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

CERTIFIED MAIL RETURN RECEIPT REQUESTED

NOV 07 2013

Eric Ewer
Project Executive
John Moriarty & Associates, Inc.
3 Church Street
Winchester, MA 01890

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Canal Street Construction site located at One Canal Street, Boston, MA 02114, Suffolk County; Authorization # MAG910601

Dear Mr. Ewer:

Based on the review of a Notice of Intent (NOI) submitted by Jonathan Patch from McPhail Associates, Inc., on behalf of Trinity One Canal LLC, 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. Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on selected dilution ranges and technology-based ceiling limitations. With the absence of dilution of freshwater into tidal water, EPA determined that the Dilution Factor Range (DFR) for each parameter for this site is in the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities). Therefore, the limits for antimony of 5.6 ug/L and copper of 3.7 ug/L, are required to achieve permit compliance at your site.

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

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on October 15, 2015. 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. Please note also that the expiration date of the RGP permit is before the termination date of construction at your site and therefore, you may have to reapply for a new permit prior to the site's completion date.

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

Sincerely,

Thelma Murphy

Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Paul Canavan, BWSC
Jonathan W. Patch, McPhail Associates, LLC

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910601**
Authorization Issued:	November, 2013
Facility/Site Name:	Canal Street Construction
Facility/Site Address:	One Canal Street, Boston, MA 02114, Suffolk County
	Email address of owner: Isparrow@trinityfinancial.com
Legal Name of Operator:	John Moriarty & Associates, Inc.
Operator contact name, title, and Address:	Eric Ewer- Project Executive 3 Church Street, Winchester, MA 01890
	Email: eewer@jm-a.com
Estimated date of Completion:	October 15, 2015
Category and Sub-Category:	Contaminated Construction Dewatering. Sub-category A. General Urban Fill Sites.
RGP Termination Date:	September 10, 2015
Receiving Water:	Boston Harbor

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

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing ** Me#160.2/ML5ug/L
	2. Total Residual Chlorine (TRC) [1]	Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L
	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
	4. Cyanide (CN) [2, 3]	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L
	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes	100 ug/L/ Me#8260C/ ML 2ug/L

	Parameter	Effluent Limit/Method#/ML (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	(BTEX) [4]	
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	14. Naphthalene [5]	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
√	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L,Me#604 &625/ML 10ug/L
	33. Total Phthalates (Phthalate esters) [6]	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML 5ug/L
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L

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

	Metal Parameters	Total Recoverable MA/Metal Limit H [10] = 50 mg/l CaCO3, Units = ug/l [(11/12)]	Minimum level=ML

			Saltwater Limits		
√	39. Antimony	5.6		ML	10
	40. Arsenic **		36	ML	20
	41. Cadmium **		8.9	ML	10
	42. Chromium III (trivalent) **		100	ML	15
	43. Chromium VI (hexavalent) **		50.3	ML	10
√	44. Copper **		3.7	ML	15
	45. Lead **		8.5	ML	20
	46. Mercury **		1.1	ML	02
	47. Nickel **		8.2	ML	20
	48. Selenium **		71	ML	20
	49. Silver		2.2	ML	10
	50. Zinc **		85.6	ML	15
	51. Iron	1,000		ML	20

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

Footnotes:

[1] Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).
[2] Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.

[3] Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).
[4] BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.
[5] Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.
[6] The sum of individual phthalate compounds(not including the #34, Bis (2-Ethylhexyl) Phthalate . The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[7] Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.
[8] In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses."Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.
[9]Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).
[10] Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.
[11] For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using DF x 1,000ug/L (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit =1,000 x 2 =2,000 ug/L., etc. not to exceed the DF=5.
[12] Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).
[13] pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.
[14] Temperature sampling per Method 170.1

McPHAIL ASSOCIATES, LLC

NOTICE OF INTENT FOR DISCHARGE UNDER MASSACHUSETTS DEWATERING GENERAL PERMIT MAG070000

ONE CANAL

BOSTON MASSACHUSETTS

to

U.S. Environmental Protection Agency

October 16, 2013

Project No. 5161.9.T4

GEOTECHNICAL AND GEOENVIRONMENTAL ENGINEERS
2269 Massachusetts Avenue
Cambridge, Massachusetts 02140
617 / 868-1420

McPHAIL ASSOCIATES, LLC

October 16, 2013

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

Attention: DGP Processing

Reference: One Canal; Boston, Massachusetts
Notice of Intent for Construction Dewatering Discharge Under
Massachusetts General Discharge MAG070000

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 Boston's Inner Harbor during construction activities at the above referenced site. Refer to **Figure 1** Project Location Plan for the general site locus.

These services were performed and this report was prepared in accordance with the authorization of Trinity One Canal LLC. These services are subject to the limitations contained in **Appendix A**.

The project site occupies an approximate 61,500 square-foot plan area bounded to the west by an existing three-story brick building at 53 Canal Street, Anthony "Rip" Valenti Way to the north, New Chardon Street to the south, Beverly Street to the northeast, and North Washington Street to the east. The existing ground surface across the site is generally level varying from about Elevation +117 to approximately Elevation +120. Elevations included herein are in feet and are referenced to the Massachusetts Bay Transit Authority (MBTA) Vertical Datum.

The surficial portion of the site not occupied by the two, existing MBTA buildings is occupied by grassed areas and bituminous concrete paved surfaces. The MBTA Orange and Green Line tunnels are located beneath the central and western portions of the site, respectively. The Central Artery I-93 tunnel structure is located beneath the eastern portion of the site. Existing site conditions are shown on the attached **Subsurface Exploration Plan, Figure 2**.

The proposed development is understood to include the construction of a mixed-use, three to eleven-story building. The proposed structure will contain a below-grade level within the eastern portion of the proposed building footprint in the area located above the CA/T tunnel. The lowest level slab within the garage will be at about Elevation +108.3. The proposed structure will encompass the majority of the site area, including the portion of the site underlain by the MBTA and CA/T tunnel structures. The existing MBTA electrical substation and vent building are to remain in place and be incorporated into the proposed structure.

A subsurface exploration consisting of twenty-three (23) test pits was completed at the site during the period of November 1 to 9, 2010 under contract to McPhail Associates, LLC (McPhail). The purpose of the test pits was to locate the existing CA/T and MBTA Green Line slurry walls and tunnel roofs and to document the existing subsurface conditions. Several previous phases of subsurface explorations were performed at the project site by others as part of the MBTA and CA/T projects. The results of these

GEOTECHNICAL AND GEOENVIRONMENTAL ENGINEERS
2269 Massachusetts Avenue
Cambridge, Massachusetts 02140
617 / 868-1420

subsurface explorations document the anticipated subsurface conditions in the areas of the site not occupied by the existing tunnels. In general, these explorations indicate that ground surface is underlain by a miscellaneous fill deposit that ranges from 8 to 16 feet in thickness. Underlying the fill, the borings encountered an organic deposit which represents the former bottom of the Charles River. The borings indicate that the organic deposit is 5.5 to 16 feet thick. The organic deposit is underlain by a marine clay deposit observed to vary from 19.5 to 41 feet in thickness across the site. A glacial till deposit was encountered underlying the marine deposit, the surface of which was encountered at depths ranging from 47.5 to 67 feet below the existing ground surface. Underlying the glacial till deposit, the boreholes encountered bedrock at depths ranging from 52.5 to 83.5 feet below the existing ground surface. The groundwater level at the site was observed to range from depths of about 8 to 14 feet below ground surface.

Foundation support for the portion of the proposed building that is located outside the footprint of the existing tunnels will be provided by 200-ton design capacity mini-piles which transfer the structural load through the fill, organic and marine deposits and into the underlying glacial till and/or bedrock deposits. Foundation support for the portion of the proposed building located above the existing MBTA Green Line and CA/T tunnels will be provided by the existing slurry walls which are understood to have been designed and installed to support the proposed structure.

Localized construction dewatering will be required to construct the below-grade foundations and to install utilities. The depth of excavation is anticipated to typically range from about 4 to 18 feet below ground surface. It is anticipated that dewatering will be performed utilizing conventional sumping methods within the open excavations. It is estimated that the intermittent groundwater discharge will be on the order of 10 to 30 gallons per minute (GPM). This estimate of discharge does not include surface runoff which will be removed from the excavation during a limited duration of a rain storm and shortly thereafter. One, 5,000 gallon settling tank and bag filters will be used to settle out particulate prior to discharge. A schematic of the treatment system is shown on **Figure 4**.

Since the footprint of the proposed construction will occupy the entire site area which is bounded by existing streets and buildings, and the site is underlain by three below-grade tunnel structures, temporary on-site collection and recharge of groundwater is not feasible. Therefore, construction dewatering will require the discharge of collected groundwater into the storm drain system under the requested U.S. EPA Dewatering General Permit (DGP). A review of relevant sewer and drainage plans provided by the Boston Water and Sewer Commission (BWSC) indicate that storm water lines adjacent to the planned construction area on Canal and North Washington Streets flow into Boston Harbor. The locations of relevant catch basins with relation to the subject property are indicated on **Figure 3A**. **Figures 3B and 3C** show the routes of the storm drains adjacent to the site which lead to Boston Harbor.

To document the effectiveness of the above treatment system, samples of the discharge water will be obtained and tested for the presence of TSS prior to the start of discharge into the storm drain system. Should the pre-start up testing indicate that the levels of TSS in the effluent from the settling tank exceed the limits established under the DGP, additional filtration of the effluent will be implemented prior to discharge.

In conclusion, it is our opinion that groundwater at the site is acceptable for discharge directly into Boston Harbor under a Dewatering General Permit. Sampling and analysis of the effluent will be carried out in accordance with the terms of the Dewatering General Permit.

McPHAIL ASSOCIATES, LLC

Supplemental information appended to this letter in support of the DGP includes the following;

- Notice of Intent Transmittal Form for Permit Application and DEP Transmittal Form for Permit Application and Payment (**Appendix B**);
- A summary of groundwater analysis (**Appendix C, Table 1**);
- A review of adjacent and nearby DEP-listed disposal sites (**Attachment D**);
- A review of Areas of Critical Concern and Endangered and Threatened Species (**Appendix E**);
- A review of National Historic Places (**Attachment F**).

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, LLC

Jonathan W. Patch, P.E.

Ambrose J. Donovan, P.E., L.S.P.

Enclosures

c: Trinity One Canal LLC (Mr. Lawrence Sparrow)

F:\WP5\REPORTS\5161 DGP.wpd

JWP/ajd/wjb

FIGURE 1

McPHAIL ASSOCIATES, LLC
Geotechnical and Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)

N

SCALE 1:25,000

PROJECT LOCATION PLAN

ONE CANAL STREET

BOSTON MASSACHUSETTS

BEVERLY STREET
(PUBLIC – VARIABLE WIDTH)

NORTH WASHINGTON STREET
(PUBLIC – VARIABLE WIDTH)

NORTH

ANTHONY "RIP" VALENTI WAY
(PUBLIC – VARIABLE WIDTH)

HAVERHILL STREET
(PUBLIC) – 40' WIDE

CANAL STREET
(PUBLIC – VARIABLE WIDTH)

NEW CHARDON STREET
(PUBLIC – VARIABLE WIDTH)

EXISTING MIDDLE CA/T SLURRY WALL

EXISTING CA/T I-93 SOUTH BOUND TUNNEL

EXISTING WEST CA/T SLURRY WALL

EXISTING MBTA ORANGE LINE TUNNEL

EXISTING MBTA GREEN LINE TUNNEL

APPROXIMATE FOOTPRINT OF BELOW-GRADE PARKING LEVEL. LOWEST LEVEL SLAB EL.+108.3 (SHADED)

TP1 TP2 TP3 TP5 TP6 TP7 TP8 TP10 TP11 TP12 TP13 TP14 TP15 TP16 TP17 TP18 TP19 TP20 TP21 TP22 TP25 TP26

2 STORY BRICK/CONCRETE BUILDING
EXISTING ELECTRICAL SUBSTATION

4 STORY
CONCRETE BUILDING
EXISTING VENT BUILDING

EXISTING 53 CANAL STREET

APPROXIMATE LOCATION OF PROPOSED BUILDING

BENCHMARK #4
X-CUT ON HYDRANT BOLT
ELEV: 119.07
(MBTA SUBWAY DATUM)

BENCHMARK #3
LOWER LEFT STEP CORNER
ELEV:117.17
(MBTA SUBWAY DATUM)

LEGEND

— APPROXIMATE LOCATION OF TEST PIT PERFORMED BY MATTUCHIO CONSTRUCTION CORP. DURING THE PERIOD OF NOVEMBER 1 TO 9, 2010 FOR McPHAIL ASSOCIATES, INC.

NOTE: WITH THE EXCEPTION OF TEST PITS TP-1 AND TP-2, THE ACTUAL SIZE OF THE TEST PITS IS AS INDICATED ON THE PLAN.

REFERENCE: THIS PLAN WAS PREPARED FROM AN UNTITLED, UNDATED DRAWING PREPARED BY NITSCH ENGINEERING AND SCHEMATIC FOUNDATION PLANS PREPARED BY McNAMARA/SALVIA, INC.

GRAPHIC SCALE
20 0 20 40 80

McPHAIL ASSOCIATES, LLC
Geotechnical and Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)

ONE CANAL STREET

BOSTON MASSACHUSETTS

SUBSURFACE EXPLORATION PLAN

FOR

TRINITY ONE CANAL LLC

BY

McPHAIL ASSOCIATES, LLC

Date: SEPTEMBER 2013	Dwn: I.J.M.	Chkd: J.W.P.	Scale: 1" = 20'
Project No: 5161			FIGURE 2

FILE NAME: H:\Acad\JOBS\5161\Dewatering Permit\5161-E02.dwg

FIGURE 3A

APPROXIMATE SITE AREA

LOCATIONS OF DISCHARGE

LOCATIONS OF DISCHARGE

REFERENCE: THIS DRAWING WAS PREPARED FROM A PLAN OBTAINED FROM BOSTON WATER AND SEWER ON FEBRUARY 21, 2013

GRAPHIC SCALE

100 0 100 200

McPHAIL ASSOCIATES, LLC
Geotechnical and Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)

ONE CANAL STREET

BOSTON MASSACHUSETTS

DISCHARGE LOCATION PLAN

FOR

TRINITY ONE CANAL LLC

BY

McPHAIL ASSOCIATES, LLC

Date: SEPTEMBER 2013	Dwn: I.J.M.	Chkd: J.W.P.	Scale: 1" = 100'
Project No: 5161			

FILE NAME: H:\Acad\JOBS\5161\Dewatering Permit\5161-EO3A.dwg

FIGURE 3B

APPROXIMATE SITE AREA

LOCATION OF DISCHARGE

LOCATION OF DISCHARGE

LEGEND

— INDICATES DIRECTION OF FLOW

REFERENCE: THIS DRAWING WAS PREPARED FROM A PLAN OBTAINED FROM BOSTON WATER AND SEWER ON FEBRUARY 21, 2013

GRAPHIC SCALE

250 0 250 500

McPHAIL ASSOCIATES,LLC
Geotechnical and Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)

ONE CANAL STREET

BOSTON MASSACHUSETTS

DISCHARGE LOCATION PLAN

FOR

TRINITY ONE CANAL LLC

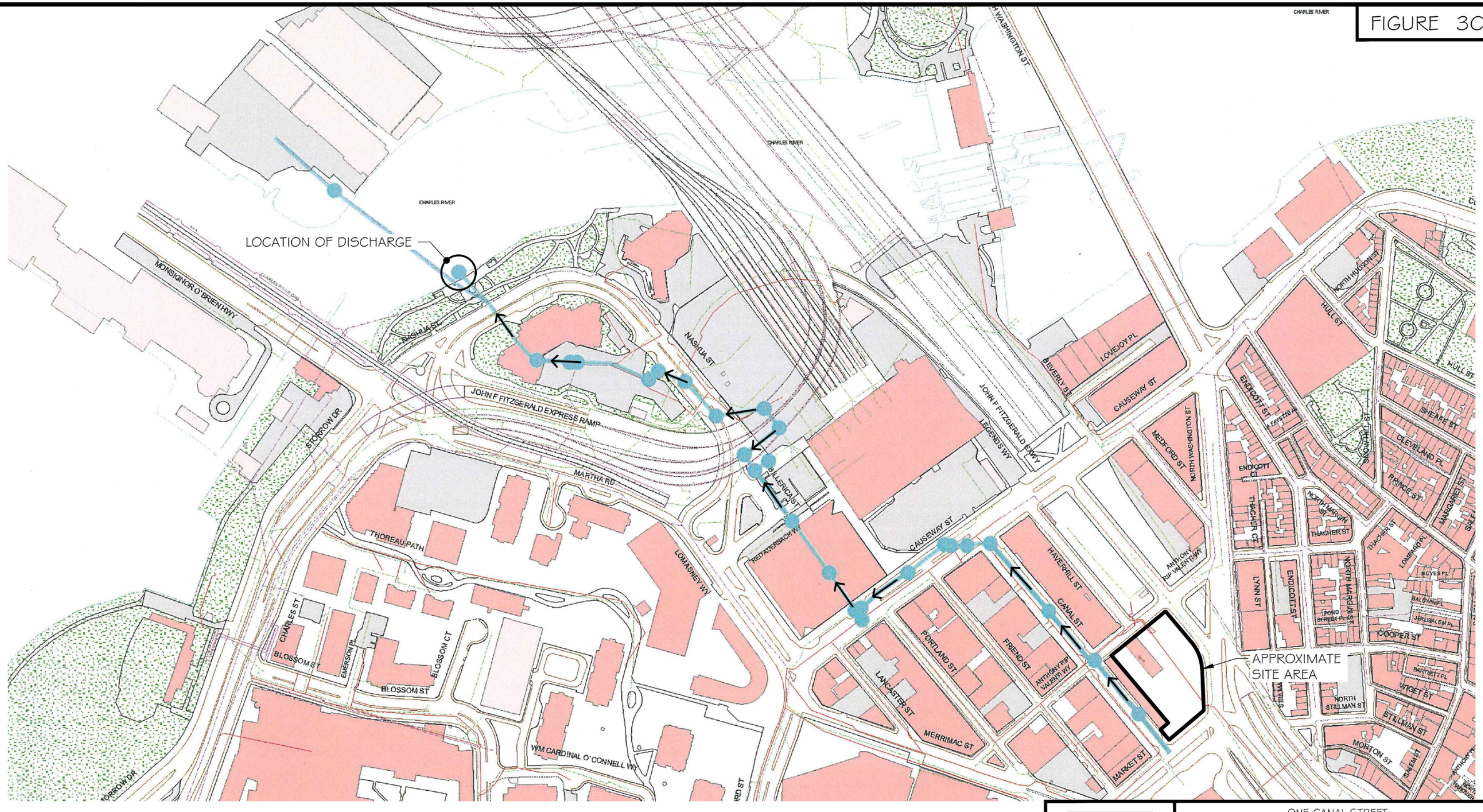
BY

McPHAIL ASSOCIATES, LLC

Date: SEPTEMBER 2013	Dwn: I.J.M.	Chkd: J.W.P.	Scale: 1" = 250'
Project No: 5161			

FILE NAME: H:\Acad\OBS\5161\Dewatering Permit\5161-E03B.dwg

FIGURE 3C



LEGEND

← — INDICATES DIRECTION OF FLOW

REFERENCE: THIS DRAWING WAS PREPARED FROM A PLAN OBTAINED FROM BOSTON WATER AND SEWER ON FEBRUARY 21, 2013

GRAPHIC SCALE

300 0 300 600

McPHAIL ASSOCIATES, LLC
Geotechnical and Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)

ONE CANAL STREET

BOSTON MASSACHUSETTS

DISCHARGE LOCATION PLAN

FOR

TRINITY ONE CANAL LLC

BY

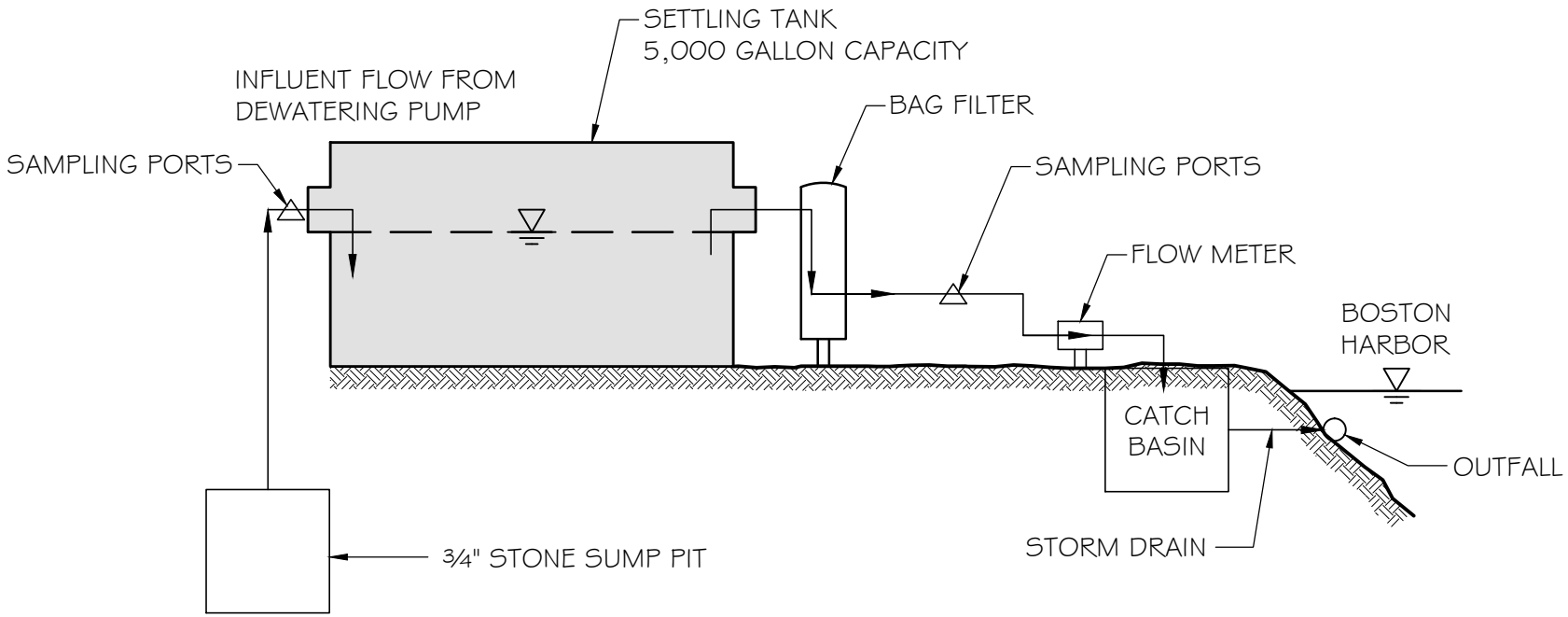
McPHAIL ASSOCIATES, LLC

Date: SEPTEMBER 2013	Dwn: I.J.M.	Chkd: J.W.P.	Scale: 1" = 300'
Project No: 5161			

FILE NAME: H:\Acad\JOBS\5161\Dewatering Permit\5161-E03C.dwg

FILE NAME: H:\Acad\JOBS\5161\Dewatering Permit\5161-E04.dwg

FIGURE 4



McPHAIL ASSOCIATES,LLC
Geotechnical and
Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)

ONE CANAL STREET
BOSTON MASSACHUSETTS

SCHEMATIC OF TREATMENT SYSTEM

FOR
TRINITY ONE CANAL LLC
BY
McPHAIL ASSOCIATES, LLC

Date: OCTOBER 2013	Dwn: I.J.M.	Chkd: J.W.P.	Scale: N.T.S.
Project No: 5161			

McPHAIL ASSOCIATES, LLC

APPENDIX A

LIMITATIONS

The purpose of this report is to present the result of testing of a groundwater sample obtained from the One Canal project site in Boston, Massachusetts, in support of an application for approval of temporary construction site dewatering discharge into surface waters of the Commonwealth of Massachusetts under the US EPA's Massachusetts Dewatering General Permit MAG070000.

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 specific subsurface explorations that were performed become evident in the future, it may 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 test data obtained from analysis of a groundwater sample, and are contingent upon its 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.

Analytical analyses have been performed for specific constituents during the course of this site 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 Trinity One Canal LLC. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party except relevant governmental agencies associated with the subject permit application, nor used in whole or in part by any other party, without the prior written consent of McPhail Associates, LLC.

McPHAIL ASSOCIATES, LLC

APPENDIX B

Notice of Intent Transmittal Form

DEP Transmittal Form for Permit Application and Payment

II. Suggested Notice of Intent (NOI) Form

1. General facility information. Please provide the following information about the facility.

a) Name of facility: One Canal	**Mailing Address for the Facility:** One Canal Street Boston, MA	
b) Location Address of the Facility (if different from mailing address):	**Facility Location** **longitude:** -71.058949 **latitude:** 42.363768	**Type of Business:** New Construction **Facility SIC codes:**

c) Name of facility owner: Trinity One Canal, LLC **Owner's email:** lsparrow@trinityfinancial.com

Owner's Tel #: 617-720-8400 **Owner's Fax #:** 617-720-8401

Address of owner (if different from facility address)

75 Federal Street; 4th Floor
Boston, MA 02114

Owner is (check one): 1. Federal____ 2. State _____ 3.Tribal_____ 4. Private_✓___ 4. Other _____(Describe)

Legal name of Operator, if not owner: John Moriarty & Associates, Inc.

Operator Contact Name: Eric Ewer - Project Executive

Operator Tel Number: (781) 729-3900 **Fax Number:** (781) 729-8456

Operator's email: eewer@jm-a.com

Operator Address (if different from owner)

3 Church Street; Winchester, MA 01890

d) Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water. Map attached? __✓__

e) Check Yes or No for the following:

1. **Has a prior NPDES permit been granted for the discharge? Yes ____ No_✓_ If Yes, Permit Number: _____**
2. **Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes_____ No__✓___**
3. **Is the facility covered by an individual NPDES permit? Yes_____ No_✓_ If Yes, Permit Number ____**
4. **Is there a pending application on file with EPA for this discharge? Yes _____ No __✓___ If Yes, date of submittal:**

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

a) Name of receiving water into which discharge will occur: Boston Harbor
State Water Quality Classification: SB **Freshwater:** _____ **Marine Water:** X

b) Describe the discharge activities for which the owner/applicant is seeking coverage:
1. **Construction dewatering of groundwater intrusion and/or storm water accumulation.**
2. **Short-term or long-term dewatering of foundation sumps.**
3. **Other.**

c) Number of outfalls 3

For each outfall:

d) Estimate the maximum daily and average monthly flow of the discharge (in gallons per day – GPD). Max Daily Flow 43,200 **GPD**
Average Monthly Flow 28,800 **GPD**

e) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 8.3 **Min pH** 6.5

f) Identify the source of the discharge (i.e. potable water, surface water, or groundwater). If groundwater, the facility shall submit effluent test results, as required in Section 4.4.5 of the General Permit. Groundwater, surface water runoff. See attached report.

g) What treatment does the wastewater receive prior to discharge? 5,000 sedimentation tank and bag filters

h) Is the discharge continuous? Yes _____ **No** ✓ **If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B)** B
If (P), number of days or months per year of the discharge _____ **and the specific months of discharge** _____;
If (I), number of days/year there is a discharge _____
Is the discharge temporary? Yes ✓ **No** _____
If yes, approximate start date of dewatering 10/15/2013 **approximate end date of dewatering** 10/15/2015

i) Latitude and longitude of each discharge within 100 feet (See http://www.epa.gov/tri/report/siting_tool): Outfall 1: long. 42.3639 **lat.** -71.0493 ;
Outfall 2: long. 42.3612 **lat.** -71.0507; **Outfall 3: long.** 42.3677 **lat.** -71.067 .

j) If the source of the discharge is potable water, please provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water and attach any calculation sheets used to support stream flow and dilution calculations _____ **cfs**
(See Appendix VII for equations and additional information)

MASSACHUSETTS FACILITIES: See Section 3.4 and Appendix 1 of the General Permit for more information on Areas of Critical Environmental Concern (ACEC):

k) Does the discharge occur in an ACEC? Yes _____ No __✓__
If yes, provide the name of the ACEC: _____

3. Contaminant Information

a) Are any pH neutralization and/or dechlorination chemicals used in the discharge? If so, include the chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC_{50} in percent for aquatic organism(s)). See attached report.

b) Please report any known remediation activities or water-quality issues in the vicinity of the discharge. See attached report.

4. Determination of Endangered Species Act Eligibility: Provide documentation of ESA eligibility as required at Part 3.4 and Appendices III and IV. In addition, respond to the following questions.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes____No_✓__
b) Has any consultation with the federal services been completed ? Yes___ No_✓
c) Is consultation underway? Yes ____ No_✓__
d) What were the results of the consultation with the U.S. Fish and Wildlife Service and/or NOAA Fisheries Service (check one): a "no jeopardy" opinion _____or written concurrence____ on a finding that the discharges are not likely to adversely affect any endangered species or critical habitat.
e) Which of the five eligibility criteria listed in Appendix 2, Section B (A,B,C,D,or E) have you met? A_____
f) Please attach a copy of the most current federal listing of endangered and threatened species, found at USF&W website.

5. Documentation of National Historic Preservation Act requirements: Please respond to the following questions:

a) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility site or in proximity to the discharge? Yes _____ No _✓__
b) Have any State or Tribal historic preservation officers been consulted in this determination? Yes _____ or No _✓__ If yes, attach the results of the consultation(s).
c) Which of the three National Historic Preservation Act requirements listed in Appendix 3, Section C (1,2 o3) have you met? _____

6. 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

7. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22 (see below) including the following certification:

I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the dewatering system; (2) the discharge consists solely of dewatering and authorized pH adjustment and/or

dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product or finished product; (4) if the discharge of dewatering subsequently mixes with other permitted wastewater (i.e.stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for dewatering discharge; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) 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 Name: One Canal

Operator signature:

Title: Project Executive

Date: 10/16/13

Federal regulations require this application to be signed as follows:

1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.

Enter your transmittal number → X257811 (Transmittal Number)

Your unique Transmittal Number can be accessed online: http://mass.gov/dep/service/online/trasmfrm.shtml

Massachusetts Department of Environmental Protection

Transmittal Form for Permit Application and Payment

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

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

3. Three copies of this form will be needed.

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

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

MassDEP
P.O. Box 4062
Boston, MA
02211

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

A. Permit Information

WM10	Construction Site Dewatering
1. Permit Code: 7 or 8 character code from permit instructions	2. Name of Permit Category

Temporary Construction Dewatering
3. Type of Project or Activity

B. Applicant Information – Firm or Individual

Trinity One Canal LLC
1. Name of Firm - Or, if party needing this approval is an individual enter name below:

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

75 Federal Street, 4th Floor
5. Street Address

6. City/Town	7. State	8. Zip Code	9. Telephone #	10. Ext. #
Boston	MA	02110	617-720-8400	1541

11. Contact Person	12. e-mail address (optional)
Mr. Lawrence Sparrow	lsparrow@trinityfinancial.com

C. Facility, Site or Individual Requiring Approval

One Canal
1. Name of Facility, Site Or Individual
One Canal Street
2. Street Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Boston	MA	02114		

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

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

McPhail Associates, LLC
1. Name of Firm Or Individual
2269 Massachusetts Avenue
2. Address

3. City/Town	4. State	5. Zip Code	6. Telephone #	7. Ext. #
Cambridge	MA	02140	617-868-1420	316

8. Contact Person	9. LSP Number (BWSC Permits only)
Mr. Jonathan W. Patch, P.E.	

E. Permit - Project Coordination

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

EOEA File Number

F. Amount Due

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

Special Provisions:

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

Check Number	Dollar Amount	Date
32097	470	October 2, 2013

32097

MCPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140

Cambridge Trust Company
CAMBRIDGE, MASS.
01
53-59-113

EZShield™ Check Fraud Protection for Business

10/8/2013

PAY TO THE ORDER OF Commonwealth of Mass.

$ **470.00

Four Hundred Seventy and 00/100********** DOLLARS

Commonwealth of Mass.

MEMO 5161.9.T4

AUTHORIZED SIGNATURE

Security features. Details on back.

⑈032097⑈ ⑆011300595⑆ ⑈5055280 1⑈

MCPHAIL ASSOCIATES, LLC

32097

Commonwealth of Mass.		10/8/2013	
	5161.9.T4		470.00

McPhail LLC	5161.9.T4	470.00

McPHAIL ASSOCIATES, LLC

APPENDIX C

RESULTS OF RECENT GROUNDWATER ANALYSIS

On September 20, 2013, McPhail Associates, LLC obtained a sample of groundwater from a groundwater equilibrium manhole located on the project site using a peristaltic pump and submitted the sample to a certified laboratory for analysis for the presence of parameters 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), polyaromatic hydrocarbons (PAHs), total phenols, PCBs, and total recoverable metals.

The results of the laboratory analysis are summarized in Table 1 included in Appendix C. The results of laboratory analysis indicate the following:

1. **pH**: The tested sample exhibited a pH level of 7.1 Standard Units (S.U.). The level of 7.1 is within the recommended range of 6.5 to 8.5 S.U. for discharge into salt water.

2. **TSS**: Total suspended solids (TSS) were not detected in the tested sample at a concentration above the method detection limit of 5 milligrams per liter (mg/l).

3. **VOCs**: With the exception of acetone which was detected at a concentration of 9.9 micrograms per liter (ug/l), the groundwater sample indicated no detected levels of any of the target VOCs, including BTEX.

4. **TPH**: Laboratory analysis of the groundwater sample indicated no detectable levels of TPH above the laboratory method detection limit of 4,000 ug/l.

5. **PAHs and Total Phenols**: The laboratory reported no detectable levels of Group 1 or 2 PAHs. Total Phenols were not detected in the groundwater sample.

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

7. **Cyanide**: Cyanide was not detected at a concentration above the laboratory method detection limit.

McPHAIL ASSOCIATES, LLC

8. **Total Metals**: The laboratory reported no detectable levels of cadmium, chromium III, chromium VI, lead, mercury, or silver above the laboratory method detection limits in the submitted sample of groundwater. Levels of antimony, arsenic, copper, nickel, selenium, zinc and iron were detected at concentrations of 12.21 ug/l, 1.42 ug/l, 4.64 ug/l, 1.58 ug/l, 7.58 ug/l, 11.07 ug/l and 70 ug/l, respectively. The detected levels of arsenic, nickel, selenium, zinc and iron are below the EPA RGP effluent limits for discharge to a salt water body.

   The detected levels of antimony and copper exceed the EPA RGP effluent limits of 5.6 ug/l and 4.64 ug/l, respectively, for discharge into a salt water body. Approval has been obtained from the Massachusetts Department of Environmental Protection (DEP) to utilize a dilution factor. Dilution factor (DF) calculations and the approval to use a DF from the DEP are attached. As a result, a Dilution Factor (DF) was calculated for the detected levels of total antimony and copper. The purpose of the DF calculation is to establish Total Recoverable Limits for metals, taking into consideration the anticipated dilution of the detected analytes upon discharge into Boston Harbor. A DF of 33.8 was calculated. Conservatively, we applied a DF of 5 to calculate the Total Recoverable Limits for metals.

   As noted in the text of the report, one, 5,000 gallon sedimentation tank and bag filters will be implemented prior to discharge to reduce the concentration of TSS in the effluent. It is anticipated that this treatment measure will also reduce the antimony and copper concentrations in the effluent.

TABLE 1

ANALYTICAL TEST RESULTS--GROUNDWATER SEPTEMBER 2013

One Canal; Boston, Massachusetts
Project Number 5161.9.T4

LOCATION		RGP Limits (Saltwater)	Total Recoverable Limits (DF = 5)	DGP Limits (Class SB)		NPDES 9/20/13
SAMPLING DATE						9/20/2013
LAB SAMPLE ID						L1318667-01
					Units	
1	Solids, Total Suspended	30		100 D/50 M	mg/l	ND(5)
	pH (H)	6.5-8.3		6.5-8.5	SU	7.1
2	Total Residual Chlorine	7.5		13 D/7.5 M	ug/l	ND(20)
3	TPH	5000			ug/l	ND(4000)
4	Total Cyanide	1			ug/l	ND(5)
5	Benzene	Total BTEX			ug/l	ND(0.5)
6	Toluene	Total BTEX			ug/l	ND(0.75)
7	Ethylbenzene	Total BTEX			ug/l	ND(0.5)
8	Xylene (Total)	Total BTEX			ug/l	ND(1)
9	Total BTEX	100			ug/l	ND
10	1,2-Dibromoethane	0.05			ug/l	ND(2)
11	Methyl tert butyl ether	70			ug/l	ND(1)
12	Tert-Butyl Alcohol	Monitor Only			ug/l	ND(10)
13	Tertiary-Amyl Methyl Ether	Monitor Only			ug/l	ND(2)
14	Naphthalene	20			ug/l	ND(2.5)
15	Carbon tetrachloride	4.44			ug/l	ND(0.5)
16	1,2-Dichlorobenzene	600			ug/l	ND(2.5)
17	1,3-Dichlorobenzene	320			ug/l	ND(2.5)
18	1,4-Dichlorobenzene	5			ug/l	ND(2.5)
19	1,1-Dichloroethane	70			ug/l	ND(0.75)
20	1,2-Dichloroethane	5			ug/l	ND(2)
21	1,1-Dichloroethene	3.2			ug/l	ND(0.5)
22	cis-1,2-Dichloroethene	70			ug/l	ND(0.5)
23	Methylene chloride	4.6			ug/l	ND(3)
24	Tetrachloroethene	5			ug/l	ND(0.5)
25	1,1,1-Trichloroethane	200			ug/l	ND(0.5)
26	1,1,2-Trichloroethane	5			ug/l	ND(0.75)
27	Trichloroethene	5			ug/l	ND(0.5)
28	Vinyl chloride	2			ug/l	ND(1)
29	Acetone	Monitor Only			ug/l	9.9
30	1,4-Dioxane	Monitor Only			ug/l	ND(3)
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
34	Bis(2-ethylhexyl)phthalate	6			ug/l	ND(3)
35	Total Group I PAHs	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 PAHs	10			ug/l	ND
h	Acenaphthene	Total Group II PAH			ug/l	ND(0.2)
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	ND(0.2)
n	Naphthalene	20			ug/l	ND(0.2)
o	Phenanthrene	Total Group II PAH			ug/l	ND(0.2)
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	231000
	Total Recoverable Metal Limits					
39	Antimony, Total	5.6	28		ug/l	12.21
40	Arsenic, Total	36	180		ug/l	1.42
41	Cadmium, Total	8.9	44.5		ug/l	ND(0.2)
42	Chromium, Trivalent	100	500		ug/l	ND(1)
43	Chromium, Hexavalent	50.3	251.5		ug/l	ND(10)
44	Copper, Total	3.7	18.5		ug/l	4.64
45	Lead, Total	8.5	42.5		ug/l	ND(0.5)
46	Mercury, Total	1.1	5.5		ug/l	ND(0.2)
47	Nickel, Total	8.2	41		ug/l	1.58
48	Selenium, Total	71	355		ug/l	7.58
49	Silver, Total	2.2	11		ug/l	ND(0.4)
50	Zinc, Total	85.6	428		ug/l	11.07
51	Iron, Total	1000	5000		ug/l	70

Shading indicates an exceedence of the RGP Standards
ND--not detected above laboratory detection limit

From: Kubit, Robert (DEP)
To: Jonathan Patch;
cc: Victor Alvarez (alvarez.victor@epamail.epa.gov);
Subject: FW: RE: One Canal Street; Boston, MA - Remediation General Permit Application
Date: Monday, October 07, 2013 4:22:55 PM
Attachments: 5161_DF.pdf

Hi Jonathan,

The attached dilution factor calculations are acceptable to the state. A dilution factor of 33 makes the reported concentration levels for copper and antimony not a significant concern in my judgment.

Per the RGP, Appendix III, Category II, Non-Petroleum Site Remediation, Saltwater base limits for antimony = 5.6 ug/l and copper = 3.7 ug/l. NOI reported concentrations are antimony = 12.21 ug/l and copper = 4.64 ug/l.

According to Appendix III, footnote 11: [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.

The above may apply to saltwater if the state approves, which we do.
RGP, Part I.C.7:
[8] Dilution factors may be available for discharges to saline waters but only with approval of the flow modeling
information from the State prior to the submission of the NOI.

If I can help in any way, please let me know.

Bob

Robert Kubit, P.E.
MassDEP
Division of Watershed Management
627 Main Street
Worcester MA 01608
Telephone: (508) 767-2854
Email: robert.kubit@state.ma.us
Fax: (508) 791-4131

From: Jonathan Patch [mailto:JWP@mcphailgeo.com]
Sent: Friday, October 04, 2013 9:31 AM
To: Kubit, Robert (DEP)
Subject: RE: RE: One Canal Street; Boston, MA - Remediation General Permit Application

Good morning, Bob.

Using the example you provided, I calculated a dilution factor (DF) of 33.8, which includes, what I believe are conservative assumptions for the length and width of the mixing volume [see attached calculations]. I would only need a DF of 5 for my metals results to be below the Dilution Range Concentrations in Appendix IV for discharges to freshwater. Boston Harbor is a saltwater body and the EPA guidelines do not allow a DF to be applied for discharges to salt water. How would I be able to use a DF for my site then?

Regards,

Jonathan

==========
Jonathan Walter Patch, P.E.
McPhail Associates, LLC
2269 Massachusetts Avenue
Cambridge, MA 02140
617-868-1420 x316

From: Jonathan Patch
Sent: Thursday, October 03, 2013 1:36 PM
To: 'Kubit, Robert (DEP)'
Cc: William Burns
Subject: RE: One Canal Street; Boston, MA - Remediation General Permit Application [Filed 03 Oct 2013 13:34]

Bob,

Thank you for responding. Yes, please fax me example calculations (617-868-1423) for a dilution factor to use.

Regards,

Jonathan

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Jonathan Walter Patch, P.E.
McPhail Associates, LLC

2269 Massachusetts Avenue
Cambridge, MA 02140
617-868-1420 x316

From: Kubit, Robert (DEP) [mailto:robert.kubit@state.ma.us]
Sent: Thursday, October 03, 2013 12:34 PM
To: Jonathan Patch
Subject: FW: One Canal Street; Boston, MA - Remediation General Permit Application

Hi Jonathan,

I sent this to my colleague Victor at EPA (he will review and issue any RGP/DGP) and then realized they have been furloughed. I believe you should apply for the Dewatering General Permit and are eligible if you submit calculations showing the dilution available in Boston Harbor is greater than 5. The fee and associated category (BRPWM10) you submitted to the state is for the Dewatering General Permit. Note the Remediation General Permit has a different category (BRPWM12) and a different fee.

I can fax you example calculations others have done that were acceptable. Let me know your fax number if you would like them.

Bob

Robert Kubit, P.E.
MassDEP
Division of Watershed Management
627 Main Street
Worcester MA 01608
Telephone: (508) 767-2854
Email: robert.kubit@state.ma.us
Fax: (508) 791-4131

From: Kubit, Robert (DEP)
Sent: Thursday, October 03, 2013 12:11 PM
To: Victor Alvarez (alvarez.victor@epamail.epa.gov)
Subject: FW: One Canal Street; Boston, MA - Remediation General Permit Application

Good afternoon Victor,

I'm not sure if you received the attached RGP NOI. Copper and Antimony seem to be the pollutants of concern. According to the RGP, Part I.C.7:

7. Consideration of Dilution Factors for Discharges of Metals - Where discharges of metals
require effluent limits, dilution factors may be applied to the discharges of metals to
freshwater.[8] In the NOI, the applicant must select the applicable parameters and, if
necessary, an appropriate dilution factor. See Appendix V, Section I.A.3.c of the NOI
Instructions for detailed instructions for determining the applicable effluent limitations for
metals into freshwater.

[8] Dilution factors may be available for discharges to saline waters but only with approval of the flow modeling
information from the State prior to the submission of the NOI.

I expect the applicant could easily submit calculations showing a dilution of 5-10 or greater. That would mean the appropriate general permit would be the Dewatering General Permit, not the Remediation General Permit. If you agree, please let me know and I will contact them to correct their NOI.

Thanks.

Bob

Robert Kubit, P.E.
MassDEP
Division of Watershed Management
627 Main Street
Worcester MA 01608
Telephone: (508) 767-2854
Email: robert.kubit@state.ma.us
Fax: (508) 791-4131

From: Jonathan Patch [mailto:JWP@mcphailgeo.com]
Sent: Wednesday, October 02, 2013 5:06 PM
To: Kubit, Robert (DEP)
Cc: 'Lawrence Sparrow'; 'Eric Ewer'
Subject: One Canal Street; Boston, MA - Remediation General Permit Application

Robert,

Attached herewith is the RGP Permit Application and the Notice of Intent for Discharge Under Massachusetts Remedial General Permit MAG910000 for temporary construction dewatering at One Canal Street in Boston, Massachusetts. A copy of the DEP transmittal form and check are also attached.

Please let us know if you have any questions.

Regards,

Jonathan

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Jonathan Walter Patch, P.E.
McPhail Associates, LLC
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Cambridge, MA 02140
617-868-1420 x316

MCPHAIL ASSOCIATES, LLC
Consulting Geotechnical Engineers
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140

JOB 5161 – One Canal
SHEET NO. 1 OF
CALCULATED BY [illegible] DATE 10/4/13
CHECKED BY DATE
SCALE

One Canal

Discharge Dilution Calculations

Max. Design Flow = 30 GPM

30 GPM x 1,440 min/day x 0.134 cf^3/gal = 5789 cf/day (cfd)

Mixing Volume

Three Outfalls Assume 100 ft long (conservative)
[50 ft in each direction]

100 ft wide

MV = 100 ft long x 100 Ft wide x 9.5 Ft mean tide x 2 tides per day = 190,000 cfd

Dilution Factor

Using Equation $DF = (Q_d + Q_s)/Q_d$

DF = Dilution Factor

Q_D = Daily discharge to Recieving Body

Q_s = daily receiving body mixing volume

MCPHAIL ASSOCIATES, LLC
Consulting Geotechnical Engineers
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140

JOB 5161 – one canal

SHEET NO. 2 OF

CALCULATED BY JMP DATE 10/4/13

CHECKED BY DATE

SCALE

DF = (5,789 cfd + 190,000 cfd) / 5,789 cfd

= 33.8

Conservatively assume DF = 5

ANALYTICAL REPORT

Lab Number:	L1318667
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	ONE CANAL
Project Number:	5161.9.T2
Report Date:	09/29/13

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: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1318667-01	NPDES 9/20/13	BOSTON, MA	09/20/13 11:00

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

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. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

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.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples.

Please contact Client Services at 800-624-9220 with any questions.

Project Name:	ONE CANAL	**Lab Number:**	L1318667
Project Number:	5161.9.T2	**Report Date:**	09/29/13

Case Narrative (continued)

Sample Receipt

At the client's request the analysis of Volatile Organics by Method 624 was canceled, and the analysis of Volatile Organics by Method 8260 was added.

Semivolatile Organics

The WG638130-2/-3 LCS/LCSD recoveries, associated with L1318667-01, are below the acceptance criteria for benzidine (0%/6%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.

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: Cynthia McQueen

Title: Technical Director/Representative Date: 09/29/13

ORGANICS

VOLATILES

Project Name: ONE CANAL **Lab Number:** L1318667

Project Number: 5161.9.T2 **Report Date:** 09/29/13

SAMPLE RESULTS

Lab ID: L1318667-01
Client ID: NPDES 9/20/13
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 09/26/13 15:49
Analyst: MM

Date Collected: 09/20/13 11:00
Date Received: 09/20/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1

Project Name: ONE CANAL **Lab Number:** L1318667

Project Number: 5161.9.T2 **Report Date:** 09/29/13

SAMPLE RESULTS

Lab ID: L1318667-01 Date Collected: 09/20/13 11:00

Client ID: NPDES 9/20/13 Date Received: 09/20/13

Sample Location: BOSTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	9.9		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1

Project Name: ONE CANAL **Lab Number:** L1318667

Project Number: 5161.9.T2 **Report Date:** 09/29/13

SAMPLE RESULTS

Lab ID: L1318667-01 Date Collected: 09/20/13 11:00

Client ID: NPDES 9/20/13 Date Received: 09/20/13

Sample Location: BOSTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Project Name: ONE CANAL
Lab Number: L1318667
Project Number: 5161.9.T2
Report Date: 09/29/13

SAMPLE RESULTS

Lab ID:	L1318667-01	Date Collected:	09/20/13 11:00
Client ID:	NPDES 9/20/13	Date Received:	09/20/13
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	1,8260C-SIM(M)		
Analytical Date:	09/27/13 15:53		
Analyst:	MM		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	3.0	--	1

Project Name: ONE CANAL
Lab Number: L1318667
Project Number: 5161.9.T2
Report Date: 09/29/13

SAMPLE RESULTS

Lab ID:	L1318667-01	Date Collected:	09/20/13 11:00
Client ID:	NPDES 9/20/13	Date Received:	09/20/13
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	14,504.1	Extraction Date:	09/23/13 09:30
Analytical Date:	09/23/13 16:26		
Analyst:	SH		

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

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 09/23/13 15:38
Analyst: SH

Extraction Date: 09/23/13 09:30

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG638141-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/26/13 06:33
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG639256-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
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	--

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/26/13 06:33
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG639256-3					
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 09/26/13 06:33
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG639256-3					
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	98		70-130

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 09/27/13 10:56
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG639770-3					
1,4-Dioxane	ND		ug/l	3.0	--

Lab Control Sample Analysis

Batch Quality Control

Project Name: ONE CANAL

Project Number: 5161.9.T2

Lab Number: L1318667

Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG638141-2						
1,2-Dibromoethane	107		-		70-130	-		20	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

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: WG639256-1 WG639256-2								
Methylene chloride	89		83		70-130	7		20
1,1-Dichloroethane	92		84		70-130	9		20
Chloroform	90		84		70-130	7		20
Carbon tetrachloride	83		73		63-132	13		20
1,2-Dichloropropane	96		88		70-130	9		20
Dibromochloromethane	79		79		63-130	0		20
1,1,2-Trichloroethane	93		90		70-130	3		20
Tetrachloroethene	86		79		70-130	8		20
Chlorobenzene	93		90		75-130	3		25
Trichlorofluoromethane	86		78		62-150	10		20
1,2-Dichloroethane	92		86		70-130	7		20
1,1,1-Trichloroethane	86		79		67-130	8		20
Bromodichloromethane	89		83		67-130	7		20
trans-1,3-Dichloropropene	89		90		70-130	1		20
cis-1,3-Dichloropropene	93		87		70-130	7		20
1,1-Dichloropropene	86		79		70-130	8		20
Bromoform	87		89		54-136	2		20
1,1,2,2-Tetrachloroethane	96		97		67-130	1		20
Benzene	96		87		70-130	10		25
Toluene	93		89		70-130	4		25
Ethylbenzene	93		89		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: ONE CANAL

Project Number: 5161.9.T2

Lab Number: L1318667

Report Date: 09/29/13

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: WG639256-1 WG639256-2								
Chloromethane	92		82		64-130	11		20
Bromomethane	60		55		39-139	9		20
Vinyl chloride	98		88		55-140	11		20
Chloroethane	92		83		55-138	10		20
1,1-Dichloroethene	88		82		61-145	7		25
trans-1,2-Dichloroethene	93		83		70-130	11		20
Trichloroethene	89		81		70-130	9		25
1,2-Dichlorobenzene	94		90		70-130	4		20
1,3-Dichlorobenzene	92		88		70-130	4		20
1,4-Dichlorobenzene	91		88		70-130	3		20
Methyl tert butyl ether	91		86		63-130	6		20
p/m-Xylene	93		88		70-130	6		20
o-Xylene	93		91		70-130	2		20
cis-1,2-Dichloroethene	88		84		70-130	5		20
Dibromomethane	94		91		70-130	3		20
1,4-Dichlorobutane	95		91		70-130	4		20
1,2,3-Trichloropropane	94		90		64-130	4		20
Styrene	96		94		70-130	2		20
Dichlorodifluoromethane	104		94		36-147	10		20
Acetone	**157**	Q	**155**	Q	58-148	1		20
Carbon disulfide	86		80		51-130	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

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: WG639256-1 WG639256-2								
2-Butanone	131		126		63-138	4		20
Vinyl acetate	85		78		70-130	9		20
4-Methyl-2-pentanone	110		104		59-130	6		20
2-Hexanone	122		130		57-130	6		20
Ethyl methacrylate	100		99		70-130	1		20
Acrylonitrile	97		92		70-130	5		20
Bromochloromethane	97		92		70-130	5		20
Tetrahydrofuran	104		97		58-130	7		20
2,2-Dichloropropane	88		79		63-133	11		20
1,2-Dibromoethane	95		96		70-130	1		20
1,3-Dichloropropane	94		93		70-130	1		20
1,1,1,2-Tetrachloroethane	91		88		64-130	3		20
Bromobenzene	90		87		70-130	3		20
n-Butylbenzene	86		84		53-136	2		20
sec-Butylbenzene	85		81		70-130	5		20
tert-Butylbenzene	87		83		70-130	5		20
o-Chlorotoluene	89		84		70-130	6		20
p-Chlorotoluene	90		86		70-130	5		20
1,2-Dibromo-3-chloropropane	84		84		41-144	0		20
Hexachlorobutadiene	98		92		63-130	6		20
Isopropylbenzene	86		81		70-130	6		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: ONE CANAL

Project Number: 5161.9.T2

Lab Number: L1318667

Report Date: 09/29/13

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: WG639256-1 WG639256-2								
p-Isopropyltoluene	88		84		70-130	5		20
Naphthalene	86		85		70-130	1		20
n-Propylbenzene	86		83		69-130	4		20
1,2,3-Trichlorobenzene	94		88		70-130	7		20
1,2,4-Trichlorobenzene	89		89		70-130	0		20
1,3,5-Trimethylbenzene	92		86		64-130	7		20
1,2,4-Trimethylbenzene	90		87		70-130	3		20
trans-1,4-Dichloro-2-butene	80		92		70-130	14		20
Ethyl ether	95		94		59-134	1		20
Tert-Butyl Alcohol	112		109		70-130	3		20
Tertiary-Amyl Methyl Ether	101		94		66-130	7		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		88		70-130
Toluene-d8	93		96		70-130
4-Bromofluorobenzene	97		99		70-130
Dibromofluoromethane	90		90		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: ONE CANAL

Project Number: 5161.9.T2

Lab Number: L1318667

Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG639770-1 WG639770-2								
1,4-Dioxane	98		117		70-130	18		25

Matrix Spike Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638141-3 QC Sample: L1318667-01 Client ID: NPDES 9/20/13													
1,2-Dibromoethane	ND	0.255	0.294	115		-	-		70-130	-		20	A

SEMIVOLATILES

Project Name: ONE CANAL **Lab Number:** L1318667

Project Number: 5161.9.T2 **Report Date:** 09/29/13

SAMPLE RESULTS

Lab ID:	L1318667-01	Date Collected:	09/20/13 11:00
Client ID:	NPDES 9/20/13	Date Received:	09/20/13
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D	Extraction Date:	09/22/13 21:01
Analytical Date:	09/28/13 01:43		
Analyst:	JB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Benzidine	ND		ug/l	20	--	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
1,2-Dichlorobenzene	ND		ug/l	2.0	--	1
1,3-Dichlorobenzene	ND		ug/l	2.0	--	1
1,4-Dichlorobenzene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--	1
2,4-Dinitrotoluene	ND		ug/l	5.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
Azobenzene	ND		ug/l	2.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorocyclopentadiene	ND		ug/l	20	--	1
Isophorone	ND		ug/l	5.0	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
NDPA/DPA	ND		ug/l	2.0	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--	1
Butyl benzyl phthalate	ND		ug/l	5.0	--	1
Di-n-butylphthalate	ND		ug/l	5.0	--	1
Di-n-octylphthalate	ND		ug/l	5.0	--	1
Diethyl phthalate	ND		ug/l	5.0	--	1
Dimethyl phthalate	ND		ug/l	5.0	--	1
Aniline	ND		ug/l	2.0	--	1
4-Chloroaniline	ND		ug/l	5.0	--	1
2-Nitroaniline	ND		ug/l	5.0	--	1
3-Nitroaniline	ND		ug/l	5.0	--	1
4-Nitroaniline	ND		ug/l	5.0	--	1
Dibenzofuran	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine	ND		ug/l	2.0	--	1

Project Name: ONE CANAL **Lab Number:** L1318667

Project Number: 5161.9.T2 **Report Date:** 09/29/13

SAMPLE RESULTS

Lab ID: L1318667-01 Date Collected: 09/20/13 11:00

Client ID: NPDES 9/20/13 Date Received: 09/20/13

Sample Location: BOSTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	10	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	--	1
Benzoic Acid	ND		ug/l	50	--	1
Benzyl Alcohol	ND		ug/l	2.0	--	1
Carbazole	ND		ug/l	2.0	--	1
Pyridine	ND		ug/l	5.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	39		21-120
Phenol-d6	26		10-120
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	77		15-120
2,4,6-Tribromophenol	98		10-120
4-Terphenyl-d14	95		41-149

Project Name: ONE CANAL
Project Number: 5161.9.T2
Lab Number: L1318667
Report Date: 09/29/13

SAMPLE RESULTS

Lab ID:	L1318667-01	Date Collected:	09/20/13 11:00
Client ID:	NPDES 9/20/13	Date Received:	09/20/13
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D-SIM	Extraction Date:	09/22/13 20:31
Analytical Date:	09/25/13 13:29		
Analyst:	HL		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.20	--	1
2-Chloronaphthalene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.20	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1
Naphthalene	ND		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	ND		ug/l	0.20	--	1
Phenanthrene	ND		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
1-Methylnaphthalene	ND		ug/l	0.20	--	1
2-Methylnaphthalene	ND		ug/l	0.20	--	1
Pentachlorophenol	ND		ug/l	0.80	--	1
Hexachlorobenzene	ND		ug/l	0.80	--	1
Hexachloroethane	ND		ug/l	0.80	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		21-120
Phenol-d6	25		10-120
Nitrobenzene-d5	61		23-120
2-Fluorobiphenyl	69		15-120
2,4,6-Tribromophenol	87		10-120
4-Terphenyl-d14	93		41-149

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/26/13 19:58
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 09/22/13 18:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG638130-1					
Acenaphthene	ND		ug/l	2.0	--
Benzidine	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Hexachlorobenzene	ND		ug/l	2.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
2-Chloronaphthalene	ND		ug/l	2.0	--
1,2-Dichlorobenzene	ND		ug/l	2.0	--
1,3-Dichlorobenzene	ND		ug/l	2.0	--
1,4-Dichlorobenzene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene	ND		ug/l	2.0	--
Fluoranthene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorobutadiene	ND		ug/l	2.0	--
Hexachlorocyclopentadiene	ND		ug/l	20	--
Hexachloroethane	ND		ug/l	2.0	--
Isophorone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA	ND		ug/l	2.0	--
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	--
Butyl benzyl phthalate	ND		ug/l	5.0	--
Di-n-butylphthalate	ND		ug/l	5.0	--
Di-n-octylphthalate	ND		ug/l	5.0	--
Diethyl phthalate	ND		ug/l	5.0	--

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/26/13 19:58
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 09/22/13 18:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG638130-1					
Dimethyl phthalate	ND		ug/l	5.0	--
Benzo(a)anthracene	ND		ug/l	2.0	--
Benzo(a)pyrene	ND		ug/l	2.0	--
Benzo(b)fluoranthene	ND		ug/l	2.0	--
Benzo(k)fluoranthene	ND		ug/l	2.0	--
Chrysene	ND		ug/l	2.0	--
Acenaphthylene	ND		ug/l	2.0	--
Anthracene	ND		ug/l	2.0	--
Benzo(ghi)perylene	ND		ug/l	2.0	--
Fluorene	ND		ug/l	2.0	--
Phenanthrene	ND		ug/l	2.0	--
Dibenzo(a,h)anthracene	ND		ug/l	2.0	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	--
Pyrene	ND		ug/l	2.0	--
Biphenyl	ND		ug/l	2.0	--
Aniline	ND		ug/l	2.0	--
4-Chloroaniline	ND		ug/l	5.0	--
1-Methylnaphthalene	ND		ug/l	2.0	--
2-Nitroaniline	ND		ug/l	5.0	--
3-Nitroaniline	ND		ug/l	5.0	--
4-Nitroaniline	ND		ug/l	5.0	--
Dibenzofuran	ND		ug/l	2.0	--
2-Methylnaphthalene	ND		ug/l	2.0	--
n-Nitrosodimethylamine	ND		ug/l	2.0	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	10	--
4-Nitrophenol	ND		ug/l	10	--

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 09/26/13 19:58
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 09/22/13 18:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG638130-1					
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Pentachlorophenol	ND		ug/l	10	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol	ND		ug/l	5.0	--
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	--
2,4,5-Trichlorophenol	ND		ug/l	5.0	--
Benzoic Acid	ND		ug/l	50	--
Benzyl Alcohol	ND		ug/l	2.0	--
Carbazole	ND		ug/l	2.0	--
Pyridine	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		21-120
Phenol-d6	23		10-120
Nitrobenzene-d5	52		23-120
2-Fluorobiphenyl	65		15-120
2,4,6-Tribromophenol	70		10-120
4-Terphenyl-d14	97		41-149

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 09/25/13 11:57
Analyst: HL

Extraction Method: EPA 3510C
Extraction Date: 09/22/13 20:31

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG638132-1					
Acenaphthene	ND		ug/l	0.20	--
2-Chloronaphthalene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Hexachlorobutadiene	ND		ug/l	0.50	--
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	--
Pentachlorophenol	ND		ug/l	0.80	--
Hexachlorobenzene	ND		ug/l	0.80	--
Hexachloroethane	ND		ug/l	0.80	--

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 09/25/13 11:57
Analyst: HL

Extraction Method: EPA 3510C
Extraction Date: 09/22/13 20:31

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG638132-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	38		21-120
Phenol-d6	27		10-120
Nitrobenzene-d5	56		23-120
2-Fluorobiphenyl	62		15-120
2,4,6-Tribromophenol	74		10-120
4-Terphenyl-d14	102		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG638130-2 WG638130-3								
Acenaphthene	62		99		37-111	**46**	Q	30
Benzidine	**0**	Q	**6**	Q	10-75	**188**	Q	30
1,2,4-Trichlorobenzene	41		68		39-98	**50**	Q	30
Hexachlorobenzene	71		111		40-140	**44**	Q	30
Bis(2-chloroethyl)ether	42		66		40-140	**44**	Q	30
2-Chloronaphthalene	57		98		40-140	**53**	Q	30
1,2-Dichlorobenzene	**39**	Q	62		40-140	**46**	Q	30
1,3-Dichlorobenzene	**39**	Q	60		40-140	**42**	Q	30
1,4-Dichlorobenzene	39		61		36-97	**44**	Q	30
3,3'-Dichlorobenzidine	54		90		40-140	**50**	Q	30
2,4-Dinitrotoluene	78		**126**	Q	24-96	**47**	Q	30
2,6-Dinitrotoluene	79		128		40-140	**47**	Q	30
Azobenzene	72		113		40-140	**44**	Q	30
Fluoranthene	77		117		40-140	**41**	Q	30
4-Chlorophenyl phenyl ether	70		108		40-140	**43**	Q	30
4-Bromophenyl phenyl ether	73		113		40-140	**43**	Q	30
Bis(2-chloroisopropyl)ether	42		67		40-140	**46**	Q	30
Bis(2-chloroethoxy)methane	53		87		40-140	**49**	Q	30
Hexachlorobutadiene	40		64		40-140	**46**	Q	30
Hexachlorocyclopentadiene	**14**	Q	**22**	Q	40-140	**44**	Q	30
Hexachloroethane	40		60		40-140	**40**	Q	30

Lab Control Sample Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG638130-2 WG638130-3								
Isophorone	58		98		40-140	**51**	Q	30
Naphthalene	43		73		40-140	**52**	Q	30
Nitrobenzene	44		73		40-140	**50**	Q	30
NDPA/DPA	69		110		40-140	**46**	Q	30
n-Nitrosodi-n-propylamine	53		90		29-132	**52**	Q	30
Bis(2-ethylhexyl)phthalate	85		125		40-140	**38**	Q	30
Butyl benzyl phthalate	81		126		40-140	**43**	Q	30
Di-n-butylphthalate	79		119		40-140	**40**	Q	30
Di-n-octylphthalate	83		127		40-140	**42**	Q	30
Diethyl phthalate	75		116		40-140	**43**	Q	30
Dimethyl phthalate	73		112		40-140	**42**	Q	30
Benzo(a)anthracene	73		111		40-140	**41**	Q	30
Benzo(a)pyrene	67		105		40-140	**44**	Q	30
Benzo(b)fluoranthene	82		110		40-140	29		30
Benzo(k)fluoranthene	70		121		40-140	**53**	Q	30
Chrysene	74		113		40-140	**42**	Q	30
Acenaphthylene	63		110		45-123	**54**	Q	30
Anthracene	73		111		40-140	**41**	Q	30
Benzo(ghi)perylene	76		110		40-140	**37**	Q	30
Fluorene	71		110		40-140	**43**	Q	30
Phenanthrene	72		108		40-140	**40**	Q	30

Lab Control Sample Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG638130-2 WG638130-3								
Dibenzo(a,h)anthracene	78		116		40-140	**39**	Q	30
Indeno(1,2,3-cd)pyrene	77		113		40-140	**38**	Q	30
Pyrene	76		115		26-127	**41**	Q	30
Biphenyl	52		87		40-140	**50**	Q	30
Aniline	**33**	Q	51		40-140	**43**	Q	30
4-Chloroaniline	71		86		40-140	19		30
1-Methylnaphthalene	50		89		41-103	**56**	Q	30
2-Nitroaniline	76		122		52-143	**46**	Q	30
3-Nitroaniline	78		96		25-145	21		30
4-Nitroaniline	81		126		51-143	**43**	Q	30
Dibenzofuran	65		103		40-140	**45**	Q	30
2-Methylnaphthalene	50		88		40-140	**55**	Q	30
n-Nitrosodimethylamine	40		47		22-74	16		30
2,4,6-Trichlorophenol	67		109		30-130	**48**	Q	30
p-Chloro-m-cresol	74		**118**	Q	23-97	**46**	Q	30
2-Chlorophenol	48		70		27-123	**37**	Q	30
2,4-Dichlorophenol	55		90		30-130	**48**	Q	30
2,4-Dimethylphenol	40		78		30-130	**64**	Q	30
2-Nitrophenol	47		84		30-130	**56**	Q	30
4-Nitrophenol	43		63		10-80	**38**	Q	30
2,4-Dinitrophenol	67		106		20-130	**45**	Q	30

Lab Control Sample Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG638130-2 WG638130-3								
4,6-Dinitro-o-cresol	75		121		20-164	**47**	Q	30
Pentachlorophenol	76		**113**	Q	9-103	**39**	Q	30
Phenol	30		40		12-110	29		30
2-Methylphenol	47		71		30-130	**41**	Q	30
3-Methylphenol/4-Methylphenol	53		75		30-130	**34**	Q	30
2,4,5-Trichlorophenol	74		126		30-130	**52**	Q	30
Benzoic Acid	27		30		10-164	11		30
Benzyl Alcohol	58		70		26-116	19		30
Carbazole	77		117		55-144	**41**	Q	30
Pyridine	21		38		10-66	**58**	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	36		48		21-120
Phenol-d6	30		37		10-120
Nitrobenzene-d5	46		72		23-120
2-Fluorobiphenyl	56		96		15-120
2,4,6-Tribromophenol	78		114		10-120
4-Terphenyl-d14	76		113		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG638132-2 WG638132-3								
Acenaphthene	70		78		37-111	11		40
2-Chloronaphthalene	68		76		40-140	11		40
Fluoranthene	87		94		40-140	8		40
Hexachlorobutadiene	57		68		40-140	18		40
Naphthalene	58		69		40-140	17		40
Benzo(a)anthracene	86		93		40-140	8		40
Benzo(a)pyrene	74		83		40-140	11		40
Benzo(b)fluoranthene	85		92		40-140	8		40
Benzo(k)fluoranthene	84		90		40-140	7		40
Chrysene	77		83		40-140	8		40
Acenaphthylene	73		82		40-140	12		40
Anthracene	69		78		40-140	12		40
Benzo(ghi)perylene	78		85		40-140	9		40
Fluorene	83		87		40-140	5		40
Phenanthrene	86		91		40-140	6		40
Dibenzo(a,h)anthracene	82		87		40-140	6		40
Indeno(1,2,3-cd)Pyrene	85		93		40-140	9		40
Pyrene	84		88		26-127	5		40
1-Methylnaphthalene	68		78		40-140	14		40
2-Methylnaphthalene	65		76		40-140	16		40
Pentachlorophenol	91		101		9-103	10		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: ONE CANAL

Project Number: 5161.9.T2

Lab Number: L1318667

Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01 Batch: WG638132-2 WG638132-3								
Hexachlorobenzene	79		85		40-140	7		40
Hexachloroethane	53		66		40-140	22		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	39		50		21-120
Phenol-d6	30		37		10-120
Nitrobenzene-d5	56		71		23-120
2-Fluorobiphenyl	66		77		15-120
2,4,6-Tribromophenol	83		93		10-120
4-Terphenyl-d14	94		104		41-149

PCBS

Project Name: ONE CANAL
Project Number: 5161.9.T2
Lab Number: L1318667
Report Date: 09/29/13

SAMPLE RESULTS

Lab ID:	L1318667-01	Date Collected:	09/20/13 11:00
Client ID:	NPDES 9/20/13	Date Received:	09/20/13
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 608
Analytical Method:	5,608	Extraction Date:	09/24/13 03:41
Analytical Date:	09/25/13 13:54	Cleanup Method1:	EPA 3665A
Analyst:	JW	Cleanup Date1:	09/24/13
		Cleanup Method2:	EPA 3660B
		Cleanup Date2:	09/24/13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	B
Aroclor 1221	ND		ug/l	0.250	--	1	B
Aroclor 1232	ND		ug/l	0.250	--	1	B
Aroclor 1242	ND		ug/l	0.250	--	1	B
Aroclor 1248	ND		ug/l	0.250	--	1	B
Aroclor 1254	ND		ug/l	0.250	--	1	B
Aroclor 1260	ND		ug/l	0.200	--	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	33		30-150	B
Decachlorobiphenyl	83		30-150	B

Project Name: ONE CANAL

Project Number: 5161.9.T2

Lab Number: L1318667

Report Date: 09/29/13

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 09/25/13 12:28
Analyst: JW

Extraction Method: EPA 608
Extraction Date: 09/24/13 03:41
Cleanup Method1: EPA 3665A
Cleanup Date1: 09/24/13
Cleanup Method2: EPA 3660B
Cleanup Date2: 09/24/13

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG638462-1						
Aroclor 1016	ND		ug/l	0.250	--	B
Aroclor 1221	ND		ug/l	0.250	--	B
Aroclor 1232	ND		ug/l	0.250	--	B
Aroclor 1242	ND		ug/l	0.250	--	B
Aroclor 1248	ND		ug/l	0.250	--	B
Aroclor 1254	ND		ug/l	0.250	--	B
Aroclor 1260	ND		ug/l	0.200	--	B

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	33		30-150	B
Decachlorobiphenyl	76		30-150	B

Matrix Spike Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638462-3 QC Sample: L1318667-01 Client ID: NPDES 9/20/13													
Aroclor 1016	ND	1	0.770	77		-	-		40-140	-		50	B
Aroclor 1260	ND	1	0.717	72		-	-		40-140	-		50	B

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	47				30-150	B
Decachlorobiphenyl	87				30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: ONE CANAL

Project Number: 5161.9.T2

Lab Number: L1318667

Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG638462-2									
Aroclor 1016	79		-		40-140	-		50	B
Aroclor 1260	74		-		40-140	-		50	B

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	40				30-150	B
Decachlorobiphenyl	95				30-150	B

Lab Duplicate Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638462-4 QC Sample: L1318648-01 Client ID: DUP Sample							
Aroclor 1016	ND	ND	ug/l	NC		50	B
Aroclor 1221	ND	ND	ug/l	NC		50	B
Aroclor 1232	ND	ND	ug/l	NC		50	B
Aroclor 1242	ND	ND	ug/l	NC		50	B
Aroclor 1248	ND	ND	ug/l	NC		50	B
Aroclor 1254	ND	ND	ug/l	NC		50	B
Aroclor 1260	ND	ND	ug/l	NC		50	B

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	33		36		30-150	B
Decachlorobiphenyl	93		84		30-150	B

METALS

Project Name: ONE CANAL
Project Number: 5161.9.T2
Lab Number: L1318667
Report Date: 09/29/13

SAMPLE RESULTS

Lab ID: L1318667-01
Client ID: NPDES 9/20/13
Sample Location: BOSTON, MA
Matrix: Water
Date Collected: 09/20/13 11:00
Date Received: 09/20/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Westborough Lab											
Antimony, Total	0.01221		mg/l	0.00050	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK
Arsenic, Total	0.00142		mg/l	0.00050	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK
Cadmium, Total	ND		mg/l	0.00020	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK
Chromium, Total	ND		mg/l	0.00100	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK
Copper, Total	0.00464		mg/l	0.00100	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK
Iron, Total	0.07		mg/l	0.05	--	1	09/24/13 07:29	09/24/13 12:32	EPA 3005A	19,200.7	TT
Lead, Total	ND		mg/l	0.00050	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK
Mercury, Total	ND		mg/l	0.0002	--	1	09/25/13 08:20	09/25/13 13:18	EPA 245.1	3,245.1	DR
Nickel, Total	0.00158		mg/l	0.00050	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK
Selenium, Total	0.00758		mg/l	0.00500	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK
Silver, Total	ND		mg/l	0.00040	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK
Zinc, Total	0.01107		mg/l	0.01000	--	1	09/24/13 07:29	09/25/13 15:54	EPA 3005A	1,6020A	AK

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

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: WG638481-1										
Antimony, Total	ND		mg/l	0.00050	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK
Arsenic, Total	ND		mg/l	0.00050	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK
Cadmium, Total	ND		mg/l	0.00020	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK
Chromium, Total	ND		mg/l	0.00100	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK
Copper, Total	ND		mg/l	0.00100	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK
Lead, Total	ND		mg/l	0.00050	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK
Nickel, Total	ND		mg/l	0.00050	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK
Selenium, Total	ND		mg/l	0.00500	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK
Silver, Total	ND		mg/l	0.00040	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK
Zinc, Total	ND		mg/l	0.01000	--	1	09/24/13 07:29	09/25/13 15:46	1,6020A	AK

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: WG638482-1										
Iron, Total	ND		mg/l	0.05	--	1	09/24/13 07:29	09/24/13 11:58	19,200.7	TT

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: WG638818-1										
Mercury, Total	ND		mg/l	0.0002	--	1	09/25/13 08:20	09/25/13 12:49	3,245.1	DR

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: ONE CANAL

Project Number: 5161.9.T2

Lab Number: L1318667

Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG638481-2								
Antimony, Total	81		-		80-120	-		
Arsenic, Total	100		-		80-120	-		
Cadmium, Total	115		-		80-120	-		
Chromium, Total	96		-		80-120	-		
Copper, Total	103		-		80-120	-		
Lead, Total	103		-		80-120	-		
Nickel, Total	102		-		80-120	-		
Selenium, Total	109		-		80-120	-		
Silver, Total	96		-		80-120	-		
Zinc, Total	106		-		80-120	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG638482-2								
Iron, Total	100		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG638818-2								
Mercury, Total	107		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

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: WG638481-4 QC Sample: L1318667-01 Client ID: NPDES 9/20/13												
Antimony, Total	0.01221	0.5	0.5391	105		-	-		80-120	-		20
Arsenic, Total	0.00142	0.12	0.1314	108		-	-		80-120	-		20
Cadmium, Total	ND	0.051	0.05744	113		-	-		80-120	-		20
Chromium, Total	ND	0.2	0.1901	95		-	-		80-120	-		20
Copper, Total	0.00464	0.25	0.2534	100		-	-		80-120	-		20
Lead, Total	ND	0.51	0.5234	103		-	-		80-120	-		20
Nickel, Total	0.00158	0.5	0.4925	98		-	-		80-120	-		20
Selenium, Total	0.00758	0.12	0.137	108		-	-		80-120	-		20
Silver, Total	ND	0.05	0.04851	97		-	-		80-120	-		20
Zinc, Total	0.01107	0.5	0.5178	101		-	-		80-120	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638482-4 QC Sample: L1318667-01 Client ID: NPDES 9/20/13												
Iron, Total	0.07	1	1.1	103		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638818-4 QC Sample: L1317820-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.0053	106		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638481-3 QC Sample: L1318667-01 Client ID: NPDES 9/20/13						
Antimony, Total	0.01221	0.01174	mg/l	4		20
Arsenic, Total	0.00142	0.00139	mg/l	2		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Copper, Total	0.00464	0.00465	mg/l	0		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.00158	0.00146	mg/l	8		20
Selenium, Total	0.00758	0.00739	mg/l	3		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.01107	0.01065	mg/l	4		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638482-3 QC Sample: L1318667-01 Client ID: NPDES 9/20/13						
Iron, Total	0.07	0.07	mg/l	1		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638818-3 QC Sample: L1317820-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

SAMPLE RESULTS

Lab ID: L1318667-01
Client ID: NPDES 9/20/13
Sample Location: BOSTON, MA
Matrix: Water

Date Collected: 09/20/13 11:00
Date Received: 09/20/13
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chromium, Trivalent	ND		mg/l	0.010	--	1	-	09/26/13 11:43	107,-	JO
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	09/23/13 13:20	30,2540D	DW
Cyanide, Total	ND		mg/l	0.005	--	1	09/22/13 14:20	09/24/13 12:34	30,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	09/20/13 21:51	30,4500CL-D	EL
pH (H)	7.1		SU	-	NA	1	-	09/21/13 03:00	30,4500H+-B	DE
TPH	ND		mg/l	4.00	--	1	09/24/13 07:15	09/24/13 10:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	09/25/13 11:30	09/25/13 16:40	4,420.1	MP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	09/21/13 03:45	09/21/13 04:10	30,3500CR-D	DE
Anions by Ion Chromatography - Westborough Lab										
Chloride	231.		mg/l	12.5	--	25	-	09/23/13 18:31	44,300.0	AU

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

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: WG637906-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	09/20/13 21:51	30,4500CL-D	EL
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG637951-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	09/21/13 03:45	09/21/13 04:10	30,3500CR-D	DE
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG638123-1										
Cyanide, Total	ND		mg/l	0.005	--	1	09/22/13 14:20	09/24/13 12:22	30,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG638152-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	09/23/13 13:20	30,2540D	DW
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG638424-1										
Chloride	ND		mg/l	0.500	--	1	-	09/23/13 17:19	44,300.0	AU
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG638543-1										
TPH	ND		mg/l	4.00	--	1	09/24/13 07:15	09/24/13 10:30	74,1664A	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG638890-1										
Phenolics, Total	ND		mg/l	0.030	--	1	09/25/13 11:30	09/25/13 13:32	4,420.1	MP

Lab Control Sample Analysis

Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG637906-2								
Chlorine, Total Residual	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG637944-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG637951-2								
Chromium, Hexavalent	101		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG638123-2								
Cyanide, Total	97		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG638424-2								
Chloride	105		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG638543-2								
TPH	80		-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG638890-2								
Phenolics, Total	108		-		82-111	-		12

Matrix Spike Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

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: WG637951-4 QC Sample: L1318667-01 Client ID: NPDES 9/20/13												
Chromium, Hexavalent	ND	0.1	0.097	97		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638123-4 QC Sample: L1318654-01 Client ID: MS Sample												
Cyanide, Total	0.012	0.4	0.397	96		-	-		90-110	-		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638424-3 WG638424-4 QC Sample: L1318238-18 Client ID: MS Sample												
Chloride	108	100	207	99		207	99		40-151	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638543-4 QC Sample: L1318640-02 Client ID: MS Sample												
TPH	ND	20.4	17.1	84		-	-		64-132	-		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638890-4 QC Sample: L1318556-02 Client ID: MS Sample												
Phenolics, Total	ND	0.8	0.81	101		-	-		77-124	-		12

Lab Duplicate Analysis
Batch Quality Control

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG637906-3 QC Sample: L1318651-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG637944-2 QC Sample: L1318617-02 Client ID: DUP Sample						
pH	8.3	8.3	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG637951-3 QC Sample: L1318667-01 Client ID: NPDES 9/20/13						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638123-3 QC Sample: L1318654-01 Client ID: DUP Sample						
Cyanide, Total	0.012	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638152-2 QC Sample: L1318617-01 Client ID: DUP Sample						
Solids, Total Suspended	1700	1500	mg/l	13		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638543-3 QC Sample: L1318667-01 Client ID: NPDES 9/20/13						
TPH	ND	ND	mg/l	NC		34
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG638890-3 QC Sample: L1318556-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		12

Project Name: ONE CANAL
Project Number: 5161.9.T2

Lab Number: L1318667
Report Date: 09/29/13

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(*)
L1318667-01A	Vial HCl preserved	A	N/A	3.6	Y	Absent	8260-SIM(14),8260(14)
L1318667-01B	Vial HCl preserved	A	N/A	3.6	Y	Absent	8260-SIM(14),8260(14)
L1318667-01C	Vial HCl preserved	A	N/A	3.6	Y	Absent	8260-SIM(14),8260(14)
L1318667-01D	Plastic 1000ml unpreserved	A	7	3.6	Y	Absent	PH-4500(.01),TSS-2540(7)
L1318667-01E	Plastic 500ml unpreserved	A	7	3.6	Y	Absent	CL-300(28),HEXCR-3500(1),TRC-4500(1)
L1318667-01F	Amber 1000ml H2SO4 preserved	A	<2	3.6	Y	Absent	TPHENOL-420(28)
L1318667-01G	Amber 1000ml HCl preserved	A	N/A	3.6	Y	Absent	TPH-1664(28)
L1318667-01H	Amber 1000ml HCl preserved	A	N/A	3.6	Y	Absent	TPH-1664(28)
L1318667-01I	Plastic 250ml NaOH preserved	A	>12	3.6	Y	Absent	TCN-4500(14)
L1318667-01J	Vial Na2S2O3 preserved	A	N/A	3.6	Y	Absent	504(14)
L1318667-01K	Vial Na2S2O3 preserved	A	N/A	3.6	Y	Absent	504(14)
L1318667-01L	Amber 1000ml unpreserved	A	7	3.6	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1318667-01M	Amber 1000ml unpreserved	A	7	3.6	Y	Absent	8270TCL(7),8270TCL-SIM(7)
L1318667-01N	Amber 1000ml Na2S2O3	A	7	3.6	Y	Absent	PCB-608(7)
L1318667-01O	Amber 1000ml Na2S2O3	A	7	3.6	Y	Absent	PCB-608(7)
L1318667-01P	Plastic 250ml HNO3 preserved	A	<2	3.6	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)

*Values in parentheses indicate holding time in days

Project Name:	ONE CANAL	**Lab Number:**	L1318667
Project Number:	5161.9.T2	**Report Date:**	09/29/13

GLOSSARY

Acronyms

EDL - Estimated 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 EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

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 ten times (10x) 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 lower value for the two columns has been reported due to obvious interference.

Report Format: Data Usability Report

Project Name:	ONE CANAL	**Lab Number:**	L1318667
Project Number:	5161.9.T2	**Report Date:**	09/29/13

Data Qualifiers

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.

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.

S - Analytical results are from modified screening analysis.

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:	ONE CANAL	**Lab Number:**	L1318667
Project Number:	5161.9.T2	**Report Date:**	09/29/13

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

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.

107 Alpha Analytical - In-house calculation method.

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 August 29, 2013 - 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, Nickel, Selenium, Silver, Sodium, Thallium, 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) 504.1, Ethylene Dibromide (EDB) 504.1, 1,4-Dioxane (Mod 8270). Microbiology Parameters: Total Coliform-MF mEndo (SM9222B), Total Coliform – Colilert (SM9223, Enumeration and P/A), E. Coli. – Colilert (SM9223, Enumeration and P/A), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform-EC Medium (SM 9221E).

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, Acid Extractables (Phenols), Benzidines, Phthalate Esters, Nitrosamines, Nitroaromatics & Isophorone, Polynuclear Aromatic Hydrocarbons, Haloethers, Chlorinated Hydrocarbons, Volatile Organics, TPH (HEM/SGT), CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH. Microbiology Parameters: Total Coliform – MF mEndo (SM9222B), Total Coliform – MTF (SM9221B), E. Coli – Colilert (SM9223 Enumeration), HPC – Pour Plate (SM9215B), Fecal Coliform – MF m-FC (SM9222D), Fecal Coliform – A-1 Broth (SM9221E), Enterococcus - Enterolert.

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, CT-Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Dalapon, Volatile Organics (SW 8260), Acid Extractables (Phenols) (SW 8270), Benzidines (SW 8270), Phthalates (SW 8270), Nitrosamines (SW 8270), Nitroaromatics & Cyclic Ketones (SW 8270), PAHs (SW 8270), Haloethers (SW 8270), Chlorinated Hydrocarbons (SW 8270).)

State of Illinois Certificate/Lab ID: 003155. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM2120B, 2320B, 2510B, 2540C, SM4500CN-CE, 4500F-C, 4500H-B, 4500NO3-F, 5310C, EPA 200.7, 200.8, 245.1, 300.0. Organic Parameters: EPA 504.1, 524.2.)

Wastewater/Non-Potable Water (Inorganic Parameters: SM2120B, 2310B, 2320B, 2340B, 2510B, 2540B, 2540C, 2540D, SM4500CL-E, 4500CN-E, 4500F-C, 4500H-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-E, 4500S-D, 4500SO3-B, 5210B, 5220D, 5310C, 5540C, EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1. Organic Parameters: EPA 608, 624, 625.)

Hazardous and Solid Waste (Inorganic Parameters: EPA 1010A, 1030, 1311, 1312, 6010C, 6020A, 7196A, 7470A, 7471B, 9012B, 9014, 9038, 9040C, 9045D, 9050A, 9065, 9251. Organic Parameters: 8011 (NPW only), 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8315A, 8330.)

Maine Department of Human Services Certificate/Lab ID: 2009024.
Drinking Water (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2120B, 2130B, 2320B, 2510C, 2540C, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, 5310C, 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, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 8315A, 9010C, SM2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-C, 4500NH3-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500P-B, 4500P-E, 4500S2-D, 4500SO3-B, 5540C, 5210B, 5220D, 5310C, 9010B, 9030B, 9040C, 7470A, 7196A, 2340B, EPA 200.7, 6010C, 200.8, 6020A, 245.1, 1311, 1312, 3005A, Enterolert, 9223B, 9222D. Organic Parameters: 608, 624, 625, 8011, 8081B, 8082A, 8330, 8151A, 8260C, 8270D, 3510C, 3630C, 5030B, ME-DRO, ME-GRO, MA-EPH, MA-VPH.)

Solid Waste/Soil (Inorganic Parameters: 9010B, 9012A, 9014, 9040B, 9045C, 6010C, 6020A, 7471B, 7196A, 9050A, 1010, 1030, 9065, 1311, 1312, 3005A, 3050B, 9038, 9251. Organic Parameters: ME-DRO, ME-GRO, MA-EPH, MA-VPH, 8260C, 8270D, 8330, 8151A, 8081B, 8082A, 3540C, 3546, 3580A, 3620C, 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, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, 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, 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, SW-846 6010C, 6020A, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 350.2, 351.1, 353.2, 410.4, 420.1, 426C, 1664A, SW-846 9010B, 9010C, 9030, 9040B, 9040C, SM2120B, 2310B, 2320B, 2340B, 2540B, 2540D, 4500H+B, 4500CL-E, 4500CN-E, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500P-E, 4500-S2-D, 4500SO3-B, 5210B, 5220D, 2510B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D, 3060A. Organic Parameters: SW-846 3510C, 3630C, 5030B, 8260C, 8270D, 8330, EPA 624, 625, 608, SW-846 8082A, 8081B, 8015C, 8151A, 8330, 8270D-SIM.)

Solid & Chemical Materials (Inorganic Parameters: SW-846 6010C, 6020A, 7196A, 7471B, 1010, 1010A, 1030, 9010C, 9012B, 9014, 9030B, 9040C, 9045C, 9045D, 9050, 9065, 9251, 1311, 1312, 3005A, 3050B, 3060A. Organic Parameters: SW-846 3540C, 3546, 3050B, 3580A, 3620D, 3630C, 5030B, 5035, 8260C, 8270D, 8270D-SIM, 8330, 8151A, 8015B, 8015C, 8082A, 8081B.)

New Hampshire Department of Environmental Services Certificate/Lab ID: 2064. ***NELAP Accredited.***
Drinking Water (Organic Parameters: **EPA 524.2:** Di-isopropyl ether (DIPE), Ethyl-t-butyl ether (ETBE), Tert-amyl methyl ether (TAME)).

Non-Potable Water (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene. **EPA 8015C(M):** TPH.)

Solid & Chemical Materials (Organic Parameters: **EPA 8260C:** 1,3,5-Trichlorobenzene.)

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, 245.1, 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, 2340B, SM4500F-BC, EPA 200.7, 200.8, 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, 7470A, 5540C, SM4500H-B, 4500SO3-B, SM3500Cr-D, 4500CN-CE, EPA 245.1, SW-846 9040B, 9040C, 3005A, 3015, EPA 6010B, 6010C, 6020, 6020A, 7196A, 3060A, SW-846 9010C, 9030B. Organic Parameters: SW-846 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3510C, EPA 608, 624, 625, SW-846 3630C, 5030B, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 1,4-Dioxane by NJ Modified 8270, 8015B, NJ EPH.)

Solid & Chemical Materials (Inorganic Parameters: SW-846, 6010B, 6010C, 6020, 6020A, 7196A, 3060A, 9030B, 1010, 1010A, 1030, 1311, 1312, 3005A, 3050B, 7471A, 7471B, 9010C, 9012B, 9014, 9038, 9040B, 9040C, 9045C, 9045D,

9050A, 9065, 9251. Organic Parameters: SW-846 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8330, 8260B, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 3540C, 3546, 3580A, 3620C, 3630C, 5030B, 5035L, 5035H, 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, 245.1, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 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, 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, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2340B, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010C, 6020A, EPA 7196A, SM3500Cr-D, EPA 245.1, 7470A, SM2120B, 4500CN-CE, EPA 1664A, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 8315A, 3005A, 3015, 9010C, 9030B. Organic Parameters: EPA 624, 8260C, 8270D, 8270D-SIM, 625, 608, 8081B, 8151A, 8330, 8082A, EPA 3510C, 5030B, 8015C, 8011.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, EPA 6010C, 6020A, 7196A, 7471B, 8315A, 9012B, 9014, 9065, 9050A, 9038, 9251, EPA 1311, 1312, 3005A, 3050B, 9010C, 9030B, 9040C, 9045D. Organic Parameters: EPA 8260C, 8270D, 8270D-SIM, 8015C, 8081B, 8151A, 8330, 8082A, 3540C, 3546, 3580A, 5035A-H, 5035A-L.)

North Carolina Department of the Environment and Natural Resources Certificate/Lab ID : 666. (Inorganic Parameters: SM2310B, 2320B, 4500Cl-E, 4500Cn-E, 9012B, 9014, Lachat 10-204-00-1-X, 1010A, 1030, 4500NO3-F, 353.2, 4500P-E, 4500SO4-E, 300.0, 4500S-D, 5310B, 5310C, 6010C, 6020A, 200.7, 200.8, 3500Cr-B, 7196A, 245.1, 7470A, 7471B, 1311,1312. Organic Parameters: 608, 8081B, 8082A, 624, 8260B, 625, 8270D, 8151A, 8015C, 504.1, 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 (Inorganic Parameters: 200.7, 200.8, 300.0, 332.0, 2120B, 2320B, 2510B, 2540C, 4500-CN-CE, 4500F-C, 4500H+-B, 4500NO3-F, 5310C. Organic Parameters: EPA 524.2, 504.1)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1312, 3005A,3015, 3060A, 200.7, 200.8, 410.4, 1664A, SM2540D, 5210B, 5220D, 4500-P,BE, 245.1, 300.0, 350.1, 350.2, 351.1, 353.2, 420.1, 6010C, 6020A, 7196A, 7470A, 9030B, 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 3500Cr-D, 426C, 4500CN-CE, 4500Cl-E, 4500F-B, 4500F-C, 4500H+-B, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500S-D, 4500SO3-B, 5310BCD, 5540C, 9010C, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 625, 624, 608, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, 8015C, NJ-EPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 350.1, 1010, 1030, 1311, 1312, 3005A, 3050B, 3060A, 6010C, 6020A, 7196A, 7471B, 9010C, 9012B, 9014, 9040B, 9045D, 9050A, 9065, SM 4500NH3-BH, 9030B, 9038, 9251. Organic Parameters: 3540C, 3546, 3580A, 3620C, 3630C, 5035, 8015C, 8081B, 8082A, 8151A, 8260C, 8270D, 8270D-SIM, 8330, NJ-EPH.)

Rhode Island Department of Health Certificate/Lab ID: LAO00065. ***NELAP Accredited via NJ-DEP.***
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. ***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, 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.)

Virginia Division of Consolidated Laboratory Services Certificate/Lab ID: 460195. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: EPA 200.7, 200.8, 300.0, 2510B, 2120B, 2540C, 4500CN-CE, 245.1, 2320B, 4500F-C, 4500NO3-F, 4500H+B, 5310C. Organic Parameters: EPA 504.1, 524.2.)

Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 200.7, 200.8, 245.1, 300.0, 350.1, 351.1, 351.2, 3005A, 3015, 1312, 6010B, 6010C, 3060A, 353.2, 420.1, 2340B, 6020, 6020A, SM4500S-D, SM4500-CN-CE, Lachat 10-204-00-1-X, 7196A, 7470A, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 3500Cr-D, 426C, 4500Cl-E, 4500F-B, 4500F-C, 4500NH3-H, 4500NO2-B, 4500NO3-F, 4500 SO3-B, 4500H-B, 4500PE, 510AC, 5210B, 5310B 5310C, 5540C, 9010Cm

9030B, 9040C. Organic Parameters: EPA 3510C, 3630C, 5030B, 8260B, 608, 624, 625, 8011, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8260C, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330,)

Solid & Hazardous Waste (Inorganic Parameters: EPA 1010A, 1030, 3060A, 3050B, 1311, 1312, 6010B, 6010C, 6020, , 7196A, 7471A, 7471B, 6020A, 9010C, 9012B, 9030B, 9014, 9038, 9040C, 9045D, 9251, 9050A, 9065. Organic Parameters: EPA 5030B, 5035, 3540C, 3546, 3550B, 3580A, 3620C, 3630C, 6020A, 8260B, 8260C, 8015B, 8015C, 8081A, 8081B, 8082, 8082A, 8151A, 8270C, 8270D, 8270C-SIM, 8270D-SIM, 8330.)

Department of Defense, L-A-B 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, 6010C, 6020A, 245.1, 7470A, 9040B, 9010B, 180.1, 300.0, 332.0, 6860, 351.1, 353.2, 9060, 1664A, SM 4500CN-E, 4500H-B, 4500Norg-C, 4500NO3-F, 5310C, 2130B, 2320B, 2340B, 2540C, 5540C, 3005A, 3015, 9056, 7196A, 3500-Cr-D. Organic Parameters: EPA 8015C, 8151A, 8260C, 8270D, 8270D-SIM, 8330A, 8082A, 8081B, 3510C, 5030B, MassDEP EPH, MassDEP VPH.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010C, 6020A, 7471A, 6860, 1311, 1312, 3050B, 7196A, 9040B, 9045C, 9010C, 9012B, 9251, SM3500-CR-D, 4500CN-CE, 2540G, Organic Parameters: EPA 8015C, 8151A, 8260C, 8270D, 8270D-SIM, 8330A/B-prep, 8082A, 8081B, 3540C, 3546, 3580A, 5035A, MassDEP EPH, MassDEP VPH.)

The following analytes are not included in our current NELAP/TNI Scope of Accreditation:
EPA 524.2: Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether. **EPA 8260B:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8260 Non-potable water matrix:** Iodomethane (methyl iodide), Methyl methacrylate. **EPA 8260 Soil matrix:** Tert-amyl methyl ether (TAME), Diisopropyl ether (DIPE), Azobenzene. **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. **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, TKN in a soil matrix, NO2 in a soil matrix, NO3 in a soil matrix. **EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

2/3

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 9/20/13 | ALPHA Job #: L1318667

Project Information

Project Name: One Canal

Project Location: Boston, MA

Project #: 5161.9.T2

Project Manager: JWP

ALPHA Quote #:

Client Information

Client: McPhial Associates, LLC

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Phone: 617-868-1420

Fax: 617-868-1423

Email: jwp@mcphailgeo.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: ~~9/27/13~~ 9/26/13 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	Criteria
EPA NPDES RGP	

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?

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

Other Project Specific Requirements/Comments/Detection Limits:
NPDES RGP Package

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	pH, Cl, TRC	624	504 (EDB Only)	TSS	8270	8270-SIM	PCB_608	TPH_1664	TPhenol	TCN	HexCr	Total HgFeAgAsCdCrCuNiPbSbSeZn	Sample Specific Comments	TOTAL # BOTTLES
18667-1	NPDES 9/20/13	9/20/13	11AM	GW	BAC	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒		16
Container Type						P	V	V	P	A	A	A	A	A	P	P	P		
Preservative						A	H	H	A	H	H	H	B	D	E	A	C		

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

FORM NO: 01-01(I) (rev. 5-JAN-12)

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9-20-13/1:00	[signature]	9/20/13 1705
[signature]	9/20/13 1845	[signature]	9/20/13 1845

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 Payment Terms.

McPHAIL ASSOCIATES, LLC

ATTACHMENT D

ASSESSMENT OF DEP-LISTED SITES

The DEP on-line waste site database indicates that there are five (5) DEP listed sites within 500 of the subject site. With the exception of one site, the releases of oil and/or hazardous material (OHM) which triggered notification to the DEP have Response Action Outcome (RAO) statements that indicate that Permanent Solutions have been achieved and that a Condition of No Significant Risk exists at the sites. The final site, which does not have an RAO, is identified as "Merrimac/New Chardon URAM" with release tracking number (RTN) 3-21775. This site is located approximately 257 feet to the southwest of the subject site. The RTN was assigned based on gasoline contamination that was encountered during road work by the Massachusetts Highway Department. Based on the location of the release site, the reported direction of groundwater flow to the north-northwest and therefore away from the subject property, and the slurry wall which is located along the western margin of the MBTA tunnel and the subject property, this site is not considered to pose a threat of impact to the subject site. In conclusion, based on the reported DEP status, the surrounding disposal sites are not considered to pose a threat of impact to the groundwater dewatering activities at the subject site.

McPHAIL ASSOCIATES, LLC

APPENDIX E

AREAS OF CRITICAL CONCERN, ENDANGERED AND THREATENED SPECIES

Based on a review of Massachusetts Geographic Information Systems (GIS) DEP Priority Resources' Map, there are no drinking water supplies, no Areas of Critical Environmental Concern, no Sole Source Aquifers, no fish habitats, and no habitats of Species of Special Concern or Threatened or Endangered Species at or within 500 feet of the subject site. No Protected Open Space is indicated within 500 feet of the subject property.

There are no surface water bodies located within the site boundary. Boston Harbor is located approximately 1,500 feet to the north of the subject property.

A review of the federal listing of threatened and endangered species published by the U.S. Fish and Wildlife Service identified no threatened and/or endangered species or critical habitats 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.

Based upon the above, the site is considered criterion A pursuant to Appendix II of the DGP.

MassDEP - Bureau of Waste Site Cleanup

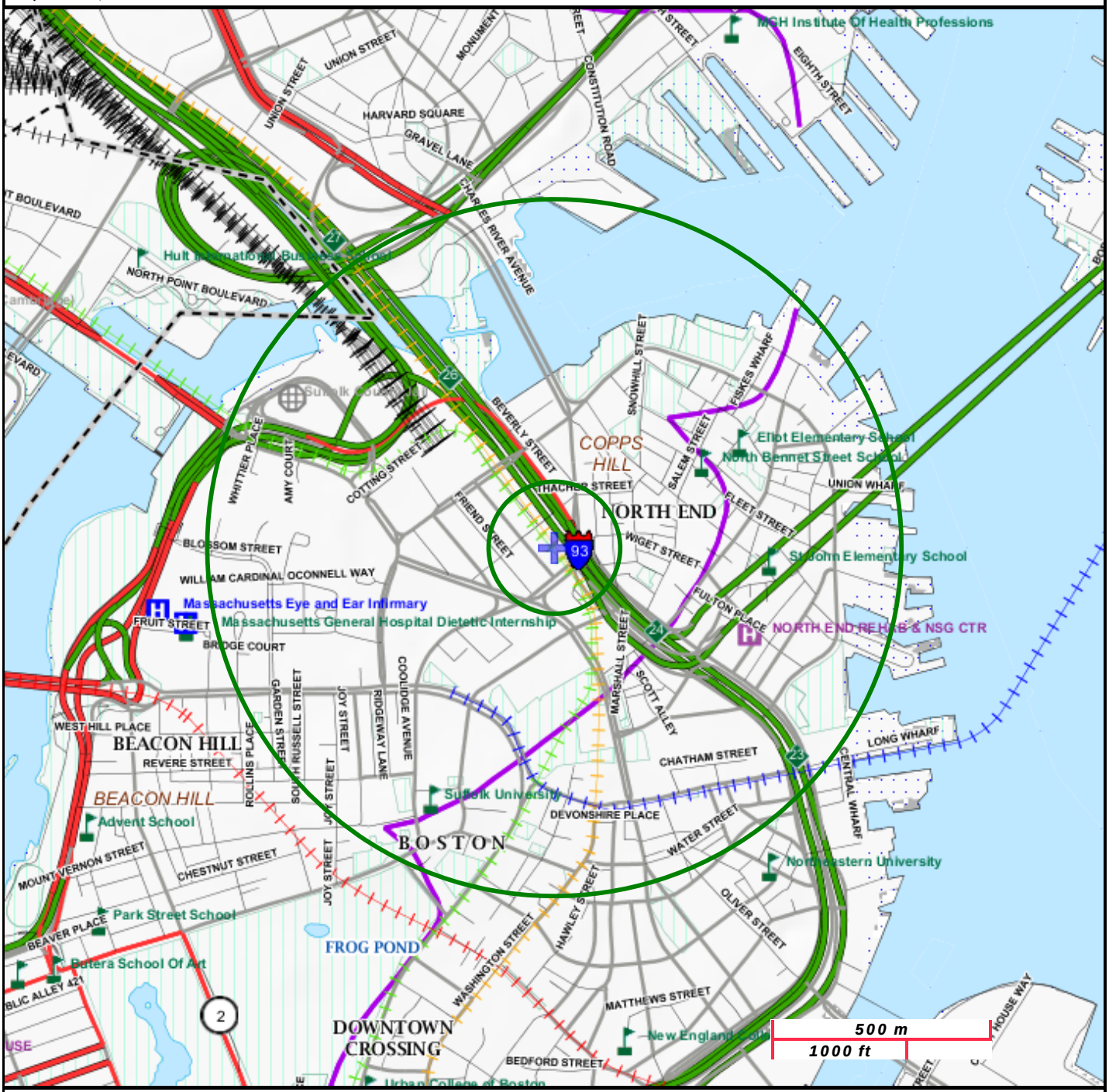
MCP Numerical Ranking System Map: 500 feet & 0.5 Mile Radii

Site Information:
ONE CANAL
1 CANAL STREET BOSTON, MA

NAD83 UTM Meters:
4692263mN , 330454mE (Zone: 19)
September 30, 2013

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately repsponsible for ascertaining the true conditions surrounding the site. Metadata for data layers shown on this map can be found at: http://www.mass.gov/mgis/.

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, PWS; 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
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

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

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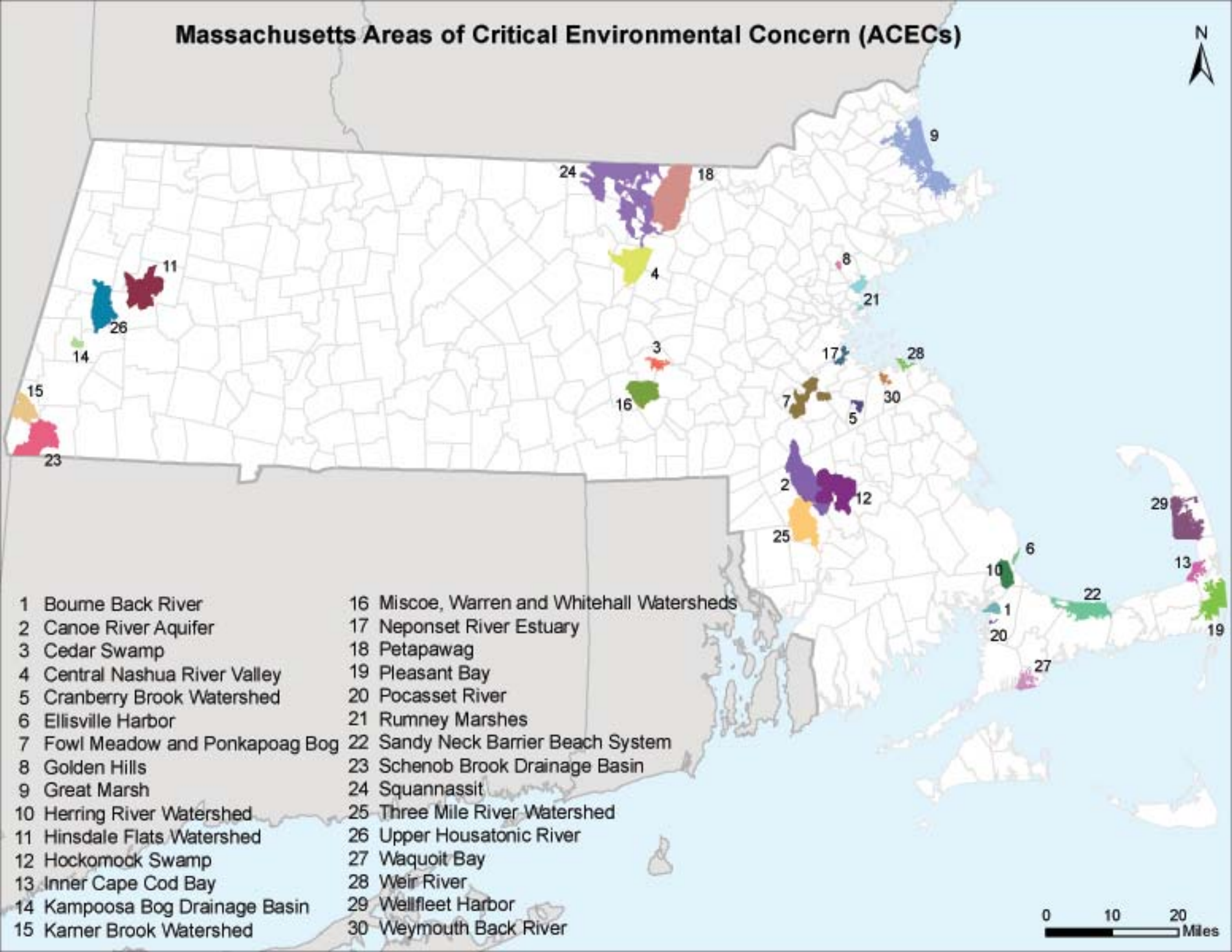
Massachusetts Areas of Critical Environmental Concern (ACECs)



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

McPHAIL ASSOCIATES, LLC

APPENDIX F

NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places on-line database was reviewed for listings located within the immediate vicinity of the subject site in Boston, Massachusetts. A review of the most recent National Register of Historical Places for Suffolk County, Massachusetts did not identify records or addresses of Historic Places that exist in the immediate vicinity of the subject site and/or outfall locations. The nearest site to the subject site located on the National Register of Historic Places appears to be the building located at 138 Portland Street which is located approximately 1000 feet to the southwest of the subject site. It is not anticipated that dewatering activities at the subject site will affect nearby listed historic sites.