hence, construction dewatering will be required during excavation at these areas. In addition, it is anticipated that excess water generated during the installation of drilled mini-piles will require off-site discharge. The excavation of site soils and dewatering of groundwater will be performed under the provisions of a RAM plan that will be filed with the DEP prior to the commencement of these activities.

It is estimated that intermittent groundwater discharge required during excavation will be on the order of 20 to 30 gallons per minute (GPM). A rate of discharge of 10 to 20 GPM is anticipated during the installation of drilled piles.

Construction dewatering will require the discharge of collected groundwater into the storm drain system under the requested Remedial General Permit. A review of available subgrade utility plans on the City of Cambridge GIS database indicates that a dedicated 24-inch diameter storm drain runs beneath Brookline Street. The dedicated storm drain beneath Brookline street flows northeast connecting to a 54-inch by 64-inch storm drain at the intersection of Pacific Street. The 54-inch by 64-inch storm drain flows east beneath a portion of the MIT campus where it increases in size to 60-inches by 66-inches. The storm drain eventually runs beneath Memorial Drive where it discharges into the Charles River. The location of the relevant catch basins with relation to the subject property are indicated on **Figure 2**. The flow path of the discharge is shown in plans provided by the City of Cambridge GIS database which are included in **Figures 3A** through **3G**.

Summary of Groundwater Analysis

On October 21, 2011, McPhail Associates, Inc. obtained a sample of groundwater from monitoring well B-303(OW) and submitted the sample to a certified laboratory for analysis for the presence of compounds required under the EPA's Remediation General Permit (RGP) application, including pH, total suspended solids (TSS), total residual chlorine, total petroleum hydrocarbons (TPH), cyanide, volatile organic compounds (VOCs) including total benzene, toluene, ethylbenzene and xylenes (BTEX), poly-aromatic hydrocarbons (PAHs), total phenols, pesticides and PCBs, and total recoverable metals.

The results of the laboratory analysis are summarized in **Table 1**, and laboratory data is included in **Appendix D**. The results of laboratory analysis indicate the following:

1. **pH:** The tested sample exhibited a pH level of 6.5 Standard Units (S.U.) which is within the recommended range of 6.5 to 8.5 S.U. for discharge into freshwater.

2. **TSS:** Total suspended solids (TSS) were not detected in excess of the laboratory limit of 5 milligrams per liter (mg/l) which is well below the 30 mg/l limit established by the US EPA for discharge into surface water. However, it is likely that proposed dewatering activities will cause concentrations of TSS in the influent to fluctuate which will require mitigation. As a result, groundwater will be pre-treated by passing the water through one (1) 5,000 gallon sediment settling tank and bag filters prior to discharge in order to reduce the concentration of TSS in the effluent.

3. **VOCs:** The groundwater sample exhibited a concentration of naphthalene at 0.21 micrograms per liter (ug/l) which exceeds the RGP effluent limit of 0.02 ug/l. The results of the analysis also indicated a concentration of total BTEX at 0.755 ug/l which is below the RGP effluent limit of 100 ug/l. The remaining VOCs were not detected in excess of the laboratory method detection limits.

As detailed below, groundwater will pass through a treatment system that will include a granular activated carbon filter prior to off-site discharge. It is anticipated that the treatment system will reduce the level of naphthalene detected in the groundwater to below the EPA effluent limit prior to discharge into the City of Cambridge storm drain system.

4. **TPH:** Laboratory analysis of the groundwater sample indicated no detectable levels of TPH.

5. **PAHs and Total Phenols:** The laboratory reported no detectable levels of Group 1 PAHs or total phenols. However, the groundwater sample exhibited a total concentration of Group II PAHs at 0.161 ug/l which exceeds the RGP effluent of 0.01 ug/l. As mentioned above and discussed in further detail below, groundwater will pass through a treatment system that will include a granular activated carbon filter prior to off-site discharge. It is anticipated that the treatment system will reduce levels of Group II PAHs to below the EPA effluent limit prior to discharge into the City of Cambridge storm drain system.

6. **PCBs:** The laboratory results indicated no detectable levels of PCBs.

7. **Cyanide:** Cyanide was not detected in the tested groundwater sample at a concentration in excess of the laboratory method detection limit of 0.5 mg/l.

8. **Total Metals:** The laboratory reported no detectable levels of antimony, cadmium, chromium VI, lead, mercury, silver or zinc. Levels of arsenic, chromium III, copper, nickel, selenium and iron were reported at levels of 1.4 ug/l, 29 ug/l, 0.7ug/l, 176.3 ug/l, 2 ug/l and 13,000 ug/l, respectively. The detected levels of arsenic and chromium III, copper, and selenium are below the EPA effluent limits of 10 ug/l, 48.8 ug/l, 5.2 ug/l, and 5 ug/l, respectively, for discharge to a freshwater body.

   The detected levels of nickel and iron exceed the EPA effluent limit of 29 ug/l and 1,000 ug/l, respectively, for discharge into a freshwater body. However, based on calculations of the applicable dilution factor as shown below, the detected concentration of nickel does not exceed the applicable effluent limit for total recoverable nickel. The concentration of iron continues to exceed the corresponding dilution concentration of 5,000 ug/l. As discussed in further detail below, dewatered groundwater will pass through an ion exchange resin filter designed to reduce levels of metals prior to discharge into the City of Cambridge storm drain system. As a result, it is anticipated that levels of iron detected in groundwater will be reduced to below the applicable EPA RGP effluent limitation prior to off-site discharge.

Dilution Factor Application for Total Nickel and Iron

As mentioned above, total nickel and iron were detected at concentrations of 176.3 ug/l and 4,300 ug/l, respectively. The EPA freshwater effluent limitations for nickel and iron are 176.3 ug/l and 1,000 ug/l, respectively. As a result, a Dilution Factor (DF) was calculated for the detected levels of total nickel and iron pursuant to the procedure contained in RGP MAG910000, Appendix V. The purpose of the DF calculation is to establish Total Recoverable Limits for metals, taking into consideration the anticipated dilution of the detected analyte upon discharge into the Charles River. The calculated DF was then used to find the appropriate Dilution Range Concentrations (DRCs) contained in MAG910000, Appendix IV. The Minimum Flow Rate calculated by the USGS Streamstats GIS database at the location of discharge into the Charles River for 7 consecutive days with a recurrence interval of 10 years (7Q10 flow) is 24.7 thus resulting in a DF of 370. A DF in excess of 100 corresponds to dilution concentrations of 2,380 ug/l

and 5,000 ug/l for total nickel and iron, respectively. Therefore, based on calculations of the applicable dilution factor, nickel does not exceed the applicable permit limit of 2,380 ug/l for total recoverable metals. However, as mentioned above the detected level of iron at 13,000 ug/l exceeds the dilution concentration of 5,000 ug/l for discharge into a freshwater body.

Groundwater Treatment

Based on the results of the above referenced groundwater analyses and the presence of MCP release sites documented at the subject site, it is our opinion that a settling tank, bag filter, granular activated carbon filter, and ion exchange resin filter will be required to settle out particulate matter and lower the detected concentrations of naphthalene, PAHs and metals to meet the applicable effluent limits established by the US EPA prior to discharge. One settling tank 5,000-gallons in capacity, two bag filters, a granular activated carbon chamber and an ion exchange resin chamber will be incorporated into the discharge system in series in order to meet allowable discharge limits for naphthalene, PAHs and metals established by the RGP. A schematic of the treatment system is shown on **Figure 4**.

To document the effectiveness of the treatment system, samples of the discharge water will be obtained and tested for the presence of TSS, VOC, PAH and total metals prior to the start of discharge into the storm drain system. Should the pre-start up testing indicate that the levels of these compounds in the effluent exceed the limits established under the RGP, additional treatment of the effluent will be implemented prior to initial discharge. In addition, should other contaminants be detected within the discharge water during the construction dewatering phase of the project at levels that exceed the effluent limitations, mitigative measures will be implemented to meet the allowable discharge limits.

Summary and Conclusions

The purpose of this report is to assess site environmental conditions and groundwater data to support an application for a Massachusetts Remedial General Permit for off-site discharge of groundwater which will be encountered during renovations to the existing building at 130 Brookline Street in Cambridge. The groundwater testing results reported in this application have been provided to the site owner.

Based on the results of the above referenced groundwater analyses in conjunction with the presence of MCP release sites documented at the subject site, groundwater treatment is necessary to meet allowable effluent limits established by the US EPA prior to discharge. The proposed groundwater treatment system will consist of one settling tank 5,000-gallons in capacity, two bag filters, a granular activated carbon chamber and an ion exchange resin chamber in series in order to meet the applicable discharge limits for naphthalene, PAHs and metals established by the RGP. In order to ensure that the levels of TSS, VOC, PAH and total metals meet the terms of the discharge permit, a sample of the effluent will be submitted for laboratory analysis prior to discharge into the City of Cambridge storm drain system. However, should the effluent motoring results indicate levels of TSS, PAHs and metals in excess of the limits established in the Massachusetts Remedial General Permit, additional mitigative measures will be implemented to meet the allowable discharge limits.

McPHAIL ASSOCIATES, INC

Geotechnical Engineers

We trust that the above satisfies your present requirements. Should you have any questions or comments concerning the above, please do not hesitate to contact us.

Very truly yours,

McPHAIL ASSOCIATES, INC.

William J. Burns

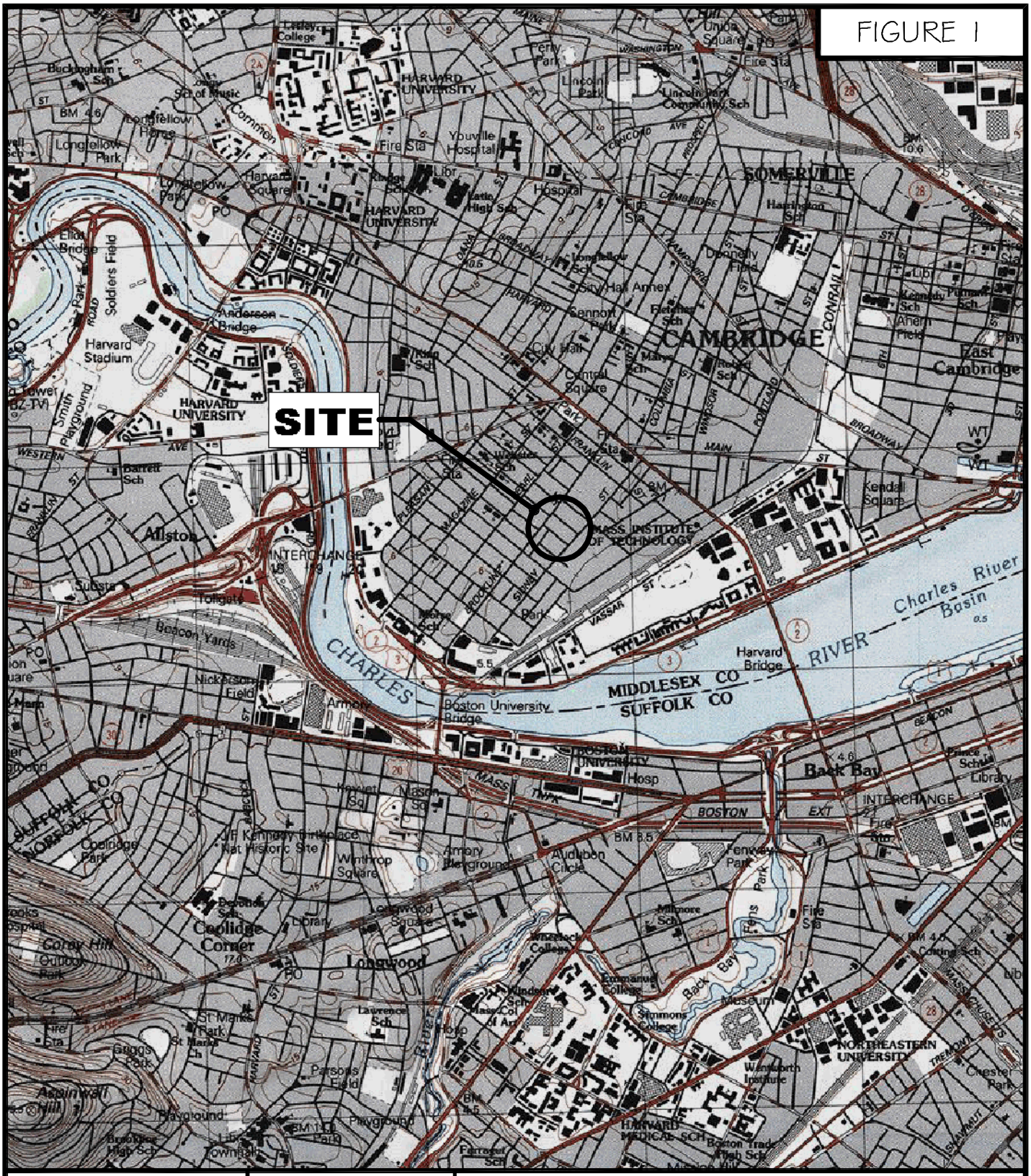
Joseph G. Lombardo Jr., L.S.P.

Enclosures

F:\WP5\REPORTS\3570 RGP(final).wpd

WJB/jgl

FIGURE 1



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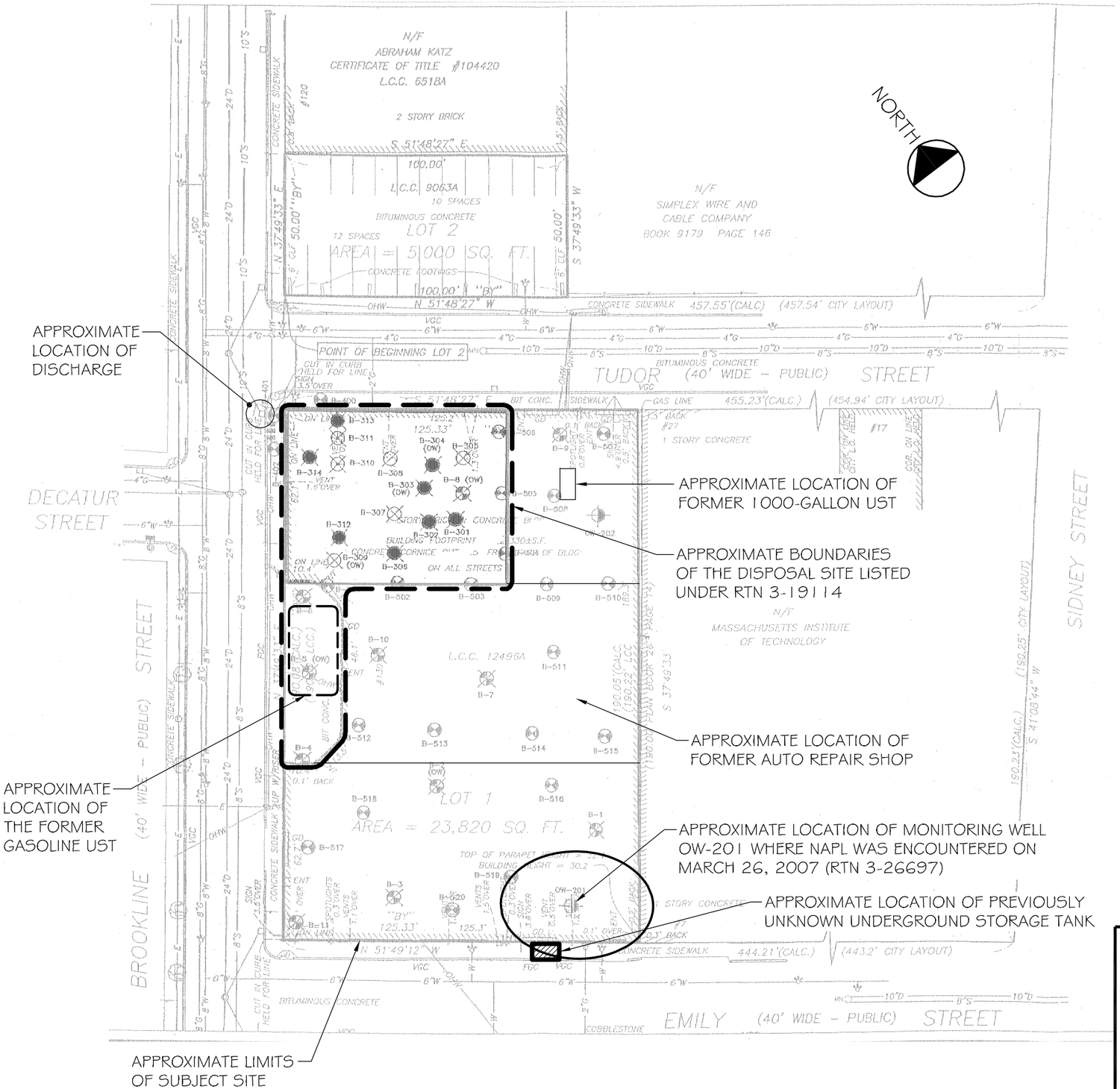
SCALE 1:25,000

PROJECT LOCATION PLAN

130 BROOKLINE STREET

CAMBRIDGE MASSACHUSETTS

FIGURE 2



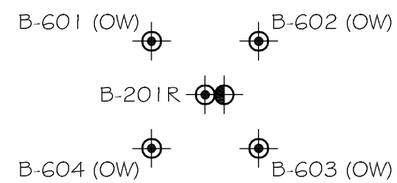
LEGEND

- LOCATION OF BORINGS B-1 THROUGH B-13 WERE PERFORMED BY NEW ENGLAND BORING CONTRACTORS OF CT., INC. IN OCTOBER 1999 FO McPHAIL ASSOCIATES, INC.
- LOCATION OF OW-201 THROUGH OW-203 WERE PERFORMED BY CARR-DEE CORP. IN JULY 1998 FOR OTHERS.
- LOCATION OF MW-1 AND MW-2 WERE PERFORMED BY EMA IN JUNE 1995 FOR OTHERS.
- LOCATION OF BORINGS B-301 THROUGH B-309 WERE PERFORMED BY CARR-DEE CORP. IN JUNE 2000 FOR McPHAIL ASSOCIATES, INC.
- LOCATION OF BORINGS B-310 THROUGH B-314 WERE PERFORMED BY PINE & SWALLOW IN JUNE 2000 FOR McPHAIL ASSOCIATES, INC.
- DESIGNATION AND APPROXIMATE LOCATION OF GEO-PROBE DRILLED BY NEW HAMPSHIRE BORING, INC. FOR COM.

NOTE:
BASE PLAN PREPARED FROM A DRAWING ENTITLED "ALTA/ACSM LAND TITLE SURVEY", PREPARED BY HARRY R. FELDMAN INC., DATED FEBRUARY 28, 2002.

REFER TO FIGURE 3 FOR THE APPROXIMATE LIMITS OF THE MCP SITE LISTED UNDER RTN 3-26697

DETAIL
1" = 16'



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130 BROOKLINE STREET
CAMBRIDGE MASSACHUSETTS

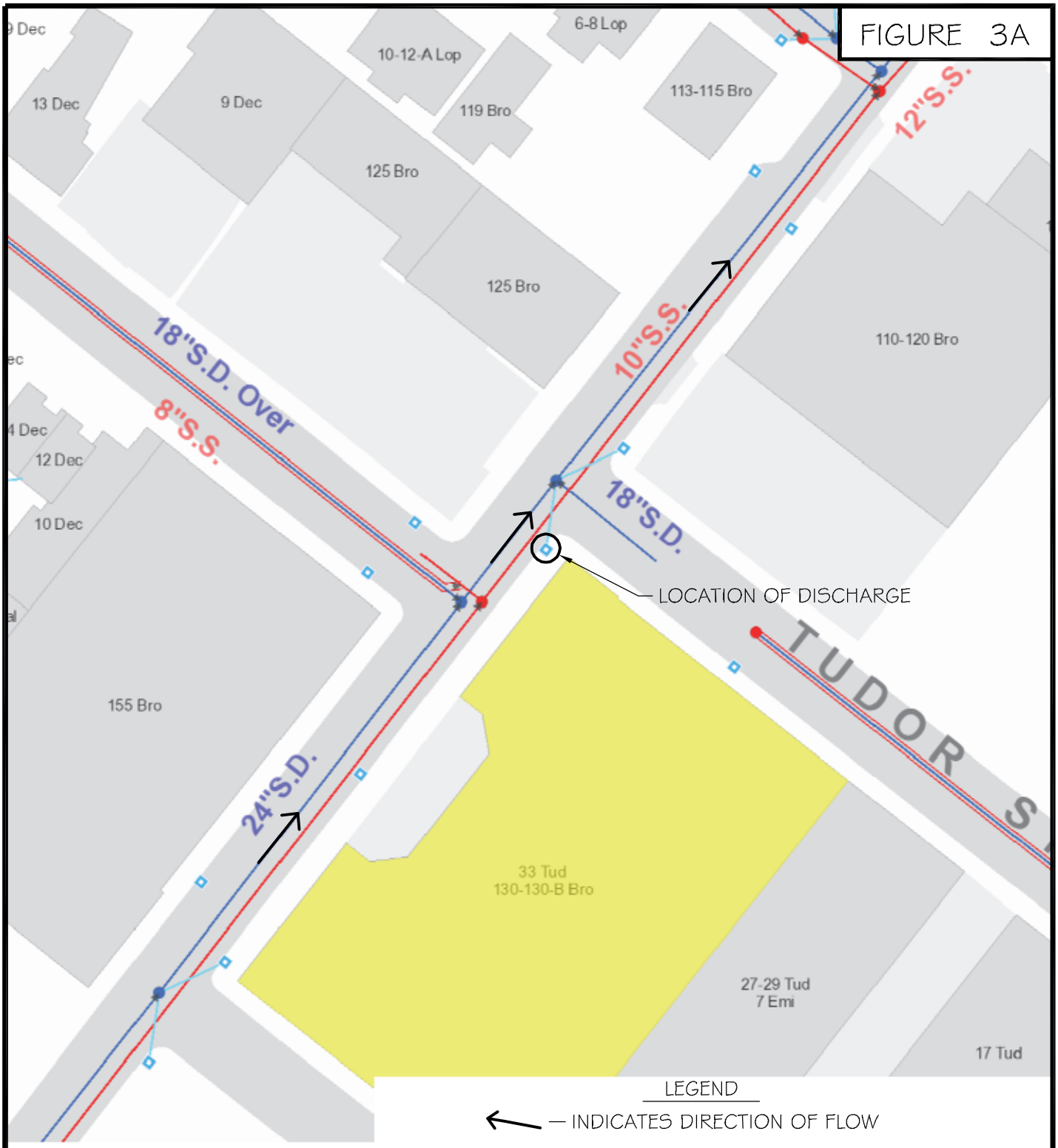
SUBSURFACE EXPLORATION PLAN

FOR
MIT 130 BROOKLINE LLC
BY
McPHAIL ASSOCIATES, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Date: OCTOBER 2008	Dwn: F.G.P.	Chkd: A.B.J.	Scale: 1" = 40'
Project No: 3570			

FILE NAME: 3570-F02rev2

FIGURE 3A



LEGEND

← — INDICATES DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE SEWER AND WATER ATLAS DATABASE.

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130 BROOKLINE STREET

CAMBRIDGE MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PLAN

FOR

WALSH BROS. INC.

BY

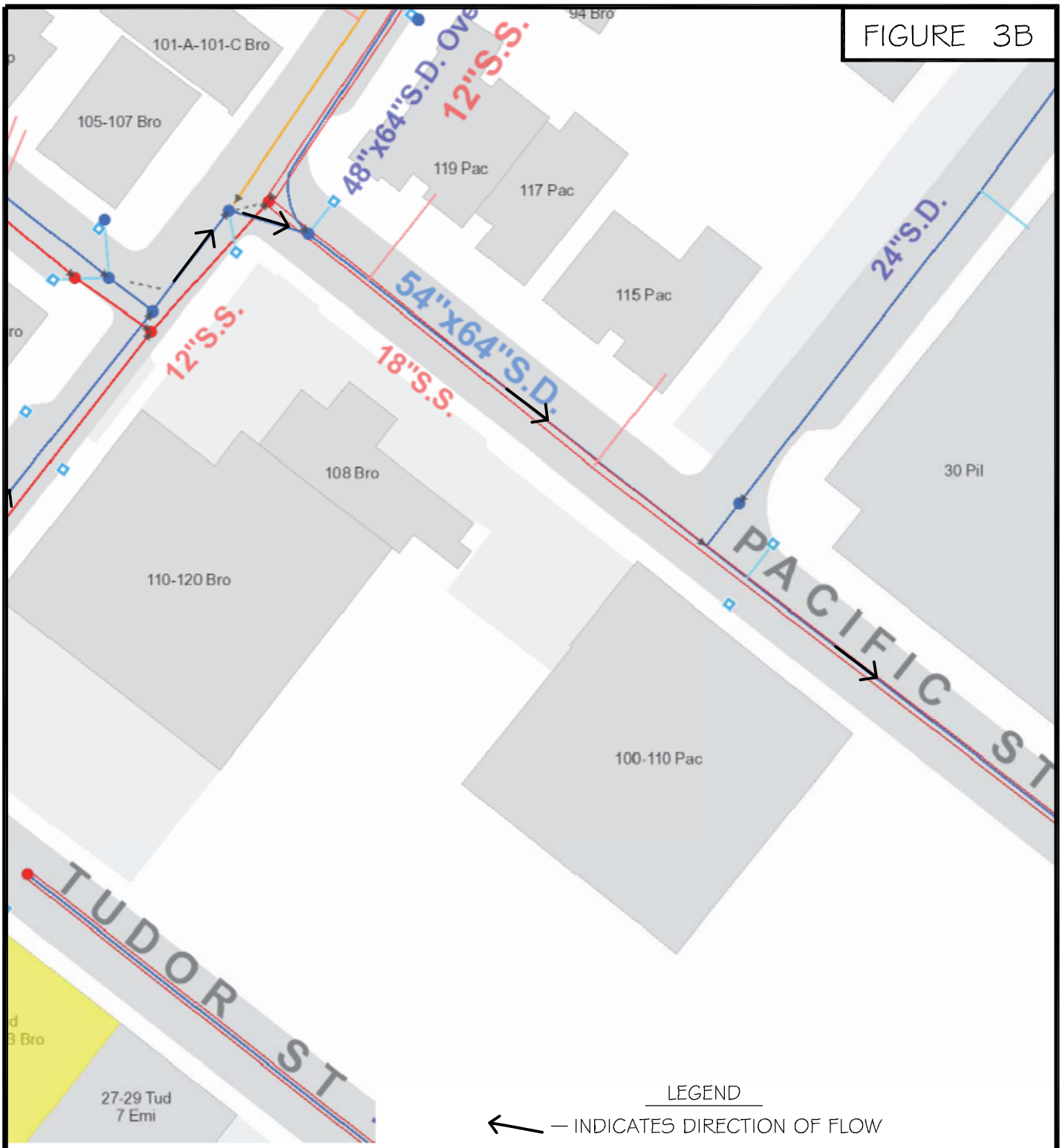
McPHAIL ASSOCIATES, INC.

CONSULTING GEOTECHNICAL ENGINEERS

Date: NOVEMBER 2011	Dwn: F.G.P.	Chkd: W.J.B.	Scale: 1" = 50'
Project No: 3570			

FILE NAME: RGP Permit\3570-F03

FIGURE 3B



LEGEND

← — INDICATES DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE SEWER AND WATER ATLAS DATABASE.

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130 BROOKLINE STREET

CAMBRIDGE MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PLAN

FOR

WALSH BROS. INC.

BY

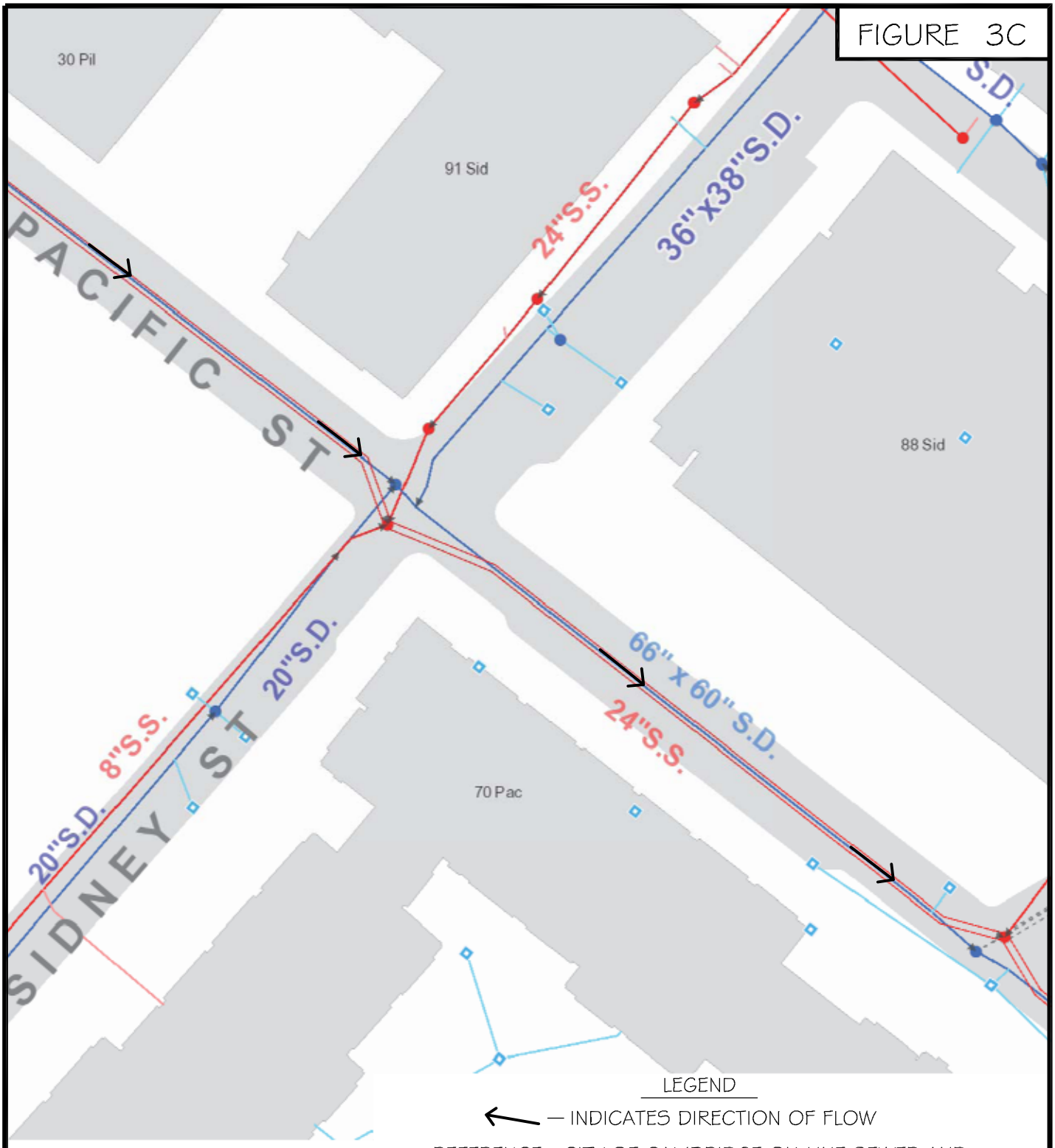
McPHAIL ASSOCIATES, INC.

CONSULTING GEOTECHNICAL ENGINEERS

Date: NOVEMBER 2011	Dwn: F.G.P.	Chkd: W.J.B.	Scale: 1" = 50'
Project No: 3570			

FILE NAME: RGP Permit\3570-F03

FIGURE 3C



LEGEND

← — INDICATES DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE SEWER AND WATER ATLAS DATABASE.

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130 BROOKLINE STREET

CAMBRIDGE MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PLAN

FOR

WALSH BROS. INC.

BY

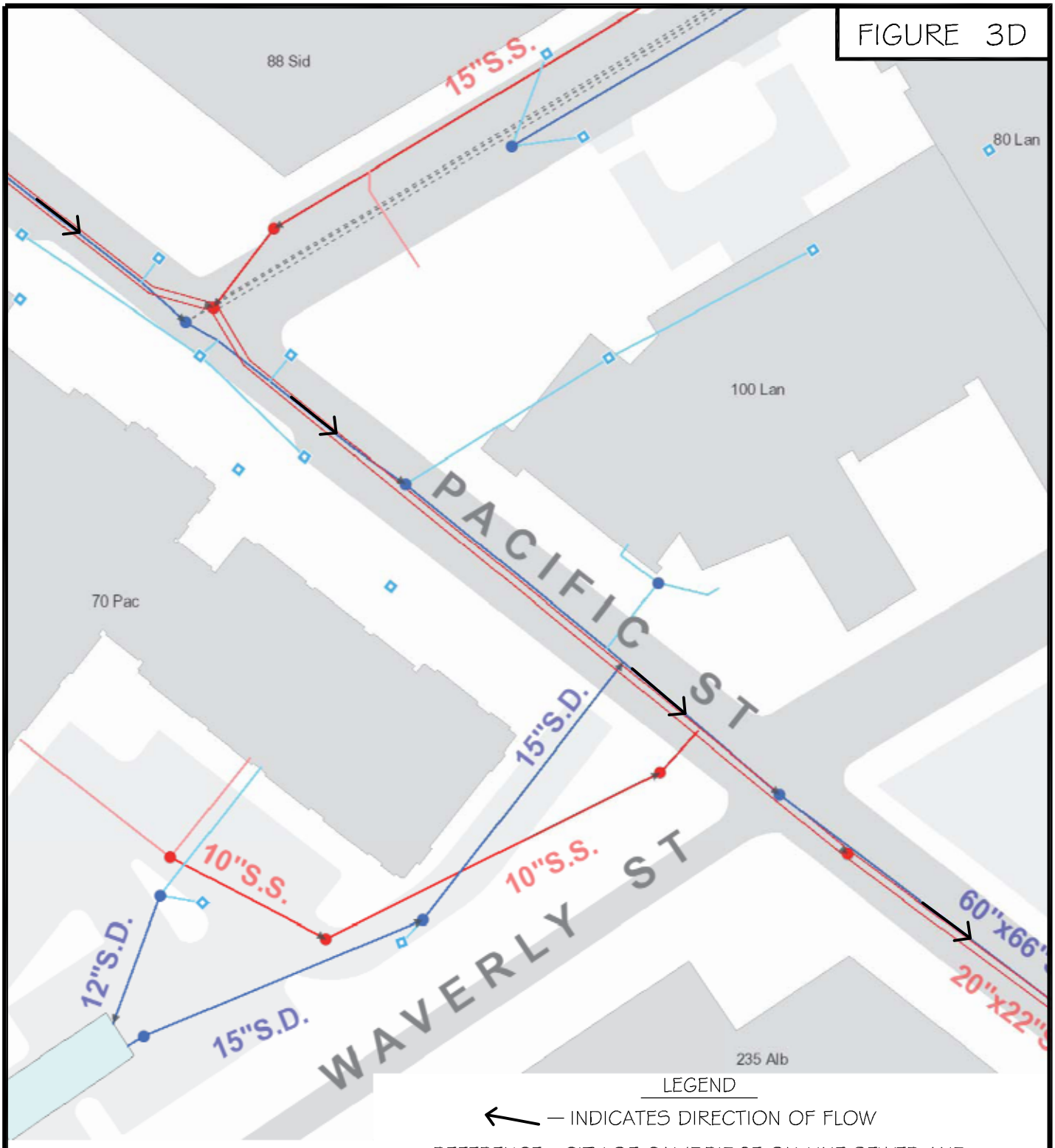
McPHAIL ASSOCIATES, INC.

CONSULTING GEOTECHNICAL ENGINEERS

Date: NOVEMBER 2011	Dwn: F.G.P.	Chkd: W.J.B.	Scale: 1" = 50'
Project No: 3570			

FILE NAME: RGP Permit\3570-F03

FIGURE 3D



LEGEND

← — INDICATES DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE SEWER AND WATER ATLAS DATABASE.

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130 BROOKLINE STREET

CAMBRIDGE MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PLAN

FOR

WALSH BROS. INC.

BY

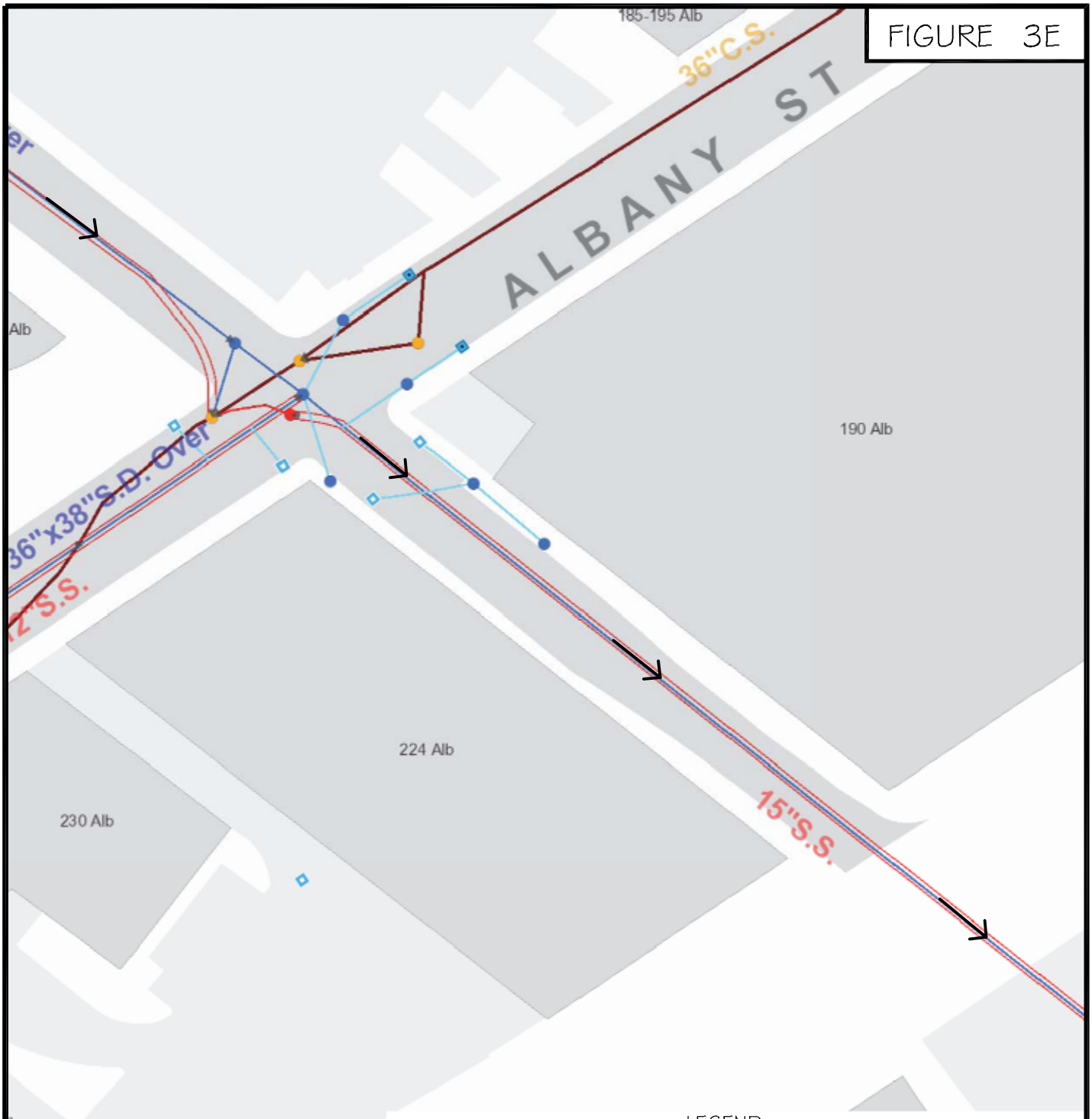
McPHAIL ASSOCIATES, INC.

CONSULTING GEOTECHNICAL ENGINEERS

Date: NOVEMBER 2011	Dwn: F.G.P.	Chkd: W.J.B.	Scale: 1" = 50'
Project No: 3570			

FILE NAME: RGP Permit\3570-F03

FIGURE 3E



LEGEND

← — INDICATES DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE SEWER AND WATER ATLAS DATABASE.

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130 BROOKLINE STREET

CAMBRIDGE MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PLAN

FOR

WALSH BROS. INC.

BY

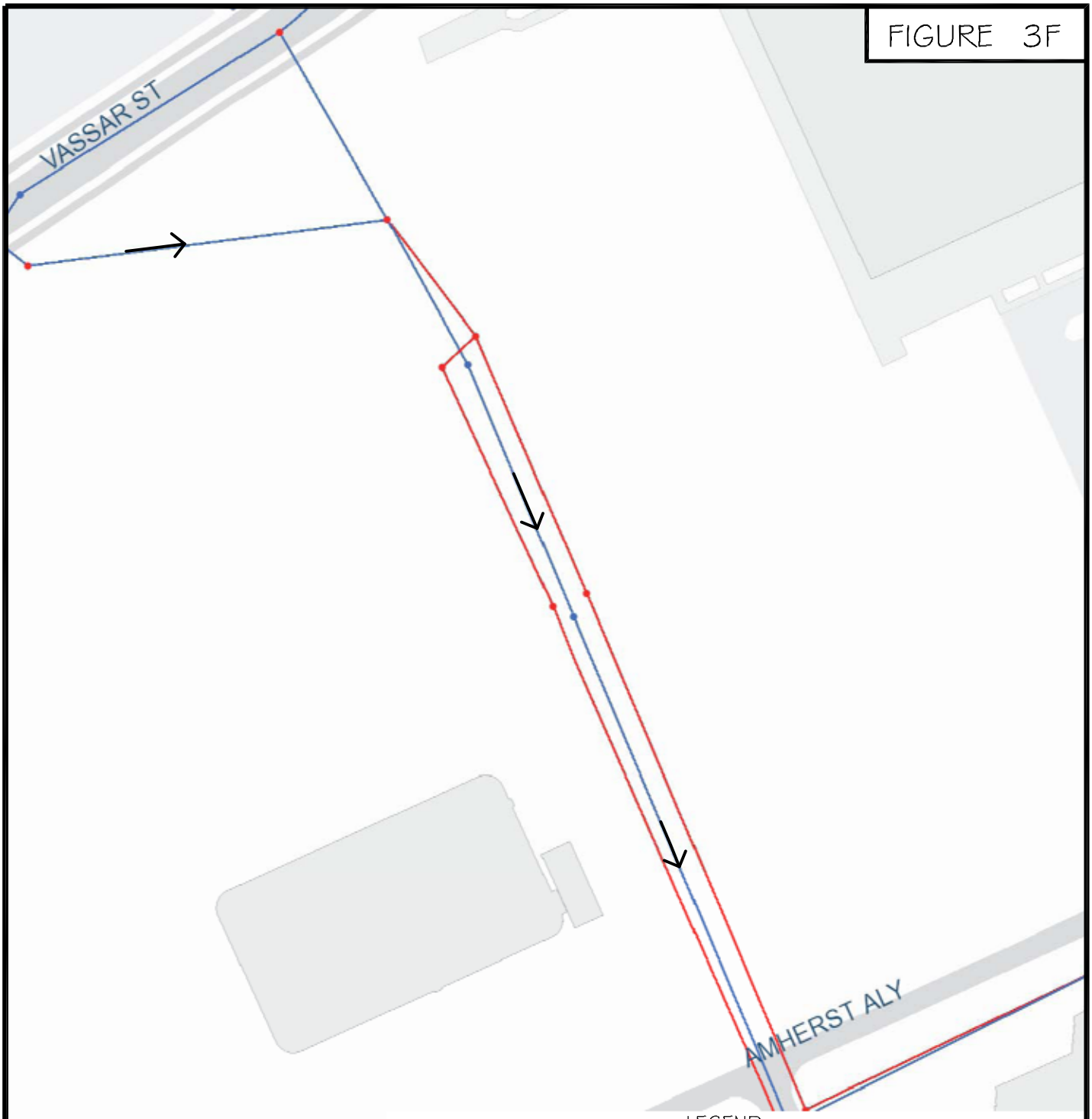
McPHAIL ASSOCIATES, INC.

CONSULTING GEOTECHNICAL ENGINEERS

Date: NOVEMBER 2011	Dwn: F.G.P.	Chkd: W.J.B.	Scale: 1" = 50'
Project No: 3570			

FILE NAME: RGP Permit\3570-F03

FIGURE 3F



LEGEND

← — INDICATES DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE SEWER AND WATER ATLAS DATABASE.

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130 BROOKLINE STREET

CAMBRIDGE MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PLAN

FOR

WALSH BROS. INC.

BY

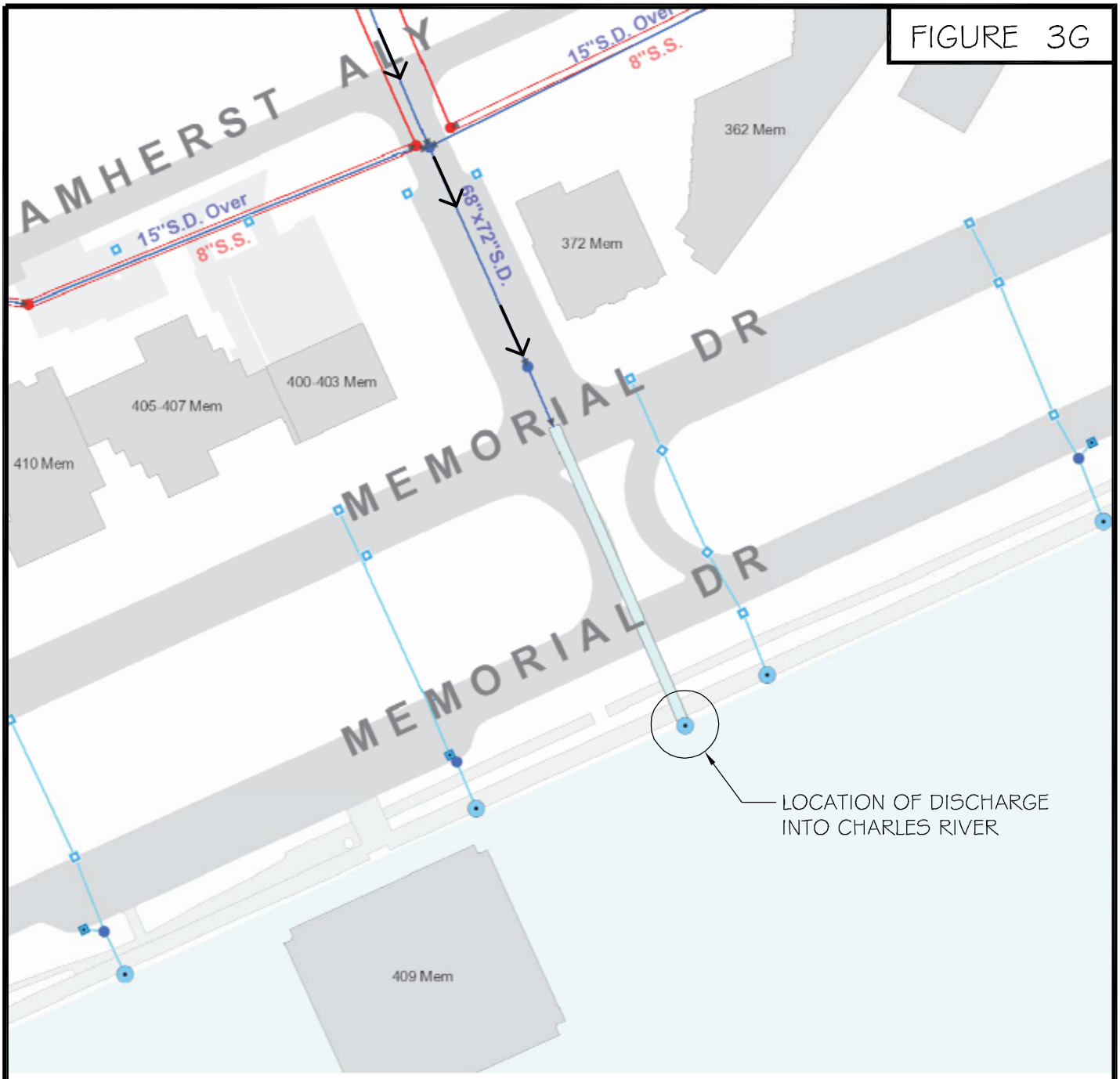
McPHAIL ASSOCIATES, INC.

CONSULTING GEOTECHNICAL ENGINEERS

Date: NOVEMBER 2011	Dwn: F.G.P.	Chkd: W.J.B.	Scale: 1" = 100'
Project No: 3570			

FILE NAME: RGP Permit\3570-F03

FIGURE 3G



LEGEND

← — INDICATES DIRECTION OF FLOW

REFERENCE: CITY OF CAMBRIDGE ON-LINE SEWER AND WATER ATLAS DATABASE.

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130 BROOKLINE STREET

CAMBRIDGE MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PLAN

FOR

WALSH BROS. INC.

BY

McPHAIL ASSOCIATES, INC.

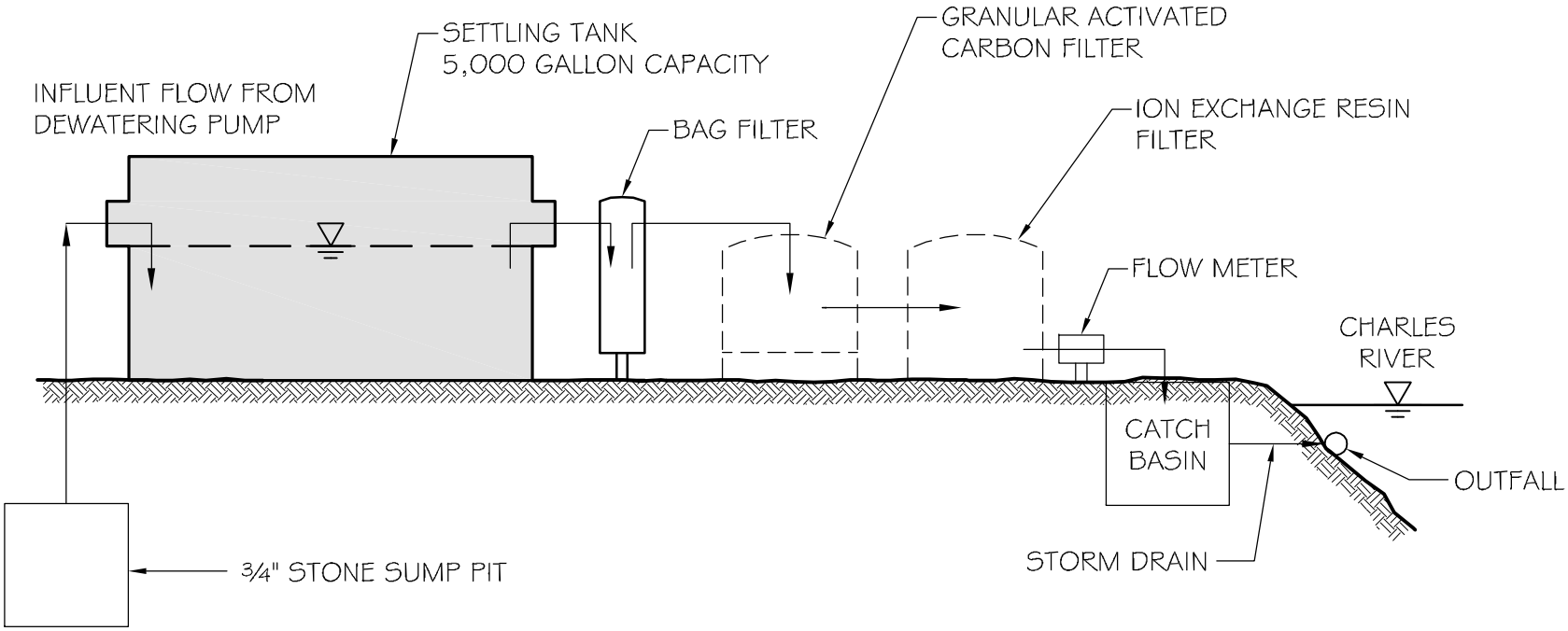
CONSULTING GEOTECHNICAL ENGINEERS

Date: NOVEMBER 2011	Dwn: F.G.P.	Chkd: W.J.B.	Scale: 1" = 80'
Project No: 3570			

FILE NAME: RGP Permit\3570-F03

FILE NAME: RGP Permit\3570-F04

FIGURE 4



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130 BROOKLINE STREET
CAMBRIDGE MASSACHUSETTS

SCHEMATIC OF TREATMENT SYSTEM

FOR
WALSH BROTHERS, INC.
BY
McPHAIL ASSOCIATES, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Date: NOVEMBER 2011	Dwn: F.G.P.	Chkd: W.J.B.	Scale: N.T.S.
Project No: 3570			

Table 1
Analytical Results-Groundwater
(RGP Application)

130 Brookline Street
Cambridge, MA
Job # 3570

LOCATION		RGP Limits	RGP Limits with DF	Units	**B-303 (OW)**
SAMPLING DATE					**21-OCT-11**
LAB SAMPLE ID					**L1117267-01**
1	Total Suspended Solids	30		mg/l	ND(5)
	pH (H)	6.5-8.3		SU	6.5
2	Total Residual Chlorine (freshwater)	11		ug/l	ND(20)
3	TPH	5000		ug/l	ND(4000)
4	Total Cyanide (freshwater)	5.2		ug/l	ND(5)
5	Benzene	Total BTEX		ug/l	0.045
6	Toluene	Total BTEX		ug/l	0.013
7	Ethylbenzene	Total BTEX		ug/l	0.37
8	Xylene (Total)	Total BTEX		ug/l	0.327
9	**Total BTEX**	100		ug/l	0.755
10	1,2-Dibromoethane	0.05		ug/l	ND(0.01)
11	Methyl-tert-Butyl Ether (MtBE)	70		ug/l	ND(10)
12	tert-Butyl Alcohol (TBA) (Tertiary Butar	Monitor Only		ug/l	ND(300)
13	tert-Amyl Methyl Ether (TAME)	Monitor Only		ug/l	ND(20)
14	Naphthalene (SVOC)	20		ug/l	210
15	Carbon tetrachloride	4.44		ug/l	ND(5)
16	1,2 Dichlorobenzene (o-DCB)	600		ug/l	ND(5)
17	1,3 Dichlorobenzene (m-DCB)	320		ug/l	ND(25)
18	1,4 Dichlorobenzene (p-DCB)	5		ug/l	ND(25)
19	1,1-Dichloroethane (DCA)	70		ug/l	ND(7.5)
20	1,2-Dichloroethane	5		ug/l	ND(5)
21	1,1-Dichloroethene	3.2		ug/l	ND(5)
22	cis-1,2-Dichloroethene	70		ug/l	ND(5)
23	Methylene Chloride	4.6		ug/l	ND(30)
24	Tetrachloroethene	5		ug/l	ND(5)
25	1,1,1-Trichloroethane	200		ug/l	ND(5)
26	1,1,2-Trichloroethane	5		ug/l	ND(7.5)
27	Trichloroethene	5		ug/l	ND(5)
28	Vinyl chloride	2		ug/l	ND(10)
29	Acetone	Monitor Only		ug/l	ND(50)
30	1,4 Dioxane	Monitor Only		ug/l	ND(2500)
31	Total Phenolics	300		ug/l	ND(30)
32	Pentachlorophenol	1		ug/l	ND(0.8)
33	Total Phthalates (Phthalate esters)	3		ug/l	ND(5)
34	Bis(2-Ethylhexyl)phthalate	6		ug/l	ND(3)
35	**Total Group I PAH**	10		ug/l	ND
a	Benzo(a)anthracene	0.0038		ug/l	ND(0.2)
b	Benzo(a)pyrene	0.0038		ug/l	ND(0.2)
c	Benzo(b)fluoranthene	0.0038		ug/l	ND(0.2)
d	Benzo(k)fluoranthene	0.0038		ug/l	ND(0.2)
e	Chrysene	0.0038		ug/l	ND(0.2)
f	Dibenzo(a,h)anthracene	0.0038		ug/l	ND(0.2)
g	Indeno(1,2,3-cd)Pyrene	0.0038		ug/l	ND(0.2)
36	**Total Group II PAH**	10		ug/l	161.06
h	Acenaphthene	Total Group II PAH		ug/l	5.6
i	Acenaphthylene	Total Group II PAH		ug/l	ND(0.2)
j	Anthracene	Total Group II PAH		ug/l	ND(0.2)
k	Benzo(ghi)perylene	Total Group II PAH		ug/l	ND(0.2)
l	Fluoranthene	Total Group II PAH		ug/l	ND(0.2)
m	Fluorene	Total Group II PAH		ug/l	0.29
n	Naphthalene	20		ug/l	160
o	Phenanthrene	Total Group II PAH		ug/l	0.21
p	Pyrene	Total Group II PAH		ug/l	ND(0.2)
37	**Total PCBs**	0.000046		ug/l	ND(0.25)
38	Chloride	Monitor Only		ug/l	440000
	Total Recoverable Metal Limits				
38	Antimony	5.6	0.141	ug/l	1
39	Arsenic (freshwater)	10	0.54	ug/l	0.0014
40	Cadmium (freshwater)	3	0.02	ug/l	ND(0.2)
41	Chromium III (freshwater)	48.8	1.71	ug/l	0.029
42	Chromium IV, Hexavalent (freshwater)	11.4	1.14	ug/l	ND(10)
44	Copper	5.2	0.52	ug/l	0.0007
45	Lead	1.3	0.132	ug/l	ND(0.5)
46	Mercury	0.9	0.0023	ug/l	ND(0.2)
47	Nickel	29	2.38	ug/l	0.1763
48	Nickel, dissolved	29	2.38	ug/l	0.166
49	Selenium	5	0.408	ug/l	0.002
50	Silver	1.2	0.115	ug/l	ND(0.4)
51	Zinc	66.6	1.48	ug/l	ND(10)
52	Iron	1000	5	ug/l	13

ND()-not detected above laboratory method detection limits
Highlight-exceeds EPA Effluent Limit

TABLE 2
Calculations of Mass of Compounds
130 Brookline Street
Cambridge, Massachusetts
McPhail Job No. 3570

Avg flow (GPM) = 20
Avg Flow (MGD) = 0.0288

Compound #	Average Concentration (ug/l)	Average Concentration (mg/l)	**MASS (kg)**
Benzene	45	0.045	**0.005**
Toluene	13	0.013	**0.00142**
Ethylbenzene	370.0	0.37	**0.04040**
Total Xylenes	327.0	0.327	**0.03570**
Total BTEX	755.0	0.755	**0.08243**
Napthalene	210.0	0.21	**0.02293**
Total Group II PAH	161	0.161	**0.01758**
Acenaphthene	0.56	0.00056	**0.00006**
Fluorene	0.29	0.00029	**0.00003**
Naphthlene	160	0.16	**0.01747**
Phenanthrene	0.21	0.00021	**0.00002**
Chloride	440000	440	**48.03840**
Arsenic	1.4	0.0014	**0.00015**
Chromium III	29	0.029	**0.00317**
Copper	0.7	0.0007	**0.00008**
Nickel	176.3	0.1763	**0.01925**
Selenium	2	0.002	**0.00022**
Iron	13000	**13**	**1.41932**

Avg flow (GPM) = 30
Avg Flow (MGD) = 0.0432

Compound #	Max Concentration (ug/l)	Max Concentration (mg/l)	**MASS (kg)**
Benzene	45	0.045	**0.0074**
Toluene	13	0.013	**0.0021**
Ethylbenzene	370.0	0.37	**0.0606**
Total Xylenes	327.0	0.327	**0.0536**
Total BTEX	755.0	0.755	**0.1236**
Napthalene	210.0	0.21	**0.0344**
Total Group II PAH	161	0.161	**0.0264**
Acenaphthene	0.56	0.00056	**0.0001**
Fluorene	0.29	0.00029	**0.0000**
Naphthlene	160	0.16	**0.0262**
Phenanthrene	0.21	0.00021	**0.0000**
Chloride	440000	440	**72.0576**
Arsenic	1.4	0.0014	**0.0002**
Chromium III	29	0.029	**0.0047**
Copper	0.7	0.0007	**0.0001**
Nickel	176.3	0.1763	**0.0289**
Selenium	2	0.002	**0.0003**
Iron	13000	13	**2.1290**

GPM = Gallons Per Minute
MGD = Million Gallons Per Day
ug/l = Micrograms per liter
mg/l = Milligrams per liter
kg = Kilograms

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APPENDIX A

Limitations

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Limitations

The purpose of this report is to present a summary of environmental conditions, including the results of testing of groundwater samples obtained from monitoring wells on the property located at 130 Brookline Street in Cambridge, Massachusetts, in support of an application for approval of construction site dewatering discharge into surface waters of the Commonwealth of Massachusetts under EPA's Massachusetts Remedial General Permit MAG910000.

The observations were made under the conditions stated in this report. The conclusions presented above were based on these observations. If variations in the nature and extent of subsurface conditions between the spaced subsurface explorations become evident in the future, it will be necessary to re-evaluate the conclusions presented herein after performing on-site observations and noting the characteristics of any variations.

The conclusions submitted in this report are based in part upon analytical data obtained from analysis of groundwater samples, and are contingent upon their validity. The data have been reviewed, and interpretations have been made in the text. It should also be noted that fluctuations in the types and levels of contaminants and variations in their flow paths may occur due to changes in seasonal water table, past practices used in disposal and other factors.

Laboratory analyses have been performed for specific constituents during the course of this assessment, as described in the text. However, it should be noted that additional constituents not searched for during the current study may be present in soil and/or groundwater at the site.

This report and application have been prepared on behalf of and for the exclusive use of Walsh Brothers Inc. and MIT 130 Brookline LLC. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, other than the US EPA, nor used in whole or in part by any other party without prior written consent of McPhail Associates, Inc

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APPENDIX B

Notice of Intent for Construction Site Dewatering

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**: 130 Brookline Street		**Facility/site** mailing address:		
Location of **facility/site**: longitude: -71.1045 latitude: 42.3604	Facility SIC code(s):	Street: 130 Brookline Street		
b) Name of **facility/site owner:** MIT 130 Brookline LLC		Town: Cambridge		
Email address of facility/site owner: ken.williams@mit.edu		State: MA	Zip: 02139	County: Middlesex
Telephone no. of facility/site **owner**: 617-452-2240				
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: 238 Main Street, Suite 200				
Town: Cambridge	State: MA	Zip: 02142	County: Middlesex	
c) Legal name of **operator**:	**Operator** telephone no: 617-878-4800			
Walsh Brothers, Inc.	**Operator** fax no.: 617-720-6116	**Operator** email: kleonard@walshbrothers.com		
Operator contact name and title: Kris Leonard (Senior Project Manager)				
Address of **operator** (if different from owner):	Street: 210 Commercial Street			
Town: Boston	State: MA	Zip: 02109	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:
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

f) Is the site/facility covered by any other EPA permit, including:
1. Multi-Sector General Permit? Y ○ N ◉,
if Y, number:
2. Final Dewatering General Permit? Y ○ N ◉,
if Y, number:
3. EPA Construction General Permit? Y ○ N ◉,
if Y, number:
4. Individual NPDES permit? Y ○ N ◉,
if Y, number:
5. any other water quality related individual or general permit? Y ○ N ◉, if Y, number:

g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ○ N ◉

h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.

Activity Category	**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:

Temporary Construction Dewatering

b) Provide the following information about each discharge:

1) Number of discharge points: 1

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)?
Max. flow: 0.669 Is maximum flow a **design value**? Y ○ N ◉
Average flow (include units): .446 ft3/s Is average flow a design value or estimate? no

3) Latitude and longitude of each discharge within 100 feet:
pt.1: lat. 42.3604 long. -71.1045 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 12/15/2011 end 06/13/2012

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). Please refer to the 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	30,2540D	5000	ND			
2. Total Residual Chlorine (TRC)		☒	☐	1	grab	30,4500CL-D	20	ND			
3. Total Petroleum Hydrocarbons (TPH)		☐	☒	1	grab	74,1664A	4000	ND			
4. Cyanide (CN)	57125	☒	☐	1	grab	30,4500CN-CE	5	ND			
5. Benzene (B)	71432	☒	☐	1	grab	1,8260B		45	0.0074		
6. Toluene (T)	108883	☒	☐	1	grab	1,8260B		13	0.0021		
7. Ethylbenzene (E)	100414	☒	☐	1	grab	1,8260B		370	0.0606		
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	1	grab	1,8260B		327	0.0536		
9. Total BTEX [2]	n/a	☒	☐	1	grab	1,8260B		755	0.1236		
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐	1	grab	1,8260B	0.01	ND			
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	1	grab	1,8260B	10	ND			
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1	grab	1,8260B	300	ND			

***** 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	1,8260B	20	ND			
14. Naphthalene	91203	☐	☒	1	grab	1,8260B		210	0.0344		
15. Carbon Tetrachloride	56235	☒	☐	1	grab	1,8260B	5	ND			
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	grab	1,8260B	5	ND			
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	grab	1,8260B	25	ND			
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	grab	1,8260B	25	ND			
18a. Total dichlorobenzene		☒	☐	1	grab	1,8260B	25	ND			
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	1	grab	1,8260B	7.5	ND			
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	1	grab	1,8260B	5	ND			
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	1	grab	1,8260B	5	ND			
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	1	grab	1,8260B	5	ND			
23. Methylene Chloride	75092	☒	☐	1	grab	1,8260B	30	ND			
24. Tetrachloroethene (PCE)	127184	☒	☐	1	grab	1,8260B	5	ND			
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	1	grab	1,8260B	5	ND			
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	1	grab	1,8260B	7.5	ND			
27. Trichloroethene (TCE)	79016	☒	☐	1	grab	1,8260B	5	ND			

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	1,8260B	10	ND			
29. Acetone	67641	☒	☐	1	grab	1,8260B	50	ND			
30. 1,4 Dioxane	123911	☒	☐	1	grab	1,8260B	2500	ND			
31. Total Phenols	108952	☒	☐	1	grab	1,8260B	30	ND			
32. Pentachlorophenol (PCP)	87865	☒	☐	1	grab		0.8	ND			
33. Total Phthalates (Phthalate esters) [4]		☒	☐	1	grab						
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1	grab						
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1	grab	1,827C		ND			
a. Benzo(a) Anthracene	56553	☒	☐	1	grab	1,827C	0.2	ND			
b. Benzo(a) Pyrene	50328	☒	☐	1	grab	1,827C	0.2	ND			
c. Benzo(b)Fluoranthene	205992	☒	☐	1	grab	1,827C	0.2	ND			
d. Benzo(k)Fluoranthene	207089	☒	☐	1	grab	1,827C	0.2	ND			
e. Chrysene	21801	☒	☐	1	grab	1,827C	0.2	ND			
f. Dibenzo(a,h)anthracene	53703	☒	☐	1	grab	1,827C	0.2	ND			
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1	grab	1,827C	0.2	ND			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☐	☒	1	grab	1,827C		161.06	0.01758		

[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	GC/MS-SIM		0.56	0.00006		
i. Acenaphthylene	208968	☒	☐	1	grab	GC/MS-SIM	0.2	ND			
j. Anthracene	120127	☒	☐	1	grab	GC/MS-SIM	0.2	ND			
k. Benzo(ghi) Perylene	191242	☒	☐	1	grab	GC/MS-SIM	0.2	ND			
l. Fluoranthene	206440	☒	☐	1	grab	GC/MS-SIM	0.2	ND			
m. Fluorene	86737	☐	☒	1	grab	GC/MS-SIM		0.29	0.00003		
n. Naphthalene	91203	☐	☒	1	grab	GC/MS-SIM		160	0.01747		
o. Phenanthrene	85018	☐	☒	1	grab	GC/MS-SIM		0.21	0.00002		
p. Pyrene	129000	☒	☐	1	grab	GC/MS-SIM	0.2	ND			
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1	grab	EPA 608		ND			
38. Chloride	16887006	☐	☒	1	grab	44,300		440000	48.038		
39. Antimony	7440360	☒	☐	1	grab	16020	1	ND			
40. Arsenic	7440382	☐	☒	1	grab	16020		1.4	0.0002		
41. Cadmium	7440439	☒	☐	1	grab	16020	0.2	ND			
42. Chromium III (trivalent)	16065831	☐	☒	1	grab	30,3500CR-D		29.9	0.0047		
43. Chromium VI (hexavalent)	18540299	☒	☐	1	grab	30,3500-CR	10	ND			
44. Copper	7440508	☐	☒	1	grab	16020		0.7	0.0001		
45. Lead	7439921	☒	☐	1	grab	16020		ND			
46. Mercury	7439976	☒	☐	1	grab	3,245.1		ND			
47. Nickel	7440020	☐	☒	1	grab	16020		176.3	0.0289		
48. Selenium	7782492	☐	☒	1	grab	16020		2	0.0003		
49. Silver	7440224	☒	☐	1	grab	16020		ND			
50. Zinc	7440666	☒	☐	1	grab	16020		ND			
51. Iron	7439896	☐	☒	1	grab	19,200.7		13000	2.129		
Other (describe):		☐	☐	1							

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)
Dissolved Nickel		☐	☒	1	grab	1,6020		166.3	0.0272		
		☐	☐								

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 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: iron DF: >100 Metal: nickel DF: >100 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:

5,000-gallon settling tank, bag filter, granular activated carbon filtration and resin ionization filtration in series

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):	Ion exchange resin filter		

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system:
Average flow rate of discharge 25 gpm Maximum flow rate of treatment system 75 gpm
Design flow rate of treatment system 100 gpm

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

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:
Please refer to attached report for narrative description and plan

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 Class B

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 24.7 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)? chlorophyll-a, combined biota/habitat bioassessments, DDT, dissolved oxygen, excess algal growth, oil and grease, secchi disk transparency, nutrient/eutrophication biological indicators, phosphorus, PCB in fish tissue

Is there a final TMDL? Y ◉ N ○ If yes, for which pollutant(s)? TMDL for pathogens, TMDL for nutrients

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.

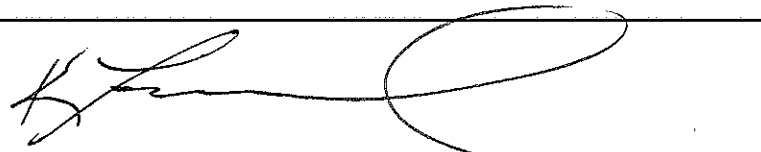
7. Supplemental information.

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

Please refer to 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:	130 Brookline Street
Operator signature:	
Printed Name &Title:	Kris Leonard - Senior Project Manager
Date:	11/6/14

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APPENDIX C

DEP Priority Resources Map

U.S Fish and Wildlife Services Endangered Species List

Massachusetts Division of Fisheries and Wildlife Endangered Species List

MassDEP - Bureau of Waste Site Cleanup

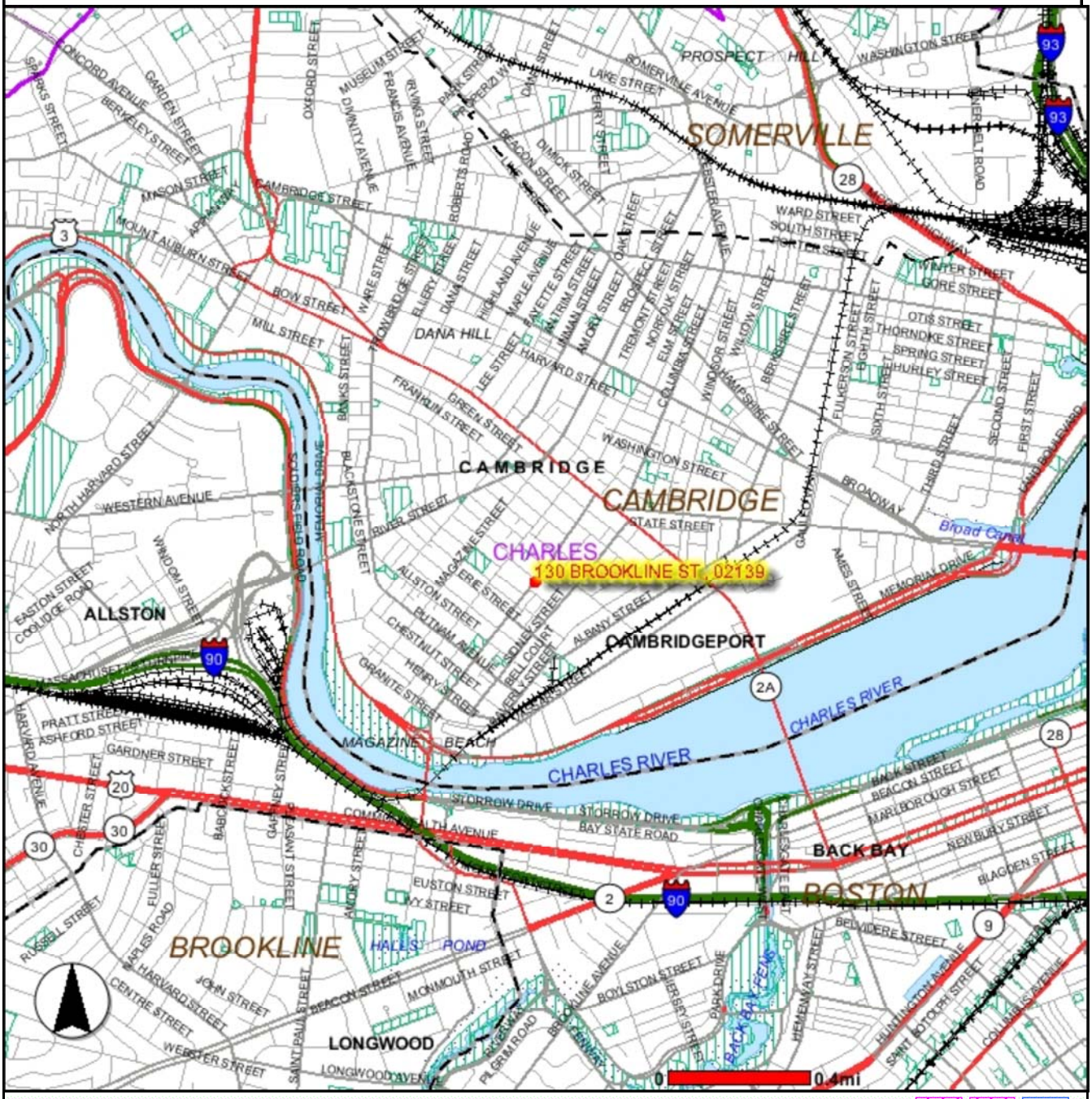
MCP Numerical Ranking System Map: 500 feet & 0.5 Mile Radii

Site Name:
130 Brookline Street
Cambridge, MA
RTN:
NAD83 MA Coordinates:
0mE, 0mN

November 18, 2011

The information shown on this map is the best available at the date of printing. For more information please refer to www.mass.gov/mgis/massgis.htm

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, Sub; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
NHESP: Est Rare Weland Habitat, Certified Vernal Pool
DEP Permitted Solid Waste Landfill

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN
June 2009

Total Approximate Acreage: 268,000 acres
Approximate acreage and designation date follow ACEC names below.

Bourne Back River
(1,850 acres, 1989) Bourne

Canoe River Aquifer and Associated Areas (17,200 acres, 1991) Easton, Foxborough, Mansfield, Norton, Sharon, and Taunton

Cedar Swamp
(1,650 acres, 1975) Hopkinton and Westborough

Central Nashua River Valley
(12,900 acres, 1996) Bolton, Harvard, Lancaster, and Leominster

Cranberry Brook Watershed
(1,050 acres, 1983) Braintree and Holbrook

Ellisville Harbor
(600 acres, 1980) Plymouth

Fowl Meadow and Ponkapoag Bog
(8,350 acres, 1992) Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood

Golden Hills
(500 acres, 1987) Melrose, Saugus, and Wakefield

Great Marsh (originally designated as Parker River/Essex Bay)
(25,500 acres, 1979) Essex, Gloucester, Ipswich, Newbury, and Rowley

Herring River Watershed
(4,450 acres, 1991) Bourne and Plymouth

Hinsdale Flats Watershed
(14,500 acres, 1992) Dalton, Hinsdale, Peru, and Washington

Hockomock Swamp
(16,950 acres, 1990) Bridgewater, Easton, Norton, Raynham, Taunton, and West Bridgewater

Inner Cape Cod Bay
(2,600 acres, 1985) Brewster, Eastham, and Orleans

Kampoosa Bog Drainage Basin
(1,350 acres, 1995) Lee and Stockbridge

Karner Brook Watershed
(7,000 acres, 1992) Egremont and Mount Washington

Miscoe, Warren, and Whitehall Watersheds
(8,700 acres, 2000) Grafton, Hopkinton, and Upton

Neponset River Estuary
(1,300 acres, 1995) Boston, Milton, and Quincy

Petapawag
(25,680 acres, 2002) Ayer, Dunstable, Groton, Pepperell, and Tyngsborough

Pleasant Bay
(9,240 acres, 1987) Brewster, Chatham, Harwich, and Orleans

Pocasset River
(160 acres, 1980) Bourne

Rumney Marshes
(2,800 acres, 1988) Boston, Lynn, Revere, Saugus, and Winthrop

Sandy Neck Barrier Beach System
(9,130 acres, 1978) Barnstable and Sandwich

Schenob Brook Drainage Basin
(13,750 acres, 1990) Mount Washington and Sheffield

Squannassit
(37,420 acres, 2002) Ashby, Ayer, Groton, Harvard, Lancaster, Lunenburg, Pepperell, Shirley, and Townsend

Three Mile River Watershed
(14,280 acres, 2008) Dighton, Norton, Taunton

Upper Housatonic River
(12,280 acres, 2009) Lee, Lenox, Pittsfield, Washington

Waquoit Bay
(2,580 acres, 1979) Falmouth and Mashpee

Weir River
(950 acres, 1986) Cohasset, Hingham, and Hull

Wellfleet Harbor
(12,480 acres, 1989) Eastham, Truro, and Wellfleet

Weymouth Back River
(800 acres, 1982) Hingham and Weymouth

ACEC acreages above are based on MassGIS calculations and may differ from numbers originally presented in designation documents and other ACEC publications due to improvements in accuracy of GIS data and boundary clarifications. Listed acreages have been rounded to the nearest 50 or 10 depending on whether boundary clarification has occurred. For more information please see, http://www.mass.gov/dcr/stewardship/acec/aboutMaps.htm.

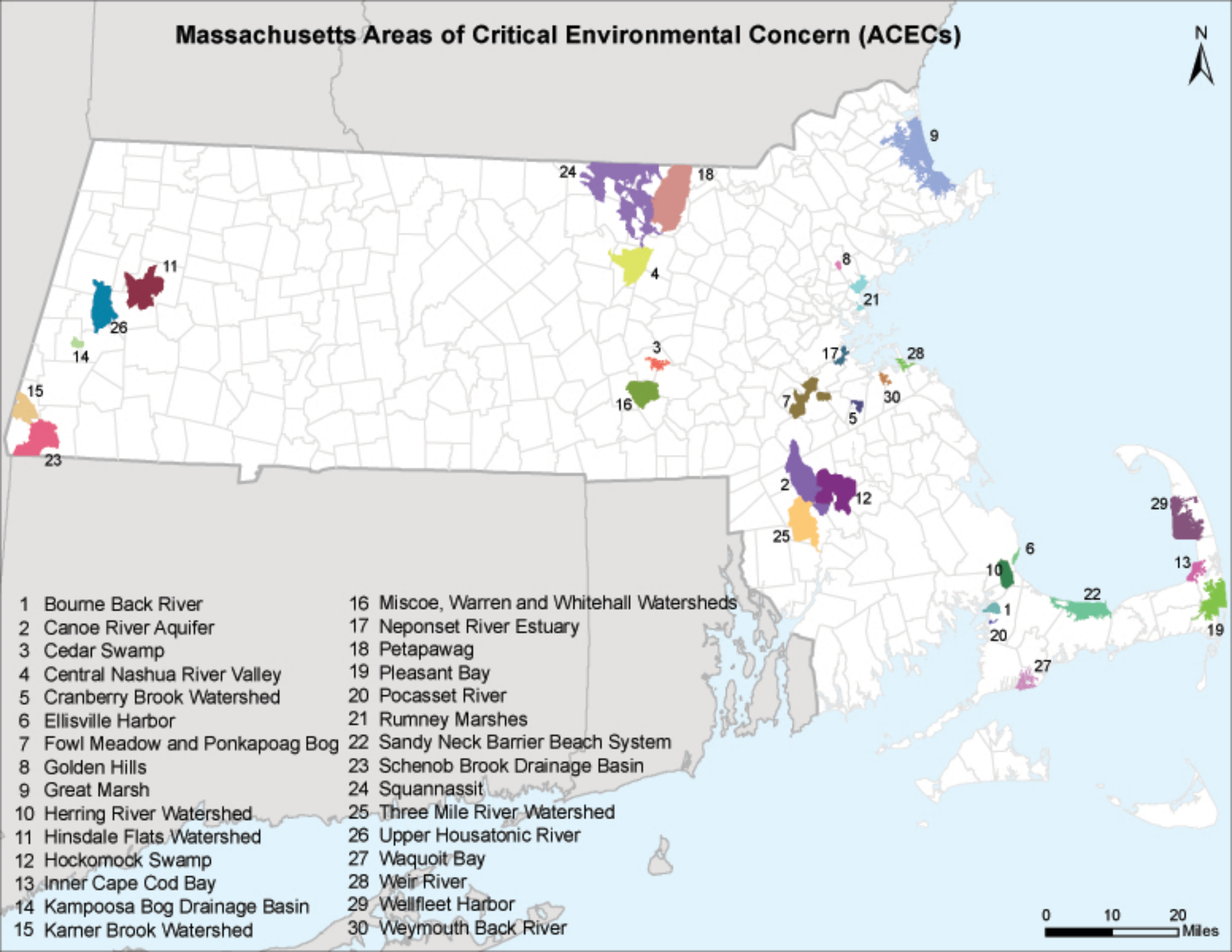
Towns with ACECs within their Boundaries June 2009

TOWN	ACEC
Ashby	Squannassit
Ayer	Petapawag
	Squannassit
Barnstable	Sandy Neck Barrier Beach System
Bolton	Central Nashua River Valley
Boston	Rumney Marshes
	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary
Bourne	Pocasset River
	Bourne Back River
	Herring River Watershed
Braintree	Cranberry Brook Watershed
Brewster	Pleasant Bay
	Inner Cape Cod Bay
Bridgewater	Hockomock Swamp
Canton	Fowl Meadow and Ponkapoag Bog
Chatham	Pleasant Bay
Cohasset	Weir River
Dalton	Hinsdale Flats Watershed
Dedham	Fowl Meadow and Ponkapoag Bog
Dighton	Three Mile River Watershed
Dunstable	Petapawag
Eastham	Inner Cape Cod Bay
	Wellfleet Harbor
Easton	Canoe River Aquifer
	Hockomock Swamp
Egremont	Karner Brook Watershed
Essex	Great Marsh
Falmouth	Waquoit Bay
Foxborough	Canoe River Aquifer
Gloucester	Great Marsh
Grafton	Miscoe-Warren-Whitehall Watersheds
Groton	Petapawag
	Squannassit
Harvard	Central Nashua River Valley
	Squannassit
Harwich	Pleasant Bay
Hingham	Weir River
	Weymouth Back River
Hinsdale	Hinsdale Flats Watershed
Holbrook	Cranberry Brook Watershed
Hopkinton	Miscoe-Warren-Whitehall Watersheds
	Cedar Swamp
Hull	Weir River
Ipswich	Great Marsh
Lancaster	Central Nashua River Valley
	Squannassit
Lee	Kampoosa Bog Drainage Basin
	Upper Housatonic River
Lenox	Upper Housatonic River
Leominster	Central Nashua River Valley
Lunenburg	Squannassit
Lynn	Rumney Marshes
Mansfield	Canoe River Aquifer
Mashpee	Waquoit Bay
Melrose	Golden Hills
Milton	Fowl Meadow and Ponkapoag Bog
	Neponset River Estuary

TOWN	ACEC
Mt. Washington	Karner Brook Watershed
	Schenob Brook
Newbury	Great Marsh
Norton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Norwood	Fowl Meadow and Ponkapoag Bog
Orleans	Inner Cape Cod Bay
	Pleasant Bay
Pepperell	Petapawag
	Squannassit
Peru	Hinsdale Flats Watershed
Pittsfield	Upper Housatonic River
Plymouth	Herring River Watershed
	Ellisville Harbor
Quincy	Neponset River Estuary
Randolph	Fowl Meadow and Ponkapoag Bog
Raynham	Hockomock Swamp
Revere	Rumney Marshes
Rowley	Great Marsh
Sandwich	Sandy Neck Barrier Beach System
Saugus	Rumney Marshes
	Golden Hills
Sharon	Canoe River Aquifer
	Fowl Meadow and Ponkapoag Bog
Sheffield	Schenob Brook
Shirley	Squannassit
Stockbridge	Kampoosa Bog Drainage Basin
Taunton	Hockomock Swamp
	Canoe River Aquifer
	Three Mile River Watershed
Truro	Wellfleet Harbor
Townsend	Squannassit
Tyngsborough	Petapawag
Upton	Miscoe-Warren-Whitehall Watersheds
Wakefield	Golden Hills
Washington	Hinsdale Flats Watershed
	Upper Housatonic River
Wellfleet	Wellfleet Harbor
W Bridgewater	Hockomock Swamp
Westborough	Cedar Swamp
Westwood	Fowl Meadow and Ponkapoag Bog
Weymouth	Weymouth Back River
Winthrop	Rumney Marshes

.

Massachusetts Areas of Critical Environmental Concern (ACECs)



1 Bourne Back River
2 Canoe River Aquifer
3 Cedar Swamp
4 Central Nashua River Valley
5 Cranberry Brook Watershed
6 Ellisville Harbor
7 Fowl Meadow and Ponkapoag Bog
8 Golden Hills
9 Great Marsh
10 Herring River Watershed
11 Hinsdale Flats Watershed
12 Hockomock Swamp
13 Inner Cape Cod Bay
14 Kampoosa Bog Drainage Basin
15 Karner Brook Watershed
16 Miscoe, Warren and Whitehall Watersheds
17 Neponset River Estuary
18 Petapawag
19 Pleasant Bay
20 Pocasset River
21 Rumney Marshes
22 Sandy Neck Barrier Beach System
23 Schenob Brook Drainage Basin
24 Squannassit
25 Three Mile River Watershed
26 Upper Housatonic River
27 Waquoit Bay
28 Weir River
29 Wellfleet Harbor
30 Weymouth Back River

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Raynham and Taunton
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Glocester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague
	Dwarf wedgemussel	Endangered	Mill River	Whately
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hadley, Hatfield, Amherst and Northampton
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, and Wareham
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
Suffolk	Piping Plover	Threatened	Coastal Beaches	Winthrop
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster

-Eastern cougar and gray wolf are considered extirpated in Massachusetts.
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
-Critical habitat for the Northern Red-bellied cooter is present in Plymouth County.

7/31/2008

New England Field Office

Conserving the Nature of New England

Friday, November 18, 2011

ENDANGERED SPECIES
- Overview
- Consultation
- N.E. Listed Species
- Species Under Review
- Recovery Activities
- Habitat Conservation
- Images
- Biological Opinions

PARTNERS FOR FISH & WILDLIFE
- Overview
- Restoration Initiatives
- Species & Habitats of Special Concern
- Accomplishments
- How to Participate
- Habitat Restoration
- Links

ENVIRONMENTAL CONTAMINANTS
- Overview
- BTAG
- NRDAR
- Special Studies
- Oil Spills

FEDERAL ACTIVITIES
- Overview
- Federal Projects & Permits
- Wetland Permits
- FERC_ Hydropower Projects
- River Flow Protection
- Wind Energy Projects

OUTREACH
- NH Envirothon
- Kids Corner
- Let's Go Outside

Staff Directory

Our Location

HOME

BOOKMARK

Endangered Species

New England Listed Species

The following federally-listed species are protected in New England. This list includes links to species information on our National Fish and Wildlife Service website including current Federal Register documents, HCPs, Recovery Plans, Life History accounts.

Vertebrates

Mammals
Eastern Cougar -**Puma (=Felis) concolor couguar**
Gray Wolf -**Canis lupus**
Indiana Bat - **Myotis sodalis**
Canada Lynx - **Lynx canadensis**

Birds
Atlantic Coast Piping Plover - **Charadrius melodus**
Birds of North America Species Account ***Piping Plover***
Atlantic Coast piping plover website ***Piping Plover***
Roseate Tern – **Sterna dougallii dougallii**
Birds of North America Species Account ***Roseate Tern***

Reptiles
Bog Turtle - **Clemmys muhlenbergii**
Northern Redbelly Cooter (Plymouth redbelly turtle) **Pseudemys rubriventris bangsii**
Northern Redbelly Cooter 5-year Review*;(pdf size 1.6MB*) May 2007*

Fish
Atlantic Salmon - **Salmo salar** (Maine only)
Maine Atlantic Salmon Atlas

Invertebrates

Insects
American Burying Beetle - **Nicrophorus americanus**
Karner Blue Butterfly - **Lycaeides melissa samuelis**
Karner Blue Butterfly ***Fact sheet***
Northeastern Beach Tiger Beetle - **Cicindela dorsalis dorsalis**
Puritan Tiger Beetle - **Cicindela puritana**
Draft Puritan Tiger Beetle; *(pdf size 2.4MB*) 5-year Review*

Mussels
Dwarf Wedgemussel - ***Alasmidonta heterodon***
Dwarf Wedgemussel 5-Year Status Review 2007 *(pdf size 1.14MB*)*

Plants
Jesup 's Milkvetch - **Astragalus robbinsii var. jesupi**
Northeastern Bulrush - **Scirpus ancistrochaetus**
Sandplain Gerardia - **Agalinis acuta**
Small Whorled Pogonia - **Isotria medeoloides**
Seabeach Amaranth - **Amaranthus pumilus** (historic)
American Chaffseed - **Schwalbea americana** (historic)
Eastern Prairie Fringed Orchid - **Platanthera leucophaea** (Maine only)
Furbish's Lousewort - **Pedicularis furbishiae** (Maine only)

Candidate species and species recently delisted are identified below, including links for additional information regarding their status.

Candidate Species

The Service has recently completed a status assessment for the following species and determined that federally listing is "warranted, but precluded", i.e. the status of the species indicates that it should be listed but the listing is superceded by higher listing actions.

While there is currently no obligation for Federal Agencies to consult with us regarding these species, coordination is encouraged to avoid project delays that may occur as a result of the species becoming federally-listed during the planning or construction phases of a given project. In addition, the Service is interested in promoting conservation actions that may result in benefits to these species that will prevent the need to list it. Information regarding our **candidate conservation** program may help you decide if you would like to become involved.

- **New England Cottontail; Sylvilagus transitionalis**
- Red Knot **Calidris canutus rufa**; **Red Knot Fact Sheet**

Delisted Species

Bald Eagle - **Haliaeetus leucocephalus**
Bald Eagle Guidance

NCTC Eagle Cam

This Bald Eagle image is a link to a Service website that chronicles the activities of the eagle nest located on the grounds of the USFWS National Conservation Training Center near the Potomac River in Shepherdstown, West Virginia. The nest has been active for four seasons, fledging several juvenile bald eagles.

Files in PDF format will require Acrobat Reader to access the content. If you do not have a copy, please select the link [or click the image] to take you to the Adobe website where you can download a free copy. Get Adobe Acrobat Reader

Last updated: October 28, 2010

McPHAIL ASSOCIATES, INC

Geotechnical Engineers

APPENDIX D

Laboratory Data - Groundwater Testing B-303(OW)

ANALYTICAL REPORT

Lab Number:	L1117267
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	130 BROOKLINE ST.
Project Number:	3570
Report Date:	11/01/11

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1117267-01	B-303 (OW)	CAMBRIDGE	10/21/11 11:40

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267
Project Number: 3570 **Report Date:** 11/01/11

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

For additional information, please contact Client Services at 800-624-9220.

Volatile Organics

L1117267-01 has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

Semivolatile Organics by SIM

L1117267-01 was re-analyzed on dilution in order to quantitate the sample within the calibration range. The result should be considered estimated, and is qualified with an E flag, for any compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound that exceeded the calibration range.

Chloride

L1117267-01 has an elevated detection limit due to the dilution required to quantitate the result within the

Project Name:	130 BROOKLINE ST.	**Lab Number:**	L1117267
Project Number:	3570	**Report Date:**	11/01/11

Case Narrative (continued)

calibration range.

Chromium, Hexavalent

The WG497502-4 MS recovery (0%), performed on L1117267-01, is below the acceptance criteria. The sample was diluted and re-spiked, resulting in an MS recovery of 6%. This has been attributed to matrix interference.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Elizabeth Simmons

Title: Technical Director/Representative Date: 11/01/11

ORGANICS

VOLATILES

Project Name: 130 BROOKLINE ST.
Lab Number: L1117267
Project Number: 3570
Report Date: 11/01/11

SAMPLE RESULTS

Lab ID:	L1117267-01	Date Collected:	10/21/11 11:40
Client ID:	B-303 (OW)	Date Received:	10/21/11
Sample Location:	CAMBRIDGE	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	14,504.1	Extraction Date:	10/26/11 08:30
Analytical Date:	10/26/11 13:50		
Analyst:	SH		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Pesticides by GC - Westborough Lab						
1,2-Dibromoethane	ND		ug/l	0.010	--	1

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267

Project Number: 3570 **Report Date:** 11/01/11

SAMPLE RESULTS

Lab ID: L1117267-01 D
Client ID: B-303 (OW)
Sample Location: CAMBRIDGE
Matrix: Water
Analytical Method: 1,8260B
Analytical Date: 10/26/11 13:02
Analyst: PD

Date Collected: 10/21/11 11:40
Date Received: 10/21/11
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	30	--	10
1,1-Dichloroethane	ND		ug/l	7.5	--	10
Carbon tetrachloride	ND		ug/l	5.0	--	10
1,1,2-Trichloroethane	ND		ug/l	7.5	--	10
Tetrachloroethene	ND		ug/l	5.0	--	10
1,2-Dichloroethane	ND		ug/l	5.0	--	10
1,1,1-Trichloroethane	ND		ug/l	5.0	--	10
Benzene	45		ug/l	5.0	--	10
Toluene	13		ug/l	7.5	--	10
Ethylbenzene	370		ug/l	5.0	--	10
Vinyl chloride	ND		ug/l	10	--	10
1,1-Dichloroethene	ND		ug/l	5.0	--	10
Trichloroethene	ND		ug/l	5.0	--	10
1,2-Dichlorobenzene	ND		ug/l	25	--	10
1,3-Dichlorobenzene	ND		ug/l	25	--	10
1,4-Dichlorobenzene	ND		ug/l	25	--	10
Methyl tert butyl ether	ND		ug/l	10	--	10
p/m-Xylene	310		ug/l	10	--	10
o-Xylene	17		ug/l	10	--	10
cis-1,2-Dichloroethene	ND		ug/l	5.0	--	10
Acetone	ND		ug/l	50	--	10
Naphthalene	210		ug/l	25	--	10
Tert-Butyl Alcohol	ND		ug/l	300	--	10
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--	10
1,4-Dioxane	ND		ug/l	2500	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	84		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	91		70-130
Dibromofluoromethane	78		70-130

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 10/26/11 12:17
Analyst: SH

Extraction Date: 10/26/11 08:30

Parameter	Result	Qualifier	Units	RL	MDL
Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG498197-1					
1,2-Dibromoethane	ND		ug/l	0.010	--
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267

Project Number: 3570 **Report Date:** 11/01/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 10/26/11 09:41
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG498279-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Acetone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	30	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267

Project Number: 3570 **Report Date:** 11/01/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260B
Analytical Date: 10/26/11 09:41
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG498279-3					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	93		70-130
Dibromofluoromethane	92		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 130 BROOKLINE ST.

Project Number: 3570

Lab Number: L1117267

Report Date: 11/01/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG498197-2								
1,2-Dibromoethane	107		-		70-130	-		20
1,2-Dibromo-3-chloropropane	102		-		70-130	-		20
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG498279-1 WG498279-2								
Chlorobenzene	109		104		75-130	5		25
Benzene	103		97		76-127	6		25
Toluene	105		98		76-125	7		25
1,1-Dichloroethene	99		94		61-145	5		25
Trichloroethene	106		102		71-120	4		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: 130 BROOKLINE ST.

Project Number: 3570

Lab Number: L1117267

Report Date: 11/01/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG498279-1 WG498279-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		93		70-130
Toluene-d8	99		98		70-130
4-Bromofluorobenzene	91		92		70-130
Dibromofluoromethane	97		100		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Pesticides by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498197-3 QC Sample: L1117140-01 Client ID: MS Sample												
1,2-Dibromoethane	ND	0.26	0.266	102		-	-		70-130	-		20
1,2-Dibromo-3-chloropropane	ND	0.26	0.239	92		-	-		70-130	-		20

SEMIVOLATILES

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267

Project Number: 3570 **Report Date:** 11/01/11

SAMPLE RESULTS

Lab ID:	L1117267-01	Date Collected:	10/21/11 11:40
Client ID:	B-303 (OW)	Date Received:	10/21/11
Sample Location:	CAMBRIDGE	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270C	Extraction Date:	10/26/11 11:50
Analytical Date:	10/27/11 09:18		
Analyst:	JC		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.56		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.20	--	1
Naphthalene	100	E	ug/l	0.20	--	1
Benzo(a)anthracene	ND		ug/l	0.20	--	1
Benzo(a)pyrene	ND		ug/l	0.20	--	1
Benzo(b)fluoranthene	ND		ug/l	0.20	--	1
Benzo(k)fluoranthene	ND		ug/l	0.20	--	1
Chrysene	ND		ug/l	0.20	--	1
Acenaphthylene	ND		ug/l	0.20	--	1
Anthracene	ND		ug/l	0.20	--	1
Benzo(ghi)perylene	ND		ug/l	0.20	--	1
Fluorene	0.29		ug/l	0.20	--	1
Phenanthrene	0.21		ug/l	0.20	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--	1
Pyrene	ND		ug/l	0.20	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	91		15-120
4-Terphenyl-d14	97		41-149

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267

Project Number: 3570 **Report Date:** 11/01/11

SAMPLE RESULTS

Lab ID:	L1117267-01	D	Date Collected:	10/21/11 11:40
Client ID:	B-303 (OW)		Date Received:	10/21/11
Sample Location:	CAMBRIDGE		Field Prep:	Not Specified
Matrix:	Water		Extraction Method:	EPA 3510C
Analytical Method:	1,8270C		Extraction Date:	10/26/11 11:50
Analytical Date:	10/27/11 11:38			
Analyst:	JC			

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
PAHs by GC/MS-SIM - Westborough Lab						
Naphthalene	160		ug/l	4.0	--	20

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267

Project Number: 3570 **Report Date:** 11/01/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270C
Analytical Date: 10/27/11 03:51
Analyst: JC

Extraction Method: EPA 3510C
Extraction Date: 10/26/11 11:50

Parameter	Result	Qualifier	Units	RL	MDL
PAHs by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG498269-1					
Acenaphthene	ND		ug/l	0.20	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--
1-Methylnaphthalene	ND		ug/l	0.20	--
2-Methylnaphthalene	ND		ug/l	0.20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	86		15-120
4-Terphenyl-d14	102		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: 130 BROOKLINE ST.

Project Number: 3570

Lab Number: L1117267

Report Date: 11/01/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
PAHs by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG498269-2 WG498269-3								
Acenaphthene	95		85		37-111	11		40
2-Chloronaphthalene	108		96		40-140	12		40
Fluoranthene	102		91		40-140	11		40
Anthracene	97		85		40-140	13		40
Pyrene	99		89		40-140	11		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	113		88		23-120
2-Fluorobiphenyl	111		88		15-120
4-Terphenyl-d14	128		102		41-149

PCBS

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267

Project Number: 3570 **Report Date:** 11/01/11

SAMPLE RESULTS

Lab ID:	L1117267-01	Date Collected:	10/21/11 11:40
Client ID:	B-303 (OW)	Date Received:	10/21/11
Sample Location:	CAMBRIDGE	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 608
Analytical Method:	5,608	Extraction Date:	10/24/11 16:59
Analytical Date:	10/25/11 23:37	Cleanup Method1:	EPA 3665A
Analyst:	SH	Cleanup Date1:	10/25/11
		Cleanup Method2:	EPA 3660B
		Cleanup Date2:	10/25/11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Polychlorinated Biphenyls by GC - Westborough Lab						
Aroclor 1016	ND		ug/l	0.250	--	1
Aroclor 1221	ND		ug/l	0.250	--	1
Aroclor 1232	ND		ug/l	0.250	--	1
Aroclor 1242	ND		ug/l	0.250	--	1
Aroclor 1248	ND		ug/l	0.250	--	1
Aroclor 1254	ND		ug/l	0.250	--	1
Aroclor 1260	ND		ug/l	0.250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	93		30-150	A
Decachlorobiphenyl	70		30-150	A

Project Name: 130 BROOKLINE ST.

Project Number: 3570

Lab Number: L1117267

Report Date: 11/01/11

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 10/25/11 22:20
Analyst: SH

Extraction Method: EPA 608
Extraction Date: 10/24/11 16:59
Cleanup Method1: EPA 3665A
Cleanup Date1: 10/25/11
Cleanup Method2: EPA 3660B
Cleanup Date2: 10/25/11

Parameter	Result	Qualifier	Units	RL	MDL
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG497798-1					
Aroclor 1016	ND		ug/l	0.250	--
Aroclor 1221	ND		ug/l	0.250	--
Aroclor 1232	ND		ug/l	0.250	--
Aroclor 1242	ND		ug/l	0.250	--
Aroclor 1248	ND		ug/l	0.250	--
Aroclor 1254	ND		ug/l	0.250	--
Aroclor 1260	ND		ug/l	0.250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	89		30-150	A
Decachlorobiphenyl	86		30-150	A

Matrix Spike Analysis
Batch Quality Control

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497798-3 QC Sample: L1117140-01 Client ID: MS Sample												
Aroclor 1016	ND	1	0.601	60		-	-		40-126	-		30
Aroclor 1260	ND	1	0.522	52		-	-		40-127	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	*Column*
2,4,5,6-Tetrachloro-m-xylene	62				30-150	A
Decachlorobiphenyl	49				30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 130 BROOKLINE ST.

Project Number: 3570

Lab Number: L1117267

Report Date: 11/01/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG497798-2								
Aroclor 1016	82		-		40-126	-		30
Aroclor 1260	79		-		40-127	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77				30-150	A
Decachlorobiphenyl	82				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497798-4 QC Sample: L1117140-02 Client ID: DUP Sample						
Aroclor 1016	ND	ND	ug/l	NC		30
Aroclor 1221	ND	ND	ug/l	NC		30
Aroclor 1232	ND	ND	ug/l	NC		30
Aroclor 1242	ND	ND	ug/l	NC		30
Aroclor 1248	ND	ND	ug/l	NC		30
Aroclor 1254	ND	ND	ug/l	NC		30
Aroclor 1260	ND	ND	ug/l	NC		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		88		30-150	A
Decachlorobiphenyl	55		68		30-150	A

METALS

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267

Project Number: 3570 **Report Date:** 11/01/11

SAMPLE RESULTS

Lab ID: L1117267-01 Date Collected: 10/21/11 11:40

Client ID: B-303 (OW) Date Received: 10/21/11

Sample Location: CAMBRIDGE Field Prep: Not Specified

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Antimony, Total	ND		mg/l	0.0010	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Arsenic, Total	0.0014		mg/l	0.0005	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Cadmium, Total	ND		mg/l	0.0002	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Chromium, Total	0.0299		mg/l	0.0005	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Copper, Total	0.0007		mg/l	0.0005	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Iron, Total	13		mg/l	0.05	--	1	10/25/11 10:00	10/25/11 13:56	EPA 3005A	19,200.7	AI
Lead, Total	ND		mg/l	0.0005	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Mercury, Total	ND		mg/l	0.0002	--	1	10/26/11 20:00	10/27/11 12:29	EPA 245.1	3,245.1	JP
Nickel, Total	0.1763		mg/l	0.0005	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Selenium, Total	0.002		mg/l	0.001	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Silver, Total	ND		mg/l	0.0004	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Zinc, Total	ND		mg/l	0.0100	--	1	10/24/11 14:00	10/26/11 00:18	EPA 3005A	1,6020	BM
Dissolved Metals - Westborough Lab											
Nickel, Dissolved	0.1663		mg/l	0.0005	--	1	10/24/11 14:30	10/26/11 01:57	EPA 3005A	1,6020	BM

Project Name: 130 BROOKLINE ST. **Lab Number:** L1117267

Project Number: 3570 **Report Date:** 11/01/11

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG497780-1										
Antimony, Total	ND		mg/l	0.0010	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM
Arsenic, Total	ND		mg/l	0.0005	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM
Cadmium, Total	ND		mg/l	0.0002	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM
Chromium, Total	ND		mg/l	0.0005	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM
Copper, Total	ND		mg/l	0.0005	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM
Lead, Total	ND		mg/l	0.0005	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM
Nickel, Total	ND		mg/l	0.0005	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM
Selenium, Total	ND		mg/l	0.001	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM
Silver, Total	ND		mg/l	0.0004	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM
Zinc, Total	ND		mg/l	0.0100	--	1	10/24/11 14:00	10/25/11 22:25	1,6020	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Westborough Lab for sample(s): 01 Batch: WG497786-1										
Nickel, Dissolved	ND		mg/l	0.0005	--	1	10/24/11 14:30	10/25/11 22:32	1,6020	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG497966-1										
Iron, Total	ND		mg/l	0.05	--	1	10/25/11 10:00	10/25/11 13:38	19,200.7	AI

Prep Information

Digestion Method: EPA 3005A

Project Name: 130 BROOKLINE ST.
Project Number: 3570
Lab Number: L1117267
Report Date: 11/01/11

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG498429-1										
Mercury, Total	ND		mg/l	0.0002	--	1	10/26/11 20:00	10/27/11 12:18	3,245.1	JP

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: 130 BROOKLINE ST.

Project Number: 3570

Lab Number: L1117267

Report Date: 11/01/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG497780-2								
Antimony, Total	92		-		80-120	-		
Arsenic, Total	104		-		80-120	-		
Cadmium, Total	107		-		80-120	-		
Chromium, Total	96		-		80-120	-		
Copper, Total	102		-		80-120	-		
Lead, Total	100		-		80-120	-		
Nickel, Total	102		-		80-120	-		
Selenium, Total	111		-		80-120	-		
Silver, Total	98		-		80-120	-		
Zinc, Total	102		-		80-120	-		
Dissolved Metals - Westborough Lab Associated sample(s): 01 Batch: WG497786-2								
Nickel, Dissolved	104		-		80-120	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG497966-2								
Iron, Total	96		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG498429-2								
Mercury, Total	98		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497780-4 QC Sample: L1117267-01 Client ID: B-303 (OW)												
Antimony, Total	ND	0.5	0.5030	101		-	-		80-120	-		20
Arsenic, Total	0.0014	0.12	0.1300	107		-	-		80-120	-		20
Cadmium, Total	ND	0.051	0.0559	110		-	-		80-120	-		20
Chromium, Total	0.0299	0.2	0.2261	98		-	-		80-120	-		20
Copper, Total	0.0007	0.25	0.2645	106		-	-		80-120	-		20
Lead, Total	ND	0.51	0.5266	103		-	-		80-120	-		20
Nickel, Total	0.1763	0.5	0.7080	106		-	-		80-120	-		20
Selenium, Total	0.002	0.12	0.129	106		-	-		80-120	-		20
Silver, Total	ND	0.05	0.050	100		-	-		80-120	-		20
Zinc, Total	ND	0.5	0.5172	103		-	-		80-120	-		20
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497786-4 QC Sample: L1117267-01 Client ID: B-303 (OW)												
Nickel, Dissolved	0.1663	0.5	0.6846	104		-	-		80-120	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497966-4 QC Sample: L1117417-02 Client ID: MS Sample												
Iron, Total	ND	1	0.98	98		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498429-4 QC Sample: L1117267-01 Client ID: B-303 (OW)												
Mercury, Total	ND	0.001	0.0012	121		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497780-3 QC Sample: L1117267-01 Client ID: B-303 (OW)						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.0014	0.0014	mg/l	0		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.0299	0.0293	mg/l	2		20
Copper, Total	0.0007	0.0007	mg/l	1		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.1763	0.1723	mg/l	2		20
Selenium, Total	0.002	0.002	mg/l	16		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Dissolved Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497786-3 QC Sample: L1117267-01 Client ID: B-303 (OW)						
Nickel, Dissolved	0.1663	0.1724	mg/l	4		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497966-3 QC Sample: L1117417-02 Client ID: DUP Sample						
Iron, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498429-3 QC Sample: L1117267-01 Client ID: B-303 (OW)						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

SAMPLE RESULTS

Lab ID: L1117267-01
Client ID: B-303 (OW)
Sample Location: CAMBRIDGE
Matrix: Water

Date Collected: 10/21/11 11:40
Date Received: 10/21/11
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	10/25/11 10:15	30,2540D	DW
Cyanide, Total	ND		mg/l	0.005	--	1	10/26/11 10:30	10/26/11 18:17	30,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	10/22/11 01:05	30,4500CL-D	KK
pH (H)	6.5		SU	-	NA	1	-	10/21/11 23:05	30,4500H+-B	DE
TPH	ND		mg/l	4.00	--	1	10/25/11 13:00	10/26/11 14:15	74,1664A	JO
Phenolics, Total	ND		mg/l	0.03	--	1	10/25/11 17:30	10/25/11 21:59	4,420.1	TP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/22/11 01:50	10/22/11 02:08	30,3500CR-D	KK
General Chemistry										
Trivalent Chromium	0.0299		mg/l	0.0100	--	1	-	10/27/11 14:00	30,3500-Cr	ED
Anions by Ion Chromatography - Westborough Lab										
Chloride	440		mg/l	12	--	25	-	10/25/11 00:07	44,300.0	AU

Project Name: 130 BROOKLINE ST.
Project Number: 3570
Lab Number: L1117267
Report Date: 11/01/11

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG497502-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	10/22/11 01:50	10/22/11 02:06	30,3500CR-D	KK
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG497507-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	10/22/11 01:05	30,4500CL-D	KK
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG497889-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	10/25/11 10:15	30,2540D	DW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG498082-2										
TPH	ND		mg/l	4.00	--	1	10/25/11 13:00	10/26/11 14:15	74,1664A	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG498097-1										
Phenolics, Total	ND		mg/l	0.03	--	1	10/25/11 17:30	10/25/11 21:55	4,420.1	TP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG498244-2										
Cyanide, Total	ND		mg/l	0.005	--	1	10/26/11 10:30	10/26/11 18:03	30,4500CN-CE	JO
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG498406-1										
Chloride	ND		mg/l	0.50	--	1	-	10/24/11 20:31	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG497492-1								
pH	101		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG497502-2								
Chromium, Hexavalent	101		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG497507-2								
Chlorine, Total Residual	105		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG498082-1								
TPH	85		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG498097-2								
Phenolics, Total	98		-		82-111	-		12
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG498244-1								
Cyanide, Total	93		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG498406-2								
Chloride	105		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497502-4 QC Sample: L1117267-01 Client ID: B-303 (OW)												
Chromium, Hexavalent	ND	0.1	ND	**0**	Q	-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498082-3 QC Sample: L1117141-02 Client ID: MS Sample												
TPH	ND	20.4	16.4	80		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498097-3 QC Sample: L1117350-01 Client ID: MS Sample												
Phenolics, Total	ND	0.8	0.76	95		-	-		77-124	-		12
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498244-3 QC Sample: L1117423-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.152	**76**	Q	-	-		90-110	-		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498406-3 QC Sample: L1117252-02 Client ID: MS Sample												
Chloride	43	4	48	101		-	-		40-151	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497502-3 QC Sample: L1117267-01 Client ID: B-303 (OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497507-3 QC Sample: L1117252-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG497889-2 QC Sample: L1117257-02 Client ID: DUP Sample						
Solids, Total Suspended	11000	12000	mg/l	9		32
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498082-4 QC Sample: L1117141-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498097-4 QC Sample: L1117350-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		12
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498244-4 QC Sample: L1117267-01 Client ID: B-303 (OW)						
Cyanide, Total	ND	ND	mg/l	NC		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG498406-4 QC Sample: L1117252-02 Client ID: DUP Sample						
Chloride	43	45	mg/l	5		18

Project Name: 130 BROOKLINE ST.
Project Number: 3570

Lab Number: L1117267
Report Date: 11/01/11

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1117267-01A	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1117267-01B	Vial HCl preserved	A	N/A	3	Y	Absent	8260(14)
L1117267-01C	Vial Na2S2O3 preserved	A	N/A	3	Y	Absent	504(14)
L1117267-01D	Vial Na2S2O3 preserved	A	N/A	3	Y	Absent	504(14)
L1117267-01E	Amber 1000ml unpreserved	A	7	3	Y	Absent	CL-300(28),PAHTCL-SIM(7)
L1117267-01F	Amber 1000ml unpreserved	A	7	3	Y	Absent	CL-300(28),PAHTCL-SIM(7)
L1117267-01G	Amber 1000ml HCl preserved	A	N/A	3	Y	Absent	TPH-1664(28)
L1117267-01H	Amber 1000ml HCl preserved	A	N/A	3	Y	Absent	TPH-1664(28)
L1117267-01I	Amber 1000ml Na2S2O3	A	7	3	Y	Absent	PCB-608(7)
L1117267-01J	Amber 1000ml Na2S2O3	A	7	3	Y	Absent	PCB-608(7)
L1117267-01K	Amber 500ml H2SO4preserved	A	<2	3	Y	Absent	TPHENOL-420(28)
L1117267-01L	Plastic 1000ml unpreserved	A	7	3	Y	Absent	TSS-2540(7)
L1117267-01M	Plastic 1000ml unpreserved	A	7	3	Y	Absent	SPECWC(),CL-300(28),HEXCR-3500(1),TRC-4500(1),PH-4500(.01)
L1117267-01N	Plastic 1000ml unpreserved	A	7	3	Y	Absent	-
L1117267-01O	Plastic 250ml HNO3 preserved	A	7	3	Y	Absent	SE-6020T(180),CR-6020T(180),NI-6020T(180),CU-6020T(180),ZN-6020T(180),FE-UI(180),PB-6020T(180),HG-U(28),AS-6020T(180),SB-6020T(180),AG-6020T(180),CD-6020T(180)
L1117267-01P	Plastic 250ml NaOH preserved	A	>12	3	Y	Absent	TCN-4500(14)
L1117267-01X	Plastic 1000ml HNO3 preserved sp	A	<2	3	Y	Absent	NI-6020S(180)

*Values in parentheses indicate holding time in days

Project Name:	130 BROOKLINE ST.	**Lab Number:**	L1117267
Project Number:	3570	**Report Date:**	11/01/11

GLOSSARY

Acronyms

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NI - Not Ignitable.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

Report Format: Data Usability Report

Project Name:	130 BROOKLINE ST.	**Lab Number:**	L1117267
Project Number:	3570	**Report Date:**	11/01/11

Data Qualifiers

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	130 BROOKLINE ST.	**Lab Number:**	L1117267
Project Number:	3570	**Report Date:**	11/01/11

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

5 Methods for the Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A, Part 136, 40 CFR (Code of Federal Regulations).

14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

74 Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certificate/Approval Program Summary

Last revised September 19, 2011 - Westboro Facility

The following list includes only those analytes/methods for which certification/approval is currently held.
For a complete listing of analytes for the referenced methods, please contact your Alpha Customer Service Representative.

Connecticut Department of Public Health Certificate/Lab ID: PH-0574. ***NELAP Accredited Solid Waste/Soil.***

Drinking Water (Inorganic Parameters: Color, pH, Turbidity, Conductivity, Alkalinity, Chloride, Free Residual Chlorine, Fluoride, Calcium Hardness, Sulfate, Nitrate, Nitrite, Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc, Total Dissolved Solids, Total Organic Carbon, Total Cyanide, Perchlorate. Organic Parameters: Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB), 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223 P/A), E. Coli. – Colilert (SM9223 P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D))

Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Silica, Sulfate, Sulfide, Ammonia, Kjeldahl Nitrogen, Nitrate, Nitrite, O-Phosphate, Total Phosphorus, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Strontium, Thallium, Tin, Titanium, Vanadium, Zinc, Total Residue (Solids), Total Dissolved Solids, Total Suspended Solids (non-filterable), BOD, CBOD, COD, TOC, Total Cyanide, Phenolics, Foaming Agents (MBAS), Bromide, Oil and Grease. Organic Parameters: PCBs, Organochlorine Pesticides, Technical Chlordane, Toxaphene, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E).)

Solid Waste/Soil (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3.3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

Maine Department of Human Services Certificate/Lab ID: 2009024.
Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, SM2320B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B, 4500P-E, 5210B, 5220D, 5310C, 9010B, 9040B, 9030B, 7470A, 7196A, 2340B, EPA 200.7, 6010, 200.8, 6020, 245.1, 1311, 1312, 3005A, Enterolert, 9223D, 9222D. Organic Parameters: 608, 8081, 8082, 8330, 8151A, 624, 8260, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014A, 9040B, 9045C, 6010B, 7471A, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260B, 8270C, 8330, 8151A, 8081A, 8082, 3540C, 3546, 3580A, 3630C, 5030B, 5035.)

Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.
*Drinking Water (*Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl) (EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate); (EPA 353.2 for: Nitrate-N, Nitrite-N); (SM4500NO3-F for: Nitrate-N and Nitrite-N); 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B. Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics); (504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), EPA 332. Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; ColilertQT SM9223B; MF-SM9222D.)

*Non-Potable Water (*Inorganic Parameters:, (EPA 200.8 for: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn); (EPA 200.7 for: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl, V,Zn); 245.1, SM4500H,B, EPA 120.1,

SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.
Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. Microbiology Parameters: (ColilertQT SM9223B;Enterolert-QT: SM9222D-MF.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 245.2, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. Organic Parameters: 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 3005A, 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2120B, 2310B, 2320B, 2540B, 2540D, 4500H+B, 4500CL-E, 4500CN-E, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 5220D, 2510B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3510C, 3630C, 5030B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A, 8151A.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040B, 9045C, 9050C, 9065,1311, 1312, 3005A, 3050B. Organic Parameters: SW-846 3540C, 3546, 3550B, 3580A, 3630C, 5030B, 5035, 8260B, 8270C, 8330, 8151A, 8015B, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.2, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. Organic Parameters: EPA 332, 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-E, EPA 300.0, SM2120B, SM4500F-BC, EPA 200.7, 351.1, LACHAT 10-107-06-2-D, EPA 353.2, SM4500NO3-F, 4500NO2-B, EPA 1664A, SM5310B, C or D, 4500-PE, EPA 420.1, SM510ABC, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, 9222D, 9221B, 9221C, 9221E, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, 350.2, SW-846 1312, 6020, 6020A, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, 4500CN-CE, EPA 245.1, 245.2, SW-846 9040B, 3005A, 3015, EPA 6010B, 6010C, 7196A, 3060A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8081A, 8081B, 8082, 8082A, 8151A, 8330, NJ OQA-QAM-025 Rev.7, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 7196A, 3060A, 9010B, 9030B, 1010, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9014, 9012A, 9040B, 9045C, 9050A, 9065. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3545, 3546, 3550B, 3580A, 3630C, 5030B, 5035L, 5035H, NJ OQA-QAM-025 Rev.7, NJ EPH.)

New York Department of Health Certificate/Lab ID: 11148. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, 5310C, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, SM4500CL-E, 4500F-C, SM15 426C, EPA 350.1, SM4500NH3-BH, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-04-1-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, SM3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 9010B, 9030B.. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: 1010, 1030, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8015B, 8081A, 8151A, 8330, 8082, 3540C, 3545, 3546, 3580, 5030B, 5035.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. Organic Parameters: MA-EPH, MA-VPH.

Drinking Water Program Certificate/Lab ID: 25700. (Inorganic Parameters: Chloride EPA 300.0. Organic Parameters: 524.2)

Pennsylvania Department of Environmental Protection Certificate/Lab ID : 68-03671. ***NELAP Accredited.***
Drinking Water (Organic Parameters: EPA 524.2, 504.1)

Non-Potable Water (Inorganic Parameters: EPA 1312, 200.7, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P,BE. Organic Parameters: EPA 3510C, 3005A, 3630C, 5030B, 625, 624, 608, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Solid & Hazardous Waste (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3050B, 6010B, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065, SM 4500NH3-H. Organic Parameters: 3540C, 3545, 3546, 3550B**,** 3580A, 3630C, 5035, 8015B, 8081A, 8082, 8151A, 8260B, 8270C, 8330)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. ***NELAP Accredited via NY-DOH.***
Refer to MA-DEP Certificate for Potable and Non-Potable Water.
Refer to NJ-DEP Certificate for Potable and Non-Potable Water.

Texas Commisson on Environmental Quality Certificate/Lab ID: T104704476-09-1. ***NELAP Accredited.***
Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 $S2^{-}$D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1311, 1312, 9012, 9014, 9040, 9045, 9050, 9065.)

Department of Defense Certificate/Lab ID: L2217.
Drinking Water (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

Non-Potable Water (Inorganic Parameters: EPA 200.7, 200.8, 6010B, 6020, 245.1, 245.2, 7470A, 9040B, 300.0, 332.0, 6860, 353.2, 410.4, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500NO3-F, 5220D, 5310C, 2320B, 2540C, 3005A, 3015, 9010B, 9056. Organic Parameters: EPA 8260B, 8270C, 8330A, 625, 8082, 8081A, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9010, 9012A, 6860, 1311, 1312, 3050B, 7196A, 9010B, 3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8260B, 8270C, 8330A/B-prep, 8082, 8081A, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:
EPA 8260B: Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO2 in a soil matrix, NO3 in a soil matrix, SO4 in a soil matrix.

CHAIN OF CUSTODY

PAGE_____ OF _____

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193

MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Serial No: 10111 80

Date Rec'd in Lab: 10/21/11

ALPHA Job #: L1117267

Client Information

Client: McPhail Associates Inc

Address: 2269 Mass. Aven

Phone:

Fax:

Email:

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 130 Brookline St

Project Location: Cambridge

Project #: 3570

Project Manager: Bill Burns

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due: 10/28/11 **Time:**

Report Information - Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program ~~MCP-DEP~~ *Criteria* ~~RC Gw-2 EPA RCP~~

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

If MS is required , indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All ***CAM*** methods for inorganic analyses require MS every 20 soil samples)

Reser to Health RGP Permit Package + Dissolved Nickel

ANALYSIS

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do

Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TSS	Total Residual Chlorine	TPH (Method 1802)	VOC 8260C	Total Phenols	PAHs	Total PCB	Cyanide	Total Chloride	Cold Mercury Analysis Cadmium	Chromium III / Chromium VI	Lead Mercury Nickel Silver Zinc	Sample Specific Comments	TOTAL # BOTTLES
17267.1	B-303 (GW)	10/21/11	11:40	(GW)	SC	X	X	X	X	X	X	X	X	X	X	X	X		16

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
Stephanie Chevrette	10/21 11:40		10/21/11 1625
	10/21/11 1805	C	10/21/11 1805

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 18-Jan-2010)

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)		☐	☒								
4. Cyanide (CN)	57125	☒	☐								
5. Benzene (B)	71432	☒	☐	3	grab	8260	2.5	ND			
6. Toluene (T)	108883	☒	☐	3	grab	8260	2.5	ND			
7. Ethylbenzene (E)	100414	☒	☐	3	grab	8260	2.5	ND			
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	3	grab	8260	2.5	ND			
9. Total BTEX [2]	n/a	☒	☐	3	grab	8260		ND			
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐	3	grab	8260	2.0	ND			
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	3	grab	8260	2.0	ND			
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	3	grab	8260	2.0	ND			

* 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	☒	☐	3	grab	8260	2.0				
14. Naphthalene	91203	☒	☐	3	grab	8260	2.0				
15. Carbon Tetrachloride	56235	☒	☐	3	grab	8260	1.0				
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	3	grab	8260	1.0				
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	3	grab	8260	1.0				
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	3	grab	8260	1.0				
18a. Total dichlorobenzene		☒	☐	3	grab	8260	1.0				
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	3	grab	8260	1.0				
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	3	grab	8260	1.0				
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	3	grab	8260	1.0				
22. cis-1,2 Dichloroethene (DCE)	156592	☐	☒	3	grab	8260		31	0.013	15	0.002
23. Methylene Chloride	75092	☒	☐	3	grab	8260	2.0				
24. Tetrachloroethene (PCE)	127184	☐	☒	3	grab	8260		7.4	0.003	3.13	0.0004
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	3	grab	8260	1.0				
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	3	grab	8260	1.0				
27. Trichloroethene (TCE)	79016	☐	☒	3	grab	8260		100	0.041	53.1	0.007

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	☒	☐	3	grab	8260	1.0				
29. Acetone	67641	☒	☐	3	grab	8260	5.0				
30. 1,4 Dioxane	123911	☒	☐	3	grab	8260	250				
31. Total Phenols	108952	☒	☐								
32. Pentachlorophenol (PCP)	87865	☒	☐								
33. Total Phthalates (Phthalate esters) [4]		☒	☐								
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐								
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐								
a. Benzo(a) Anthracene	56553	☒	☐								
b. Benzo(a) Pyrene	50328	☒	☐								
c. Benzo(b)Fluoranthene	205992	☒	☐								
d. Benzo(k)Fluoranthene	207089	☒	☐								
e. Chrysene	21801	☒	☐								
f. Dibenzo(a,h)anthracene	53703	☒	☐								
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐								
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐								

[4] The sum of individual phthalate compounds.