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

CERTIFIED MAIL RETURN RECEIPT REQUESTED

MAR 24 2015

Thomas Spence
Project Executive
Suffolk Construction Co.
65 Allerton Street
Boston, MA 02119

Re: Authorization to discharge under the Remediation General Permit (RGP) – MAG910000. Landmark Center site located at 401 Park Drive, Boston, MA 02215, Suffolk County. Authorization # MAG910669

Dear Mr. Spence:

Based on the review of a Notice of Intent (NOI) submitted by William J. Burns from McPhail Associates, Inc., on behalf Landmark Center Development LLC, of 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 your consultant marked "Believed Present". The checklist also includes, total group I and group II polycyclic aromatic hydrocarbons (PAHs), total chlorinated biphenyls (PCBs) and trivalent chromium, selected to be monitored at the site to protect the receiving stream due to their historic presence at the site.

Also, please note that the metals included on the checklist are dilution dependent pollutants and subject to limitations based on selected dilution ranges and technology-based ceiling limitations. For each parameter the dilution factor 111.8 for this site is within a dilution range greater one hundred (>100), established in the RGP. (See the RGP

Appendix IV for Massachusetts facilities). Therefore, the limits for arsenic of 540 ug/L, trivalent chromium of 1,710 ug/L, lead of 132 ug/L, and iron of 5,000 ug/L, are required to achieve permit compliance at your site.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that this project will terminate on December 1, 2017. Please be advised that in order for the site to continue discharging after the expiration date indicated above your consultant must seek a permit reissuance. A reapplication and reissuance notice will be posted on the EPA website after the EPA permit is reissued. Also, you are required to submit a notice of termination (NOT) to the attention of the contact person indicated above within 30 days of project completion.

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

Sincerely,

Thelma Murphy

Thelma Murphy, Chief
Storm Water and Construction
Permits Section

Enclosure

cc: Robert Kubit, MassDEP
Stephen Shea, Boston WSC
William J. Burns, McPhail Associates

2010 Remediation General Permit
Summary of Monitoring Parameters[1]

NPDES Authorization Number:	**MAG910669**
Authorization Issued:	March, 2015
Facility/Site Name:	Landmark Center
Facility/Site Address:	401 Park Drive, Boston, MA 02215, Suffolk County
	Email address of owner: amenzin@samuelsre.com
Legal Name of Operator:	Suffolk Construction Co.
Operator contact name, title, and Address:	Thomas Spence, Project Manager, 65 Allerton Street, Boston, MA 02119; phone:617- 541- 2128
	Email: TSpence@suffolk.com
Estimated date of the site's Completion:	December 1, 2017
Category and Sub-Category:	Category III. – Contaminated Construction Dewatering. Sub-category A. Urban Fill Sites
RGP Termination Date:	September 10, 2015
Receiving Water:	Charles River

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

	Parameter	**Effluent Limit/Method#/ML** (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
√	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing ** Me#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

	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)
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) [4]	100 ug/L/ Me#8260C/ ML 2ug/L
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
	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)	6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML

	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)
	Phthalate]	5ug/L
√	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
√	a. Benzo(a) Anthracene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	b. Benzo(a) Pyrene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	c. Benzo(b)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	d. Benzo(k)Fluoranthene [7]	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	e. Chrysene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	f. Dibenzo(a,h)anthracene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
√	g. Indeno(1,2,3-cd) Pyrene [7]	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML5ug/L
√	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
√	h. Acenaphthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	i. Acenaphthylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	j. Anthracene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	l. Fluoranthene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	m. Fluorene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	n. Naphthalene [5]	20 ug/l / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	o. Phenanthrene	X/Me#8270D/ML 5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	p. Pyrene	X/Me#8270D/ML5ug/L,Me#610/ML 5ug/L & Me#625/ML 5ug/L
√	37. Total Polychlorinated Biphenyls (PCBs) [8, 9]	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
√	38. Chloride	Monitor only/Me# 300.0/ ML 100 ug/L

	Metal parameter	Total Recoverable MA/Metal Limit H [10] = 50 mg/l CaCO3, Units = ug/l [11/12] Freshwater Limits		Minimum level=ML	
	39. Antimony	5.6		ML	10
√	40. Arsenic **	10		ML	20
	41. Cadmium **	0.2		ML	10
√	42. Chromium III (trivalent) **	48.8		ML	15
	43. Chromium VI (hexavalent) **	11.4		ML	10
	44. Copper **	5.2		ML	15
√	45. Lead **	1.3		ML	20
	46. Mercury **	0.9		ML	02
	47. Nickel **	29		ML	20
	48. Selenium **	5		ML	20
	49. Silver	1.2		ML	10
	50. Zinc **	66.6		ML	15
	51. Iron	1,000		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 "Aroclor 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

NOTICE OF INTENT FOR DISCHARGE - UNDER MASSACHUSETTS - REMEDIATION GENERAL PERMIT - MAG910000 -

LANDMARK CENTER - 401 PARK DRIVE -

BOSTON, MASSACHUSETTS -

FEBRUARY 25, 2015 -

Prepared For: -
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY -
5 POST OFFICE SQUARE, SUITE 100 -
MAIL CODE OEP06-4 -
BOSTON, MA 02109-3912 -

On Behalf Of: -
Suffolk Construction Company -
65 Allerton Street -
Boston, MA 02119 -

McPHAIL ASSOCIATES, LLC
2269 Massachusetts Avenue -
Cambridge, MA 02140 -
www.mcphailgeo.com -
(617) 868 1420 -

PROJECT NO. 5512

February 25, 2015

United States Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, MA 02109-3912

Attention: - RGO-NOC Processing

Reference: - Landmark Center; 401 Park Drive, Boston, Massachusetts
Notice of Intent for Construction Dewatering Discharge Under
Massachusetts Remediation General Permit MAG910000

Ladies and Gentlemen:

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

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

The required Notice of Intent Form contained in the RGP permit and Boston Water & Sewer Dewatering Discharge Permit Application is included in **Appendix B**.

Applicant/Operator

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

Suffolk Construction Company
65 Allerton Street
Boston, MA 02119

Attention: Mr. Thomas Spence

Tel: 617-590-5166
Fax: 781-729-8456

Existing Conditions

Fronting onto Park Drive to the southwest, the subject site is bounded by Brookline Avenue to the southeast, Fullerton Street to the northeast and the Massachusetts Bay Transit Authority (MBTA) Green Line right-of-way to the northwest. The subject site occupies a plan area of approximately 383,000 square-feet (8.8 acres) and is currently occupied by the existing Landmark Center buildings, which include the 8-story Sears Building with a 12-story tower and attached 3-story parking warehouse structures, all of which were renovated in the late 1990s for use as office/retail and parking garage space. The main building and the majority of the 3-story additions contain a single below-grade parking level. The existing ground surface surrounding the structures on-site slopes gently downwards toward the north, and varies across the site footprint from about Elevation +15 to +20. An embankment is located along Park Drive. The limits of the subject site are shown on **Figure 2**, which is based on a plan entitled Subsurface Investigation Plan.

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

Proposed Scope of Site Development

The majority of the subject site will be re-developed into a new residential and commercial center. The redevelopment will be comprised of three multi-story buildings that will be constructed on a common foundation occupying the northeastern and northwestern portions of the subject site. The existing former Sears building and associated tower will be renovated, its footprint remaining unchanged. The limits of the proposed common foundation for the new buildings are shown **Figure 2**.

Prior to construction of the common foundation, a preparatory phase of construction will be completed at the subject site. As part of this phase of construction activities, a temporary ramp will be constructed into the existing below grade parking garage at the southeastern corner of the Sears building.

Plans for construction within the common foundation area include a 2 to 3-level below grade parking garage. The proposed below grade garage will occupy a plan footprint of approximately 51,000 square feet. The anticipated below grade depth of excavation to construct the second and third levels of the parking garage is approximately 25 feet to 40 feet below ground surface, respectively. Construction of the below grade levels will be performed within a slurry wall that will be installed as the perimeter wall of the common foundation and will provide a groundwater cut-off.

Site Environmental Setting and Surrounding Historical Places

Based on the current Massachusetts Geographic Information Systems (GIS) DEP Priority Resources Map of Boston, the subject site is not located within the boundaries of a Potentially Productive Aquifer or within a Zone II, Interim Wellhead Protection Area as defined by the Massachusetts Department of Environmental Protection. There are no known public or private drinking water supply wells, no Areas of Critical Environmental Concern, no fish habitats, and no habitats of Species of Special Concern or Threatened or Endangered Species within 500 feet of the subject site. There are no surface water bodies or wetland areas located at the subject site. The nearest surface water body is the Muddy River, classified by the DEP as a Class B Surface Water Body, that is located approximately 230 feet to the south of the subject site. No areas designated as solid waste facilities (landfills) are located within 0.5 miles of the subject site. A copy of the DEP Priority Resources Map depicting the location of the subject site is included in **Appendix C**.

A review of the most recent federal listing of threatened and endangered species published by the U.S. Fish and Wildlife Service identified no threatened and/or endangered species at or in the vicinity of the proposed 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 IV of the RGP. A list of threatened and endangered species from the U.S. Fish and Wildlife Services and Massachusetts Division of Fisheries on-line databases is included in **Appendix C**.

The subject site is individually listed on the State and National Register of Historical Places (BOS.7563). In addition, the subject site is located within the immediate vicinity of Fenway Park (BOS.7709) and the Emerald Necklace Parks (Olmstead Park System)(BOS.JE), both of which are listed in the State and National Registers of Historic Places. As a result, plans for redevelopment of the subject site and its potential effects to the historical elements of the subject site were reviewed by Massachusetts Historical Commission. The conclusions of their review are documented in a letter that was prepared by the Massachusetts Historical Commission dated July 11, 2014, a copy of which is included in **Appendix C**.

Based on their review, the Massachusetts Historical Commission determined that the plans for redevelopment will have no adverse effect on the listed historical elements of the subject site.

As further discussed below, treated construction dewatering effluent will be discharged into dedicated storm drains that eventually flow into the Charles River. The dewatering of groundwater at the site will be temporary and intermittent. Further, construction dewatering will be performed within a 36-inch thick slurry wall constructed into the relatively impervious clay deposit at the site to provide a groundwater cut-off. Therefore, based on the anticipated duration of construction dewatering and the location of its discharge into the Charles River, construction dewatering activities are not considered to affect the historical elements of the subject site and nearby historical listings.

Given that the Massachusetts Historical Commission has determined that the planned redevelopment of the subject site will not adversely affect the historical elements of the subject site, in conjunction with the proposed scope of construction dewatering which is not considered to affect the historical elements of the subject site and nearby historical listings, construction dewatering that is proposed at the subject site meets the Permit Eligibility Criteria 3 under the Remediation General Permit.

Site and Release History

From 1928 to 1988, Sears, Roebuck & Company (Sears) had occupied the subject site as a retail, warehouse and distribution center. Subsequent to 1988, the subject site generally remained vacant for about 10 years and was utilized as an attended parking lot. In 1997, the subject site was redeveloped as the current Landmark Center and has since been utilized as commercial and retail space.

Since its development in 1928, gasoline and fuel oil were stored and used at the subject site. Historical information indicates that gasoline and No. 6 fuel oil were stored within former underground storage tanks (USTs) which have since been removed from the subject site. According to MCP reports prepared by others, soil and groundwater have been affected by historical releases of petroleum constituents associated with these former USTs. As discussed below, two historic releases of petroleum constituents and/or metals at the subject site have been documented with the DEP under Release Tracking Numbers (RTNs) 3-2949 and 3-18042. The following is a summary of assessment activities and response actions that have been completed for each of the above referenced release sites.

RTN 3-2949

Initially in 1990, the DEP identified the subject site as a Location To Be Investigated (LTBI) due to the detected presence of gasoline, petroleum and metal contamination in site soils. Subsequently, from 1992 through 1996, a series subsurface investigations were completed by others at the subject site to further assess the nature and extent of the RTN 3-2949 site. According to the "Phase II Comprehensive Site Assessment Report and Response Action Outcome (RAO) Statement Report" prepared by GZA for the RTN 3-2949 site dated October 1999, the results of assessment activities completed at the subject site identified the contaminants of concern as being petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAHs), PCBs, and arsenic. According to GZA, these contaminants of concern were not present in groundwater at concentrations that exceeded the applicable MCP risk characterization standards.

While a majority of the contaminants of concern were present at concentrations that were determined to indicate that a Condition of No Significant Risk to human health and the environment had been achieved, GZA indicated that three areas of shallow soil located to the west and north of the existing building exhibited levels of PAHs, arsenic and/or petroleum hydrocarbons which required further remediation. As a result, a Release Abatement Measure

(RAM) Plan was implemented and completed in conjunction with the redevelopment of the subject site in 1997. The RAM involved the excavation and off-site disposal of approximately 2,370 tons of contaminated soil.

Based upon the completion of the RAM in conjunction with the results of a Method 3 Risk Characterization, GZA concluded that a Permanent Solution was achieved and a Condition of No Significant Risk exists (i.e., MCP closure) for the RTN 3-2949 site.

RTN 3-18042

In February 1999, a release of petroleum was encountered in soil during the removal of three 5,000-gallon and two 2,500-gallon capacity USTs that were formerly located adjacent to Brookline Street at the eastern portion of the subject site. The petroleum release triggered a 72-hour reporting condition under the provisions of the MCP to which the DEP assigned RTN 3-18042.

Subsequently an Immediate Response Action Plan was implemented at the site, the results of which are documented in the Response Action Outcome Statement Report that was prepared by GZA for the RTN 3-18042 site and dated April 1999. The IRA included the removal and off-site disposal of the identified USTs as well as approximately 590 tons of contaminated soil.

Upon completion of the IRA, GZA conducted sampling and laboratory analysis of soil at the limits of the remedial excavation. The results of the laboratory analysis indicated that levels of petroleum constituents were reduced to Background and as a result GZA concluded that a Condition of No Significant Risk exists for the RTN 3-18042 site.

Construction Site Dewatering

It is anticipated that excavation within the proposed footprint of the common foundation will extend approximately 30 feet below the observed groundwater level. In order to facilitate construction of the below grade levels, to provide support of the excavation and to provide an effective groundwater cut-off during construction, a continuous slurry wall will be installed as the perimeter wall of the common foundation. Hence, construction dewatering will be necessary within the footprint of the common foundation to facilitate construction of the proposed below grade levels and additional foundation elements.

The excavation phase of construction will progress in stages with depth involving the off-site removal of fill material, organic soil, sand, sand and clay from within the limits of the proposed foundation. Given that the excavation will be performed within a slurry wall that will act as a groundwater cut-off, the volume of groundwater that will require construction dewatering will generally be limited to within the area of the common foundation. The rate of construction dewatering discharge will vary as the excavation progresses from the relatively pervious fill material into the relatively impermeable underlying organic and clay

deposits. It is anticipated that the rate of construction dewatering to facilitate excavation of the fill material will be on the order of 75 to 100 gallons per minute (gpm). However, as the excavation extends into the underlying organic and clay deposits, it is anticipated that rate of construction dewatering will decrease to approximately 25 to 50 gallons per minute. These estimates do not include surface run-off which will be removed from the excavation during periods of precipitation.

Given that the area of the common foundation occupies a majority of the subject site, temporary on-site collection and recharge of groundwater is not feasible. As a result, construction dewatering will require the discharge of collected groundwater into the storm drain system under the requested Remediation General Permit.

A review of available subgrade utility plans provided by the Boston Water and Sewer Commission indicates that a 12-inch diameter storm drain is located beneath Fullerton Street. In addition, a 10-inch dedicated storm drain is located beneath the southern portion of the subject site adjacent to Park Drive. Stormwater is collected within each of the storm drains and flows southeast into a 116-inch by 120-inch storm drain located beneath Brookline Avenue. The stormwater drain located beneath Brookline Avenue flows northeast where it eventually discharges into the Charles River. The locations of the relevant stormwater drains in relation to the subject site are indicated on **Figure 2**. The flow path of the discharge is shown in plans provided by the Boston Water and Sewer Commission which are included in **Figures 3A** through **3C**.

Summary of Groundwater Analysis

On November 11 and 12, 2014, McPhail Associates, LLC obtained a sample of groundwater from each of monitoring wells MAE-17, MAE-42, and MAE-58 which are located within the proposed footprint of the common building foundation at the northwestern portion of the subject site. The groundwater samples were submitted to a certified laboratory for analysis for the presence of compounds required under the EPA's Remediation General Permit (RGP) application, including total suspended solids (TSS), total residual chlorine, total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs) including total benzene, toluene, ethylbenzene and xylenes (BTEX), poly-aromatic hydrocarbons (PAHs), total phenols, pesticides and PCBs, and total recoverable metals. The results of the laboratory analysis are summarized in **Table 1**, and laboratory data is included in **Appendix D**.

With the exception of cyanide and iron, the results of the laboratory testing did not detect concentrations of the tested compounds in excess of the applicable EPA discharge limits established in Appendix VI of the RGP. Although TSS, TPH, PCBs, lead and arsenic were not detected in the groundwater samples at concentrations which exceed the applicable EPA effluent limits for off-site discharge, these compounds have been identified as contaminants of concern in soil. As a result, these compounds are considered to be potentially present in the construction dewatering effluent during excavation of fill material at the subject site. It is anticipated that the construction dewatering treatment system that is discussed below,

which include sedimentation components, will reduce potential concentrations of the above referenced contaminants of concern in the effluent to below the applicable RGP discharge limits.

Of the three groundwater samples submitted for laboratory analysis, the sample obtained from monitoring well MAE-42 exhibited a concentration of total cyanide at 10 micrograms per liter (ug/l) which exceeds the EPA effluent limit for discharge of 5.2 ug/l. The remaining samples did not exhibit concentrations of total cyanide in excess of the EPA effluent limit for discharge. As a result, the construction dewatering treatment system that is further discussed below will include an ion exchange filter to remove levels of cyanide in the effluent prior to off-site discharge.

In addition, two of the three groundwater samples exhibited concentrations of total iron which exceed the EPA effluent discharge limit of 1,000 ug/l. The groundwater samples obtained from monitoring wells MAE-42 and MAE-58 exhibited levels of total iron at 1,100 ug/l and 20,000 ug/l, respectively.

A Dilution Factor (DF) was calculated for the detected levels of metals pursuant to the procedure contained in RGP MAG910000, Appendix V. The purpose of the DF calculation is to establish Total Recoverable Limits for metals, taking into consideration the anticipated dilution of the detected analyte upon discharge into the Charles River. The calculated DF was then used to find the appropriate Dilution Range Concentrations (DRCs) contained in MAG910000, Appendix IV. The Minimum Flow Rate calculated by the USGS Streamstats GIS database at the location of discharge into the Charles River for 7 consecutive days with a recurrence interval of 10 years (7Q10 flow) is 24.7 thus resulting in a DF of 247.1. A DF in excess of 100 corresponds to dilution concentration of 5,000 ug/l for total iron. Therefore, based on calculations of the applicable dilution factor, the total iron exceeds the applicable permit limitations.

Groundwater Treatment

Based on the results of the above referenced groundwater analyses, it is our opinion that a 20,000-gallon capacity settling tank, bag filter and ion exchange filter will be required to settle out particulate matter which may contain levels of petroleum hydrocarbons, PAHs, and total BTEX and lower the detected concentrations of total cyanide and iron in groundwater to meet the applicable effluent limits established by the US EPA prior to discharge. A schematic of the treatment system is shown on **Figure 4**.

A Best Management Practices Plan (BMPP) has been prepared as **Appendix E** to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Summary and Conclusions

The purpose of this report is to assess site environmental conditions and groundwater data to support an application for a Massachusetts Remediation General Permit for off-site discharge of groundwater which will be encountered during the redevelopment of the Landmark Center located at 401 Park Drive in Boston. The groundwater testing results reported in this application have been provided to the site owner.

Based on the results of the above referenced groundwater analyses, groundwater treatment is necessary to meet allowable effluent limits established by the US EPA prior to discharge. The proposed construction dewatering effluent treatment system will consist of one settling tank 20,000-gallons in capacity, a bag filter, and ion exchange filter in series in order to meet the applicable discharge limits for total cyanide and an iron established by the RGP. However, should the effluent monitoring results indicate levels of total cyanide or iron in excess of the limits established in the Massachusetts Remediation General Permit, additional mitigative measures will be implemented to meet the allowable discharge limits.

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.

Sincerely,

McPHAIL ASSOCIATES, LLC

William J. Burns

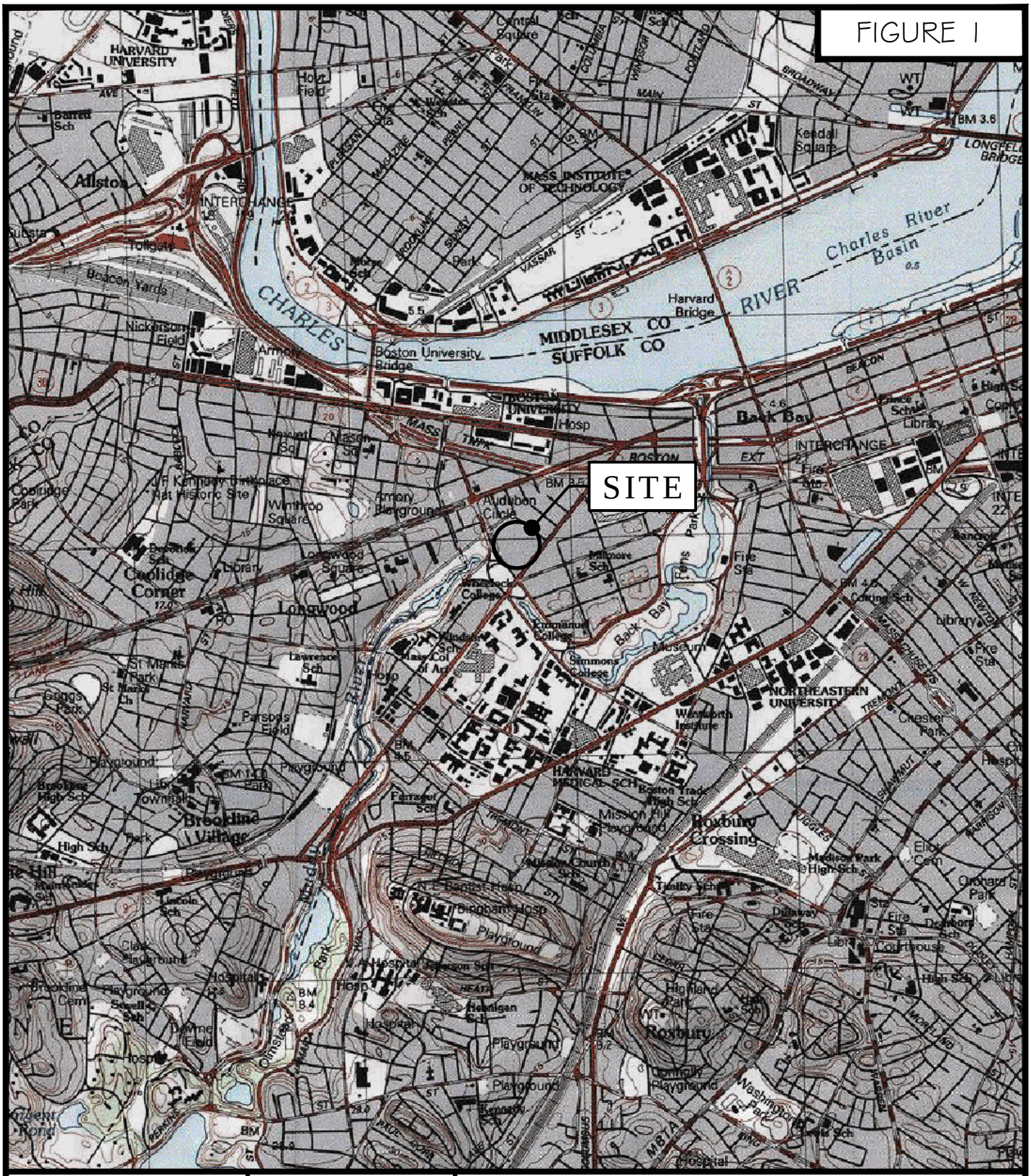
Joseph G. Lombardo, Jr., L.S.P.

WJB/ajd

F:\WP5\Office\CONVERSION TO WORD\Letter Report.docx

C: Landmark Center Development LLC
Suffolk Construction Company

FIGURE 1



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N

SCALE 1:25,000

PROJECT LOCATION PLAN

LANDMARK CENTER

BOSTON MASSACHUSETTS

LEGEND

(B.1) ▲ — APPROXIMATE LOCATION OF CONE PENETRATION TEST PERFORMED BY CORE TEC ON MARCH 13 AND 14, 2014 FOR McPHAIL ASSOCIATES, LLC

(B.2) — APPROXIMATE LOCATION OF BORING PERFORMED BY CARR-DEE CORP. FROM MARCH 13, 2014 TO APRIL 8, 2014 FOR McPHAIL ASSOCIATES, LLC

(B.3) — APPROXIMATE LOCATION OF GEOENVIRONMENTAL BORING PERFORMED BY CARR-DEE CORP. FROM OCTOBER 1 TO NOVEMBER 10, 2014 FOR McPHAIL ASSOCIATES, LLC

(B.4) — APPROXIMATE LOCATION OF GEOTECHNICAL BORING PERFORMED BY CARR-DEE CORP. FROM OCTOBER 1 TO NOVEMBER 10, 2014 FOR McPHAIL ASSOCIATES, LLC

(B.5) — APPROXIMATE LOCATION OF SPLIT SPOON PROBE PERFORMED BY CARR-DEE CORP. FROM OCTOBER 30 AND 31, 2014 FOR McPHAIL ASSOCIATES, LLC

(B.6) — APPROXIMATE LOCATION OF SLAB CORE AND HAND AUGER BORING PERFORMED BY McPHAIL ASSOCIATES, LLC ON NOVEMBER 10, 2014

(B.7) — APPROXIMATE LOCATION OF BORING PERFORMED BY CARR-DEE CORP. DURING THE PERIODS OF JANUARY 30 THROUGH FEBRUARY 8, 2012 AND MAY 12 TO 16, 2014 FOR McPHAIL ASSOCIATES, LLC

(B.8) — APPROXIMATE LOCATION OF BORING PERFORMED BY NEW ENGLAND BORING CONTRACTORS OF CT., INC. FROM SEPTEMBER 28 TO OCTOBER 5, 2000 FOR McPHAIL ASSOCIATES, INC.

(B.9) — APPROXIMATE LOCATION OF BORING PERFORMED BY GZA DRILLING, INC. FROM SEPTEMBER 7, 1994 TO NOVEMBER 4, 1994 OBSERVED BY GZA ENVIRONMENTAL, INC. PERSONNEL

(B.10) — APPROXIMATE LOCATION OF BORING PERFORMED BY GUILD DRILLING CO., INC. OF EAST PROVIDENCE, RHODE ISLAND FROM MARCH 9 TO MARCH 30, 1994 FOR HALEY AND ALDRICH, INC.

(B.11) — APPROXIMATE LOCATION OF BORING PERFORMED BY GZA DRILLING, INC. FROM SEPTEMBER 5 TO SEPTEMBER 27, 1989 OBSERVED BY GZA ENVIRONMENTAL, INC. PERSONNEL

(B.12) — APPROXIMATE LOCATION OF BORING PERFORMED BY GEI CONSULTANTS, INC. BETWEEN JANUARY 22, 1988 AND JANUARY 6, 1989

(B.13) — APPROXIMATE LOCATION OF BORING PERFORMED BY OTHERS AND PUBLISHED BY BOSTON SOCIETY OF CIVIL ENGINEERS, 1969

(B.14) — APPROXIMATE LOCATION OF BORING PERFORMED BY NEW ENGLAND TEST BORING CORP. IN JANUARY 1965

(B.15) — APPROXIMATE LOCATION OF BORING PERFORMED BY AMERICAN DRILLING CO., INC. IN DECEMBER, 1964

(B.16) — PREVIOUS BORINGS PERFORMED BY OTHERS. INFORMATION TAKEN FROM A PLAN ENTITLED, "FOUNDATION PLAN, ADDITION & ALTERATIONS TO MAIL ORDER STORE, FOR SEARS ROEBUCK & CO., BUILDING No. 845, CARR AND WRIGHT, INC. REV. 3-1-48"

(B.1) — INDICATES APPENDIX CONTAINING EXPLORATION LOGS

(OW) — INDICATES OBSERVATION WELL INSTALLED WITHIN COMPLETED BOREHOLE

↖ — STORMWATER FLOW DIRECTION

REFERENCE: THIS PLAN WAS PREPARED FROM A 20-SCALE DRAWING ENTITLED, "EXISTING CONDITIONS PLAN" DATED APRIL 4, 2014 PREPARED BY HARRY R. FELDMAN, INC.

GRAPHIC SCALE

40 0 40 80 160

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LANDMARK CENTER

BOSTON MASSACHUSETTS

SUBSURFACE EXPLORATION PLAN

FOR

LANDMARK CENTER DEVELOPMENT LLC

BY

McPHAIL ASSOCIATES, LLC

Date: DECEMBER 2014	Dwn: M.B.S.	Chkd: B.A.O.	Scale: 1" = 40'
Project No: 5512			FIGURE 2

FILE NAME: H:\Acad\JOBS\5512\RGP\5512F02.dwg

FIGURE 3A

MATCH LINE

APPROXIMATE LOCATION OF CONSTRUCTION DEWATERING DISCHARGE

APPROXIMATE LIMITS OF SUBJECT SITE

NORTH

GRAPHIC SCALE

100 0 100 200

REFERENCE: THIS PLAN WAS PREPARED FROM A 100-SCALE DRAWING ENTITLED "BOSTON WATER AND SEWER" PRINTED ON APRIL 17, 2012 BY BOSTON WATER AND SEWER COMMISSION.

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LANDMARK CENTER

BOSTON MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PATH

FOR

LANDMARK CENTER DEVELOPMENT LLC

BY

McPHAIL ASSOCIATES, LLC

Date: DECEMBER 2014	Dwn: I.J.M.	Chkd: W.J.B.	Scale: 1" = 100'
Project No: 5512			

FILE NAME: H:\Acad\JOBS\55 | 2\RGR55 | 2-F03.dwg

FIGURE 3B

MATCH LINE

COMMONWEALTH AV

BLANDFORD ST

BEACON ST

MASSACHUSETTS TNPK

BROOKLINE AV

KENMORE SQUARE

PARKING

CONRAIL

MAITLAND ST

SALVATION ARMY ADULT REHABILITATION CENTER

OVERLAND ST

PRIVATE RD

LANSDOWNE ST

BULKHEADED

FLOWS IN BOTH DIRECTIONS

NORTH

GRAPHIC SCALE

100 0 100 200

REFERENCE: THIS PLAN WAS PREPARED FROM A 100-SCALE DRAWING ENTITLED "BOSTON WATER AND SEWER" PRINTED ON APRIL 17, 2012 BY BOSTON WATER AND SEWER COMMISSION.

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LANDMARK CENTER

BOSTON MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PATH

FOR

LANDMARK CENTER DEVELOPMENT LLC

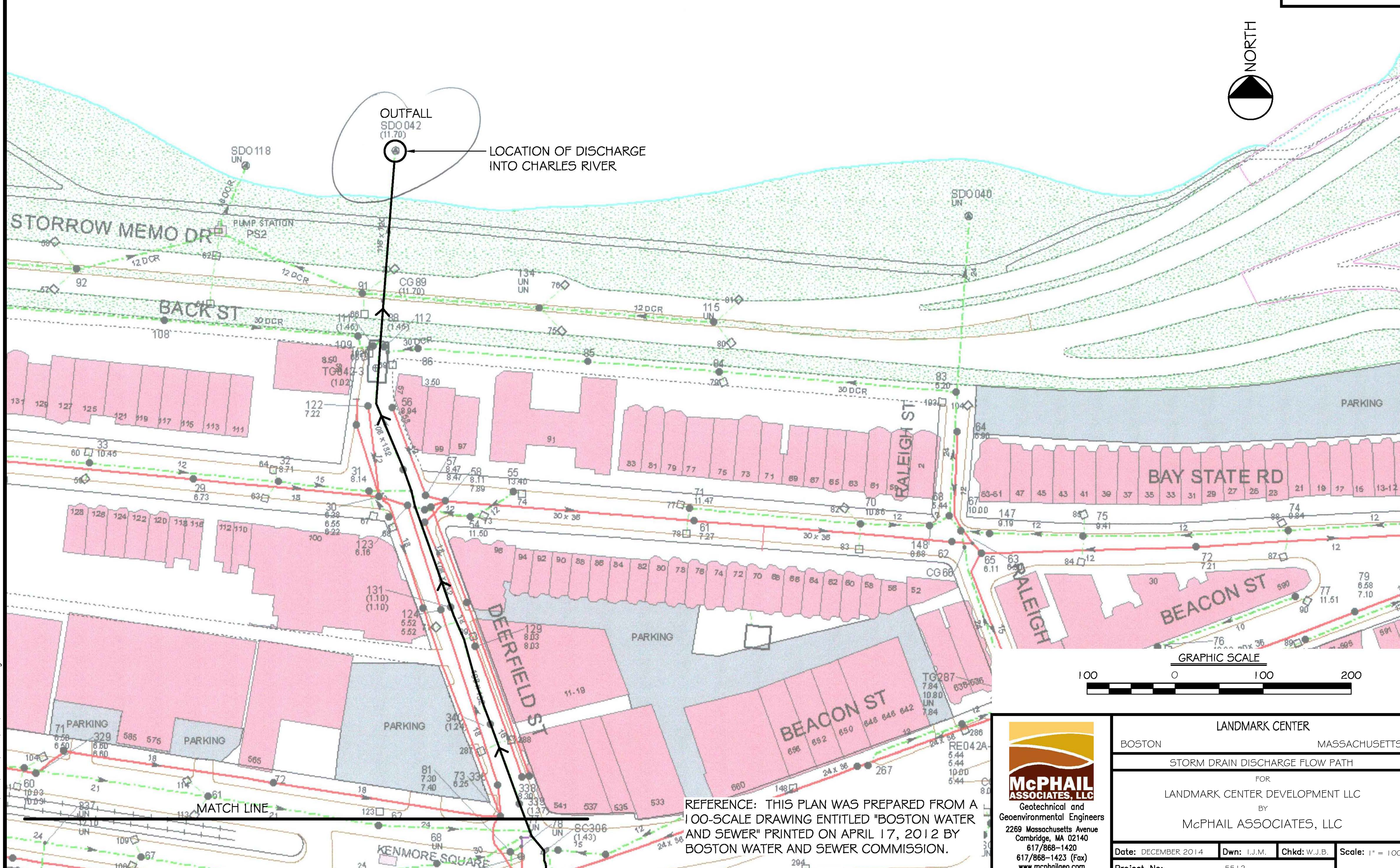
BY

McPHAIL ASSOCIATES, LLC

Date: DECEMBER 2014	Dwn: I.J.M.	Chkd: W.J.B.	Scale: 1" = 100'
Project No: 5512			

FILE NAME: H:\Acad\JOBS\5512\RGR\5512-FIG3.dwg

FIGURE 3C



REFERENCE: THIS PLAN WAS PREPARED FROM A 100-SCALE DRAWING ENTITLED "BOSTON WATER AND SEWER" PRINTED ON APRIL 17, 2012 BY BOSTON WATER AND SEWER COMMISSION.

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LANDMARK CENTER

BOSTON MASSACHUSETTS

STORM DRAIN DISCHARGE FLOW PATH

FOR

LANDMARK CENTER DEVELOPMENT LLC

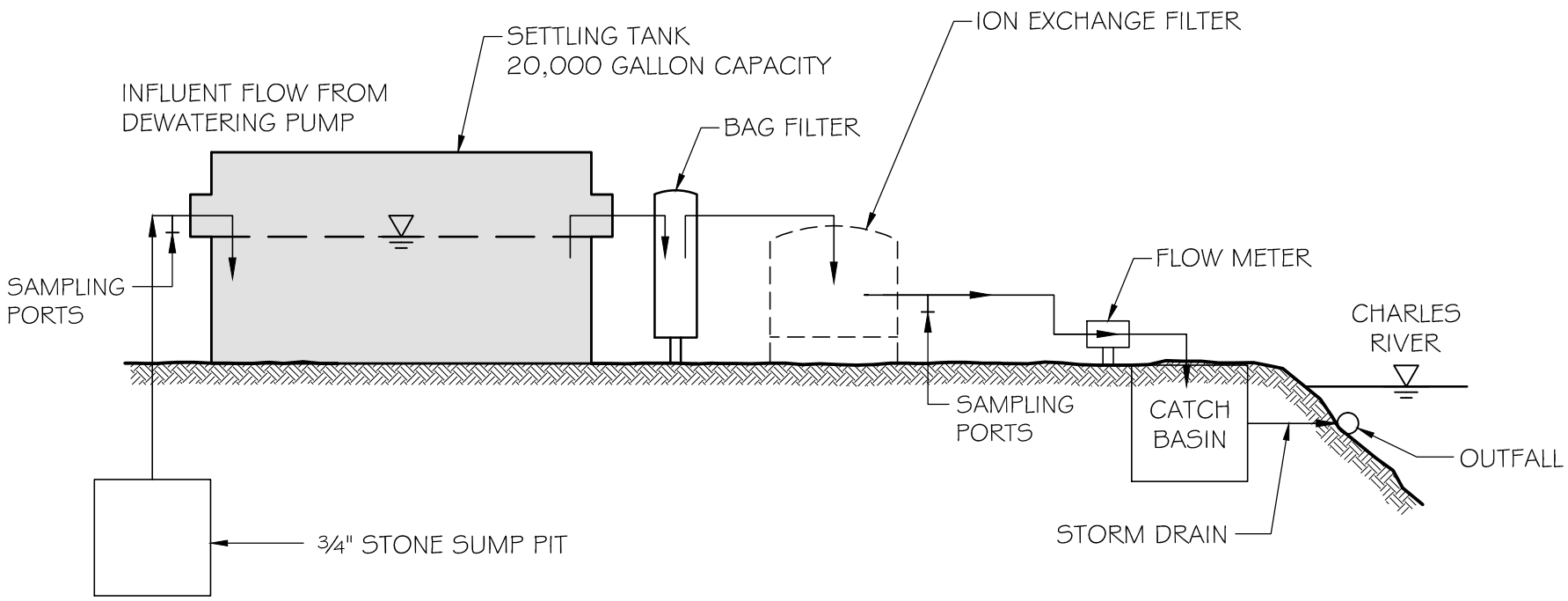
BY

McPHAIL ASSOCIATES, LLC

Date: DECEMBER 2014	Dwn: I.J.M.	Chkd: W.J.B.	Scale: 1" = 100'
Project No: 5512			

FILE NAME: H:\Acad\JOBS\5512\RGP\5512-F04.dwg

FIGURE 4



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LANDMARK CENTER

BOSTON MASSACHUSETTS

SCHEMATIC OF TREATMENT SYSTEM

FOR

LANDMARK CENTER DEVELOPMENT LLC

BY

McPHAIL ASSOCIATES, LLC

CONSULTING GEOTECHNICAL ENGINEERS

Date: FEBRUARY 2015	Dwn: I.J.M.	Chkd: W.J.B.	Scale: N.T.S.
Project No: 5512			

TABLE 1
ANAYTICAL RESULTS - GROUNDWATER

Landmark Center
401 Park Drive; Boston, MA
Project No. 5512

LOCATION	RGP Effluent Limit	Units	MAE-58	MAE-42	MAE-17	TRIP BLANK
SAMPLING DATE			11/11/2014	11/11/2014	11/12/2014	11/11/2014
LAB SAMPLE ID			L1427121-01	L1427132-01	L1427275-01	L1427121-02
Solids, Total Suspended	30000	ug/l	6700	7100	ND(5000)	-
Chlorine, Total Residual	11	ug/l	ND(20)	ND(20)	ND(20)	-
TPH	5000	ug/l	ND(4000)	ND(4000)	ND(4000)	-
Cyanide, Total	5.2	ug/l	ND(5)	**10**	5	-
Benzene	Total BTEX	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	-
Toluene	Total BTEX	ug/l	ND(0.75)	ND(0.75)	ND(0.75)	-
Ethylbenzene	Total BTEX	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	-
p/m-Xylene	Total BTEX	ug/l	ND(1)	ND(1)	ND(1)	-
o-Xylene	Total BTEX	ug/l	ND(1)	ND(1)	ND(1)	-
Total BTEX	100	ug/l	ND	ND	ND	
1,2-Dibromoethane	0.05	ug/l	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Methyl tert butyl ether	70	ug/l	ND(1)	ND(1)	ND(1)	-
Tert-Butyl Alcohol	Monitor	ug/l	ND(10)	ND(10)	-	-
Tertiary-Amyl Methyl Ether	Monitor	ug/l	ND(2)	ND(2)	-	-
Naphthalene	20	ug/l	ND(2.5)	ND(2.5)	ND(2.5)	-
Carbon tetrachloride	4.4	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	-
1,2-Dichlorobenzene	600	ug/l	ND(2.5)	ND(2.5)	ND(2.5)	-
1,3-Dichlorobenzene	320	ug/l	ND(2.5)	ND(2.5)	ND(2.5)	-
1,4-Dichlorobenzene	5	ug/l	ND(2.5)	ND(2.5)	ND(2.5)	-
Total Dichlorobenzene			ND	ND	ND	
1,1-Dichloroethane	70	ug/l	ND(0.75)	ND(0.75)	ND(0.75)	-
1,2-Dichloroethane	5	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	-
1,1-Dichloroethene	3.2	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	-
cis-1,2-Dichloroethene	70	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	-
Methylene chloride	4.6	ug/l	ND(3)	ND(3)	ND(3)	-
Tetrachloroethene	5	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	-
1,1,1-Trichloroethane	200	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	-
1,1,2-Trichloroethane	5	ug/l	ND(0.75)	ND(0.75)	ND(0.75)	-
Trichloroethene	5	ug/l	ND(0.5)	ND(0.5)	ND(0.5)	-
Vinyl chloride	2	ug/l	ND(1)	ND(1)	ND(1)	-
Acetone	Monitor	ug/l	5	8.2	ND(5)	-
1,4-Dioxane	Monitor	ug/l	ND(3)	ND(3)	ND(3)	-
Phenolics, Total	300	ug/l	ND(30)	ND(30)	ND(30)	-
Butyl benzyl phthalate	Total Phthalate	ug/l	ND(5)	ND(5)	ND(5.2)	-
Di-n-butylphthalate	Total Phthalate	ug/l	ND(5)	ND(5)	ND(5.2)	-
Di-n-octylphthalate	Total Phthalate	ug/l	ND(5)	ND(5)	ND(5.2)	-
Diethyl phthalate	Total Phthalate	ug/l	ND(5)	ND(5)	ND(5.2)	-
Dimethyl phthalate	Total Phthalate	ug/l	ND(5)	ND(5)	ND(5.2)	-
Total Phthalates	3	ug/l	ND	ND	ND	-
Bis(2-ethylhexyl)phthalate	6	ug/l	ND(3)	ND(3)	ND(3.1)	-
Total Group I PAHs	10	ug/l	ND	ND	ND	
Benzo(a)anthracene	0.0038	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Benzo(a)pyrene	0.0038	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Benzo(b)fluoranthene	0.0038	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Benzo(k)fluoranthene	0.0038	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Chrysene	0.0038	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Dibenzo(a,h)anthracene	0.0038	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Indeno(1,2,3-cd)pyrene	0.0038	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Total Group II PAHs	100	ug/l	ND	0.27	ND	
Acenaphthene	Total Group II	ug/l	ND(0.2)	0.27	ND(0.21)	-
Acenaphthylene	Total Group II	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Anthracene	Total Group II	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Benzo(ghi)perylene	Total Group II	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Fluoranthene	Total Group II	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Fluorene	Total Group II	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Naphthalene	Total Group II	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Phenanthrene	Total Group II	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Pyrene	Total Group II	ug/l	ND(0.2)	ND(0.2)	ND(0.21)	-
Total PCBs	0.000064	ug/l	ND	ND	ND	-
Chloride	Monitor	ug/l	621000	3380000	1250000	-
Antimony, Total	5.6	ug/l	0.5	0.9	0.8	-
Arsenic, Total	10	ug/l	0.6	1.3	1	-
Cadmium, Total	0.2	ug/l	ND(0.2)	ND(0.2)	ND(0.2)	-
Chromium, Total	48.8	ug/l	2.1	1.2	2.7	-
Chromium, Hexavalent	11.4	ug/l	ND(10)	ND(10)	ND(10)	-
Copper, Total	5.2	ug/l	ND(1)	ND(1)	ND(1)	-
Lead, Total	1.3	ug/l	ND(0.5)	ND(0.5)	ND(1)	-
Mercury, Total	0.9	ug/l	ND(0.2)	ND(0.2)	ND(0.2)	-
Nickel, Total	29	ug/l	0.6	ND(0.5)	0.7	-
Selenium, Total	5	ug/l	ND(5)	ND(5)	ND(5)	-
Silver, Total	1.2	ug/l	ND(0.3)	ND(0.3)	ND(0.3)	-
Zinc, Total	66.6	ug/l	ND(10)	ND(10)	ND(10)	-
Iron, Total	1000	ug/l	**1100**	**20000**	890	-

ND - not detected in excess of the laboratory method detection limits in ()
Bold - exceeds RGP effluent limit
Blank-not analyzed

TABLE 2
Calculations of Mass of Compounds

Landmark Center
401 Park Drive; Boston, MA
McPhail Job No. 5512

Avg flow (GPM) = 40 Avg Flow (MGD) = 0.0576			
Compound #	Average Concentration (ug/l)	Average Concentration (mg/l)	**MASS (kg)**
TSS	6267	6.267	**1.36844**
cyanide	6.7	0.00667	**0.00146**
acetone	6.1	0.0061	**0.00133**
acenaphthene	0.2	0.00023	**0.00005**
Chloride	1750333	1750.333	**382.19635**
antimony	0.73	0.00073	**0.00016**
arsenic	0.96	0.00096	**0.00021**
total chromium	2	0.002	**0.00044**
nickel	0.6	0.0006	**0.00013**
iron	7330	7.33	**1.60055**
Max flow (GPM) = 75 Max Flow (MGD) = 0.108			
Compound #	Max Concentration (ug/l)	Max Concentration (mg/l)	**MASS (kg)**
TSS	7,100	7.1	**2.907**
cyanide	10	0.01	**0.0041**
acetone	8.20	0.0082	**0.0034**
acenaphthene	0.27	0.00027	**0.0001**
Chloride	3380000.00	3380	**1383.8335**
antimony	0.90	0.0009	**0.0004**
arsenic	1.30	0.0013	**0.0005**
total chromium	2.70	0.0027	**0.0011**
nickel	0.70	0.0007	**0.0003**
iron	20000.00	20	**8.1884**

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

APPENDIX A:

LIMITATIONS

LIMITATIONS

The purpose of this report is to present the results of testing of groundwater samples obtained from monitoring wells located at the Landmark Center property listed with the address of 401 Park Drive in Boston, Massachusetts, in support of an application for approval of construction site dewatering discharge into surface waters of the Commonwealth of Massachusetts under EPA's Massachusetts Remediation General Permit MAG910000.

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

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

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

This report and application have been prepared on behalf of and for the exclusive use of Landmark Center Development LLC and Suffolk Construction Company. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, other than submission to relevant governmental agencies, nor used in whole or in part by any other party without the prior written consent of McPhail Associates, LLC.

APPENDIX B:

NOTICE OF INTENT TRANSMITTAL FORM
BOSTON WATER & SEWER DEWATERING DISCHARGE PERMIT APPLICATION

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

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

a) Name of **facility/site:** Landmark Center		**Facility/site** mailing address:			
Location of **facility/site:** longitude: -71.097840 latitude: 42.36166	Facility SIC code(s):	Street: 401 Park Drive			
b) Name of **facility/site owner:** Landmark Center Owner Limited Partnership		Town: Boston			
Email address of facility/site owner: amenzin@samuelsre.com		State: MA	Zip: 02215	County: Suffolk	
Telephone no. of facility/site **owner:** 617-247-3434					
Fax no. of facility/site **owner:** 617-266-8788		**Owner** is (check one): 1. Federal ○ 2. State/Tribal ○ 3. Private ◉ 4. Other ○ if so, describe:			
Address of **owner** (if different from site):					
Street: 333 Newbury Street					
Town: Boston	State: MA	Zip: 02115	County: Suffolk		
c) Legal name of **operator**: Suffolk Construction Co.		**Operator** telephone no: 617-445-3500			
		Operator fax no.: 617-541-2128	**Operator** email: TSpence@suffolk.com		
Operator contact name and title: Thomas Spence, Project Executive					
Address of **operator** (if different from owner):		Street: 65 Allerton Street			
Town: Boston	State: MA	Zip: 02119	County: Suffolk		

d) Check Y for "yes" or N for "no" for the following:
1. Has a prior NPDES permit exclusion been granted for the discharge? Y ○ N ⊙, if Y, number:
2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge?
Y ○ N ⊙, if Y, date and tracking #:
3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Y ○ N ⊙
4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ⊙ N ○

e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ○ N ⊙
If Y, please list:
1. site identification # assigned by the state of NH or MA:
2. permit or license # assigned:
3. state agency contact information: name, location, and telephone number:

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

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

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

Activity Category	**Activity Sub-Category**
I - Petroleum Related Site Remediation	A. Gasoline Only Sites ☐ B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☐ C. Petroleum Sites with Additional Contamination ☐
II - Non Petroleum Site Remediation	A. Volatile Organic Compound (VOC) Only Sites ☐ B. VOC Sites with Additional Contamination ☐ C. Primarily Heavy Metal Sites ☐
III - Contaminated Construction Dewatering	A. General Urban Fill Sites ☒ B. Known Contaminated Sites ☐

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formerly Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐

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

a) Describe the discharge activities for which the owner/applicant is seeking coverage:

Temporary Construction Dewatering

b) Provide the following information about each discharge:

1) Number of discharge points: 2

2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)?
Max. flow 0.223 Is maximum flow a **design value**? Y ○ N ◉
Average flow (include units) 0.0892 cu.ft/s Is average flow a design value or estimate? estimate

3) Latitude and longitude of each discharge within 100 feet:

pt.1: lat	42.34497	long	-71.10359	pt.2: lat.	42.345398	long.	-71.10195 ;
pt.3: lat		long		pt.4: lat.		long.	;
pt.5: lat		long		pt.6: lat.		long.	;
pt.7: lat		long		pt.8: lat.		long.	; etc.

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

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

c) Expected dates of discharge (mm/dd/yy): start Mar 1, 2015 end Dec 1, 2017

d) Please attach a line drawing or flow schematic showing water flow through the facility including:
1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s). Please refer to the attached report

3. Contaminant information.

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

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids (TSS)		☐	☒	3	grab	302540D		7100	2.9	6267	1.36
2. Total Residual Chlorine (TRC)		☒	☐	3			20	ND	ND		
3. Total Petroleum Hydrocarbons (TPH)		☐	☒	3	grab	74,1664A	4000	ND	ND		
4. Cyanide (CN)	57125	☐	☒	3				10	0.0041	6.7	0.00146
5. Benzene (B)	71432	☒	☐	3	grab	1,8260B	0.5	ND	ND		
6. Toluene (T)	108883	☒	☐	3	grab	1,8260B	0.75	ND	ND		
7. Ethylbenzene (E)	100414	☒	☐	3	grab	1,8260B	0.5	ND	ND		
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	3	grab	1,8260B	1	ND	ND		
9. Total BTEX [2]	n/a	☒	☐					ND	ND		
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) [3]	106934	☒	☐	3	grab	1,8260B	0.01	ND	ND		
11. Methyl-tert-Butyl Ether (MtBE)	1634044	☒	☐	3	grab	1,8260B	2	ND	ND		
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	2	grab	1,8260B	10	ND	ND		

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

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

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

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	3	grab	1,8260B	2	ND	ND		
14. Naphthalene	91203	☒	☐	3	grab	1,8260B	2	ND	ND		
15. Carbon Tetrachloride	56235	☒	☐	3	grab	1,8260B	1	ND	ND		
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	3	grab	1,8260B	1	ND	ND		
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	3	grab	1,8260B	1	ND	ND		
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	3	grab	1,8260B	1	ND	ND		
18a. Total dichlorobenzene		☒	☐	3	grab			ND	ND		
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	3	grab	1,8260B	1	ND	ND		
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	3	grab	1,8260B	1	ND	ND		
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	3	grab	1,8260B	1	ND	ND		
22. cis-1,2 Dichloroethene (DCE)	156592	☒	☐	3	grab	1,8260B	1	ND	ND		
23. Methylene Chloride	75092	☒	☐	3	grab	1,8260B	2	ND	ND		
24. Tetrachloroethene (PCE)	127184	☒	☐	3	grab	1,8260B	1	ND	ND		
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	3	grab	1,8260B	1	ND	ND		
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	3	grab	1,8260B	1	ND	ND		
27. Trichloroethene (TCE)	79016	☒	☐	3	grab	1,8260B	1	ND	ND		

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
28. Vinyl Chloride (Chloroethene)	75014	☒	☐	3	grab	1,8260B	1	ND	ND		
29. Acetone	67641	☒	☐	3	grab	1,8260B	5	8.2	0.0034	6.1	0.00133
30. 1,4 Dioxane	123911	☒	☐	3	grab	1,8260B	3	ND	ND		
31. Total Phenols	108952	☒	☐	3	grab	1,827C	30	ND	ND		
32. Pentachlorophenol (PCP)	87865	☒	☐								
33. Total Phthalates (Phthalate esters) [4]		☒	☐	3	grab	1,827C	ND	ND	ND		
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	3	grab	1,827C	3	ND	ND		
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐					ND	ND		
a. Benzo(a) Anthracene	56553	☒	☐	3	grab	1,827C	0.2	ND	ND		
b. Benzo(a) Pyrene	50328	☒	☐	3	grab	1,827C	0.2	ND	ND		
c. Benzo(b)Fluoranthene	205992	☒	☐	3	grab	1,827C	0.2	ND	ND		
d. Benzo(k)Fluoranthene	207089	☒	☐	3	grab	1,827C	0.2	ND	ND		
e. Chrysene	21801	☒	☐	3	grab	1,827C	0.2	ND	ND		
f. Dibenzo(a,h)anthracene	53703	☒	☐	3	grab	1,827C	0.2	ND	ND		
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	3	grab	1,827C	0.2	ND	ND		
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐					0.27	0.0001	0.2	0.00005

[4] The sum of individual phthalate compounds.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
h. Acenaphthene	83329	☒	☐	3	grab	1,827C	0.2	0.27	0.0001	0.2	0.00005
i. Acenaphthylene	208968	☒	☐	3	grab	1,827C	0.2	ND	ND		
j. Anthracene	120127	☒	☐	3	grab	1,827C	0.2	ND	ND		
k. Benzo(ghi) Perylene	191242	☒	☐	3	grab	1,827C	0.2	ND	ND		
l. Fluoranthene	206440	☒	☐	3	grab	1,827C	0.2	ND	ND		
m. Fluorene	86737	☒	☐	3	grab	1,827C	0.2	ND	ND		
n. Naphthalene	91203	☒	☐	3	grab	1,827C	0.2	ND	ND		
o. Phenanthrene	85018	☒	☐	3	grab	1,827C	0.2	ND	ND		
p. Pyrene	129000	☒	☐	3	grab	1,827C	0.2	ND	ND		
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☐	☒	3	grab			ND	ND		
38. Chloride	16887006	☐	☒	3	grab	44,300		3,380,000	1383.8	1750333	382.19
39. Antimony	7440360	☒	☐	3	grab	16020		0.9	0.0004	0.73	0.00016
40. Arsenic	7440382	☐	☒	3	grab	16020		1.3	0.0005	0.96	0.00021
41. Cadmium	7440439	☒	☐	3	grab	16020	0.2	ND	ND		
42. Chromium III (trivalent)	16065831	☒	☐	3	grab	30,3500CR-D		2.7	0.0011	2	0.00044
43. Chromium VI (hexavalent)	18540299	☒	☐	3	grab	30,3500CR-D	10	ND	ND		
44. Copper	7440508	☒	☐	3	grab	16020	1	ND	ND		
45. Lead	7439921	☐	☒	3	grab	16020	0.5	ND	ND		
46. Mercury	7439976	☒	☐	3	grab	3,245.1	0.2	ND	ND		
47. Nickel	7440020	☒	☐	3	grab	16020		0.7	0.0003	0.6	0.00013
48. Selenium	7782492	☒	☐	3	grab	16020	5	ND	ND		
49. Silver	7440224	☒	☐	3	grab	16020	0.3	ND	ND		
50. Zinc	7440666	☒	☐	3	grab	16020	10	ND	ND		
51. Iron	7439896	☐	☒	3	grab	19,200.7		20000	8.1884	7330	1.60055
Other (describe):		☐	☐								

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

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

Step 1: Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ◉ N ○	If yes, which metals? iron
Step 2: For any metals which exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metal: iron DF: >100 Metal: DF: Metal: DF: Metal: DF: Etc.	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ○ N ◉ If Y, list which metals:

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

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

20,000-gallon settling tank, bag filter and ion exchange filter in series

b) Identify each applicable treatment unit (check all that apply):	Frac. tank ☒	Air stripper ☐	Oil/water separator ☐	Equalization tanks ☐	Bag filter ☒	GAC filter ☐
	Chlorination ☐	De-chlorination ☐	Other (please describe):	Ion Exchange Filter		

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system:
Average flow rate of discharge 40 gpm Maximum flow rate of treatment system 100 gpm
Design flow rate of treatment system 100 gpm

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

N/A

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

a) Identify the discharge pathway:	Direct to receiving water ☐	Within facility (sewer) ☐	Storm drain ☒	Wetlands ☐	Other (describe):

b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters:

Stormdrains that discharge into the Charles River. Please refer to attached report for further details and plan.

c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water:
1. For multiple discharges, number the discharges sequentially.
2. For indirect dischargers, indicate the location of the discharge to the indirect conveyance and the discharge to surface water
The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.

d) Provide the state water quality classification of the receiving water Class B

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 24.7 cfs
Please attach any calculation sheets used to support stream flow and dilution calculations.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Y ⊙ N ○ If yes, for which pollutant(s)?
chlorophyll-a, DDT, dissolved oxygen, oil and grease, nutrient/eutrophication, phosphorous, PCBs

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

6. ESA and NHPA Eligibility.

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

a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?

A ◉ B ○ C ○ D ○ E ○ F ○

b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ○ N ○ Underway ○

c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received? Y ○ N ○

d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.

e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?

1 ○ 2 ○ 3 ◉

f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

7. Supplemental information.

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

Please refer to attached report

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

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name: Landmark Center

Operator signature:

Printed Name &Title: Thomas Spence Project Executive

Date: 2/11/15

Boston Water and Sewer Commission
980 Harrison Avenue
Boston, MA 02119-2540

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Suffolk Construction Company Address: 65 Allerton Street; Boston, MA 02119

Phone Number: 617-445-3500 Fax number: 617-541-2128

Contact person name: Thomas Spence Title: Project Executive

Cell number: 617-593-7373 Email address: TSpence@suffolk.com

Permit Request (check one): ☒ New Application ☐ Permit Extension ☐ Other (Specify): _____

Owner's Information (if different from above):

Owner of property being dewatered: Landmark Center Owner Limited Partnership

Owner's mailing address: 333 Newbury Street, Boston, MA 02115 Phone number: 617-247-3434

Location of Discharge & Proposed Treatment System(s):

Street number and name: 401 Park Drive Neighborhood Fenway

Discharge is to a: ☐ Sanitary Sewer ☐ Combined Sewer ☒ Storm Drain ☐ Other (specify): _____

Describe Proposed Pre-Treatment System(s): 20,000-gallon capacity settling tank, bag filters and ion exchange filter in series

BWSC Outfall No. SDO 042 Receiving Waters Charles River

Temporary Discharges (Provide Anticipated Dates of Discharge): From March 1, 2015 To December 1, 2017

☐ Groundwater Remediation	☐ Tank Removal/Installation	☒ Foundation Excavation
☐ Utility/Manhole Pumping	☐ Test Pipe	☒ Trench Excavation
☒ Accumulated Surface Water	☐ Hydrogeologic Testing	☐ Other _____

Permanent Discharges

☐ Foundation Drainage	☐ Crawl Space/Footing Drain
☐ Accumulated Surface Water	☐ Non-contact/Uncontaminated Cooling
☐ Non-contact/Uncontaminated Process	☐ Other; _____

---

1. Attach a Site Plan showing the source of the discharge and the location of the point of discharge (i.e. the sewer pipe or catch basin). Include meter type, meter number, size, make and start reading. Note. All discharges to the Commission's sewer system will be assessed current sewer charges.
2. If discharging to a sanitary or combined sewer, attach a copy of MWRA's Sewer Use Discharge permit or application.
3. If discharging to a separate storm drain, attach a copy of EPA's NPDES Permit or NOI application, or NPDES Permit exclusion letter for the discharge, as well as other relevant information.
4. Dewatering Drainage Permit will be denied or revoked if applicant fails to obtain the necessary permits from MWRA or EPA.

Submit Completed Application to: Boston Water and Sewer Commission
Engineering Customer Services
980 Harrison Avenue, Boston, MA 02119
Attn: Matthew Tuttle, Engineering Customer Service
E-mail: tuttlemp@bwsc.org
Phone: 617-989-7204 Fax: 617-989-7716

Signature of Authorized Representative for Property Owner: _____ Date: 2/26/15

Alc Moran
Senior VP of Development

APPENDIX C:

DEP PRIORITY RESOURCES MAP

U.S. FISH AND WILDLIFE SERVICES - LIST OF THREATENED AND ENDANGERED SPECIES

MASSACHUSETTS DIVISION OF FISHERIES - LIST OF THREATENED AND ENDANGERED SPECIES

MASSACHUSETTS HISTORICAL COMMISSION REVIEW LETTER DATED JULY 11, 2014

MassDEP - Bureau of Waste Site Cleanup

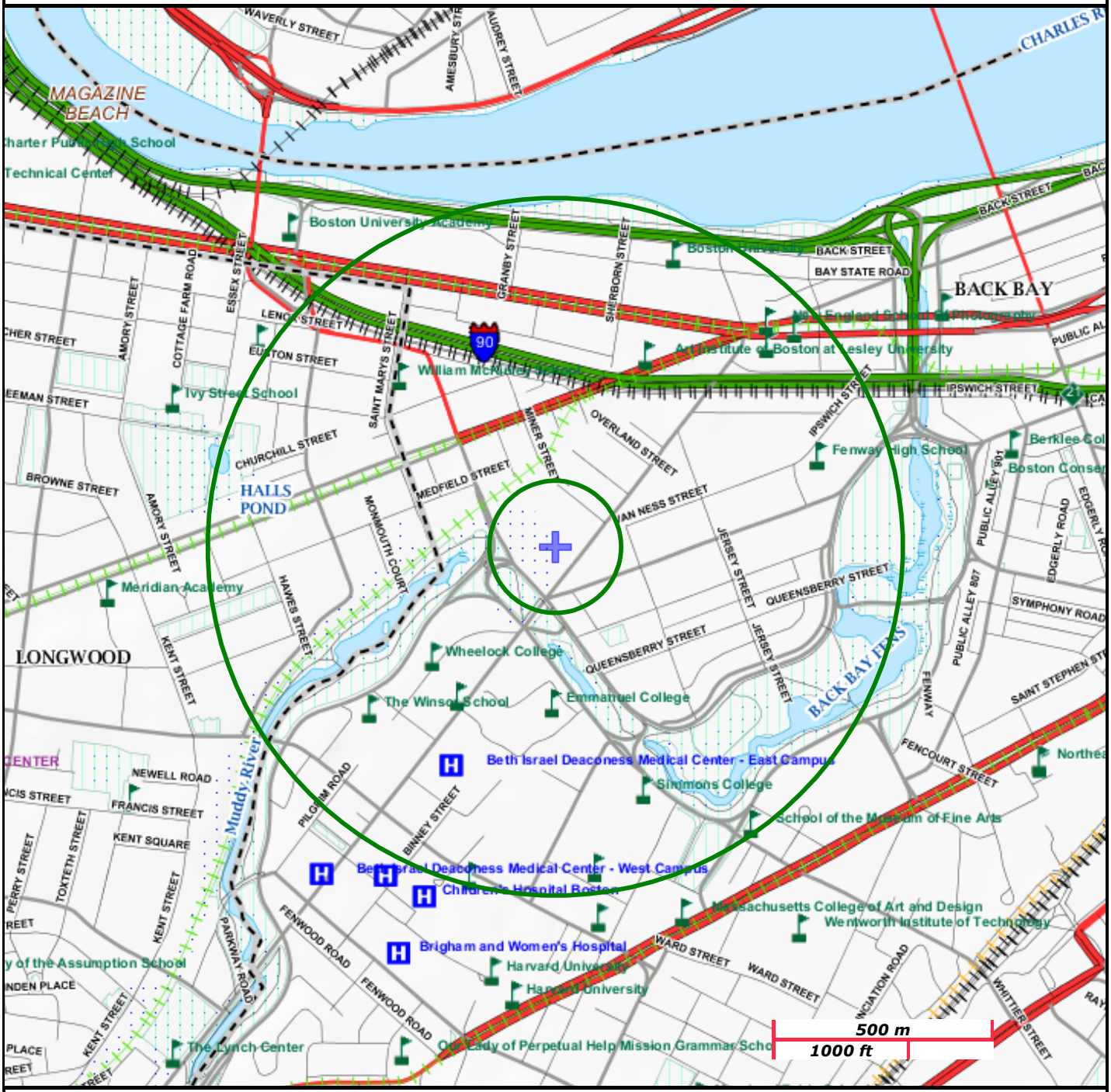
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
LANDMARK CENTER
401 PARK DRIVE BOSTON, MA

NAD83 UTM Meters:
4690155mN , 326824mE (Zone: 19)
January 21, 2015

The information shown is the best available at the date of printing. However, it may be incomplete. The responsible party and LSP are ultimately responsible 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.

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

July 22, 2014

Jason Bansfield
Fenway Enterprises LLC
On behalf of Landmark Center Ventures LLC
c/o Samuels and Associates
333 Newbury Street
Boston, MA 02155

RE: Landmark Center Redevelopment (including Wegman's), 309 Park Drive, Boston (Fenway), MA; MHC#55450; **EEA# 15183**

Dear Mr. Bansfield:

Thank you for submitting the additional information and Single Environmental Impact Report for the project referenced above, which were received at this office on June 10, 2014 and July 3, 2014.

The proposed project includes the demolition of existing structures surrounding the Sears Roebuck and Company Mail Order Store (Landmark Center). New construction is proposed on the north and east sides of the Sears building. The proposed new construction will be directly attached to the Sears building. Interior modifications are proposed to the interior of the Sears building to allow for access to the proposed new structures.

Review of the MHC's *Inventory of Historic and Archaeological Assets of the Commonwealth* indicates that the Sears Roebuck and Company Mail Order Store at 309 Park Drive (BOS.7563) is individually listed in the State and National Registers of Historic Places. The project is also within the vicinity of the Fenway Park (BOS.7709) and the Emerald Necklace Parks (Olmsted Park System) (BOS.JE), both of which are listed in the State and National Registers of Historic Places, as well as the Audubon Circle (BOS.XB), which is included in MHC's *Inventory of Historic and Archaeological Assets of the Commonwealth* and may be eligible for listing in the National Register of Historic Places as a historic district.

The 1991 National Register nomination for the Sears Roebuck and Company Mail Order Store outlines the various sections of the building, including original construction and subsequent additions. These sections are detailed in the National Register nomination and are as follows:

- Sears Roebuck and Company Mail Order Store, George C. Nimmons, and Nimmons Carr and Wright, architects, 1928-1930, Sections A-D
- Miller Building, architect unknown, 1929, Section M
- Addition, Carr and Wright, architects, 1948-1949, Section E
- Addition, Ballinger and Company, architects and engineers, 1966, Section F

The 1929 Miller Building, that currently houses the Blick store, is referred to as Section M in the 1991 National Register nomination for the Sears Roebuck and Company Mail Order Store. This portion of the

building has been significantly modified since its construction. No distinguishing architectural features still exist. Due to the extensive modifications, the Section M building no longer retains integrity.

After review of MHC's files and the information submitted, MHC has determined that the proposed project will have "no adverse effect" (950 CMR 71.07(2)(b)(2)) on the Sears Roebuck and Company Mail Order Store at 309 Park Drive. If project plans change, please provide revised scaled existing and proposed conditions project plans to MHC for review and comment.

These comments are offered to assist in compliance with M.G.L. Chapter 9, sections 26-27C, (950 CMR 71.00) and MEPA. Please do not hesitate to contact Elizabeth Sherva of my staff if you have any questions.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission

xc: Ellen Lipsey, Boston Landmarks Commission
Greg Galer, Boston Preservation Alliance
Emerald Necklace Conservancy
Purvi Patel, EEA/MEPA Unit
Patrice Kish, DCR
DEP-NERO
Boston Redevelopment Authority (BRA)
VHB

MASSACHUSETTS AREAS OF CRITICAL ENVIRONMENTAL CONCERN
June 2009

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

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

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

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

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

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

Ellisville Harbor
(600 acres, 1980) Plymouth

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

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

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

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

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

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

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

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

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

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

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

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

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

Pocasset River
(160 acres, 1980) Bourne

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

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

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

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

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

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

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

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

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

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

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

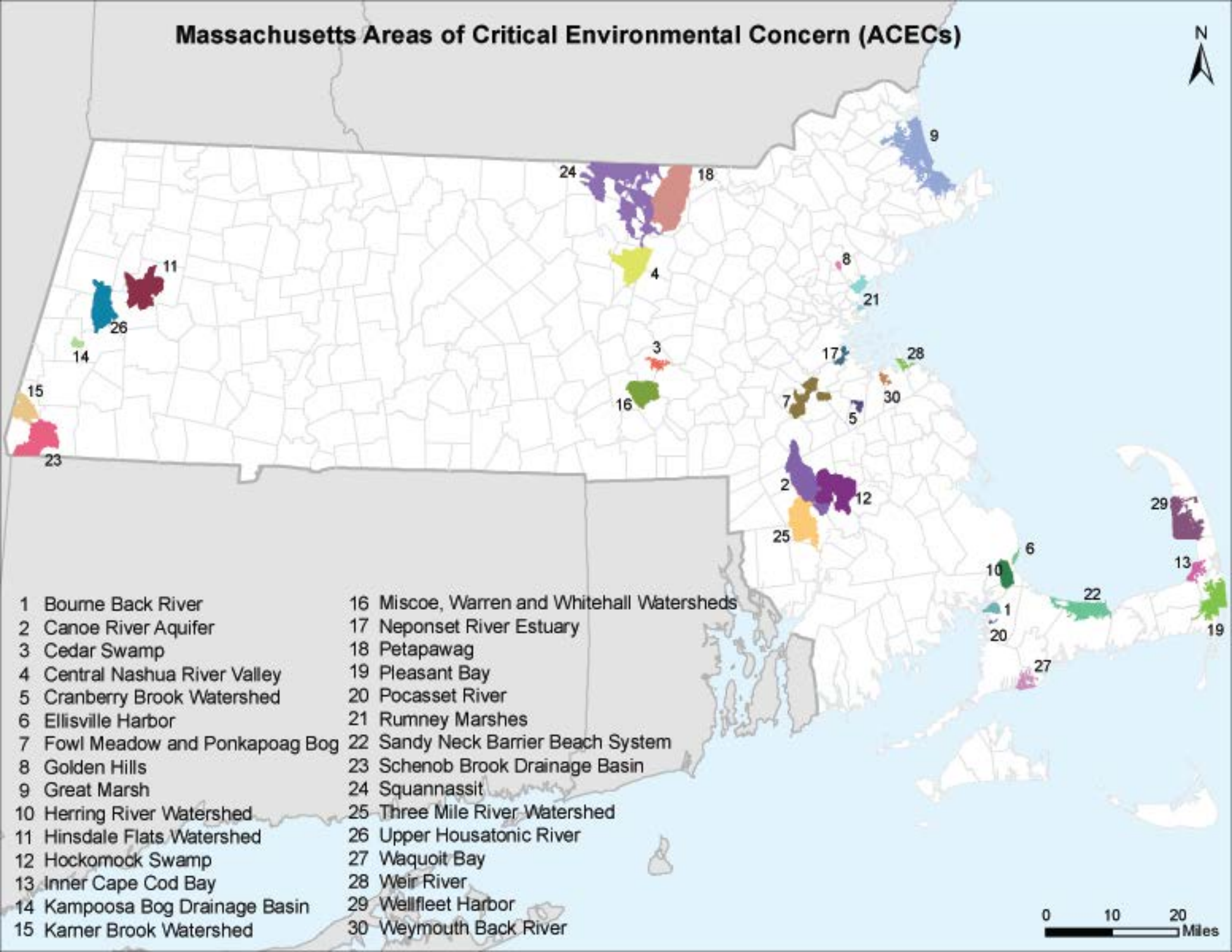
Towns with ACECs within their Boundaries June 2009

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

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

.

Massachusetts Areas of Critical Environmental Concern (ACECs)



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

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

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

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

7/31/2008

USGS Massachusetts StreamStats

Streamstats Ungaged Site Report

Date: Thu Feb 5 2015 09:56:22 Mountain Standard Time
Site Location: Massachusetts
NAD27 Latitude: 42.3533 (42 21 12)
NAD27 Longitude: -71.0964 (-71 05 47)
NAD83 Latitude: 42.3534 (42 21 12)
NAD83 Longitude: -71.0959 (-71 05 45)
ReachCode: 01090001000111
Measure: 19.66
Drainage Area: 283 mi2
Percent Urban: 43.7 %
Percent Impervious: 17 %

Low Flows Basin Characteristics

100% Statewide Low Flow (283 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	283 (above max value 149)	1.61	149
Mean Basin Slope from 250K DEM (percent)	2.33	0.32	24.6
Stratified Drift per Stream Length (square mile per mile)	0.23	0	1.29
Massachusetts Region (dimensionless)	0	0	1

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

Probability of Perennial Flow Basin Characteristics

100% Perennial Flow Probability (283 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	283 (above max value 1.99)	0.01	1.99
Percent Underlain By Sand And Gravel (percent)	47.89	0	100
Percent Forest (percent)	42.01	0	100
Massachusetts Region (dimensionless)	0	0	1

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

Low Flows Streamflow Statistics

Statistic	Flow (ft^3/s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
D50	303				
D60	250				
D70	172				
D75	140				
D80	110				
D85	88				
D90	68.6				
D95	46.3				
D98	30.9				
D99	25.7				
M7D2Y	49.6				
AUGD50	94.3				
M7D10Y	24.7				

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

Probability of Perennial Flow Statistics

Statistic	Value	Standard Error (percent)

PROBPEREN	1	

APPENDIX D:

LABORATORY ANALYTICAL DATA – GROUNDWATER

ANALYTICAL REPORT

Lab Number:	L1427121
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	LANDMARK
Project Number:	5512.9.01
Report Date:	11/18/14

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: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1427121-01	MAE-58	WATER	BOSTON, MA	11/11/14 13:00	11/11/14
L1427121-02	TRIP BLANK	WATER	BOSTON, MA	11/11/14 00:00	11/11/14

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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. All specific QC 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. 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 (with the exception of Air canisters) 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. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name:	LANDMARK	**Lab Number:**	L1427121
Project Number:	5512.9.01	**Report Date:**	11/18/14

Case Narrative (continued)

Report Submission

Per client request, a sample-by-sample results summary is provided as an addendum to this report.

Metals

The WG739915-3 Laboratory Duplicate RPD, performed on L1427121-01, is above the acceptance criteria for arsenic (22%); however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

Cyanide, Total

A Laboratory Duplicate were prepared with the sample batch, however, the native sample required re-analysis; therefore, the laboratory duplicate results could not be 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: Kelly Stenstrom

Title: Technical Director/Representative Date: 11/18/14

ORGANICS

VOLATILES

Project Name: LANDMARK **Lab Number:** L1427121

Project Number: 5512.9.01 **Report Date:** 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-01
Client ID: MAE-58
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 11/14/14 09:31
Analyst: MM

Date Collected: 11/11/14 13:00
Date Received: 11/11/14
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
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	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
Vinyl chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	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
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
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Acetone	5.0		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Project Name: LANDMARK **Lab Number:** L1427121

Project Number: 5512.9.01 **Report Date:** 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-01 Date Collected: 11/11/14 13:00

Client ID: MAE-58 Date Received: 11/11/14

Sample Location: BOSTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Volatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	104		70-130

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427121
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-01
Client ID: MAE-58
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 11/14/14 09:31
Analyst: MM

Date Collected: 11/11/14 13:00
Date Received: 11/11/14
Field Prep: Not Specified

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: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427121
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-01
Client ID: MAE-58
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 11/12/14 19:39
Analyst: NS

Date Collected: 11/11/14 13:00
Date Received: 11/11/14
Field Prep: Not Specified
Extraction Date: 11/12/14 10:30

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: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427121
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-02
Client ID: TRIP BLANK
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 11/12/14 19:57
Analyst: NS

Date Collected: 11/11/14 00:00
Date Received: 11/11/14
Field Prep: Not Specified
Extraction Date: 11/12/14 10:30

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: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 11/12/14 18:46
Analyst: NS

Extraction Date: 11/12/14 10:30

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01-02 Batch: WG739764-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 11/14/14 06:49
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG740557-3					
1,4-Dioxane	ND		ug/l	3.0	--

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/14/14 06:49
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG740562-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Acetone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/14/14 06:49
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG740562-3					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427121

Report Date: 11/18/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01-02		Batch: WG739764-2						
1,2-Dibromoethane	110		-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	106		-		70-130	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427121

Report Date: 11/18/14

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: WG740557-1 WG740557-2								
1,4-Dioxane	117		122		70-130	4		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Methylene chloride	93		96		70-130	3		20
1,1-Dichloroethane	93		96		70-130	3		20
Chloroform	93		96		70-130	3		20
Carbon tetrachloride	80		88		63-132	10		20
1,2-Dichloropropane	82		96		70-130	16		20
Dibromochloromethane	82		85		63-130	4		20
1,1,2-Trichloroethane	90		90		70-130	0		20
2-Chloroethylvinyl ether	95		97		70-130	2		20
Tetrachloroethene	85		88		70-130	3		20
Chlorobenzene	90		91		75-130	1		25
Trichlorofluoromethane	87		90		62-150	3		20
1,2-Dichloroethane	98		100		70-130	2		20
1,1,1-Trichloroethane	88		92		67-130	4		20
Bromodichloromethane	84		89		67-130	6		20
trans-1,3-Dichloropropene	88		91		70-130	3		20
cis-1,3-Dichloropropene	91		95		70-130	4		20
1,1-Dichloropropene	93		95		70-130	2		20
Bromoform	70		76		54-136	8		20
1,1,2,2-Tetrachloroethane	90		91		67-130	1		20
Benzene	94		96		70-130	2		25
Toluene	91		92		70-130	1		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Ethylbenzene	91		91		70-130	0		20
Chloromethane	97		98		64-130	1		20
Bromomethane	70		75		39-139	7		20
Vinyl chloride	91		92		55-140	1		20
Chloroethane	94		95		55-138	1		20
1,1-Dichloroethene	88		92		61-145	4		25
trans-1,2-Dichloroethene	92		95		70-130	3		20
Trichloroethene	92		94		70-130	2		25
1,2-Dichlorobenzene	89		89		70-130	0		20
1,3-Dichlorobenzene	88		88		70-130	0		20
1,4-Dichlorobenzene	89		89		70-130	0		20
Methyl tert butyl ether	93		94		63-130	1		20
p/m-Xylene	88		88		70-130	0		20
o-Xylene	87		88		70-130	1		20
cis-1,2-Dichloroethene	93		96		70-130	3		20
Dibromomethane	90		95		70-130	5		20
1,4-Dichlorobutane	94		94		70-130	0		20
1,2,3-Trichloropropane	93		91		64-130	2		20
Styrene	89		90		70-130	1		20
Dichlorodifluoromethane	89		86		36-147	3		20
Acetone	125		132		58-148	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Carbon disulfide	82		88		51-130	7		20
2-Butanone	114		114		63-138	0		20
Vinyl acetate	92		95		70-130	3		20
4-Methyl-2-pentanone	98		103		59-130	5		20
2-Hexanone	105		109		57-130	4		20
Ethyl methacrylate	96		95		70-130	1		20
Acrylonitrile	99		101		70-130	2		20
Bromochloromethane	91		96		70-130	5		20
Tetrahydrofuran	110		107		58-130	3		20
2,2-Dichloropropane	92		96		63-133	4		20
1,2-Dibromoethane	89		88		70-130	1		20
1,3-Dichloropropane	93		95		70-130	2		20
1,1,1,2-Tetrachloroethane	83		87		64-130	5		20
Bromobenzene	86		84		70-130	2		20
n-Butylbenzene	92		90		53-136	2		20
sec-Butylbenzene	86		86		70-130	0		20
tert-Butylbenzene	86		85		70-130	1		20
o-Chlorotoluene	86		86		70-130	0		20
p-Chlorotoluene	90		90		70-130	0		20
1,2-Dibromo-3-chloropropane	79		76		41-144	4		20
Hexachlorobutadiene	86		86		63-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Isopropylbenzene	92		91		70-130	1		20
p-Isopropyltoluene	85		83		70-130	2		20
Naphthalene	95		95		70-130	0		20
n-Propylbenzene	88		88		69-130	0		20
1,2,3-Trichlorobenzene	90		86		70-130	5		20
1,2,4-Trichlorobenzene	87		87		70-130	0		20
1,3,5-Trimethylbenzene	87		86		64-130	1		20
1,3,5-Trichlorobenzene	89		86		70-130	3		20
1,2,4-Trimethylbenzene	87		88		70-130	1		20
trans-1,4-Dichloro-2-butene	98		99		70-130	1		20
Ethyl ether	94		96		59-134	2		20
Methyl Acetate	105		107		70-130	2		20
Ethyl Acetate	104		106		70-130	2		20
Isopropyl Ether	93		94		70-130	1		20
Cyclohexane	94		96		70-130	2		20
Tert-Butyl Alcohol	112		117		70-130	4		20
Ethyl-Tert-Butyl-Ether	93		94		70-130	1		20
Tertiary-Amyl Methyl Ether	92		96		66-130	4		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	91		91		70-130	0		20
Methyl cyclohexane	93		93		70-130	0		20
1,4-Diethylbenzene	88		86		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427121

Report Date: 11/18/14

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: WG740562-1 WG740562-2								
4-Ethyltoluene	86		86		70-130	0		20
1,2,4,5-Tetramethylbenzene	89		87		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		99		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	99		104		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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): 01-02 QC Batch ID: WG739764-3 QC Sample: L1427121-01 Client ID: MAE-58													
1,2-Dibromoethane	ND	0.253	0.285	113		-	-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.253	0.278	110		-	-		70-130	-		20	A

SEMIVOLATILES

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427121
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-01
Client ID: MAE-58
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 11/14/14 02:14
Analyst: PS

Date Collected: 11/11/14 13:00
Date Received: 11/11/14
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 11/12/14 01:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	25		21-120
Phenol-d6	16		10-120
Nitrobenzene-d5	59		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	63		10-120
4-Terphenyl-d14	75		41-149

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427121
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-01
Client ID: MAE-58
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 11/12/14 15:43
Analyst: MW

Date Collected: 11/11/14 13:00
Date Received: 11/11/14
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 11/12/14 01:52

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.20	--	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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	25		21-120
Phenol-d6	17		10-120
Nitrobenzene-d5	62		23-120
2-Fluorobiphenyl	68		15-120
2,4,6-Tribromophenol	91		10-120
4-Terphenyl-d14	77		41-149

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 11/12/14 17:54
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 11/12/14 01:53

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG739647-1					
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	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	25		21-120
Phenol-d6	16		10-120
Nitrobenzene-d5	55		23-120
2-Fluorobiphenyl	51		15-120
2,4,6-Tribromophenol	68		10-120
4-Terphenyl-d14	67		41-149

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 11/12/14 14:02
Analyst: MW

Extraction Method: EPA 3510C
Extraction Date: 11/12/14 01:52

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG739648-1					
Acenaphthene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	26		21-120
Phenol-d6	17		10-120
Nitrobenzene-d5	59		23-120
2-Fluorobiphenyl	62		15-120
2,4,6-Tribromophenol	85		10-120
4-Terphenyl-d14	81		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG739647-2 WG739647-3								
Benzidine	32		22		10-75	**37**	Q	30
1,2,4-Trichlorobenzene	46		48		39-98	4		30
Bis(2-chloroethyl)ether	53		59		40-140	11		30
1,2-Dichlorobenzene	46		48		40-140	4		30
1,3-Dichlorobenzene	44		45		40-140	2		30
1,4-Dichlorobenzene	43		46		36-97	7		30
3,3'-Dichlorobenzidine	62		69		40-140	11		30
2,4-Dinitrotoluene	67		75		24-96	11		30
2,6-Dinitrotoluene	66		79		40-140	18		30
Azobenzene	76		84		40-140	10		30
4-Chlorophenyl phenyl ether	56		62		40-140	10		30
4-Bromophenyl phenyl ether	60		67		40-140	11		30
Bis(2-chloroisopropyl)ether	58		64		40-140	10		30
Bis(2-chloroethoxy)methane	63		74		40-140	16		30
Hexachlorocyclopentadiene	**21**	Q	**22**	Q	40-140	5		30
Isophorone	67		79		40-140	16		30
Nitrobenzene	68		72		40-140	6		30
NitrosoDiPhenylAmine(NDPA)/DPA	67		75		40-140	11		30
Bis(2-ethylhexyl)phthalate	70		76		40-140	8		30
Butyl benzyl phthalate	76		84		40-140	10		30
Di-n-butylphthalate	68		77		40-140	12		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG739647-2 WG739647-3								
Di-n-octylphthalate	72		80		40-140	11		30
Diethyl phthalate	69		77		40-140	11		30
Dimethyl phthalate	66		71		40-140	7		30
Aniline	**31**	Q	**33**	Q	40-140	6		30
4-Chloroaniline	71		78		40-140	9		30
2-Nitroaniline	69		81		52-143	16		30
3-Nitroaniline	68		78		25-145	14		30
4-Nitroaniline	52		55		51-143	6		30
Dibenzofuran	61		66		40-140	8		30
n-Nitrosodimethylamine	30		34		22-74	13		30
2,4,6-Trichlorophenol	71		80		30-130	12		30
P-Chloro-M-Cresol	68		81		23-97	17		30
2-Chlorophenol	58		63		27-123	8		30
2,4-Dichlorophenol	68		75		30-130	10		30
2,4-Dimethylphenol	67		78		30-130	15		30
2-Nitrophenol	63		74		30-130	16		30
4-Nitrophenol	43		50		10-80	15		30
2,4-Dinitrophenol	51		75		20-130	**38**	Q	30
4,6-Dinitro-o-cresol	84		94		20-164	11		30
Phenol	22		25		12-110	13		30
2-Methylphenol	48		56		30-130	15		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427121

Report Date: 11/18/14

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: WG739647-2 WG739647-3								
3-Methylphenol/4-Methylphenol	40		48		30-130	18		30
2,4,5-Trichlorophenol	75		84		30-130	11		30
Benzoic Acid	18		22		10-164	20		30
Benzyl Alcohol	48		58		26-116	19		30
Carbazole	71		81		55-144	13		30
Pyridine	27		28		10-66	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	31		34		21-120
Phenol-d6	21		24		10-120
Nitrobenzene-d5	71		83		23-120
2-Fluorobiphenyl	60		67		15-120
2,4,6-Tribromophenol	64		70		10-120
4-Terphenyl-d14	67		79		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG739648-2 WG739648-3								
Acenaphthene	64		55		37-111	15		40
2-Chloronaphthalene	62		51		40-140	19		40
Fluoranthene	76		69		40-140	10		40
Hexachlorobutadiene	48		**37**	Q	40-140	26		40
Naphthalene	56		43		40-140	26		40
Benzo(a)anthracene	74		68		40-140	8		40
Benzo(a)pyrene	73		66		40-140	10		40
Benzo(b)fluoranthene	71		64		40-140	10		40
Benzo(k)fluoranthene	72		67		40-140	7		40
Chrysene	76		69		40-140	10		40
Acenaphthylene	65		57		40-140	13		40
Anthracene	72		66		40-140	9		40
Benzo(ghi)perylene	78		72		40-140	8		40
Fluorene	68		62		40-140	9		40
Phenanthrene	69		64		40-140	8		40
Dibenzo(a,h)anthracene	80		74		40-140	8		40
Indeno(1,2,3-cd)pyrene	78		72		40-140	8		40
Pyrene	76		69		26-127	10		40
1-Methylnaphthalene	62		50		40-140	21		40
2-Methylnaphthalene	63		50		40-140	23		40
Pentachlorophenol	73		70		9-103	4		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427121

Report Date: 11/18/14

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: WG739648-2 WG739648-3								
Hexachlorobenzene	64		58		40-140	10		40
Hexachloroethane	50		**36**	Q	40-140	33		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	26		21		21-120
Phenol-d6	19		16		10-120
Nitrobenzene-d5	59		46		23-120
2-Fluorobiphenyl	61		51		15-120
2,4,6-Tribromophenol	80		75		10-120
4-Terphenyl-d14	71		65		41-149

PCBS

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427121
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-01
Client ID: MAE-58
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 5,608
Analytical Date: 11/13/14 17:18
Analyst: KB

Date Collected: 11/11/14 13:00
Date Received: 11/11/14
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 11/12/14 08:40
Cleanup Method: EPA 3665A
Cleanup Date: 11/12/14
Cleanup Method: EPA 3660B
Cleanup Date: 11/12/14

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	56		30-150	A

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427121

Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 11/13/14 18:07
Analyst: KB

Extraction Method: EPA 608
Extraction Date: 11/12/14 08:40
Cleanup Method: EPA 3665A
Cleanup Date: 11/12/14
Cleanup Method: EPA 3660B
Cleanup Date: 11/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG739732-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	A
Decachlorobiphenyl	58		30-150	A

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG739732-3 QC Sample: L1427121-01 Client ID: MAE-58													
Aroclor 1016	ND	1.04	0.750	72		-	-		40-140	-		50	A
Aroclor 1260	ND	1.04	0.797	76		-	-		40-140	-		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57				30-150	A
Decachlorobiphenyl	56				30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427121

Report Date: 11/18/14

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: WG739732-2									
Aroclor 1016	87		-		40-140	-		50	A
Aroclor 1260	97		-		40-140	-		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70				30-150	A
Decachlorobiphenyl	68				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739732-4 QC Sample: L1427132-01 Client ID: DUP Sample							
Aroclor 1016	ND	ND	ug/l	NC		50	A
Aroclor 1221	ND	ND	ug/l	NC		50	A
Aroclor 1232	ND	ND	ug/l	NC		50	A
Aroclor 1242	ND	ND	ug/l	NC		50	A
Aroclor 1248	ND	ND	ug/l	NC		50	A
Aroclor 1254	ND	ND	ug/l	NC		50	A
Aroclor 1260	ND	ND	ug/l	NC		50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		50		30-150	A
Decachlorobiphenyl	66		53		30-150	A

METALS

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427121
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-01
Client ID: MAE-58
Sample Location: BOSTON, MA
Matrix: Water
Date Collected: 11/11/14 13:00
Date Received: 11/11/14
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	0.0005		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM
Arsenic, Total	0.0006		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM
Cadmium, Total	ND		mg/l	0.0002	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM
Chromium, Total	0.0021		mg/l	0.0010	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM
Copper, Total	ND		mg/l	0.0010	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM
Iron, Total	1.1		mg/l	0.05	--	1	11/13/14 07:52	11/13/14 16:56	EPA 3005A	19,200.7	BC
Lead, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM
Mercury, Total	ND		mg/l	0.00020	--	1	11/12/14 09:46	11/12/14 23:59	EPA 245.1	3,245.1	AK
Nickel, Total	0.0006		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM
Selenium, Total	ND		mg/l	0.005	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM
Silver, Total	ND		mg/l	0.0003	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM
Zinc, Total	ND		mg/l	0.0100	--	1	11/13/14 07:52	11/13/14 18:04	EPA 3005A	1,6020A	BM

Project Name: LANDMARK **Lab Number:** L1427121

Project Number: 5512.9.01 **Report Date:** 11/18/14

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: WG739753-1										
Mercury, Total	ND		mg/l	0.00020	--	1	11/12/14 09:46	11/12/14 22:58	3,245.1	AK

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG739915-1										
Antimony, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Arsenic, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Cadmium, Total	ND		mg/l	0.0002	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Chromium, Total	ND		mg/l	0.0010	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Copper, Total	ND		mg/l	0.0010	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Lead, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Nickel, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Selenium, Total	ND		mg/l	0.005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Silver, Total	ND		mg/l	0.0003	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Zinc, Total	ND		mg/l	0.0100	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG739917-1										
Iron, Total	ND		mg/l	0.05	--	1	11/13/14 07:52	11/13/14 17:20	19,200.7	BC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427121

Report Date: 11/18/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG739753-2								
Mercury, Total	91		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG739915-2								
Antimony, Total	94		-		80-120	-		
Arsenic, Total	95		-		80-120	-		
Cadmium, Total	106		-		80-120	-		
Chromium, Total	89		-		80-120	-		
Copper, Total	92		-		80-120	-		
Lead, Total	93		-		80-120	-		
Nickel, Total	92		-		80-120	-		
Selenium, Total	102		-		80-120	-		
Silver, Total	90		-		80-120	-		
Zinc, Total	99		-		80-120	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG739917-2								
Iron, Total	100		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG739753-4 QC Sample: L1427097-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00446	89		-	-		70-130	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739915-4 QC Sample: L1427121-01 Client ID: MAE-58												
Antimony, Total	0.0005	0.5	0.5182	104		-	-		75-125	-		20
Arsenic, Total	0.0006	0.12	0.1199	99		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.0533	104		-	-		75-125	-		20
Chromium, Total	0.0021	0.2	0.1942	96		-	-		75-125	-		20
Copper, Total	ND	0.25	0.2469	99		-	-		75-125	-		20
Lead, Total	ND	0.51	0.5087	100		-	-		75-125	-		20
Nickel, Total	0.0006	0.5	0.4472	89		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.094	79		-	-		75-125	-		20
Silver, Total	ND	0.05	0.0473	94		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.5024	100		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739917-4 QC Sample: L1427121-01 Client ID: MAE-58												
Iron, Total	1.1	1	2.0	90		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739753-3 QC Sample: L1427097-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739915-3 QC Sample: L1427121-01 Client ID: MAE-58						
Antimony, Total	0.0005	ND	mg/l	NC		20
Arsenic, Total	0.0006	0.0008	mg/l	**22**	Q	20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.0021	0.0019	mg/l	8		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.0006	0.0007	mg/l	19		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739917-3 QC Sample: L1427121-01 Client ID: MAE-58						
Iron, Total	1.1	1.1	mg/l	0		20

INORGANICS
&
MISCELLANEOUS

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427121-01
Client ID: MAE-58
Sample Location: BOSTON, MA
Matrix: Water

Date Collected: 11/11/14 13:00
Date Received: 11/11/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	6.7		mg/l	5.0	NA	1	-	11/12/14 15:25	30,2540D	MP
Cyanide, Total	ND		mg/l	0.005	--	1	11/12/14 11:44	11/12/14 15:42	30,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	11/11/14 21:45	30,4500CL-D	MR
TPH	ND		mg/l	4.00	--	1	11/12/14 12:00	11/12/14 16:00	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	11/12/14 10:15	11/12/14 15:48	4,420.1	MP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/11/14 21:40	11/11/14 22:04	30,3500CR-D	DE
Anions by Ion Chromatography - Westborough Lab										
Chloride	621.		mg/l	25.0	--	50	-	11/12/14 17:35	44,300.0	AU

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG739617-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	11/11/14 21:45	30,4500CL-D	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739619-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/11/14 21:40	11/11/14 22:04	30,3500CR-D	DE
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739699-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	11/12/14 15:25	30,2540D	MP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739748-1										
Phenolics, Total	ND		mg/l	0.030	--	1	11/12/14 10:15	11/12/14 15:45	4,420.1	MP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739807-1										
Cyanide, Total	ND		mg/l	0.005	--	1	11/12/14 11:44	11/12/14 15:29	30,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739853-1										
TPH	ND		mg/l	4.00	--	1	11/12/14 12:00	11/12/14 16:00	74,1664A	ML
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG740408-1										
Chloride	ND		mg/l	0.500	--	1	-	11/12/14 20:35	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427121

Report Date: 11/18/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739617-2								
Chlorine, Total Residual	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739619-2								
Chromium, Hexavalent	103		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739748-2								
Phenolics, Total	94		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739807-2								
Cyanide, Total	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739853-2								
TPH	80		-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG740408-2								
Chloride	100		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

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: WG739619-4 QC Sample: L1427132-01 Client ID: MS Sample												
Chromium, Hexavalent	ND	0.1	0.108	108		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739748-4 QC Sample: L1427121-01 Client ID: MAE-58												
Phenolics, Total	ND	0.4	0.36	89		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739807-3 QC Sample: L1427121-01 Client ID: MAE-58												
Cyanide, Total	ND	0.2	0.200	100		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739853-4 QC Sample: L1427079-02 Client ID: MS Sample												
TPH	ND	21.5	21.0	98		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740408-3 QC Sample: L1427242-03 Client ID: MS Sample												
Chloride	ND	4	3.95	99		-	-		40-151	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739617-3 QC Sample: L1427121-01 Client ID: MAE-58						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739619-3 QC Sample: L1427132-01 Client ID: DUP Sample						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739699-2 QC Sample: L1426645-02 Client ID: DUP Sample						
Solids, Total Suspended	460	470	mg/l	2		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739748-3 QC Sample: L1427121-01 Client ID: MAE-58						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739853-3 QC Sample: L1427079-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740408-4 QC Sample: L1427242-03 Client ID: DUP Sample						
Chloride	ND	ND	mg/l	NC		18

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: NA

Cooler Information Custody Seal

Cooler	
B	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427121-01A	Vial HCl preserved	B	N/A	2.0	Y	Absent	8260(14)
L1427121-01B	Vial HCl preserved	B	N/A	2.0	Y	Absent	8260(14)
L1427121-01C	Vial HCl preserved	B	N/A	2.0	Y	Absent	8260(14)
L1427121-01D	Vial HCl preserved	B	N/A	2.0	Y	Absent	8260-SIM(14)
L1427121-01E	Vial HCl preserved	B	N/A	2.0	Y	Absent	8260-SIM(14)
L1427121-01F	Vial HCl preserved	B	N/A	2.0	Y	Absent	8260-SIM(14)
L1427121-01G	Vial Na2S2O3 preserved	B	N/A	2.0	Y	Absent	504(14)
L1427121-01H	Vial Na2S2O3 preserved	B	N/A	2.0	Y	Absent	504(14)
L1427121-01I	Plastic 250ml HNO3 preserved	B	<2	2.0	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)
L1427121-01K	Amber 1000ml Na2S2O3	B	8	2.0	Y	Absent	PCB-608(7)
L1427121-01L	Amber 1000ml Na2S2O3	B	8	2.0	Y	Absent	PCB-608(7)
L1427121-01M	Amber 1000ml HCl preserved	B	N/A	2.0	Y	Absent	TPH-1664(28)
L1427121-01N	Amber 1000ml HCl preserved	B	N/A	2.0	Y	Absent	TPH-1664(28)
L1427121-01O	Amber 1000ml H2SO4 preserved	B	<2	2.0	Y	Absent	TPHENOL-420(28)
L1427121-01Q	Plastic 500ml unpreserved	B	8	2.0	Y	Absent	HEXCR-3500(1)
L1427121-01R	Plastic 250ml NaOH preserved	B	>12	2.0	Y	Absent	TCN-4500(14)
L1427121-01S	Plastic 500ml unpreserved	B	8	2.0	Y	Absent	CL-300(28),TRC-4500(1)
L1427121-01T	Plastic 950ml unpreserved	B	8	2.0	Y	Absent	TSS-2540(7)
L1427121-01U	Amber 1000ml unpreserved	B	8	2.0	Y	Absent	8270TCL(7)
L1427121-01V	Amber 1000ml unpreserved	B	8	2.0	Y	Absent	8270TCL(7)
L1427121-01W	Amber 1000ml unpreserved	B	8	2.0	Y	Absent	8270TCL-SIM(7)
L1427121-01X	Amber 1000ml unpreserved	B	8	2.0	Y	Absent	8270TCL-SIM(7)
L1427121-02A	Vial Na2S2O3 preserved	B	N/A	2.0	Y	Absent	504(14)

*Values in parentheses indicate holding time in days

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427121
Report Date: 11/18/14

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1427121-02B	Vial Na2S2O3 preserved	B	N/A	2.0	Y	Absent	504(14)

*Values in parentheses indicate holding time in days

Project Name:	LANDMARK	**Lab Number:**	L1427121
Project Number:	5512.9.01	**Report Date:**	11/18/14

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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.

Report Format: Data Usability Report

Project Name:	LANDMARK	**Lab Number:**	L1427121
Project Number:	5512.9.01	**Report Date:**	11/18/14

Data Qualifiers

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.

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:	LANDMARK	**Lab Number:**	L1427121
Project Number:	5512.9.01	**Report Date:**	11/18/14

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.

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.

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LAO00065 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L1427121-01
MAE-58
Sample Matrix: WATER

Date Collected: 11-NOV-2014 13:00
Date Received : 11-NOV-2014

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 9-Amber,5-Plastic,8-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
General Chemistry - Westborough Lab								
Solids, Total Suspended	6.7	mg/l	5.0	30	2540D		1112 15:25	MP
Anions by Ion Chromatography - Westborough Lab								
Chloride	621.	mg/l	25.0	44	300.0		1112 17:35	AU
General Chemistry - Westborough Lab								
Cyanide, Total	ND	mg/l	0.005	30	4500CN-CE	1112 11:44	1112 15:42	JO
Chlorine, Total Residual	ND	mg/l	0.02	30	4500CL-D		1111 21:45	MR
TPH	ND	mg/l	4.00	74	1664A	1112 12:00	1112 16:00	ML
Phenolics, Total	ND	mg/l	0.030	4	420.1	1112 10:15	1112 15:48	MP
Chromium, Hexavalent	ND	mg/l	0.010	30	3500CR-D	1111 21:40	1111 22:04	DE
Total Metals - Westborough Lab								
Antimony, Total	0.0005	mg/l	0.0005	1	6020A	1113 07:52	1113 18:04	BM
Arsenic, Total	0.0006	mg/l	0.0005	1	6020A	1113 07:52	1113 18:04	BM
Cadmium, Total	ND	mg/l	0.0002	1	6020A	1113 07:52	1113 18:04	BM
Chromium, Total	0.0021	mg/l	0.0010	1	6020A	1113 07:52	1113 18:04	BM
Copper, Total	ND	mg/l	0.0010	1	6020A	1113 07:52	1113 18:04	BM
Iron, Total	1.1	mg/l	0.05	19	200.7	1113 07:52	1113 16:56	BC
Lead, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 18:04	BM
Mercury, Total	ND	mg/l	0.00020	3	245.1	1112 09:46	1112 23:59	AK
Nickel, Total	0.0006	mg/l	0.0005	1	6020A	1113 07:52	1113 18:04	BM
Selenium, Total	ND	mg/l	0.005	1	6020A	1113 07:52	1113 18:04	BM
Silver, Total	ND	mg/l	0.0003	1	6020A	1113 07:52	1113 18:04	BM
Zinc, Total	ND	mg/l	0.0100	1	6020A	1113 07:52	1113 18:04	BM
Microextractables by GC - Westborough Lab				14	504.1	1112 10:30	1112 19:39	NS
1,2-Dibromoethane	ND	ug/l	0.010					
Volatile Organics by GC/MS - Westborough Lab				1	8260C		1114 09:31	MM
Methylene chloride	ND	ug/l	3.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
1,1,2-Trichloroethane	ND	ug/l	0.75					

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L1427121-01
MAE-58

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS - Westborough Lab cont'd				1	8260C		1114 09:31	MM
Tetrachloroethene	ND	ug/l	0.50					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.50					
Toluene	ND	ug/l	0.75					
Ethylbenzene	ND	ug/l	0.50					
Vinyl chloride	ND	ug/l	1.0					
1,1-Dichloroethene	ND	ug/l	0.50					
Trichloroethene	ND	ug/l	0.50					
1,2-Dichlorobenzene	ND	ug/l	2.5					
1,3-Dichlorobenzene	ND	ug/l	2.5					
1,4-Dichlorobenzene	ND	ug/l	2.5					
Methyl tert butyl ether	ND	ug/l	1.0					
p/m-Xylene	ND	ug/l	1.0					
o-Xylene	ND	ug/l	1.0					
cis-1,2-Dichloroethene	ND	ug/l	0.50					
Acetone	5.0	ug/l	5.0					
Naphthalene	ND	ug/l	2.5					
Tert-Butyl Alcohol	ND	ug/l	10.					
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0					
Surrogate(s)	Recovery		QC Criteria					
1,2-Dichloroethane-d4	100	%	70-130					
Toluene-d8	99.0	%	70-130					
4-Bromofluorobenzene	110	%	70-130					
Dibromofluoromethane	104	%	70-130					
Volatile Organics by GC/MS-SIM - Westborough Lab				1	8260C-SIM(M)		1114 09:31	MM
1,4-Dioxane	ND	ug/l	3.0					
Semivolatile Organics by GC/MS - Westborough Lab				1	8270D	1112 01:53	1114 02:14	PS
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					
Dimethyl phthalate	ND	ug/l	5.0					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	25.0	%	21-120					
Phenol-d6	16.0	%	10-120					
Nitrobenzene-d5	59.0	%	23-120					
2-Fluorobiphenyl	70.0	%	15-120					
2,4,6-Tribromophenol	63.0	%	10-120					
4-Terphenyl-d14	75.0	%	41-149					
Semivolatile Organics by GC/MS-SIM - Westborough Lab				1	8270D-SIM	1112 01:52	1112 15:43	MW
Acenaphthene	ND	ug/l	0.20					
Fluoranthene	ND	ug/l	0.20					

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L1427121-01
MAE-58

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Semivolatile Organics by GC/MS-SIM - Westborough Lab cont'				1	8270D-SIM	1112 01:52	1112 15:43	MW
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					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	25.0	%	21-120					
Phenol-d6	17.0	%	10-120					
Nitrobenzene-d5	62.0	%	23-120					
2-Fluorobiphenyl	68.0	%	15-120					
2,4,6-Tribromophenol	91.0	%	10-120					
4-Terphenyl-d14	77.0	%	41-149					
Polychlorinated Biphenyls by GC - Westborough Lab				5	608	1112 08:40	1113 17:18	KB
Aroclor 1016	ND	ug/l	0.250					
Aroclor 1221	ND	ug/l	0.250					
Aroclor 1232	ND	ug/l	0.250					
Aroclor 1242	ND	ug/l	0.250					
Aroclor 1248	ND	ug/l	0.250					
Aroclor 1254	ND	ug/l	0.250					
Aroclor 1260	ND	ug/l	0.200					
Surrogate(s)	Recovery		QC Criteria					
2,4,5,6-Tetrachloro-m-xylene	65.0	%	30-150					
Decachlorobiphenyl	56.0	%	30-150					

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LAO00065 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L1427121-02
TRIP BLANK
Sample Matrix: WATER

Date Collected: 11-NOV-2014 00:00
Date Received : 11-NOV-2014

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Microextractables by GC - Westborough Lab				14 504.1	1112 10:30	1112 19:57	NS
1,2-Dibromoethane	ND	ug/l	0.010				

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L1427121

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
General Chemistry - Westborough Lab for sample(s) 01 (L1426645-02, WG739699-2)					
Solids, Total Suspended	460	470	mg/l	2	29
Anions by Ion Chromatography - Westborough Lab for sample(s) 01 (L1427242-03, WG740408-4)					
Chloride	ND	ND	mg/l	NC	18
General Chemistry - Westborough Lab for sample(s) 01 (L1427121-01, WG739617-3)					
Chlorine, Total Residual	ND	ND	mg/l	NC	20
General Chemistry - Westborough Lab for sample(s) 01 (L1427079-01, WG739853-3)					
TPH	ND	ND	mg/l	NC	34
General Chemistry - Westborough Lab for sample(s) 01 (L1427121-01, WG739748-3)					
Phenolics, Total	ND	ND	mg/l	NC	20
General Chemistry - Westborough Lab for sample(s) 01 (L1427132-01, WG739619-3)					
Chromium, Hexavalent	ND	ND	mg/l	NC	20
Total Metals - Westborough Lab for sample(s) 01 (L1427121-01, WG739917-3)					
Iron, Total	1.1	1.1	mg/l	0	20
Total Metals - Westborough Lab for sample(s) 01 (L1427121-01, WG739915-3)					
Antimony, Total	0.0005	ND	mg/l	NC	20
Arsenic, Total	0.0006	0.0008	mg/l	22	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	0.0021	0.0019	mg/l	8	20
Copper, Total	ND	ND	mg/l	NC	20
Lead, Total	ND	ND	mg/l	NC	20
Nickel, Total	0.0006	0.0007	mg/l	19	20
Selenium, Total	ND	ND	mg/l	NC	20
Silver, Total	ND	ND	mg/l	NC	20
Zinc, Total	ND	ND	mg/l	NC	20
Total Metals - Westborough Lab for sample(s) 01 (L1427097-01, WG739753-3)					
Mercury, Total	ND	ND	mg/l	NC	20
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s) 01 (L1427132-01, WG739732-4)					
Aroclor 1016	ND	ND	ug/l	NC	
Aroclor 1221	ND	ND	ug/l	NC	
Aroclor 1232	ND	ND	ug/l	NC	
Aroclor 1242	ND	ND	ug/l	NC	
Aroclor 1248	ND	ND	ug/l	NC	
Aroclor 1254	ND	ND	ug/l	NC	
Aroclor 1260	ND	ND	ug/l	NC	
Surrogate(s)	Recovery				QC Criteria
2,4,5,6-Tetrachloro-m-xylene	62.0	50.0	%		30-150
Decachlorobiphenyl	66.0	53.0	%		30-150

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L1427121

Parameter	% Recovery	QC Criteria
Anions by Ion Chromatography - Westborough Lab LCS for sample(s) 01 (WG740408-2)		
Chloride	100	90-110
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739807-2)		
Cyanide, Total	94	90-110
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739617-2)		
Chlorine, Total Residual	101	90-110
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739853-2)		
TPH	80	64-132
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739748-2)		
Phenolics, Total	94	70-130
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739619-2)		
Chromium, Hexavalent	103	85-115
Total Metals - Westborough Lab LCS for sample(s) 01 (WG739917-2)		
Iron, Total	100	85-115
Total Metals - Westborough Lab LCS for sample(s) 01 (WG739915-2)		
Antimony, Total	94	80-120
Arsenic, Total	95	80-120
Cadmium, Total	106	80-120
Chromium, Total	89	80-120
Copper, Total	92	80-120
Lead, Total	93	80-120
Nickel, Total	92	80-120
Selenium, Total	102	80-120
Silver, Total	90	80-120
Zinc, Total	99	80-120
Total Metals - Westborough Lab LCS for sample(s) 01 (WG739753-2)		
Mercury, Total	91	85-115
Microextractables by GC - Westborough Lab LCS for sample(s) 01-02 (WG739764-2)		
1,2-Dibromoethane	110	70-130
1,2-Dibromo-3-chloropropane	106	70-130
Polychlorinated Biphenyls by GC - Westborough Lab LCS for sample(s) 01 (WG739732-2)		
Aroclor 1016	87	
Aroclor 1260	97	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	70	30-150
Decachlorobiphenyl	68	30-150

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L1427121

Continued

Parameter	% Recovery	QC Criteria
Anions by Ion Chromatography - Westborough Lab SPIKE for sample(s) 01 (L1427242-03, WG740408-3)		
Chloride	99	40-151
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739807-3)		
Cyanide, Total	100	90-110
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1427079-02, WG739853-4)		
TPH	98	64-132
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739748-4)		
Phenolics, Total	89	70-130
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1427132-01, WG739619-4)		
Chromium, Hexavalent	108	85-115
Total Metals - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739917-4)		
Iron, Total	90	75-125
Total Metals - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739915-4)		
Antimony, Total	104	75-125
Arsenic, Total	99	75-125
Cadmium, Total	104	75-125
Chromium, Total	96	75-125
Copper, Total	99	75-125
Lead, Total	100	75-125
Nickel, Total	89	75-125
Selenium, Total	79	75-125
Silver, Total	94	75-125
Zinc, Total	100	75-125
Total Metals - Westborough Lab SPIKE for sample(s) 01 (L1427097-01, WG739753-4)		
Mercury, Total	89	70-130
Microextractables by GC - Westborough Lab SPIKE for sample(s) 01-02 (L1400011-39, WG739764-3)		
1,2-Dibromoethane	113	70-130
1,2-Dibromo-3-chloropropane	110	70-130
Polychlorinated Biphenyls by GC - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739732-		
Aroclor 1016	72	
Aroclor 1260	76	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	57	30-150
Decachlorobiphenyl	56	30-150

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L1427121

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by GC/MS - Westborough Lab for sample(s) 01 (WG740562-1, WG740562-2)					
Methylene chloride	93	96	3	20	70-130
1,1-Dichloroethane	93	96	3	20	70-130
Chloroform	93	96	3	20	70-130
Carbon tetrachloride	80	88	10	20	63-132
1,2-Dichloropropane	82	96	16	20	70-130
Dibromochloromethane	82	85	4	20	63-130
1,1,2-Trichloroethane	90	90	0	20	70-130
2-Chloroethylvinyl ether	95	97	2	20	70-130
Tetrachloroethene	85	88	3	20	70-130
Chlorobenzene	90	91	1	25	75-130
Trichlorofluoromethane	87	90	3	20	62-150
1,2-Dichloroethane	98	100	2	20	70-130
1,1,1-Trichloroethane	88	92	4	20	67-130
Bromodichloromethane	84	89	6	20	67-130
trans-1,3-Dichloropropene	88	91	3	20	70-130
cis-1,3-Dichloropropene	91	95	4	20	70-130
1,1-Dichloropropene	93	95	2	20	70-130
Bromoform	70	76	8	20	54-136
1,1,2,2-Tetrachloroethane	90	91	1	20	67-130
Benzene	94	96	2	25	70-130
Toluene	91	92	1	25	70-130
Ethylbenzene	91	91	0	20	70-130
Chloromethane	97	98	1	20	64-130
Bromomethane	70	75	7	20	39-139
Vinyl chloride	91	92	1	20	55-140
Chloroethane	94	95	1	20	55-138
1,1-Dichloroethene	88	92	4	25	61-145
trans-1,2-Dichloroethene	92	95	3	20	70-130
Trichloroethene	92	94	2	25	70-130
1,2-Dichlorobenzene	89	89	0	20	70-130
1,3-Dichlorobenzene	88	88	0	20	70-130
1,4-Dichlorobenzene	89	89	0	20	70-130
Methyl tert butyl ether	93	94	1	20	63-130
p/m-Xylene	88	88	0	20	70-130
o-Xylene	87	88	1	20	70-130
cis-1,2-Dichloroethene	93	96	3	20	70-130
Dibromomethane	90	95	5	20	70-130
1,4-Dichlorobutane	94	94	0	20	70-130
1,2,3-Trichloropropane	93	91	2	20	64-130
Styrene	89	90	1	20	70-130
Dichlorodifluoromethane	89	86	3	20	36-147
Acetone	125	132	5	20	58-148
Carbon disulfide	82	88	7	20	51-130
2-Butanone	114	114	0	20	63-138
Vinyl acetate	92	95	3	20	70-130
4-Methyl-2-pentanone	98	103	5	20	59-130
2-Hexanone	105	109	4	20	57-130
Ethyl methacrylate	96	95	1	20	70-130

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L1427121

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by GC/MS - Westborough Lab for sample(s) 01 (WG740562-1, WG740562-2)					
Acrylonitrile	99	101	2	20	70-130
Bromochloromethane	91	96	5	20	70-130
Tetrahydrofuran	110	107	3	20	58-130
2,2-Dichloropropane	92	96	4	20	63-133
1,2-Dibromoethane	89	88	1	20	70-130
1,3-Dichloropropane	93	95	2	20	70-130
1,1,1,2-Tetrachloroethane	83	87	5	20	64-130
Bromobenzene	86	84	2	20	70-130
n-Butylbenzene	92	90	2	20	53-136
sec-Butylbenzene	86	86	0	20	70-130
tert-Butylbenzene	86	85	1	20	70-130
o-Chlorotoluene	86	86	0	20	70-130
p-Chlorotoluene	90	90	0	20	70-130
1,2-Dibromo-3-chloropropane	79	76	4	20	41-144
Hexachlorobutadiene	86	86	0	20	63-130
Isopropylbenzene	92	91	1	20	70-130
p-Isopropyltoluene	85	83	2	20	70-130
Naphthalene	95	95	0	20	70-130
n-Propylbenzene	88	88	0	20	69-130
1,2,3-Trichlorobenzene	90	86	5	20	70-130
1,2,4-Trichlorobenzene	87	87	0	20	70-130
1,3,5-Trimethylbenzene	87	86	1	20	64-130
1,3,5-Trichlorobenzene	89	86	3	20	70-130
1,2,4-Trimethylbenzene	87	88	1	20	70-130
trans-1,4-Dichloro-2-butene	98	99	1	20	70-130
Ethyl ether	94	96	2	20	59-134
Methyl Acetate	105	107	2	20	70-130
Ethyl Acetate	104	106	2	20	70-130
Isopropyl Ether	93	94	1	20	70-130
Cyclohexane	94	96	2	20	70-130
Tert-Butyl Alcohol	112	117	4	20	70-130
Ethyl-Tert-Butyl-Ether	93	94	1	20	70-130
Tertiary-Amyl Methyl Ether	92	96	4	20	66-130
1,1,2-Trichloro-1,2,2-Trifluoroethane	91	91	0	20	70-130
Methyl cyclohexane	93	93	0	20	70-130
1,4-Diethylbenzene	88	86	2	20	70-130
4-Ethyltoluene	86	86	0	20	70-130
1,2,4,5-Tetramethylbenzene	89	87	2	20	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	99	99			70-130
Toluene-d8	101	100			70-130
4-Bromofluorobenzene	95	94			70-130
Dibromofluoromethane	99	104			70-130

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L1427121

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s) 01 (WG740557-1, WG740557-2)					
1,4-Dioxane	117	122	4	25	70-130
Semivolatile Organics by GC/MS - Westborough Lab for sample(s) 01 (WG739647-2, WG739647-3)					
Benzidine	32	22	37	30	10-75
1,2,4-Trichlorobenzene	46	48	4	30	39-98
Bis(2-chloroethyl)ether	53	59	11	30	40-140
1,2-Dichlorobenzene	46	48	4	30	40-140
1,3-Dichlorobenzene	44	45	2	30	40-140
1,4-Dichlorobenzene	43	46	7	30	36-97
3,3'-Dichlorobenzidine	62	69	11	30	40-140
2,4-Dinitrotoluene	67	75	11	30	24-96
2,6-Dinitrotoluene	66	79	18	30	40-140
Azobenzene	76	84	10	30	40-140
4-Chlorophenyl phenyl ether	56	62	10	30	40-140
4-Bromophenyl phenyl ether	60	67	11	30	40-140
Bis(2-chloroisopropyl)ether	58	64	10	30	40-140
Bis(2-chloroethoxy)methane	63	74	16	30	40-140
Hexachlorocyclopentadiene	21	22	5	30	40-140
Isophorone	67	79	16	30	40-140
Nitrobenzene	68	72	6	30	40-140
NitrosoDiPhenylAmine(NDPA)/DPA	67	75	11	30	40-140
Bis(2-ethylhexyl)phthalate	70	76	8	30	40-140
Butyl benzyl phthalate	76	84	10	30	40-140
Di-n-butylphthalate	68	77	12	30	40-140
Di-n-octylphthalate	72	80	11	30	40-140
Diethyl phthalate	69	77	11	30	40-140
Dimethyl phthalate	66	71	7	30	40-140
Aniline	31	33	6	30	40-140
4-Chloroaniline	71	78	9	30	40-140
2-Nitroaniline	69	81	16	30	52-143
3-Nitroaniline	68	78	14	30	25-145
4-Nitroaniline	52	55	6	30	51-143
Dibenzofuran	61	66	8	30	40-140
n-Nitrosodimethylamine	30	34	13	30	22-74
2,4,6-Trichlorophenol	71	80	12	30	30-130
P-Chloro-M-Cresol	68	81	17	30	23-97
2-Chlorophenol	58	63	8	30	27-123
2,4-Dichlorophenol	68	75	10	30	30-130
2,4-Dimethylphenol	67	78	15	30	30-130
2-Nitrophenol	63	74	16	30	30-130
4-Nitrophenol	43	50	15	30	10-80
2,4-Dinitrophenol	51	75	38	30	20-130
4,6-Dinitro-o-cresol	84	94	11	30	20-164
Phenol	22	25	13	30	12-110
2-Methylphenol	48	56	15	30	30-130
3-Methylphenol/4-Methylphenol	40	48	18	30	30-130
2,4,5-Trichlorophenol	75	84	11	30	30-130

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L1427121

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Semivolatile Organics by GC/MS - Westborough Lab for sample(s) 01 (WG739647-2, WG739647-3)					
Benzoic Acid	18	22	20	30	10-164
Benzyl Alcohol	48	58	19	30	26-116
Carbazole	71	81	13	30	55-144
Pyridine	27	28	4	30	10-66
Surrogate(s)					
2-Fluorophenol	31	34			21-120
Phenol-d6	21	24			10-120
Nitrobenzene-d5	71	83			23-120
2-Fluorobiphenyl	60	67			15-120
2,4,6-Tribromophenol	64	70			10-120
4-Terphenyl-d14	67	79			41-149
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s) 01 (WG739648-2, WG739648-3)					
Acenaphthene	64	55	15	40	37-111
2-Chloronaphthalene	62	51	19	40	40-140
Fluoranthene	76	69	10	40	40-140
Hexachlorobutadiene	48	37	26	40	40-140
Naphthalene	56	43	26	40	40-140
Benzo(a)anthracene	74	68	8	40	40-140
Benzo(a)pyrene	73	66	10	40	40-140
Benzo(b)fluoranthene	71	64	10	40	40-140
Benzo(k)fluoranthene	72	67	7	40	40-140
Chrysene	76	69	10	40	40-140
Acenaphthylene	65	57	13	40	40-140
Anthracene	72	66	9	40	40-140
Benzo(ghi)perylene	78	72	8	40	40-140
Fluorene	68	62	9	40	40-140
Phenanthrene	69	64	8	40	40-140
Dibenzo(a,h)anthracene	80	74	8	40	40-140
Indeno(1,2,3-cd)pyrene	78	72	8	40	40-140
Pyrene	76	69	10	40	26-127
1-Methylnaphthalene	62	50	21	40	40-140
2-Methylnaphthalene	63	50	23	40	40-140
Pentachlorophenol	73	70	4	40	9-103
Hexachlorobenzene	64	58	10	40	40-140
Hexachloroethane	50	36	33	40	40-140
Surrogate(s)					
2-Fluorophenol	26	21			21-120
Phenol-d6	19	16			10-120
Nitrobenzene-d5	59	46			23-120
2-Fluorobiphenyl	61	51			15-120
2,4,6-Tribromophenol	80	75			10-120
4-Terphenyl-d14	71	65			41-149

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L1427121

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01 (WG739699-1)								
General Chemistry - Westborough Lab								
Solids, Total Suspended	ND	mg/l	5.0	30	2540D		1112 15:25	MP
Blank Analysis for sample(s) 01 (WG740408-1)								
Anions by Ion Chromatography - Westborough Lab								
Chloride	ND	mg/l	0.500	44	300.0		1112 20:35	AU
Blank Analysis for sample(s) 01 (WG739807-1)								
General Chemistry - Westborough Lab								
Cyanide, Total	ND	mg/l	0.005	30	4500CN-CE	1112 11:44	1112 15:29	JO
Blank Analysis for sample(s) 01 (WG739617-1)								
General Chemistry - Westborough Lab								
Chlorine, Total Residual	ND	mg/l	0.02	30	4500CL-D		1111 21:45	MR
Blank Analysis for sample(s) 01 (WG739853-1)								
General Chemistry - Westborough Lab								
TPH	ND	mg/l	4.00	74	1664A	1112 12:00	1112 16:00	ML
Blank Analysis for sample(s) 01 (WG739748-1)								
General Chemistry - Westborough Lab								
Phenolics, Total	ND	mg/l	0.030	4	420.1	1112 10:15	1112 15:45	MP
Blank Analysis for sample(s) 01 (WG739619-1)								
General Chemistry - Westborough Lab								
Chromium, Hexavalent	ND	mg/l	0.010	30	3500CR-D	1111 21:40	1111 22:04	DE
Blank Analysis for sample(s) 01 (WG739917-1)								
Total Metals - Westborough Lab				19	200.7			
Iron, Total	ND	mg/l	0.05	19	200.7	1113 07:52	1113 17:20	BC
Blank Analysis for sample(s) 01 (WG739915-1)								
Total Metals - Westborough Lab								
Antimony, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 17:58	BM
Arsenic, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 17:58	BM
Cadmium, Total	ND	mg/l	0.0002	1	6020A	1113 07:52	1113 17:58	BM
Chromium, Total	ND	mg/l	0.0010	1	6020A	1113 07:52	1113 17:58	BM
Copper, Total	ND	mg/l	0.0010	1	6020A	1113 07:52	1113 17:58	BM

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L1427121

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01 (WG739915-1)								
Total Metals - Westborough Lab								
Lead, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 17:58	BM
Nickel, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 17:58	BM
Selenium, Total	ND	mg/l	0.005	1	6020A	1113 07:52	1113 17:58	BM
Silver, Total	ND	mg/l	0.0003	1	6020A	1113 07:52	1113 17:58	BM
Zinc, Total	ND	mg/l	0.0100	1	6020A	1113 07:52	1113 17:58	BM
Blank Analysis for sample(s) 01 (WG739753-1)								
Total Metals - Westborough Lab								
Mercury, Total	ND	mg/l	0.00020	3	245.1	1112 09:46	1112 22:58	AK
Blank Analysis for sample(s) 01-02 (WG739764-1)								
Microextractables by GC - Westborough Lab				14	504.1	1112 10:30	1112 18:46	NS
1,2-Dibromoethane	ND	ug/l	0.010					
Blank Analysis for sample(s) 01 (WG740562-3)								
Volatile Organics by GC/MS - Westborough Lab				1	8260C		1114 06:49	MM
Methylene chloride	ND	ug/l	3.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
1,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	ND	ug/l	0.50					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.50					
Toluene	ND	ug/l	0.75					
Ethylbenzene	ND	ug/l	0.50					
Vinyl chloride	ND	ug/l	1.0					
1,1-Dichloroethene	ND	ug/l	0.50					
Trichloroethene	ND	ug/l	0.50					
1,2-Dichlorobenzene	ND	ug/l	2.5					
1,3-Dichlorobenzene	ND	ug/l	2.5					
1,4-Dichlorobenzene	ND	ug/l	2.5					
Methyl tert butyl ether	ND	ug/l	1.0					
p/m-Xylene	ND	ug/l	1.0					
o-Xylene	ND	ug/l	1.0					
cis-1,2-Dichloroethene	ND	ug/l	0.50					
Acetone	ND	ug/l	5.0					
Naphthalene	ND	ug/l	2.5					
Tert-Butyl Alcohol	ND	ug/l	10.					
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0					
Surrogate(s)	Recovery		QC Criteria					
1,2-Dichloroethane-d4	99.0	%	70-130					
Toluene-d8	100	%	70-130					

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L1427121

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01 (WG740562-3)								
Volatile Organics by GC/MS - Westborough Lab cont'd				1	8260C		1114 06:49	MM
4-Bromofluorobenzene	107	%	70-130					
Dibromofluoromethane	102	%	70-130					
Blank Analysis for sample(s) 01 (WG740557-3)								
Volatile Organics by GC/MS-SIM - Westborough Lab				1	8260C-SIM(M)		1114 06:49	MM
1,4-Dioxane	ND	ug/l	3.0					
Blank Analysis for sample(s) 01 (WG739647-1)								
Semivolatile Organics by GC/MS - Westborough Lab				1	8270D	1112 01:53	1112 17:54	PS
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					
Dimethyl phthalate	ND	ug/l	5.0					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	25.0	%	21-120					
Phenol-d6	16.0	%	10-120					
Nitrobenzene-d5	55.0	%	23-120					
2-Fluorobiphenyl	51.0	%	15-120					
2,4,6-Tribromophenol	68.0	%	10-120					
4-Terphenyl-d14	67.0	%	41-149					
Blank Analysis for sample(s) 01 (WG739648-1)								
Semivolatile Organics by GC/MS-SIM - Westborough Lab				1	8270D-SIM	1112 01:52	1112 14:02	MW
Acenaphthene	ND	ug/l	0.20					
Fluoranthene	ND	ug/l	0.20					
Naphthalene	ND	ug/l	0.20					
Benzo(a)anthracene	ND	ug/l	0.20					
Benzo(a)pyrene	ND	ug/l	0.20					
Benzo(b)fluoranthene	ND	ug/l	0.20					
Benzo(k)fluoranthene	ND	ug/l	0.20					
Chrysene	ND	ug/l	0.20					
Acenaphthylene	ND	ug/l	0.20					
Anthracene	ND	ug/l	0.20					
Benzo(ghi)perylene	ND	ug/l	0.20					
Fluorene	ND	ug/l	0.20					
Phenanthrene	ND	ug/l	0.20					
Dibenzo(a,h)anthracene	ND	ug/l	0.20					
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.20					
Pyrene	ND	ug/l	0.20					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	26.0	%	21-120					
Phenol-d6	17.0	%	10-120					

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L1427121

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01 (WG739648-1)								
Semivolatile Organics by GC/MS-SIM - Westborough Lab cont'				1	8270D-SIM	1112 01:52	1112 14:02	MW
Nitrobenzene-d5	59.0	%	23-120					
2-Fluorobiphenyl	62.0	%	15-120					
2,4,6-Tribromophenol	85.0	%	10-120					
4-Terphenyl-d14	81.0	%	41-149					
Blank Analysis for sample(s) 01 (WG739732-1)								
Polychlorinated Biphenyls by GC - Westborough Lab				5	608	1112 08:40	1113 18:07	KB
Aroclor 1016	ND	ug/l	0.250					
Aroclor 1221	ND	ug/l	0.250					
Aroclor 1232	ND	ug/l	0.250					
Aroclor 1242	ND	ug/l	0.250					
Aroclor 1248	ND	ug/l	0.250					
Aroclor 1254	ND	ug/l	0.250					
Aroclor 1260	ND	ug/l	0.200					
Surrogate(s)	Recovery		QC Criteria					
2,4,5,6-Tetrachloro-m-xylene	55.0	%	30-150					
Decachlorobiphenyl	58.0	%	30-150					

Certification Information

Last revised April 15, 2014

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility
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 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.
EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.
EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 625: 4-Chloroaniline, 4-Methylphenol.
SM4500: Soil: Total Phosphorus, TKN, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
EPA 2540D: TSS
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: 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
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

-revised 11/18/14 ks

Serial_No:11181412:22

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 11/11/14

ALPHA Job #: L1427121

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: McPhail Associates
Address: 2269 Mass Ave, Cambridge, MA
Phone: 617-868-1420
Fax:
Email: JGL@mcphailgeo.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 2 RANDOM ACRES
Project Location: BOSTON, MA
Project #: 5512.9.01
Project Manager: Joe Lombardo
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/18/14 Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:
NPDES RGP

Regulatory Requirements/Report Limits

State /Fed Program: DEP/MCP Criteria: RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: 504	PCBs-608	Metals	TSS-2540	HexCr-3500	TRC-4500, Cl-300	8260-5mL	8260	TCN-4500	8270/KL-5mL	8270/TCL	TPH-1664	Sample Specific Comments	TOTAL # BOTTLES
27121-01	MAE-58	11/11/14	1300	GW	JPK	X	X	X	X	X	X	X	X	X	X	X	X		21

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

Container Type	V	A	P	P	P	P	V	V	P	A	A	A
Preservative	H	H	C	A	A	A	B	B	E	M	A	B

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/11/14 1530		11/11/14 1630
	11/11/14 1720		11/11/14 18:20

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

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

CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/11/14

ALPHA Job #: L1427121

Client Information

Client: McPhail Associates
Address: 2269 Mass Ave, Cambridge, MA
Phone: 617-868-1420
Fax:
Email: JCL@mcphailgroup.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK
Project Location: BOSTON, MA
Project #: 5512.9.01
Project Manager: JOE LAMBERT
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/12/14 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 DEP/MCP Criteria RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

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

NOT SUBMITTING Tripblank-8260-SIM

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: TPhenol-420	ANALYSIS: Tripblank-504	Sample Specific Comments	TOTAL # BOTTLES
2212-01	MAE-58	11/11/14	1300	GW	JPK	X	X		3

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

Container Type	A	V
Preservative	A	B

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/11/14 1530	USM	11/11/14 1600
	11/11/14 1825		11/11/14 1826

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

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

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 11/11/14

ALPHA Job #: L1427121

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: McPhail Associates
Address: 2269 Mass Ave, Cambridge, MA
Phone: 617-868-1420
Fax:
Email: JGL@mcphailgeo.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 2 RANDOM ACRES
Project Location: BOSTON, MA
Project #: 5512.9.01
Project Manager: Joe Lombardo
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/18/14 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: DEP/MCP Criteria: RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

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

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	504	PCBs-608	M-7415	TSS-2540	HexCr-3500	TRC-4500, Cl-350	8260 - SIM	8260	TCN-4500	8270/PAL-SIM	8270/TCL	TPH-1664	Sample Specific Comments	TOTAL # BOTTLES
27121-01	MAE-58	11/11/14	1300	GW	JPK	X	X	X	X	X	X	X	X	X	X	X	X		21
Container Type						V	A	P	P	P	P	V	V	P	A	A	A		
Preservative						H	H	C	A	A	A	B	B	E	A	A	B		

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/11/14 1530		11/11/14 1603
	11/11/14 1820		11/11/14 1820

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

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

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 11/11/14

ALPHA Job #: L1427121

ALPHA ANALYTICAL

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

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

Client Information

Client: McPhail Associates

Address: 2269 Mass Ave, Cambridge, MA

Phone: 617-868-1420

Fax:

Email: JGL@mcphailgeo.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK

Project Location: BOSTON, MA

Project #: 5512.9.01

Project Manager: Joe Lombardo

ALPHA Quote #:

Turn-Around Time

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

Date Due: 11/12/14

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: DEP/MCP Criteria: RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ☐ No Are MCP Analytical Methods Required?

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

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

Other Project Specific Requirements/Comments/Detection Limits:

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

NOT SUBMITTING Tripblank-8260-SIM

SAMPLE HANDLING

Filtration ______
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: TPhenol-420	Tripblank-504	Sample Specific Comments	TOTAL # BOTTLES
27121-01	MAE-58	11/11/14	1300	GW	JPK	X	X		3

	TPhenol-420	Tripblank-504
Container Type	A	V
Preservative	A	B

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	11/11/14 1530	MSM	11/11/14 1600
MSM	11/11/14 1823	[signature]	11/11/14 1820

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

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

ANALYTICAL REPORT

Lab Number:	L1427132
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	LANDMARK
Project Number:	5512.9.01
Report Date:	11/18/14

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: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1427132-01	MAE-42	WATER	BOSTON, MA	11/11/14 10:00	11/11/14

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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. All specific QC 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. 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 (with the exception of Air canisters) 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. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name:	LANDMARK	**Lab Number:**	L1427132
Project Number:	5512.9.01	**Report Date:**	11/18/14

Case Narrative (continued)

Report Submission

Per client request, a sample-by-sample results summary is provided as an addendum to this report.

Cyanide, Total

A Laboratory Duplicate were prepared with the sample batch, however, the native sample required re-analysis; therefore, the laboratory duplicate result could not be 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: Kelly Stenstrom

Title: Technical Director/Representative Date: 11/18/14

ORGANICS

VOLATILES

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427132
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427132-01
Client ID: MAE-42
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 11/14/14 10:04
Analyst: MM

Date Collected: 11/11/14 10:00
Date Received: 11/11/14
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
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	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
Vinyl chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	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
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
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Acetone	8.2		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1
Tert-Butyl Alcohol	ND		ug/l	10	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1

Project Name: LANDMARK **Lab Number:** L1427132

Project Number: 5512.9.01 **Report Date:** 11/18/14

SAMPLE RESULTS

Lab ID: L1427132-01 Date Collected: 11/11/14 10:00

Client ID: MAE-42 Date Received: 11/11/14

Sample Location: BOSTON, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Volatile Organics by GC/MS - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427132
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427132-01
Client ID: MAE-42
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 11/14/14 10:04
Analyst: MM

Date Collected: 11/11/14 10:00
Date Received: 11/11/14
Field Prep: Not Specified

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: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427132
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID:	L1427132-01	Date Collected:	11/11/14 10:00
Client ID:	MAE-42	Date Received:	11/11/14
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	14,504.1	Extraction Date:	11/12/14 10:30
Analytical Date:	11/12/14 20:15		
Analyst:	NS		

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: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 11/12/14 18:46
Analyst: NS

Extraction Date: 11/12/14 10:30

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG739764-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 11/14/14 06:49
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG740557-3					
1,4-Dioxane	ND		ug/l	3.0	--

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/14/14 06:49
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG740562-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Acetone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/14/14 06:49
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG740562-3					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427132

Report Date: 11/18/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 01 Batch: WG739764-2									
1,2-Dibromoethane	110		-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	106		-		70-130	-		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427132

Report Date: 11/18/14

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: WG740557-1 WG740557-2								
1,4-Dioxane	117		122		70-130	4		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427132

Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Methylene chloride	93		96		70-130	3		20
1,1-Dichloroethane	93		96		70-130	3		20
Chloroform	93		96		70-130	3		20
Carbon tetrachloride	80		88		63-132	10		20
1,2-Dichloropropane	82		96		70-130	16		20
Dibromochloromethane	82		85		63-130	4		20
1,1,2-Trichloroethane	90		90		70-130	0		20
2-Chloroethylvinyl ether	95		97		70-130	2		20
Tetrachloroethene	85		88		70-130	3		20
Chlorobenzene	90		91		75-130	1		25
Trichlorofluoromethane	87		90		62-150	3		20
1,2-Dichloroethane	98		100		70-130	2		20
1,1,1-Trichloroethane	88		92		67-130	4		20
Bromodichloromethane	84		89		67-130	6		20
trans-1,3-Dichloropropene	88		91		70-130	3		20
cis-1,3-Dichloropropene	91		95		70-130	4		20
1,1-Dichloropropene	93		95		70-130	2		20
Bromoform	70		76		54-136	8		20
1,1,2,2-Tetrachloroethane	90		91		67-130	1		20
Benzene	94		96		70-130	2		25
Toluene	91		92		70-130	1		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Ethylbenzene	91		91		70-130	0		20
Chloromethane	97		98		64-130	1		20
Bromomethane	70		75		39-139	7		20
Vinyl chloride	91		92		55-140	1		20
Chloroethane	94		95		55-138	1		20
1,1-Dichloroethene	88		92		61-145	4		25
trans-1,2-Dichloroethene	92		95		70-130	3		20
Trichloroethene	92		94		70-130	2		25
1,2-Dichlorobenzene	89		89		70-130	0		20
1,3-Dichlorobenzene	88		88		70-130	0		20
1,4-Dichlorobenzene	89		89		70-130	0		20
Methyl tert butyl ether	93		94		63-130	1		20
p/m-Xylene	88		88		70-130	0		20
o-Xylene	87		88		70-130	1		20
cis-1,2-Dichloroethene	93		96		70-130	3		20
Dibromomethane	90		95		70-130	5		20
1,4-Dichlorobutane	94		94		70-130	0		20
1,2,3-Trichloropropane	93		91		64-130	2		20
Styrene	89		90		70-130	1		20
Dichlorodifluoromethane	89		86		36-147	3		20
Acetone	125		132		58-148	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Carbon disulfide	82		88		51-130	7		20
2-Butanone	114		114		63-138	0		20
Vinyl acetate	92		95		70-130	3		20
4-Methyl-2-pentanone	98		103		59-130	5		20
2-Hexanone	105		109		57-130	4		20
Ethyl methacrylate	96		95		70-130	1		20
Acrylonitrile	99		101		70-130	2		20
Bromochloromethane	91		96		70-130	5		20
Tetrahydrofuran	110		107		58-130	3		20
2,2-Dichloropropane	92		96		63-133	4		20
1,2-Dibromoethane	89		88		70-130	1		20
1,3-Dichloropropane	93		95		70-130	2		20
1,1,1,2-Tetrachloroethane	83		87		64-130	5		20
Bromobenzene	86		84		70-130	2		20
n-Butylbenzene	92		90		53-136	2		20
sec-Butylbenzene	86		86		70-130	0		20
tert-Butylbenzene	86		85		70-130	1		20
o-Chlorotoluene	86		86		70-130	0		20
p-Chlorotoluene	90		90		70-130	0		20
1,2-Dibromo-3-chloropropane	79		76		41-144	4		20
Hexachlorobutadiene	86		86		63-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Isopropylbenzene	92		91		70-130	1		20
p-Isopropyltoluene	85		83		70-130	2		20
Naphthalene	95		95		70-130	0		20
n-Propylbenzene	88		88		69-130	0		20
1,2,3-Trichlorobenzene	90		86		70-130	5		20
1,2,4-Trichlorobenzene	87		87		70-130	0		20
1,3,5-Trimethylbenzene	87		86		64-130	1		20
1,3,5-Trichlorobenzene	89		86		70-130	3		20
1,2,4-Trimethylbenzene	87		88		70-130	1		20
trans-1,4-Dichloro-2-butene	98		99		70-130	1		20
Ethyl ether	94		96		59-134	2		20
Methyl Acetate	105		107		70-130	2		20
Ethyl Acetate	104		106		70-130	2		20
Isopropyl Ether	93		94		70-130	1		20
Cyclohexane	94		96		70-130	2		20
Tert-Butyl Alcohol	112		117		70-130	4		20
Ethyl-Tert-Butyl-Ether	93		94		70-130	1		20
Tertiary-Amyl Methyl Ether	92		96		66-130	4		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	91		91		70-130	0		20
Methyl cyclohexane	93		93		70-130	0		20
1,4-Diethylbenzene	88		86		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427132

Report Date: 11/18/14

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: WG740562-1 WG740562-2								
4-Ethyltoluene	86		86		70-130	0		20
1,2,4,5-Tetramethylbenzene	89		87		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		99		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	99		104		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG739764-3 QC Sample: L1427121-01 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.253	0.285	113		-	-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.253	0.278	110		-	-		70-130	-		20	A

SEMIVOLATILES

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427132
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427132-01
Client ID: MAE-42
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 11/14/14 01:50
Analyst: PS

Date Collected: 11/11/14 10:00
Date Received: 11/11/14
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 11/12/14 01:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	22		21-120
Phenol-d6	15		10-120
Nitrobenzene-d5	53		23-120
2-Fluorobiphenyl	58		15-120
2,4,6-Tribromophenol	50		10-120
4-Terphenyl-d14	59		41-149

Project Name: LANDMARK **Lab Number:** L1427132

Project Number: 5512.9.01 **Report Date:** 11/18/14

SAMPLE RESULTS

Lab ID:	L1427132-01	Date Collected:	11/11/14 10:00
Client ID:	MAE-42	Date Received:	11/11/14
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D-SIM	Extraction Date:	11/12/14 01:52
Analytical Date:	11/12/14 16:59		
Analyst:	MW		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.27		ug/l	0.20	--	1
Fluoranthene	ND		ug/l	0.20	--	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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	22		21-120
Phenol-d6	15		10-120
Nitrobenzene-d5	54		23-120
2-Fluorobiphenyl	58		15-120
2,4,6-Tribromophenol	73		10-120
4-Terphenyl-d14	57		41-149

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 11/12/14 17:54
Analyst: PS

Extraction Method: EPA 3510C
Extraction Date: 11/12/14 01:53

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG739647-1					
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	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	25		21-120
Phenol-d6	16		10-120
Nitrobenzene-d5	55		23-120
2-Fluorobiphenyl	51		15-120
2,4,6-Tribromophenol	68		10-120
4-Terphenyl-d14	67		41-149

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 11/12/14 14:02
Analyst: MW

Extraction Method: EPA 3510C
Extraction Date: 11/12/14 01:52

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG739648-1					
Acenaphthene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	26		21-120
Phenol-d6	17		10-120
Nitrobenzene-d5	59		23-120
2-Fluorobiphenyl	62		15-120
2,4,6-Tribromophenol	85		10-120
4-Terphenyl-d14	81		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG739647-2 WG739647-3								
Benzidine	32		22		10-75	**37**	Q	30
1,2,4-Trichlorobenzene	46		48		39-98	4		30
Bis(2-chloroethyl)ether	53		59		40-140	11		30
1,2-Dichlorobenzene	46		48		40-140	4		30
1,3-Dichlorobenzene	44		45		40-140	2		30
1,4-Dichlorobenzene	43		46		36-97	7		30
3,3'-Dichlorobenzidine	62		69		40-140	11		30
2,4-Dinitrotoluene	67		75		24-96	11		30
2,6-Dinitrotoluene	66		79		40-140	18		30
Azobenzene	76		84		40-140	10		30
4-Chlorophenyl phenyl ether	56		62		40-140	10		30
4-Bromophenyl phenyl ether	60		67		40-140	11		30
Bis(2-chloroisopropyl)ether	58		64		40-140	10		30
Bis(2-chloroethoxy)methane	63		74		40-140	16		30
Hexachlorocyclopentadiene	**21**	Q	**22**	Q	40-140	5		30
Isophorone	67		79		40-140	16		30
Nitrobenzene	68		72		40-140	6		30
NitrosoDiPhenylAmine(NDPA)/DPA	67		75		40-140	11		30
Bis(2-ethylhexyl)phthalate	70		76		40-140	8		30
Butyl benzyl phthalate	76		84		40-140	10		30
Di-n-butylphthalate	68		77		40-140	12		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG739647-2 WG739647-3								
Di-n-octylphthalate	72		80		40-140	11		30
Diethyl phthalate	69		77		40-140	11		30
Dimethyl phthalate	66		71		40-140	7		30
Aniline	**31**	Q	**33**	Q	40-140	6		30
4-Chloroaniline	71		78		40-140	9		30
2-Nitroaniline	69		81		52-143	16		30
3-Nitroaniline	68		78		25-145	14		30
4-Nitroaniline	52		55		51-143	6		30
Dibenzofuran	61		66		40-140	8		30
n-Nitrosodimethylamine	30		34		22-74	13		30
2,4,6-Trichlorophenol	71		80		30-130	12		30
P-Chloro-M-Cresol	68		81		23-97	17		30
2-Chlorophenol	58		63		27-123	8		30
2,4-Dichlorophenol	68		75		30-130	10		30
2,4-Dimethylphenol	67		78		30-130	15		30
2-Nitrophenol	63		74		30-130	16		30
4-Nitrophenol	43		50		10-80	15		30
2,4-Dinitrophenol	51		75		20-130	**38**	Q	30
4,6-Dinitro-o-cresol	84		94		20-164	11		30
Phenol	22		25		12-110	13		30
2-Methylphenol	48		56		30-130	15		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427132

Report Date: 11/18/14

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: WG739647-2 WG739647-3								
3-Methylphenol/4-Methylphenol	40		48		30-130	18		30
2,4,5-Trichlorophenol	75		84		30-130	11		30
Benzoic Acid	18		22		10-164	20		30
Benzyl Alcohol	48		58		26-116	19		30
Carbazole	71		81		55-144	13		30
Pyridine	27		28		10-66	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	31		34		21-120
Phenol-d6	21		24		10-120
Nitrobenzene-d5	71		83		23-120
2-Fluorobiphenyl	60		67		15-120
2,4,6-Tribromophenol	64		70		10-120
4-Terphenyl-d14	67		79		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG739648-2 WG739648-3								
Acenaphthene	64		55		37-111	15		40
2-Chloronaphthalene	62		51		40-140	19		40
Fluoranthene	76		69		40-140	10		40
Hexachlorobutadiene	48		**37**	Q	40-140	26		40
Naphthalene	56		43		40-140	26		40
Benzo(a)anthracene	74		68		40-140	8		40
Benzo(a)pyrene	73		66		40-140	10		40
Benzo(b)fluoranthene	71		64		40-140	10		40
Benzo(k)fluoranthene	72		67		40-140	7		40
Chrysene	76		69		40-140	10		40
Acenaphthylene	65		57		40-140	13		40
Anthracene	72		66		40-140	9		40
Benzo(ghi)perylene	78		72		40-140	8		40
Fluorene	68		62		40-140	9		40
Phenanthrene	69		64		40-140	8		40
Dibenzo(a,h)anthracene	80		74		40-140	8		40
Indeno(1,2,3-cd)pyrene	78		72		40-140	8		40
Pyrene	76		69		26-127	10		40
1-Methylnaphthalene	62		50		40-140	21		40
2-Methylnaphthalene	63		50		40-140	23		40
Pentachlorophenol	73		70		9-103	4		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427132

Report Date: 11/18/14

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: WG739648-2 WG739648-3								
Hexachlorobenzene	64		58		40-140	10		40
Hexachloroethane	50		**36**	Q	40-140	33		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	26		21		21-120
Phenol-d6	19		16		10-120
Nitrobenzene-d5	59		46		23-120
2-Fluorobiphenyl	61		51		15-120
2,4,6-Tribromophenol	80		75		10-120
4-Terphenyl-d14	71		65		41-149

PCBS

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427132
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427132-01
Client ID: MAE-42
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 5,608
Analytical Date: 11/13/14 17:30
Analyst: KB

Date Collected: 11/11/14 10:00
Date Received: 11/11/14
Field Prep: Not Specified
Extraction Method: EPA 608
Extraction Date: 11/12/14 08:40
Cleanup Method: EPA 3665A
Cleanup Date: 11/12/14
Cleanup Method: EPA 3660B
Cleanup Date: 11/12/14

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		30-150	A
Decachlorobiphenyl	66		30-150	A

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427132

Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 11/13/14 18:07
Analyst: KB

Extraction Method: EPA 608
Extraction Date: 11/12/14 08:40
Cleanup Method: EPA 3665A
Cleanup Date: 11/12/14
Cleanup Method: EPA 3660B
Cleanup Date: 11/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG739732-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	A
Decachlorobiphenyl	58		30-150	A

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG739732-3 QC Sample: L1427121-01 Client ID: MS Sample													
Aroclor 1016	ND	1.04	0.750	72		-	-		40-140	-		50	A
Aroclor 1260	ND	1.04	0.797	76		-	-		40-140	-		50	A

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57				30-150	A
Decachlorobiphenyl	56				30-150	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427132

Report Date: 11/18/14

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: WG739732-2									
Aroclor 1016	87		-		40-140	-		50	A
Aroclor 1260	97		-		40-140	-		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70				30-150	A
Decachlorobiphenyl	68				30-150	A

Lab Duplicate Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab	Associated sample(s): 01	QC Batch ID: WG739732-4		QC Sample: L1427132-01		Client ID: MAE-42	
Aroclor 1016	ND	ND	ug/l	NC		50	A
Aroclor 1221	ND	ND	ug/l	NC		50	A
Aroclor 1232	ND	ND	ug/l	NC		50	A
Aroclor 1242	ND	ND	ug/l	NC		50	A
Aroclor 1248	ND	ND	ug/l	NC		50	A
Aroclor 1254	ND	ND	ug/l	NC		50	A
Aroclor 1260	ND	ND	ug/l	NC		50	A

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		50		30-150	A
Decachlorobiphenyl	66		53		30-150	A

METALS

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427132
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427132-01
Client ID: MAE-42
Sample Location: BOSTON, MA
Matrix: Water
Date Collected: 11/11/14 10:00
Date Received: 11/11/14
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	0.0009		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM
Arsenic, Total	0.0013		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM
Cadmium, Total	ND		mg/l	0.0002	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM
Chromium, Total	0.0012		mg/l	0.0010	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM
Copper, Total	ND		mg/l	0.0010	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM
Iron, Total	20		mg/l	0.05	--	1	11/13/14 07:52	11/13/14 17:51	EPA 3005A	19,200.7	BC
Lead, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM
Mercury, Total	ND		mg/l	0.00020	--	1	11/12/14 09:46	11/13/14 00:04	EPA 245.1	3,245.1	AK
Nickel, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM
Selenium, Total	ND		mg/l	0.005	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM
Silver, Total	ND		mg/l	0.0003	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM
Zinc, Total	ND		mg/l	0.0100	--	1	11/13/14 07:52	11/13/14 18:20	EPA 3005A	1,6020A	BM

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427132
Report Date: 11/18/14

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: WG739753-1										
Mercury, Total	ND		mg/l	0.00020	--	1	11/12/14 09:46	11/12/14 22:58	3,245.1	AK

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG739915-1										
Antimony, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Arsenic, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Cadmium, Total	ND		mg/l	0.0002	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Chromium, Total	ND		mg/l	0.0010	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Copper, Total	ND		mg/l	0.0010	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Lead, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Nickel, Total	ND		mg/l	0.0005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Selenium, Total	ND		mg/l	0.005	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Silver, Total	ND		mg/l	0.0003	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM
Zinc, Total	ND		mg/l	0.0100	--	1	11/13/14 07:52	11/13/14 17:58	1,6020A	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG739917-1										
Iron, Total	ND		mg/l	0.05	--	1	11/13/14 07:52	11/13/14 17:20	19,200.7	BC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK

Project Number: 5512.9.01

Lab Number: L1427132

Report Date: 11/18/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG739753-2								
Mercury, Total	91		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG739915-2								
Antimony, Total	94		-		80-120	-		
Arsenic, Total	95		-		80-120	-		
Cadmium, Total	106		-		80-120	-		
Chromium, Total	89		-		80-120	-		
Copper, Total	92		-		80-120	-		
Lead, Total	93		-		80-120	-		
Nickel, Total	92		-		80-120	-		
Selenium, Total	102		-		80-120	-		
Silver, Total	90		-		80-120	-		
Zinc, Total	99		-		80-120	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG739917-2								
Iron, Total	100		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG739753-4 QC Sample: L1427097-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00446	89		-	-		70-130	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739915-4 QC Sample: L1427121-01 Client ID: MS Sample												
Antimony, Total	0.0005	0.5	0.5182	104		-	-		75-125	-		20
Arsenic, Total	0.0006	0.12	0.1199	99		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.0533	104		-	-		75-125	-		20
Chromium, Total	0.0021	0.2	0.1942	96		-	-		75-125	-		20
Copper, Total	ND	0.25	0.2469	99		-	-		75-125	-		20
Lead, Total	ND	0.51	0.5087	100		-	-		75-125	-		20
Nickel, Total	0.0006	0.5	0.4472	89		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.094	79		-	-		75-125	-		20
Silver, Total	ND	0.05	0.0473	94		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.5024	100		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739917-4 QC Sample: L1427121-01 Client ID: MS Sample												
Iron, Total	1.1	1	2.0	90		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739753-3 QC Sample: L1427097-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739915-3 QC Sample: L1427121-01 Client ID: DUP Sample						
Antimony, Total	0.0005	ND	mg/l	NC		20
Arsenic, Total	0.0006	0.0008	mg/l	**22**	Q	20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.0021	0.0019	mg/l	8		20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.0006	0.0007	mg/l	19		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739917-3 QC Sample: L1427121-01 Client ID: DUP Sample						
Iron, Total	1.1	1.1	mg/l	0		20

INORGANICS
&
MISCELLANEOUS

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427132-01
Client ID: MAE-42
Sample Location: BOSTON, MA
Matrix: Water

Date Collected: 11/11/14 10:00
Date Received: 11/11/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	7.1		mg/l	5.0	NA	1	-	11/12/14 15:25	30,2540D	MP
Cyanide, Total	0.010		mg/l	0.005	--	1	11/12/14 11:44	11/12/14 15:44	30,4500CN-CE	JO
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	11/11/14 21:45	30,4500CL-D	MR
TPH	ND		mg/l	4.00	--	1	11/12/14 12:00	11/12/14 16:00	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	11/12/14 10:15	11/12/14 15:50	4,420.1	MP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/11/14 21:40	11/11/14 22:04	30,3500CR-D	DE
Anions by Ion Chromatography - Westborough Lab										
Chloride	3380		mg/l	125	--	250	-	11/12/14 21:02	44,300.0	AU

Project Name: LANDMARK
Project Number: 5512.9.01
Lab Number: L1427132
Report Date: 11/18/14

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: WG739617-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	11/11/14 21:45	30,4500CL-D	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739619-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/11/14 21:40	11/11/14 22:04	30,3500CR-D	DE
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739699-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	11/12/14 15:25	30,2540D	MP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739748-1										
Phenolics, Total	ND		mg/l	0.030	--	1	11/12/14 10:15	11/12/14 15:45	4,420.1	MP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739807-1										
Cyanide, Total	ND		mg/l	0.005	--	1	11/12/14 11:44	11/12/14 15:29	30,4500CN-CE	JO
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG739853-1										
TPH	ND		mg/l	4.00	--	1	11/12/14 12:00	11/12/14 16:00	74,1664A	ML
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG740408-1										
Chloride	ND		mg/l	0.500	--	1	-	11/12/14 20:35	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739617-2								
Chlorine, Total Residual	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739619-2								
Chromium, Hexavalent	103		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739748-2								
Phenolics, Total	94		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739807-2								
Cyanide, Total	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG739853-2								
TPH	80		-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG740408-2								
Chloride	100		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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: WG739619-4 QC Sample: L1427132-01 Client ID: MAE-42												
Chromium, Hexavalent	ND	0.1	0.108	108		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739748-4 QC Sample: L1427121-01 Client ID: MS Sample												
Phenolics, Total	ND	0.4	0.36	89		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739807-3 QC Sample: L1427121-01 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.200	100		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739853-4 QC Sample: L1427079-02 Client ID: MS Sample												
TPH	ND	21.5	21.0	98		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740408-3 QC Sample: L1427242-03 Client ID: MS Sample												
Chloride	ND	4	3.95	99		-	-		40-151	-		18

Lab Duplicate Analysis
Batch Quality Control

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739617-3 QC Sample: L1427121-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739619-3 QC Sample: L1427132-01 Client ID: MAE-42						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739699-2 QC Sample: L1426645-02 Client ID: DUP Sample						
Solids, Total Suspended	460	470	mg/l	2		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739748-3 QC Sample: L1427121-01 Client ID: DUP Sample						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG739853-3 QC Sample: L1427079-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740408-4 QC Sample: L1427242-03 Client ID: DUP Sample						
Chloride	ND	ND	mg/l	NC		18

Project Name: LANDMARK
Project Number: 5512.9.01

Lab Number: L1427132
Report Date: 11/18/14

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(*)
L1427132-01A	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260(14)
L1427132-01B	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260(14)
L1427132-01C	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260(14)
L1427132-01D	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260-SIM(14)
L1427132-01E	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260-SIM(14)
L1427132-01F	Vial HCl preserved	A	N/A	2.0	Y	Absent	8260-SIM(14)
L1427132-01G	Vial Na2S2O3 preserved	A	N/A	2.0	Y	Absent	504(14)
L1427132-01H	Vial Na2S2O3 preserved	A	N/A	2.0	Y	Absent	504(14)
L1427132-01I	Plastic 250ml HNO3 preserved	A	<2	2.0	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)
L1427132-01K	Amber 1000ml Na2S2O3	A	8	2.0	Y	Absent	PCB-608(7)
L1427132-01L	Amber 1000ml Na2S2O3	A	8	2.0	Y	Absent	PCB-608(7)
L1427132-01M	Amber 1000ml HCl preserved	A	N/A	2.0	Y	Absent	TPH-1664(28)
L1427132-01N	Amber 1000ml HCl preserved	A	N/A	2.0	Y	Absent	TPH-1664(28)
L1427132-01O	Amber 500ml H2SO4 preserved	A	<2	2.0	Y	Absent	TPHENOL-420(28)
L1427132-01Q	Plastic 500ml unpreserved	A	8	2.0	Y	Absent	HEXCR-3500(1)
L1427132-01R	Plastic 250ml NaOH preserved	A	>12	2.0	Y	Absent	TCN-4500(14)
L1427132-01S	Plastic 500ml unpreserved	A	8	2.0	Y	Absent	CL-300(28),TRC-4500(1)
L1427132-01T	Plastic 950ml unpreserved	A	8	2.0	Y	Absent	TSS-2540(7)
L1427132-01U	Amber 1000ml unpreserved	A	8	2.0	Y	Absent	8270TCL(7)
L1427132-01V	Amber 1000ml unpreserved	A	8	2.0	Y	Absent	8270TCL(7)
L1427132-01W	Amber 1000ml unpreserved	A	8	2.0	Y	Absent	8270TCL-SIM(7)
L1427132-01X	Amber 1000ml unpreserved	A	8	2.0	Y	Absent	8270TCL-SIM(7)

*Values in parentheses indicate holding time in days

Project Name:	LANDMARK	**Lab Number:**	L1427132
Project Number:	5512.9.01	**Report Date:**	11/18/14

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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.

Report Format: Data Usability Report

Project Name:	LANDMARK	**Lab Number:**	L1427132
Project Number:	5512.9.01	**Report Date:**	11/18/14

Data Qualifiers

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.

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:	LANDMARK	**Lab Number:**	L1427132
Project Number:	5512.9.01	**Report Date:**	11/18/14

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.

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.

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LAO00065 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L1427132-01
MAE-42
Sample Matrix: WATER

Date Collected: 11-NOV-2014 10:00
Date Received : 11-NOV-2014

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 9-Amber,5-Plastic,8-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
General Chemistry - Westborough Lab								
Solids, Total Suspended	7.1	mg/l	5.0	30	2540D		1112 15:25	MP
Anions by Ion Chromatography - Westborough Lab								
Chloride	3380	mg/l	125.	44	300.0		1112 21:02	AU
General Chemistry - Westborough Lab								
Cyanide, Total	0.010	mg/l	0.005	30	4500CN-CE	1112 11:44	1112 15:44	JO
Chlorine, Total Residual	ND	mg/l	0.02	30	4500CL-D		1111 21:45	MR
TPH	ND	mg/l	4.00	74	1664A	1112 12:00	1112 16:00	ML
Phenolics, Total	ND	mg/l	0.030	4	420.1	1112 10:15	1112 15:50	MP
Chromium, Hexavalent	ND	mg/l	0.010	30	3500CR-D	1111 21:40	1111 22:04	DE
Total Metals - Westborough Lab								
Antimony, Total	0.0009	mg/l	0.0005	1	6020A	1113 07:52	1113 18:20	BM
Arsenic, Total	0.0013	mg/l	0.0005	1	6020A	1113 07:52	1113 18:20	BM
Cadmium, Total	ND	mg/l	0.0002	1	6020A	1113 07:52	1113 18:20	BM
Chromium, Total	0.0012	mg/l	0.0010	1	6020A	1113 07:52	1113 18:20	BM
Copper, Total	ND	mg/l	0.0010	1	6020A	1113 07:52	1113 18:20	BM
Iron, Total	20	mg/l	0.05	19	200.7	1113 07:52	1113 17:51	BC
Lead, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 18:20	BM
Mercury, Total	ND	mg/l	0.00020	3	245.1	1112 09:46	1113 00:04	AK
Nickel, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 18:20	BM
Selenium, Total	ND	mg/l	0.005	1	6020A	1113 07:52	1113 18:20	BM
Silver, Total	ND	mg/l	0.0003	1	6020A	1113 07:52	1113 18:20	BM
Zinc, Total	ND	mg/l	0.0100	1	6020A	1113 07:52	1113 18:20	BM
Microextractables by GC - Westborough Lab				14	504.1	1112 10:30	1112 20:15	NS
1,2-Dibromoethane	ND	ug/l	0.010					
Volatile Organics by GC/MS - Westborough Lab				1	8260C		1114 10:04	MM
Methylene chloride	ND	ug/l	3.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
1,1,2-Trichloroethane	ND	ug/l	0.75					

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L1427132-01
MAE-42

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS - Westborough Lab cont'd				1	8260C		1114 10:04	MM
Tetrachloroethene	ND	ug/l	0.50					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.50					
Toluene	ND	ug/l	0.75					
Ethylbenzene	ND	ug/l	0.50					
Vinyl chloride	ND	ug/l	1.0					
1,1-Dichloroethene	ND	ug/l	0.50					
Trichloroethene	ND	ug/l	0.50					
1,2-Dichlorobenzene	ND	ug/l	2.5					
1,3-Dichlorobenzene	ND	ug/l	2.5					
1,4-Dichlorobenzene	ND	ug/l	2.5					
Methyl tert butyl ether	ND	ug/l	1.0					
p/m-Xylene	ND	ug/l	1.0					
o-Xylene	ND	ug/l	1.0					
cis-1,2-Dichloroethene	ND	ug/l	0.50					
Acetone	8.2	ug/l	5.0					
Naphthalene	ND	ug/l	2.5					
Tert-Butyl Alcohol	ND	ug/l	10.					
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0					
Surrogate(s)	Recovery		QC Criteria					
1,2-Dichloroethane-d4	102	%	70-130					
Toluene-d8	100	%	70-130					
4-Bromofluorobenzene	101	%	70-130					
Dibromofluoromethane	102	%	70-130					
Volatile Organics by GC/MS-SIM - Westborough Lab				1	8260C-SIM(M)		1114 10:04	MM
1,4-Dioxane	ND	ug/l	3.0					
Semivolatile Organics by GC/MS - Westborough Lab				1	8270D	1112 01:53	1114 01:50	PS
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					
Dimethyl phthalate	ND	ug/l	5.0					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	22.0	%	21-120					
Phenol-d6	15.0	%	10-120					
Nitrobenzene-d5	53.0	%	23-120					
2-Fluorobiphenyl	58.0	%	15-120					
2,4,6-Tribromophenol	50.0	%	10-120					
4-Terphenyl-d14	59.0	%	41-149					
Semivolatile Organics by GC/MS-SIM - Westborough Lab				1	8270D-SIM	1112 01:52	1112 16:59	MW
Acenaphthene	0.27	ug/l	0.20					
Fluoranthene	ND	ug/l	0.20					

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L1427132-01
MAE-42

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Semivolatile Organics by GC/MS-SIM - Westborough Lab cont'				1	8270D-SIM	1112 01:52	1112 16:59	MW
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					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	22.0	%	21-120					
Phenol-d6	15.0	%	10-120					
Nitrobenzene-d5	54.0	%	23-120					
2-Fluorobiphenyl	58.0	%	15-120					
2,4,6-Tribromophenol	73.0	%	10-120					
4-Terphenyl-d14	57.0	%	41-149					
Polychlorinated Biphenyls by GC - Westborough Lab				5	608	1112 08:40	1113 17:30	KB
Aroclor 1016	ND	ug/l	0.250					
Aroclor 1221	ND	ug/l	0.250					
Aroclor 1232	ND	ug/l	0.250					
Aroclor 1242	ND	ug/l	0.250					
Aroclor 1248	ND	ug/l	0.250					
Aroclor 1254	ND	ug/l	0.250					
Aroclor 1260	ND	ug/l	0.200					
Surrogate(s)	Recovery		QC Criteria					
2,4,5,6-Tetrachloro-m-xylene	62.0	%	30-150					
Decachlorobiphenyl	66.0	%	30-150					

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L1427132

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
General Chemistry - Westborough Lab for sample(s) 01 (L1426645-02, WG739699-2)					
Solids, Total Suspended	460	470	mg/l	2	29
Anions by Ion Chromatography - Westborough Lab for sample(s) 01 (L1427242-03, WG740408-4)					
Chloride	ND	ND	mg/l	NC	18
General Chemistry - Westborough Lab for sample(s) 01 (L1427121-01, WG739617-3)					
Chlorine, Total Residual	ND	ND	mg/l	NC	20
General Chemistry - Westborough Lab for sample(s) 01 (L1427079-01, WG739853-3)					
TPH	ND	ND	mg/l	NC	34
General Chemistry - Westborough Lab for sample(s) 01 (L1427121-01, WG739748-3)					
Phenolics, Total	ND	ND	mg/l	NC	20
General Chemistry - Westborough Lab for sample(s) 01 (L1427132-01, WG739619-3)					
Chromium, Hexavalent	ND	ND	mg/l	NC	20
Total Metals - Westborough Lab for sample(s) 01 (L1427121-01, WG739917-3)					
Iron, Total	1.1	1.1	mg/l	0	20
Total Metals - Westborough Lab for sample(s) 01 (L1427121-01, WG739915-3)					
Antimony, Total	0.0005	ND	mg/l	NC	20
Arsenic, Total	0.0006	0.0008	mg/l	22	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	0.0021	0.0019	mg/l	8	20
Copper, Total	ND	ND	mg/l	NC	20
Lead, Total	ND	ND	mg/l	NC	20
Nickel, Total	0.0006	0.0007	mg/l	19	20
Selenium, Total	ND	ND	mg/l	NC	20
Silver, Total	ND	ND	mg/l	NC	20
Zinc, Total	ND	ND	mg/l	NC	20
Total Metals - Westborough Lab for sample(s) 01 (L1427097-01, WG739753-3)					
Mercury, Total	ND	ND	mg/l	NC	20
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s) 01 (L1427132-01, WG739732-4)					
Aroclor 1016	ND	ND	ug/l	NC	
Aroclor 1221	ND	ND	ug/l	NC	
Aroclor 1232	ND	ND	ug/l	NC	
Aroclor 1242	ND	ND	ug/l	NC	
Aroclor 1248	ND	ND	ug/l	NC	
Aroclor 1254	ND	ND	ug/l	NC	
Aroclor 1260	ND	ND	ug/l	NC	
Surrogate(s)	Recovery				QC Criteria
2,4,5,6-Tetrachloro-m-xylene	62.0	50.0	%		30-150
Decachlorobiphenyl	66.0	53.0	%		30-150

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L1427132

Parameter	% Recovery	QC Criteria
Anions by Ion Chromatography - Westborough Lab LCS for sample(s) 01 (WG740408-2)		
Chloride	100	90-110
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739807-2)		
Cyanide, Total	94	90-110
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739617-2)		
Chlorine, Total Residual	101	90-110
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739853-2)		
TPH	80	64-132
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739748-2)		
Phenolics, Total	94	70-130
General Chemistry - Westborough Lab LCS for sample(s) 01 (WG739619-2)		
Chromium, Hexavalent	103	85-115
Total Metals - Westborough Lab LCS for sample(s) 01 (WG739917-2)		
Iron, Total	100	85-115
Total Metals - Westborough Lab LCS for sample(s) 01 (WG739915-2)		
Antimony, Total	94	80-120
Arsenic, Total	95	80-120
Cadmium, Total	106	80-120
Chromium, Total	89	80-120
Copper, Total	92	80-120
Lead, Total	93	80-120
Nickel, Total	92	80-120
Selenium, Total	102	80-120
Silver, Total	90	80-120
Zinc, Total	99	80-120
Total Metals - Westborough Lab LCS for sample(s) 01 (WG739753-2)		
Mercury, Total	91	85-115
Microextractables by GC - Westborough Lab LCS for sample(s) 01 (WG739764-2)		
1,2-Dibromoethane	110	70-130
1,2-Dibromo-3-chloropropane	106	70-130
Polychlorinated Biphenyls by GC - Westborough Lab LCS for sample(s) 01 (WG739732-2)		
Aroclor 1016	87	
Aroclor 1260	97	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	70	30-150
Decachlorobiphenyl	68	30-150

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L1427132

Continued

Parameter	% Recovery	QC Criteria
Anions by Ion Chromatography - Westborough Lab SPIKE for sample(s) 01 (L1427242-03, WG740408-3)		
Chloride	99	40-151
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739807-3)		
Cyanide, Total	100	90-110
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1427079-02, WG739853-4)		
TPH	98	64-132
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739748-4)		
Phenolics, Total	89	70-130
General Chemistry - Westborough Lab SPIKE for sample(s) 01 (L1427132-01, WG739619-4)		
Chromium, Hexavalent	108	85-115
Total Metals - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739917-4)		
Iron, Total	90	75-125
Total Metals - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739915-4)		
Antimony, Total	104	75-125
Arsenic, Total	99	75-125
Cadmium, Total	104	75-125
Chromium, Total	96	75-125
Copper, Total	99	75-125
Lead, Total	100	75-125
Nickel, Total	89	75-125
Selenium, Total	79	75-125
Silver, Total	94	75-125
Zinc, Total	100	75-125
Total Metals - Westborough Lab SPIKE for sample(s) 01 (L1427097-01, WG739753-4)		
Mercury, Total	89	70-130
Microextractables by GC - Westborough Lab SPIKE for sample(s) 01 (L1400011-39, WG739764-3)		
1,2-Dibromoethane	113	70-130
1,2-Dibromo-3-chloropropane	110	70-130
Polychlorinated Biphenyls by GC - Westborough Lab SPIKE for sample(s) 01 (L1427121-01, WG739732-		
Aroclor 1016	72	
Aroclor 1260	76	
Surrogate(s)		
2,4,5,6-Tetrachloro-m-xylene	57	30-150
Decachlorobiphenyl	56	30-150

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L1427132

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by GC/MS - Westborough Lab for sample(s) 01 (WG740562-1, WG740562-2)					
Methylene chloride	93	96	3	20	70-130
1,1-Dichloroethane	93	96	3	20	70-130
Chloroform	93	96	3	20	70-130
Carbon tetrachloride	80	88	10	20	63-132
1,2-Dichloropropane	82	96	16	20	70-130
Dibromochloromethane	82	85	4	20	63-130
1,1,2-Trichloroethane	90	90	0	20	70-130
2-Chloroethylvinyl ether	95	97	2	20	70-130
Tetrachloroethene	85	88	3	20	70-130
Chlorobenzene	90	91	1	25	75-130
Trichlorofluoromethane	87	90	3	20	62-150
1,2-Dichloroethane	98	100	2	20	70-130
1,1,1-Trichloroethane	88	92	4	20	67-130
Bromodichloromethane	84	89	6	20	67-130
trans-1,3-Dichloropropene	88	91	3	20	70-130
cis-1,3-Dichloropropene	91	95	4	20	70-130
1,1-Dichloropropene	93	95	2	20	70-130
Bromoform	70	76	8	20	54-136
1,1,2,2-Tetrachloroethane	90	91	1	20	67-130
Benzene	94	96	2	25	70-130
Toluene	91	92	1	25	70-130
Ethylbenzene	91	91	0	20	70-130
Chloromethane	97	98	1	20	64-130
Bromomethane	70	75	7	20	39-139
Vinyl chloride	91	92	1	20	55-140
Chloroethane	94	95	1	20	55-138
1,1-Dichloroethene	88	92	4	25	61-145
trans-1,2-Dichloroethene	92	95	3	20	70-130
Trichloroethene	92	94	2	25	70-130
1,2-Dichlorobenzene	89	89	0	20	70-130
1,3-Dichlorobenzene	88	88	0	20	70-130
1,4-Dichlorobenzene	89	89	0	20	70-130
Methyl tert butyl ether	93	94	1	20	63-130
p/m-Xylene	88	88	0	20	70-130
o-Xylene	87	88	1	20	70-130
cis-1,2-Dichloroethene	93	96	3	20	70-130
Dibromomethane	90	95	5	20	70-130
1,4-Dichlorobutane	94	94	0	20	70-130
1,2,3-Trichloropropane	93	91	2	20	64-130
Styrene	89	90	1	20	70-130
Dichlorodifluoromethane	89	86	3	20	36-147
Acetone	125	132	5	20	58-148
Carbon disulfide	82	88	7	20	51-130
2-Butanone	114	114	0	20	63-138
Vinyl acetate	92	95	3	20	70-130
4-Methyl-2-pentanone	98	103	5	20	59-130
2-Hexanone	105	109	4	20	57-130
Ethyl methacrylate	96	95	1	20	70-130

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L1427132

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by GC/MS - Westborough Lab for sample(s) 01 (WG740562-1, WG740562-2)					
Acrylonitrile	99	101	2	20	70-130
Bromochloromethane	91	96	5	20	70-130
Tetrahydrofuran	110	107	3	20	58-130
2,2-Dichloropropane	92	96	4	20	63-133
1,2-Dibromoethane	89	88	1	20	70-130
1,3-Dichloropropane	93	95	2	20	70-130
1,1,1,2-Tetrachloroethane	83	87	5	20	64-130
Bromobenzene	86	84	2	20	70-130
n-Butylbenzene	92	90	2	20	53-136
sec-Butylbenzene	86	86	0	20	70-130
tert-Butylbenzene	86	85	1	20	70-130
o-Chlorotoluene	86	86	0	20	70-130
p-Chlorotoluene	90	90	0	20	70-130
1,2-Dibromo-3-chloropropane	79	76	4	20	41-144
Hexachlorobutadiene	86	86	0	20	63-130
Isopropylbenzene	92	91	1	20	70-130
p-Isopropyltoluene	85	83	2	20	70-130
Naphthalene	95	95	0	20	70-130
n-Propylbenzene	88	88	0	20	69-130
1,2,3-Trichlorobenzene	90	86	5	20	70-130
1,2,4-Trichlorobenzene	87	87	0	20	70-130
1,3,5-Trimethylbenzene	87	86	1	20	64-130
1,3,5-Trichlorobenzene	89	86	3	20	70-130
1,2,4-Trimethylbenzene	87	88	1	20	70-130
trans-1,4-Dichloro-2-butene	98	99	1	20	70-130
Ethyl ether	94	96	2	20	59-134
Methyl Acetate	105	107	2	20	70-130
Ethyl Acetate	104	106	2	20	70-130
Isopropyl Ether	93	94	1	20	70-130
Cyclohexane	94	96	2	20	70-130
Tert-Butyl Alcohol	112	117	4	20	70-130
Ethyl-Tert-Butyl-Ether	93	94	1	20	70-130
Tertiary-Amyl Methyl Ether	92	96	4	20	66-130
1,1,2-Trichloro-1,2,2-Trifluoroethane	91	91	0	20	70-130
Methyl cyclohexane	93	93	0	20	70-130
1,4-Diethylbenzene	88	86	2	20	70-130
4-Ethyltoluene	86	86	0	20	70-130
1,2,4,5-Tetramethylbenzene	89	87	2	20	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	99	99			70-130
Toluene-d8	101	100			70-130
4-Bromofluorobenzene	95	94			70-130
Dibromofluoromethane	99	104			70-130

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L1427132

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s) 01 (WG740557-1, WG740557-2)					
1,4-Dioxane	117	122	4	25	70-130
Semivolatile Organics by GC/MS - Westborough Lab for sample(s) 01 (WG739647-2, WG739647-3)					
Benzidine	32	22	37	30	10-75
1,2,4-Trichlorobenzene	46	48	4	30	39-98
Bis(2-chloroethyl)ether	53	59	11	30	40-140
1,2-Dichlorobenzene	46	48	4	30	40-140
1,3-Dichlorobenzene	44	45	2	30	40-140
1,4-Dichlorobenzene	43	46	7	30	36-97
3,3'-Dichlorobenzidine	62	69	11	30	40-140
2,4-Dinitrotoluene	67	75	11	30	24-96
2,6-Dinitrotoluene	66	79	18	30	40-140
Azobenzene	76	84	10	30	40-140
4-Chlorophenyl phenyl ether	56	62	10	30	40-140
4-Bromophenyl phenyl ether	60	67	11	30	40-140
Bis(2-chloroisopropyl)ether	58	64	10	30	40-140
Bis(2-chloroethoxy)methane	63	74	16	30	40-140
Hexachlorocyclopentadiene	21	22	5	30	40-140
Isophorone	67	79	16	30	40-140
Nitrobenzene	68	72	6	30	40-140
NitrosoDiPhenylAmine(NDPA)/DPA	67	75	11	30	40-140
Bis(2-ethylhexyl)phthalate	70	76	8	30	40-140
Butyl benzyl phthalate	76	84	10	30	40-140
Di-n-butylphthalate	68	77	12	30	40-140
Di-n-octylphthalate	72	80	11	30	40-140
Diethyl phthalate	69	77	11	30	40-140
Dimethyl phthalate	66	71	7	30	40-140
Aniline	31	33	6	30	40-140
4-Chloroaniline	71	78	9	30	40-140
2-Nitroaniline	69	81	16	30	52-143
3-Nitroaniline	68	78	14	30	25-145
4-Nitroaniline	52	55	6	30	51-143
Dibenzofuran	61	66	8	30	40-140
n-Nitrosodimethylamine	30	34	13	30	22-74
2,4,6-Trichlorophenol	71	80	12	30	30-130
P-Chloro-M-Cresol	68	81	17	30	23-97
2-Chlorophenol	58	63	8	30	27-123
2,4-Dichlorophenol	68	75	10	30	30-130
2,4-Dimethylphenol	67	78	15	30	30-130
2-Nitrophenol	63	74	16	30	30-130
4-Nitrophenol	43	50	15	30	10-80
2,4-Dinitrophenol	51	75	38	30	20-130
4,6-Dinitro-o-cresol	84	94	11	30	20-164
Phenol	22	25	13	30	12-110
2-Methylphenol	48	56	15	30	30-130
3-Methylphenol/4-Methylphenol	40	48	18	30	30-130
2,4,5-Trichlorophenol	75	84	11	30	30-130

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L1427132

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Semivolatile Organics by GC/MS - Westborough Lab for sample(s) 01 (WG739647-2, WG739647-3)					
Benzoic Acid	18	22	20	30	10-164
Benzyl Alcohol	48	58	19	30	26-116
Carbazole	71	81	13	30	55-144
Pyridine	27	28	4	30	10-66
Surrogate(s)					
2-Fluorophenol	31	34			21-120
Phenol-d6	21	24			10-120
Nitrobenzene-d5	71	83			23-120
2-Fluorobiphenyl	60	67			15-120
2,4,6-Tribromophenol	64	70			10-120
4-Terphenyl-d14	67	79			41-149
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s) 01 (WG739648-2, WG739648-3)					
Acenaphthene	64	55	15	40	37-111
2-Chloronaphthalene	62	51	19	40	40-140
Fluoranthene	76	69	10	40	40-140
Hexachlorobutadiene	48	37	26	40	40-140
Naphthalene	56	43	26	40	40-140
Benzo(a)anthracene	74	68	8	40	40-140
Benzo(a)pyrene	73	66	10	40	40-140
Benzo(b)fluoranthene	71	64	10	40	40-140
Benzo(k)fluoranthene	72	67	7	40	40-140
Chrysene	76	69	10	40	40-140
Acenaphthylene	65	57	13	40	40-140
Anthracene	72	66	9	40	40-140
Benzo(ghi)perylene	78	72	8	40	40-140
Fluorene	68	62	9	40	40-140
Phenanthrene	69	64	8	40	40-140
Dibenzo(a,h)anthracene	80	74	8	40	40-140
Indeno(1,2,3-cd)pyrene	78	72	8	40	40-140
Pyrene	76	69	10	40	26-127
1-Methylnaphthalene	62	50	21	40	40-140
2-Methylnaphthalene	63	50	23	40	40-140
Pentachlorophenol	73	70	4	40	9-103
Hexachlorobenzene	64	58	10	40	40-140
Hexachloroethane	50	36	33	40	40-140
Surrogate(s)					
2-Fluorophenol	26	21			21-120
Phenol-d6	19	16			10-120
Nitrobenzene-d5	59	46			23-120
2-Fluorobiphenyl	61	51			15-120
2,4,6-Tribromophenol	80	75			10-120
4-Terphenyl-d14	71	65			41-149

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L1427132

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01 (WG739699-1)								
General Chemistry - Westborough Lab								
Solids, Total Suspended	ND	mg/l	5.0	30	2540D		1112 15:25	MP
Blank Analysis for sample(s) 01 (WG740408-1)								
Anions by Ion Chromatography - Westborough Lab								
Chloride	ND	mg/l	0.500	44	300.0		1112 20:35	AU
Blank Analysis for sample(s) 01 (WG739807-1)								
General Chemistry - Westborough Lab								
Cyanide, Total	ND	mg/l	0.005	30	4500CN-CE	1112 11:44	1112 15:29	JO
Blank Analysis for sample(s) 01 (WG739617-1)								
General Chemistry - Westborough Lab								
Chlorine, Total Residual	ND	mg/l	0.02	30	4500CL-D		1111 21:45	MR
Blank Analysis for sample(s) 01 (WG739853-1)								
General Chemistry - Westborough Lab								
TPH	ND	mg/l	4.00	74	1664A	1112 12:00	1112 16:00	ML
Blank Analysis for sample(s) 01 (WG739748-1)								
General Chemistry - Westborough Lab								
Phenolics, Total	ND	mg/l	0.030	4	420.1	1112 10:15	1112 15:45	MP
Blank Analysis for sample(s) 01 (WG739619-1)								
General Chemistry - Westborough Lab								
Chromium, Hexavalent	ND	mg/l	0.010	30	3500CR-D	1111 21:40	1111 22:04	DE
Blank Analysis for sample(s) 01 (WG739917-1)								
Total Metals - Westborough Lab				19	200.7			
Iron, Total	ND	mg/l	0.05	19	200.7	1113 07:52	1113 17:20	BC
Blank Analysis for sample(s) 01 (WG739915-1)								
Total Metals - Westborough Lab								
Antimony, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 17:58	BM
Arsenic, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 17:58	BM
Cadmium, Total	ND	mg/l	0.0002	1	6020A	1113 07:52	1113 17:58	BM
Chromium, Total	ND	mg/l	0.0010	1	6020A	1113 07:52	1113 17:58	BM
Copper, Total	ND	mg/l	0.0010	1	6020A	1113 07:52	1113 17:58	BM

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L1427132

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01 (WG739915-1)								
Total Metals - Westborough Lab								
Lead, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 17:58	BM
Nickel, Total	ND	mg/l	0.0005	1	6020A	1113 07:52	1113 17:58	BM
Selenium, Total	ND	mg/l	0.005	1	6020A	1113 07:52	1113 17:58	BM
Silver, Total	ND	mg/l	0.0003	1	6020A	1113 07:52	1113 17:58	BM
Zinc, Total	ND	mg/l	0.0100	1	6020A	1113 07:52	1113 17:58	BM
Blank Analysis for sample(s) 01 (WG739753-1)								
Total Metals - Westborough Lab								
Mercury, Total	ND	mg/l	0.00020	3	245.1	1112 09:46	1112 22:58	AK
Blank Analysis for sample(s) 01 (WG739764-1)								
Microextractables by GC - Westborough Lab				14	504.1	1112 10:30	1112 18:46	NS
1,2-Dibromoethane	ND	ug/l	0.010					
Blank Analysis for sample(s) 01 (WG740562-3)								
Volatile Organics by GC/MS - Westborough Lab				1	8260C		1114 06:49	MM
Methylene chloride	ND	ug/l	3.0					
1,1-Dichloroethane	ND	ug/l	0.75					
Carbon tetrachloride	ND	ug/l	0.50					
1,1,2-Trichloroethane	ND	ug/l	0.75					
Tetrachloroethene	ND	ug/l	0.50					
1,2-Dichloroethane	ND	ug/l	0.50					
1,1,1-Trichloroethane	ND	ug/l	0.50					
Benzene	ND	ug/l	0.50					
Toluene	ND	ug/l	0.75					
Ethylbenzene	ND	ug/l	0.50					
Vinyl chloride	ND	ug/l	1.0					
1,1-Dichloroethene	ND	ug/l	0.50					
Trichloroethene	ND	ug/l	0.50					
1,2-Dichlorobenzene	ND	ug/l	2.5					
1,3-Dichlorobenzene	ND	ug/l	2.5					
1,4-Dichlorobenzene	ND	ug/l	2.5					
Methyl tert butyl ether	ND	ug/l	1.0					
p/m-Xylene	ND	ug/l	1.0					
o-Xylene	ND	ug/l	1.0					
cis-1,2-Dichloroethene	ND	ug/l	0.50					
Acetone	ND	ug/l	5.0					
Naphthalene	ND	ug/l	2.5					
Tert-Butyl Alcohol	ND	ug/l	10.					
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0					
Surrogate(s)	Recovery		QC Criteria					
1,2-Dichloroethane-d4	99.0	%	70-130					
Toluene-d8	100	%	70-130					

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L1427132

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01 (WG740562-3)								
Volatile Organics by GC/MS - Westborough Lab cont'd				1	8260C		1114 06:49	MM
4-Bromofluorobenzene	107	%	70-130					
Dibromofluoromethane	102	%	70-130					
Blank Analysis for sample(s) 01 (WG740557-3)								
Volatile Organics by GC/MS-SIM - Westborough Lab				1	8260C-SIM(M)		1114 06:49	MM
1,4-Dioxane	ND	ug/l	3.0					
Blank Analysis for sample(s) 01 (WG739647-1)								
Semivolatile Organics by GC/MS - Westborough Lab				1	8270D	1112 01:53	1112 17:54	PS
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					
Dimethyl phthalate	ND	ug/l	5.0					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	25.0	%	21-120					
Phenol-d6	16.0	%	10-120					
Nitrobenzene-d5	55.0	%	23-120					
2-Fluorobiphenyl	51.0	%	15-120					
2,4,6-Tribromophenol	68.0	%	10-120					
4-Terphenyl-d14	67.0	%	41-149					
Blank Analysis for sample(s) 01 (WG739648-1)								
Semivolatile Organics by GC/MS-SIM - Westborough Lab				1	8270D-SIM	1112 01:52	1112 14:02	MW
Acenaphthene	ND	ug/l	0.20					
Fluoranthene	ND	ug/l	0.20					
Naphthalene	ND	ug/l	0.20					
Benzo(a)anthracene	ND	ug/l	0.20					
Benzo(a)pyrene	ND	ug/l	0.20					
Benzo(b)fluoranthene	ND	ug/l	0.20					
Benzo(k)fluoranthene	ND	ug/l	0.20					
Chrysene	ND	ug/l	0.20					
Acenaphthylene	ND	ug/l	0.20					
Anthracene	ND	ug/l	0.20					
Benzo(ghi)perylene	ND	ug/l	0.20					
Fluorene	ND	ug/l	0.20					
Phenanthrene	ND	ug/l	0.20					
Dibenzo(a,h)anthracene	ND	ug/l	0.20					
Indeno(1,2,3-cd)pyrene	ND	ug/l	0.20					
Pyrene	ND	ug/l	0.20					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	26.0	%	21-120					
Phenol-d6	17.0	%	10-120					

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L1427132

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01 (WG739648-1)								
Semivolatile Organics by GC/MS-SIM - Westborough Lab cont'				1	8270D-SIM	1112 01:52	1112 14:02	MW
Nitrobenzene-d5	59.0	%	23-120					
2-Fluorobiphenyl	62.0	%	15-120					
2,4,6-Tribromophenol	85.0	%	10-120					
4-Terphenyl-d14	81.0	%	41-149					
Blank Analysis for sample(s) 01 (WG739732-1)								
Polychlorinated Biphenyls by GC - Westborough Lab				5	608	1112 08:40	1113 18:07	KB
Aroclor 1016	ND	ug/l	0.250					
Aroclor 1221	ND	ug/l	0.250					
Aroclor 1232	ND	ug/l	0.250					
Aroclor 1242	ND	ug/l	0.250					
Aroclor 1248	ND	ug/l	0.250					
Aroclor 1254	ND	ug/l	0.250					
Aroclor 1260	ND	ug/l	0.200					
Surrogate(s)	Recovery		QC Criteria					
2,4,5,6-Tetrachloro-m-xylene	55.0	%	30-150					
Decachlorobiphenyl	58.0	%	30-150					

Certification Information

Last revised April 15, 2014

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility
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 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.
EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.
EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 625: 4-Chloroaniline, 4-Methylphenol.
SM4500: Soil: Total Phosphorus, TKN, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
EPA 2540D: TSS
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: 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
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

-revised 11/18/14 ks

Serial_No:11181412:06

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

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

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

Date Rec'd in Lab: 11/11/14

ALPHA Job #: L1427132

Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Avenue, Cambridge, MA

Phone: 617-868-1420

Fax:

Email: JGL@mcphailgeo.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK

Project Location: BOSTON, MA

Project #: 5512.9.01

Project Manager: Joe Lombardo

ALPHA Quote #:

Turn-Around Time

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

Date Due: 11/18/14 Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

NPDES RGP

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program ~~DEP/MCP~~ Criteria RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

~~☒ Yes ☐ No~~ Are MCP Analytical Methods Required?

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

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

Other Project Specific Requirements/Comments/Detection Limits:

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: 504	Metals	355-2540	HEXCR-3500	TRC-4500, CL-SM	8260-SIM	TPH-1664	TCN-4500	Phenol-420	8270TCL-SIM	8270TCL	PCB-608	Sample Specific Comments	TOTAL # BOTTLES
27132-01	MAE-42	11/11/14	1000	GW	JPK	X	X	X	X	X	X	X	X	X	X	X	X		19

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type	V	P	A	P	P	V	A	P	A	A	A	A	
Preservative	H	C	A	A	A	B	B	E	D	A	A	A	

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/11/14 FOC		
	11/11/14 1800		11/11/14 1820

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

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

CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/11/14

ALPHA Job #:

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue, Cambridge, MA
Phone: 617-868-1420
Fax:
Email: JWL@mcphailgroup.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK
Project Location: ~~Boston~~, MA
Project #: 5512.9.01
Project Manager: Joe Lombardo
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/18/14 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 ~~DEP/MCP~~ Criteria RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

~~☒ Yes ☐ No~~ Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS 8260	SAMPLE HANDLING	TOTAL # BOTTLES	Sample Specific Comments
27132-01	MAE-42	11/11/14	1000	GW	JPK	X		3	

SAMPLE HANDLING: *Filtration* ☐ Done ☐ Not needed ☐ Lab to do; *Preservation* ☐ Lab to do (Please specify below)

Container Type	V														
Preservative	B														

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
MSM	11/11/14 1500	MSM	11/11/14 16:00
MSM	11/11/14 1720	AAL	11/11/14 17:20

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

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

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/11/14

ALPHA Job #: L1427132

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue, Cambridge, MA
Phone: 617-868-1420
Fax:
Email: JGL@mcphailgeo.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK
Project Location: BOSTON, MA
Project #: 5512.9.01
Project Manager: Joe Lombardo
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/18/14 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 DEP/MCP Criteria RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

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

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	504	Metals	155-2540	HEXCR-3500	trc-4500, CL-300	8260-SIM	TPH-1664	tcn-4500	tphenol-420	8270TCL-SIM	8270TCL	pcb-608	Sample Specific Comments	TOTAL # BOTTLES
27132-01	MAE-42	11/11/14	1000	GW	JPK	X	X	X	X	X	X	X	X	X	X	X	Y		19

Container Type	V	P	P	P	P	V	A	P	A	A	A	A
Preservative	H	C	A	A	A	B	B	E	D	A	A	A

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/11/14 FOC		11/11/14 1600
	11/11/14 1800		11/11/14 18:20

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

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

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 11/11/14

ALPHA Job #:

ALPHA ANALYTICAL
WESTBORO, MA
TEL: 508-898-9220
FAX: 508-898-9193
MANSFIELD, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Avenue, Cambridge, MA
Phone: 617-868-1420
Fax:
Email: JWL@mcphailgeo.com
❑ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK
Project Location: BOSTON, MA
Project #: 5512.9.01
Project Manager: Joe Lombardo
ALPHA Quote #:

Turn-Around Time

☒ Standard ❑ RUSH *(only confirmed if pre-approved!)*
Date Due: 11/18/14 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: DEP/MCP Criteria: RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ❑ No Are MCP Analytical Methods Required?
❑ Yes ❑ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
❑ Yes ❑ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

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

SAMPLE HANDLING

Filtration
❑ Done
❑ Not needed
❑ Lab to do
Preservation
❑ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: 8260	Sample Specific Comments	TOTAL # BOTTLES
27132-01	MAE-42	11/11/14	1000	GW	JPK	X		3
Container Type						V		
Preservative						B		

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	11/11/14 1500	MSM [signature] AAL	11/11/14 16:00
MSM	11/11/14 1720	[signature]	11/11/14 17:20

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

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

ANALYTICAL REPORT

Lab Number:	L1427275
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	LANDMARK CENTER
Project Number:	5512.9.01
Report Date:	11/18/14

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: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1427275-01	MAE-17	WATER	BOSTON, MA	11/12/14 08:15	11/12/14

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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. All specific QC 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. 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 (with the exception of Air canisters) 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. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name: LANDMARK CENTER **Lab Number:** L1427275
Project Number: 5512.9.01 **Report Date:** 11/18/14

Case Narrative (continued)

Report Submission

Per client request, a sample-by-sample results summary is provided as an addendum to this report.

Semivolatile Organics

The WG740633-2/-3 LCS/LCSD recoveries, associated with L1427275-01, are below the acceptance criteria for benzidine (7%/5%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.

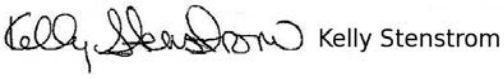
Metals

The WG740158-3 Laboratory Duplicate RPDs, performed on L1427275-01, are outside the acceptance criteria for chromium (35%). The elevated RPDs have been attributed to the non-homogeneous nature of the sample utilized for the laboratory duplicate.

Cyanide, Total

The WG740168-3 MS recovery (78%), performed on L1427275-01, is outside the acceptance criteria; however, the associated LCS recovery is within overall method allowances. No further action was required.

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:  Kelly Stenstrom

Title: Technical Director/Representative Date: 11/18/14

ORGANICS

VOLATILES

Project Name: LANDMARK CENTER
Project Number: 5512.9.01
Lab Number: L1427275
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427275-01
Client ID: MAE-17
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 11/14/14 11:41
Analyst: MM

Date Collected: 11/12/14 08:15
Date Received: 11/12/14
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
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	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
Vinyl chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	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
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
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Acetone	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	104		70-130

Project Name: LANDMARK CENTER
Lab Number: L1427275
Project Number: 5512.9.01
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427275-01
Client ID: MAE-17
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8260C-SIM(M)
Analytical Date: 11/14/14 11:41
Analyst: MM

Date Collected: 11/12/14 08:15
Date Received: 11/12/14
Field Prep: Not Specified

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: LANDMARK CENTER
Lab Number: L1427275
Project Number: 5512.9.01
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID:	L1427275-01	Date Collected:	11/12/14 08:15
Client ID:	MAE-17	Date Received:	11/12/14
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	14,504.1	Extraction Date:	11/18/14 10:00
Analytical Date:	11/18/14 15:00		
Analyst:	NS		

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: LANDMARK CENTER
Project Number: 5512.9.01
Lab Number: L1427275
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C-SIM(M)
Analytical Date: 11/14/14 06:49
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG740557-3					
1,4-Dioxane	ND		ug/l	3.0	--

Project Name: LANDMARK CENTER
Project Number: 5512.9.01
Lab Number: L1427275
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/14/14 06:49
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG740562-3					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Acetone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.5	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 11/14/14 06:49
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG740562-3					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	102		70-130

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 11/18/14 14:07
Analyst: NS

Extraction Date: 11/18/14 10:00

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 01 Batch: WG741548-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK CENTER

Project Number: 5512.9.01

Lab Number: L1427275

Report Date: 11/18/14

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: WG740557-1 WG740557-2								
1,4-Dioxane	117		122		70-130	4		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Methylene chloride	93		96		70-130	3		20
1,1-Dichloroethane	93		96		70-130	3		20
Chloroform	93		96		70-130	3		20
Carbon tetrachloride	80		88		63-132	10		20
1,2-Dichloropropane	82		96		70-130	16		20
Dibromochloromethane	82		85		63-130	4		20
1,1,2-Trichloroethane	90		90		70-130	0		20
2-Chloroethylvinyl ether	95		97		70-130	2		20
Tetrachloroethene	85		88		70-130	3		20
Chlorobenzene	90		91		75-130	1		25
Trichlorofluoromethane	87		90		62-150	3		20
1,2-Dichloroethane	98		100		70-130	2		20
1,1,1-Trichloroethane	88		92		67-130	4		20
Bromodichloromethane	84		89		67-130	6		20
trans-1,3-Dichloropropene	88		91		70-130	3		20
cis-1,3-Dichloropropene	91		95		70-130	4		20
1,1-Dichloropropene	93		95		70-130	2		20
Bromoform	70		76		54-136	8		20
1,1,2,2-Tetrachloroethane	90		91		67-130	1		20
Benzene	94		96		70-130	2		25
Toluene	91		92		70-130	1		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Ethylbenzene	91		91		70-130	0		20
Chloromethane	97		98		64-130	1		20
Bromomethane	70		75		39-139	7		20
Vinyl chloride	91		92		55-140	1		20
Chloroethane	94		95		55-138	1		20
1,1-Dichloroethene	88		92		61-145	4		25
trans-1,2-Dichloroethene	92		95		70-130	3		20
Trichloroethene	92		94		70-130	2		25
1,2-Dichlorobenzene	89		89		70-130	0		20
1,3-Dichlorobenzene	88		88		70-130	0		20
1,4-Dichlorobenzene	89		89		70-130	0		20
Methyl tert butyl ether	93		94		63-130	1		20
p/m-Xylene	88		88		70-130	0		20
o-Xylene	87		88		70-130	1		20
cis-1,2-Dichloroethene	93		96		70-130	3		20
Dibromomethane	90		95		70-130	5		20
1,4-Dichlorobutane	94		94		70-130	0		20
1,2,3-Trichloropropane	93		91		64-130	2		20
Styrene	89		90		70-130	1		20
Dichlorodifluoromethane	89		86		36-147	3		20
Acetone	125		132		58-148	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Carbon disulfide	82		88		51-130	7		20
2-Butanone	114		114		63-138	0		20
Vinyl acetate	92		95		70-130	3		20
4-Methyl-2-pentanone	98		103		59-130	5		20
2-Hexanone	105		109		57-130	4		20
Ethyl methacrylate	96		95		70-130	1		20
Acrylonitrile	99		101		70-130	2		20
Bromochloromethane	91		96		70-130	5		20
Tetrahydrofuran	110		107		58-130	3		20
2,2-Dichloropropane	92		96		63-133	4		20
1,2-Dibromoethane	89		88		70-130	1		20
1,3-Dichloropropane	93		95		70-130	2		20
1,1,1,2-Tetrachloroethane	83		87		64-130	5		20
Bromobenzene	86		84		70-130	2		20
n-Butylbenzene	92		90		53-136	2		20
sec-Butylbenzene	86		86		70-130	0		20
tert-Butylbenzene	86		85		70-130	1		20
o-Chlorotoluene	86		86		70-130	0		20
p-Chlorotoluene	90		90		70-130	0		20
1,2-Dibromo-3-chloropropane	79		76		41-144	4		20
Hexachlorobutadiene	86		86		63-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740562-1 WG740562-2								
Isopropylbenzene	92		91		70-130	1		20
p-Isopropyltoluene	85		83		70-130	2		20
Naphthalene	95		95		70-130	0		20
n-Propylbenzene	88		88		69-130	0		20
1,2,3-Trichlorobenzene	90		86		70-130	5		20
1,2,4-Trichlorobenzene	87		87		70-130	0		20
1,3,5-Trimethylbenzene	87		86		64-130	1		20
1,3,5-Trichlorobenzene	89		86		70-130	3		20
1,2,4-Trimethylbenzene	87		88		70-130	1		20
trans-1,4-Dichloro-2-butene	98		99		70-130	1		20
Ethyl ether	94		96		59-134	2		20
Methyl Acetate	105		107		70-130	2		20
Ethyl Acetate	104		106		70-130	2		20
Isopropyl Ether	93		94		70-130	1		20
Cyclohexane	94		96		70-130	2		20
Tert-Butyl Alcohol	112		117		70-130	4		20
Ethyl-Tert-Butyl-Ether	93		94		70-130	1		20
Tertiary-Amyl Methyl Ether	92		96		66-130	4		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	91		91		70-130	0		20
Methyl cyclohexane	93		93		70-130	0		20
1,4-Diethylbenzene	88		86		70-130	2		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK CENTER

Project Number: 5512.9.01

Lab Number: L1427275

Report Date: 11/18/14

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: WG740562-1 WG740562-2								
4-Ethyltoluene	86		86		70-130	0		20
1,2,4,5-Tetramethylbenzene	89		87		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		99		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	95		94		70-130
Dibromofluoromethane	99		104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK CENTER

Project Number: 5512.9.01

Lab Number: L1427275

Report Date: 11/18/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 01		Batch: WG741548-2						
1,2-Dibromoethane	106		-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	95		-		70-130	-		20	A

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG741548-3 QC Sample: L1427275-01 Client ID: MAE-17													
1,2-Dibromoethane	ND	0.252	0.282	112		-	-		70-130	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.252	0.238	94		-	-		70-130	-		20	A

SEMIVOLATILES

Project Name: LANDMARK CENTER
Lab Number: L1427275
Project Number: 5512.9.01
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID:	L1427275-01	Date Collected:	11/12/14 08:15
Client ID:	MAE-17	Date Received:	11/12/14
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	1,8270D	Extraction Date:	11/14/14 11:42
Analytical Date:	11/15/14 02:06		
Analyst:	JB		

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.1	--	1
Butyl benzyl phthalate	ND		ug/l	5.2	--	1
Di-n-butylphthalate	ND		ug/l	5.2	--	1
Di-n-octylphthalate	ND		ug/l	5.2	--	1
Diethyl phthalate	ND		ug/l	5.2	--	1
Dimethyl phthalate	ND		ug/l	5.2	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	36		10-120
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	97		15-120
2,4,6-Tribromophenol	82		10-120
4-Terphenyl-d14	99		41-149

Project Name: LANDMARK CENTER
Project Number: 5512.9.01
Lab Number: L1427275
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427275-01
Client ID: MAE-17
Sample Location: BOSTON, MA
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 11/14/14 21:06
Analyst: KR

Date Collected: 11/12/14 08:15
Date Received: 11/12/14
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 11/14/14 11:38

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	97		15-120
2,4,6-Tribromophenol	108		10-120
4-Terphenyl-d14	114		41-149

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 11/14/14 19:01
Analyst: JB

Extraction Method: EPA 3510C
Extraction Date: 11/14/14 11:42

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG740633-1					
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	--
Dimethyl phthalate	ND		ug/l	5.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	35		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	85		15-120
2,4,6-Tribromophenol	91		10-120
4-Terphenyl-d14	95		41-149

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 11/14/14 18:11
Analyst: KR

Extraction Method: EPA 3510C
Extraction Date: 11/14/14 11:38

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01 Batch: WG740636-1					
Acenaphthene	ND		ug/l	0.20	--
Fluoranthene	ND		ug/l	0.20	--
Naphthalene	ND		ug/l	0.20	--
Benzo(a)anthracene	ND		ug/l	0.20	--
Benzo(a)pyrene	ND		ug/l	0.20	--
Benzo(b)fluoranthene	ND		ug/l	0.20	--
Benzo(k)fluoranthene	ND		ug/l	0.20	--
Chrysene	ND		ug/l	0.20	--
Acenaphthylene	ND		ug/l	0.20	--
Anthracene	ND		ug/l	0.20	--
Benzo(ghi)perylene	ND		ug/l	0.20	--
Fluorene	ND		ug/l	0.20	--
Phenanthrene	ND		ug/l	0.20	--
Dibenzo(a,h)anthracene	ND		ug/l	0.20	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.20	--
Pyrene	ND		ug/l	0.20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	44		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	88		15-120
2,4,6-Tribromophenol	100		10-120
4-Terphenyl-d14	109		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740633-2 WG740633-3								
Benzidine	**7**	Q	**5**	Q	10-75	**44**	Q	30
1,2,4-Trichlorobenzene	49		60		39-98	20		30
Bis(2-chloroethyl)ether	57		63		40-140	10		30
1,2-Dichlorobenzene	50		63		40-140	23		30
1,3-Dichlorobenzene	48		60		40-140	22		30
1,4-Dichlorobenzene	48		60		36-97	22		30
3,3'-Dichlorobenzidine	45		51		40-140	13		30
2,4-Dinitrotoluene	67		75		24-96	11		30
2,6-Dinitrotoluene	71		78		40-140	9		30
Azobenzene	82		90		40-140	9		30
4-Chlorophenyl phenyl ether	62		70		40-140	12		30
4-Bromophenyl phenyl ether	63		71		40-140	12		30
Bis(2-chloroisopropyl)ether	62		72		40-140	15		30
Bis(2-chloroethoxy)methane	68		79		40-140	15		30
Hexachlorocyclopentadiene	**30**	Q	40		40-140	29		30
Isophorone	73		82		40-140	12		30
Nitrobenzene	68		75		40-140	10		30
NitrosoDiPhenylAmine(NDPA)/DPA	68		76		40-140	11		30
Bis(2-ethylhexyl)phthalate	71		76		40-140	7		30
Butyl benzyl phthalate	71		79		40-140	11		30
Di-n-butylphthalate	67		75		40-140	11		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740633-2 WG740633-3								
Di-n-octylphthalate	71		77		40-140	8		30
Diethyl phthalate	71		79		40-140	11		30
Dimethyl phthalate	68		74		40-140	8		30
Aniline	**26**	Q	**21**	Q	40-140	21		30
4-Chloroaniline	67		66		40-140	2		30
2-Nitroaniline	71		80		52-143	12		30
3-Nitroaniline	68		78		25-145	14		30
4-Nitroaniline	55		60		51-143	9		30
Dibenzofuran	67		76		40-140	13		30
n-Nitrosodimethylamine	46		50		22-74	8		30
2,4,6-Trichlorophenol	75		86		30-130	14		30
P-Chloro-M-Cresol	80		89		23-97	11		30
2-Chlorophenol	70		75		27-123	7		30
2,4-Dichlorophenol	74		81		30-130	9		30
2,4-Dimethylphenol	82		90		30-130	9		30
2-Nitrophenol	69		79		30-130	14		30
4-Nitrophenol	43		48		10-80	11		30
2,4-Dinitrophenol	60		75		20-130	22		30
4,6-Dinitro-o-cresol	73		81		20-164	10		30
Phenol	33		36		12-110	9		30
2-Methylphenol	65		76		30-130	16		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK CENTER

Project Number: 5512.9.01

Lab Number: L1427275

Report Date: 11/18/14

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: WG740633-2 WG740633-3								
3-Methylphenol/4-Methylphenol	58		68		30-130	16		30
2,4,5-Trichlorophenol	83		83		30-130	0		30
Benzoic Acid	28		33		10-164	16		30
Benzyl Alcohol	70		80		26-116	13		30
Carbazole	70		77		55-144	10		30
Pyridine	28		21		10-66	29		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	43		48		21-120
Phenol-d6	33		36		10-120
Nitrobenzene-d5	73		82		23-120
2-Fluorobiphenyl	62		72		15-120
2,4,6-Tribromophenol	64		69		10-120
4-Terphenyl-d14	64		74		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740636-2 WG740636-3								
Acenaphthene	70		68		37-111	3		40
2-Chloronaphthalene	74		71		40-140	4		40
Fluoranthene	74		76		40-140	3		40
Hexachlorobutadiene	61		55		40-140	10		40
Naphthalene	64		61		40-140	5		40
Benzo(a)anthracene	73		74		40-140	1		40
Benzo(a)pyrene	74		76		40-140	3		40
Benzo(b)fluoranthene	76		78		40-140	3		40
Benzo(k)fluoranthene	73		76		40-140	4		40
Chrysene	68		70		40-140	3		40
Acenaphthylene	76		73		40-140	4		40
Anthracene	68		71		40-140	4		40
Benzo(ghi)perylene	73		74		40-140	1		40
Fluorene	77		78		40-140	1		40
Phenanthrene	65		66		40-140	2		40
Dibenzo(a,h)anthracene	80		82		40-140	2		40
Indeno(1,2,3-cd)pyrene	79		81		40-140	3		40
Pyrene	72		74		26-127	3		40
1-Methylnaphthalene	68		66		40-140	3		40
2-Methylnaphthalene	72		69		40-140	4		40
Pentachlorophenol	72		74		9-103	3		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK CENTER

Project Number: 5512.9.01

Lab Number: L1427275

Report Date: 11/18/14

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: WG740636-2 WG740636-3								
Hexachlorobenzene	64		63		40-140	2		40
Hexachloroethane	60		59		40-140	2		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	40		43		21-120
Phenol-d6	27		29		10-120
Nitrobenzene-d5	58		60		23-120
2-Fluorobiphenyl	73		73		15-120
2,4,6-Tribromophenol	79		81		10-120
4-Terphenyl-d14	83		86		41-149

PCBS

Project Name: LANDMARK CENTER
Project Number: 5512.9.01
Lab Number: L1427275
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID:	L1427275-01	Date Collected:	11/12/14 08:15
Client ID:	MAE-17	Date Received:	11/12/14
Sample Location:	BOSTON, MA	Field Prep:	Not Specified
Matrix:	Water	Extraction Method:	EPA 608
Analytical Method:	5,608	Extraction Date:	11/13/14 01:46
Analytical Date:	11/14/14 18:07	Cleanup Method:	EPA 3665A
Analyst:	JT	Cleanup Date:	11/13/14
		Cleanup Method:	EPA 3660B
		Cleanup Date:	11/13/14

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	72		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

Method Blank Analysis
Batch Quality Control

Analytical Method: 5,608
Analytical Date: 11/14/14 18:45
Analyst: JT

Extraction Method: EPA 608
Extraction Date: 11/13/14 01:46
Cleanup Method: EPA 3665A
Cleanup Date: 11/13/14
Cleanup Method: EPA 3660B
Cleanup Date: 11/13/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG740068-1						
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	52		30-150	B
Decachlorobiphenyl	61		30-150	B

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740068-3 QC Sample: L1427275-01 Client ID: MAE-17													
Aroclor 1016	ND	2	1.60	80		-	-		40-140	-		50	B
Aroclor 1260	ND	2	1.58	79		-	-		40-140	-		50	B

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76				30-150	B
Decachlorobiphenyl	73				30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK CENTER

Project Number: 5512.9.01

Lab Number: L1427275

Report Date: 11/18/14

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: WG740068-2									
Aroclor 1016	66		-		40-140	-		50	B
Aroclor 1260	70		-		40-140	-		50	B

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52				30-150	B
Decachlorobiphenyl	59				30-150	B

Lab Duplicate Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits	
Polychlorinated Biphenyls by GC - Westborough Lab	Associated sample(s): 01	QC Batch ID: WG740068-4		QC Sample: L1427275-01		Client ID: MAE-17	
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	72		64		30-150	B
Decachlorobiphenyl	65		62		30-150	B

METALS

Project Name: LANDMARK CENTER
Project Number: 5512.9.01
Lab Number: L1427275
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427275-01
Client ID: MAE-17
Sample Location: BOSTON, MA
Matrix: Water
Date Collected: 11/12/14 08:15
Date Received: 11/12/14
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	0.0008		mg/l	0.0005	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM
Arsenic, Total	0.0010		mg/l	0.0005	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM
Cadmium, Total	ND		mg/l	0.0002	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM
Chromium, Total	0.0027		mg/l	0.0010	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM
Copper, Total	ND		mg/l	0.0010	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM
Iron, Total	0.89		mg/l	0.05	--	1	11/13/14 09:11	11/13/14 13:45	EPA 3005A	19,200.7	BC
Lead, Total	ND		mg/l	0.0010	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM
Mercury, Total	ND		mg/l	0.00020	--	1	11/13/14 10:19	11/13/14 16:50	EPA 245.1	3,245.1	AK
Nickel, Total	0.0007		mg/l	0.0005	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM
Selenium, Total	ND		mg/l	0.005	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM
Silver, Total	ND		mg/l	0.0003	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM
Zinc, Total	ND		mg/l	0.0100	--	1	11/13/14 09:11	11/13/14 16:48	EPA 3005A	1,6020A	BM

Project Name: LANDMARK CENTER
Project Number: 5512.9.01
Lab Number: L1427275
Report Date: 11/18/14

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: WG740158-1										
Antimony, Total	ND		mg/l	0.0005	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM
Arsenic, Total	ND		mg/l	0.0005	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM
Cadmium, Total	ND		mg/l	0.0002	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM
Chromium, Total	ND		mg/l	0.0010	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM
Copper, Total	ND		mg/l	0.0010	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM
Lead, Total	ND		mg/l	0.0010	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM
Nickel, Total	ND		mg/l	0.0005	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM
Selenium, Total	ND		mg/l	0.005	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM
Silver, Total	ND		mg/l	0.0003	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM
Zinc, Total	ND		mg/l	0.0100	--	1	11/13/14 09:11	11/13/14 16:39	1,6020A	BM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Westborough Lab for sample(s): 01 Batch: WG740159-1										
Iron, Total	ND		mg/l	0.05	--	1	11/13/14 09:11	11/13/14 13:37	19,200.7	BC

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: WG740187-1										
Mercury, Total	ND		mg/l	0.00020	--	1	11/13/14 10:19	11/13/14 16:39	3,245.1	AK

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK CENTER

Project Number: 5512.9.01

Lab Number: L1427275

Report Date: 11/18/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG740158-2								
Antimony, Total	98		-		80-120	-		
Arsenic, Total	87		-		80-120	-		
Cadmium, Total	104		-		80-120	-		
Chromium, Total	88		-		80-120	-		
Copper, Total	93		-		80-120	-		
Lead, Total	95		-		80-120	-		
Nickel, Total	89		-		80-120	-		
Selenium, Total	99		-		80-120	-		
Silver, Total	91		-		80-120	-		
Zinc, Total	94		-		80-120	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG740159-2								
Iron, Total	100		-		85-115	-		
Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG740187-2								
Mercury, Total	93		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740158-4 QC Sample: L1427275-01 Client ID: MAE-17												
Antimony, Total	0.0008	0.5	0.4498	90		-	-		75-125	-		20
Arsenic, Total	0.0010	0.12	0.1148	95		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.0468	92		-	-		75-125	-		20
Chromium, Total	0.0027	0.2	0.1790	88		-	-		75-125	-		20
Copper, Total	ND	0.25	0.2257	90		-	-		75-125	-		20
Lead, Total	ND	0.51	0.4483	88		-	-		75-125	-		20
Nickel, Total	0.0007	0.5	0.4388	88		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.093	78		-	-		75-125	-		20
Silver, Total	ND	0.05	0.0405	81		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.4567	91		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740159-4 QC Sample: L1427275-01 Client ID: MAE-17												
Iron, Total	0.89	1	1.8	91		-	-		75-125	-		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740187-4 QC Sample: L1427316-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00489	98		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740158-3 QC Sample: L1427275-01 Client ID: MAE-17						
Antimony, Total	0.0008	0.0007	mg/l	16		20
Arsenic, Total	0.0010	0.0009	mg/l	9		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.0027	0.0019	mg/l	**35**	Q	20
Copper, Total	ND	ND	mg/l	NC		20
Lead, Total	ND	ND	mg/l	NC		20
Nickel, Total	0.0007	0.0006	mg/l	12		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740159-3 QC Sample: L1427275-01 Client ID: MAE-17						
Iron, Total	0.89	0.87	mg/l	2		20
Total Metals - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740187-3 QC Sample: L1427316-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

SAMPLE RESULTS

Lab ID: L1427275-01
Client ID: MAE-17
Sample Location: BOSTON, MA
Matrix: Water

Date Collected: 11/12/14 08:15
Date Received: 11/12/14
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	11/13/14 15:41	30,2540D	MP
Cyanide, Total	0.005		mg/l	0.005	--	1	11/13/14 12:08	11/13/14 15:32	30,4500CN-CE	ML
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	11/13/14 01:58	30,4500CL-D	LH
TPH	ND		mg/l	4.00	--	1	11/13/14 07:45	11/14/14 16:30	74,1664A	ML
Phenolics, Total	ND		mg/l	0.030	--	1	11/14/14 11:00	11/14/14 13:53	4,420.1	MP
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/12/14 20:40	11/12/14 20:59	30,3500CR-D	MR
Anions by Ion Chromatography - Westborough Lab										
Chloride	1250		mg/l	25.0	--	50	-	11/13/14 14:25	44,300.0	AU

Project Name: LANDMARK CENTER
Project Number: 5512.9.01
Lab Number: L1427275
Report Date: 11/18/14

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: WG740013-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	11/12/14 20:40	11/12/14 20:58	30,3500CR-D	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG740070-3										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	11/13/14 01:58	30,4500CL-D	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG740126-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	11/13/14 15:41	30,2540D	MP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG740168-1										
Cyanide, Total	ND		mg/l	0.005	--	1	11/13/14 12:08	11/13/14 15:06	30,4500CN-CE	ML
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG740204-1										
TPH	ND		mg/l	4.00	--	1	11/13/14 07:45	11/14/14 16:30	74,1664A	ML
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG740425-1										
Chloride	ND		mg/l	0.500	--	1	-	11/13/14 13:49	44,300.0	AU
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG740598-1										
Phenolics, Total	ND		mg/l	0.030	--	1	11/14/14 11:00	11/14/14 13:51	4,420.1	MP

Lab Control Sample Analysis

Batch Quality Control

Project Name: LANDMARK CENTER

Project Number: 5512.9.01

Lab Number: L1427275

Report Date: 11/18/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG740013-2								
Chromium, Hexavalent	98		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG740070-1								
Chlorine, Total Residual	101		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG740168-2								
Cyanide, Total	97		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG740204-2								
TPH	75		-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG740425-2								
Chloride	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG740598-2								
Phenolics, Total	95		-		70-130	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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: WG740013-4 QC Sample: L1427275-01 Client ID: MAE-17												
Chromium, Hexavalent	ND	0.1	0.098	98		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740168-3 QC Sample: L1427275-01 Client ID: MAE-17												
Cyanide, Total	0.005	0.2	0.162	**78**	Q	-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740204-4 QC Sample: L1427275-01 Client ID: MAE-17												
TPH	ND	21.1	16.5	78		-	-		64-132	-		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740425-3 QC Sample: L1425771-02 Client ID: MS Sample												
Chloride	512	200	723	106		-	-		40-151	-		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740598-4 QC Sample: L1427275-01 Client ID: MAE-17												
Phenolics, Total	ND	0.4	0.37	92		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740013-3 QC Sample: L1427275-01 Client ID: MAE-17						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740070-2 QC Sample: L1427275-01 Client ID: MAE-17						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740126-2 QC Sample: L1427272-01 Client ID: DUP Sample						
Solids, Total Suspended	1800	1500	mg/l	18		29
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740168-4 QC Sample: L1427260-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740204-3 QC Sample: L1427317-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740425-4 QC Sample: L1425771-02 Client ID: DUP Sample						
Chloride	512	512	mg/l	0		18
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG740598-3 QC Sample: L1427275-01 Client ID: MAE-17						
Phenolics, Total	ND	ND	mg/l	NC		20

Project Name: LANDMARK CENTER
Project Number: 5512.9.01

Lab Number: L1427275
Report Date: 11/18/14

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(*)
L1427275-01A	Vial HCl preserved	A	N/A	3.1	Y	Absent	8260(14)
L1427275-01B	Vial HCl preserved	A	N/A	3.1	Y	Absent	8260(14)
L1427275-01C	Vial HCl preserved	A	N/A	3.1	Y	Absent	8260(14)
L1427275-01D	Vial HCl preserved	A	N/A	3.1	Y	Absent	8260-SIM(14)
L1427275-01E	Vial HCl preserved	A	N/A	3.1	Y	Absent	8260-SIM(14)
L1427275-01F	Vial HCl preserved	A	N/A	3.1	Y	Absent	8260-SIM(14)
L1427275-01G	Vial Na2S2O3 preserved	A	N/A	3.1	Y	Absent	504(14)
L1427275-01H	Vial Na2S2O3 preserved	A	N/A	3.1	Y	Absent	504(14)
L1427275-01I	Plastic 250ml HNO3 preserved	A	<2	3.1	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)
L1427275-01K	Amber 1000ml Na2S2O3	A	7	3.1	Y	Absent	PCB-608(7)
L1427275-01L	Amber 1000ml Na2S2O3	A	7	3.1	Y	Absent	PCB-608(7)
L1427275-01M	Amber 1000ml HCl preserved	A	N/A	3.1	Y	Absent	TPH-1664(28)
L1427275-01N	Amber 1000ml HCl preserved	A	N/A	3.1	Y	Absent	TPH-1664(28)
L1427275-01O	Amber 1000ml H2SO4 preserved	A	<2	3.1	Y	Absent	TPHENOL-420(28)
L1427275-01Q	Plastic 500ml unpreserved	A	7	3.1	Y	Absent	HEXCR-3500(1)
L1427275-01R	Plastic 250ml NaOH preserved	A	>12	3.1	Y	Absent	TCN-4500(14)
L1427275-01S	Plastic 500ml unpreserved	A	7	3.1	Y	Absent	CL-300(28),TRC-4500(1)
L1427275-01T	Plastic 950ml unpreserved	A	7	3.1	Y	Absent	TSS-2540(7)
L1427275-01U	Amber 1000ml unpreserved	A	7	3.1	Y	Absent	8270TCL(7)
L1427275-01V	Amber 1000ml unpreserved	A	7	3.1	Y	Absent	8270TCL(7)
L1427275-01W	Amber 1000ml unpreserved	A	7	3.1	Y	Absent	8270TCL-SIM(7)
L1427275-01X	Amber 1000ml unpreserved	A	7	3.1	Y	Absent	8270TCL-SIM(7)

*Values in parentheses indicate holding time in days

Project Name:	LANDMARK CENTER	**Lab Number:**	L1427275
Project Number:	5512.9.01	**Report Date:**	11/18/14

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

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

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. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

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.

Report Format: Data Usability Report

Project Name:	LANDMARK CENTER	**Lab Number:**	L1427275
Project Number:	5512.9.01	**Report Date:**	11/18/14

Data Qualifiers

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.

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:	LANDMARK CENTER	**Lab Number:**	L1427275
Project Number:	5512.9.01	**Report Date:**	11/18/14

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.

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.

Certification Information

Last revised April 15, 2014

The following analytes are not included in our NELAP Scope of Accreditation:

Westborough Facility
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 8260C: 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.
EPA 8330A/B: PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.
EPA 8270D: 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 625: 4-Chloroaniline, 4-Methylphenol.
SM4500: Soil: Total Phosphorus, TKN, NO2, NO3.
EPA 9071: Total Petroleum Hydrocarbons, Oil & Grease.

Mansfield Facility
EPA 8270D: Biphenyl.
EPA 2540D: TSS
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

Drinking Water
EPA 200.8: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7**: Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;
EPA 300.0: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

Non-Potable Water
EPA 200.8: Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;
EPA 200.7: Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;
EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**
EPA 624: Volatile Halocarbons & Aromatics,
EPA 608: 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
EPA 625: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF**.

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL

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

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

Date Rec'd in Lab: 11/12/14

ALPHA Job #: L1427275

Client Information

Client: McPhail Associates, LLC

Address: 2269 Massachusetts Ave, Cambridge, MA 02140

Phone: 617-868-1420

Fax:

Email: JGL@mcphailgeo.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK CENTER

Project Location: Boston, MA

Project #: 5512.9.01

Project Manager: Joe Lombardo

ALPHA Quote #:

Turn-Around Time

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

Date Due: 11/19/14 Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL ☒ ADEx ☐ Add'l Deliverables

RGP

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program ~~DEP/MCP~~ Criteria RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ☐ No Are MCP Analytical Methods Required?

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

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

Other Project Specific Requirements/Comments/Detection Limits:

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Metals	TSS-2540	HexCr-3500	TRC-4500 Cl-300	8260-SIM	PCBs-608	TCN-4500	8270/TCL-SIM	8270/TCL	TPH-1664	TPhenol-420	8260	Sample Specific Comments	TOTAL # BOTTLES
27275-01	MAE-17	11/12/14	0815	GW	JPK	X	X	X	X	X	X	X	X	X	X	X	X		20

ANALYSIS

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type	P	P	P	P	V	A	P	A	A	A	A	V
Preservative	C	A	A	A	B	H	E	A	A	B	D	B

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/12/14 1530		11/12/14 1530
	11/12/14 1745		11/13/14 1745

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

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

CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 11/12/14

ALPHA Job #: L1427275

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Ave, Cambridge, MA 02140
Phone: 617-868-1420
Fax:
Email: JGL@mcphailgeo.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK CENTER
Project Location: BOSTON, MA
Project #: 5512.9.01
Project Manager: Joe Lombardo
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/19/14 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 DEP/MCP Criteria RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☑ Yes ☐ No Are MCP Analytical Methods Required?
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If MS is required, indicate in Sample Specific Comments which samples and what tests MS to be performed.
(Note: All ***CAM*** methods for inorganic analyses require MS every 20 soil samples)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS 504	Sample Specific Comments	TOTAL # BOTTLES
01	MAE-17	11/12/14	0815	GW	JPK	X		2

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

Container Type	V
Preservative	H

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/12/14 1550	ARL	11/12/14 1730
	11/12/14 1720		11/12/14 1745

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

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

CHAIN OF CUSTODY

PAGE 1 OF 2

Date Rec'd in Lab: 11/12/14

ALPHA Job #: L1427275

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Ave, Cambridge, MA 02140
Phone: 617-868-1420
Fax:
Email: JGL@mcphailgeo.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK CENTER
Project Location: Boston, MA
Project #: 5512.9.01
Project Manager: Joe Lombardo
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/19/14 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 DEP/MCP Criteria RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Metals	TSS-2540	HexCr-3500	TRC-4500 Cl-300	8260-SIM	PCBs-608	TCN-4500	8270/TCL-SIM	8270/TCL	TPH-1664	TPhenol-420	8260	Sample Specific Comments	TOTAL # BOTTLES
27275-01	MAE-17	11/12/14	0815	GW	JPK	X	X	X	X	X	X	X	X	X	X	X	X		20

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

Container Type	P	P	P	P	V	A	P	A	A	A	A	V	
Preservative	C	A	A	A	B	H	E	A	A	B	D	B	

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/12/14 1530		11/12/14 1530
	11/12/14 1745		11/12/14 1745

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

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

CHAIN OF CUSTODY

PAGE 2 OF 2

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 11/12/14

ALPHA Job #: L1427275

Client Information

Client: McPhail Associates, LLC
Address: 2269 Massachusetts Ave, Cambridge, MA 02140
Phone: 617-868-1420
Fax:
Email: JGL@mcphailgeo.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: LANDMARK CENTER
Project Location: BOSTON, MA
Project #: 5512.9.01
Project Manager: Joe Lombardo
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 11/19/14 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 DEP/MCP Criteria RCS-1

MA MCP PRESUMPTIVE CERTAINTY --- CT REASONABLE CONFIDENCE PROTO

☒ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Is Matrix Spike (MS) Required on this SDG? (If yes see note in Comments)
☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS 504	SAMPLE HANDLING / Sample Specific Comments	TOTAL # BOTTLES
01	MAE-17	11/12/14	0815	GW	JPK	X		2

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

Container Type	V
Preservative	H

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/12/14 1550		11/12/14 1730
	11/12/14 1720		11/12/14 1745

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

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

APPENDIX E:

BEST MANAGEMENT PRACTICE PLAN

A Notice of Intent for a Remediation General Permit (RGP) under the National Pollutant Discharge Elimination System (NPDES) has been submitted to the US Environmental Protection Agency (EPA) in anticipation of temporary construction dewatering that will occur during redevelopment of the Landmark Center property located at 401 Park Drive in Boston, Massachusetts. This Best Management Practices Plan (BMPP) has been prepared as an Appendix to the RGP and will be posted at the site during the time period that temporary construction dewatering is occurring at the site.

Water Treatment and Management

During construction of the proposed common foundation, dewatering effluent is anticipated to be pumped from localized sumps and trenches within the excavation directly into a settling tank. The effluent will then flow through any necessary treatment systems and discharge through hoses or piping connected into the storm water drains located beneath Fullerton Street and the southern portion of the subject site. Based upon a review of the City of Boston stormwater drainage plan, the above referenced stormwater drain ultimately discharges into the Charles River. Dewatering effluent treatment will consist of bag filters and an ion exchange filter to remove suspended soil particulates, cyanide and total iron prior to off-site discharge.

Discharge Monitoring and Compliance

Regular sampling and testing will be conducted at the influent to the system and the treated effluent as required by the RGP. This includes laboratory testing required within days 1 and 3 of initial discharge and the monthly testing to be conducted through the end of the scheduled discharge.

Monitoring will include checking the condition of the treatment system, assessing the need for treatment system adjustments based on monitoring data, observing and recording daily flow rates and discharge quantities, and verifying the flow path of the discharged effluent.

The total monthly flow will be monitored by checking and documenting the flow through the flow meter to be installed on the system. Flow will be maintained below the "system design flow" by regularly monitoring flow and adjusting the amount of construction dewatering as needed. Monthly monitoring reports will be compiled and maintained at the site.

System Maintenance

A number of methods will be used to minimize the potential for violations during the term of this permit discharge. Scheduled regular maintenance of the treatment system will be conducted to verify proper operation. Regular maintenance will include checking the condition of the treatment system equipment such as the settling tanks, bag filters, ion exchange filter system, hoses, pumps, and flow meters. Equipment will be monitored daily for potential issues or unscheduled maintenance requirements.

Employees who have direct or indirect responsibility for ensuring compliance with the RGP will be trained by the Contractor.

Miscellaneous Items

It is anticipated that the erosion control measures and the nature of the site will minimize potential runoff to or from the site. The project specifications also include requirements for erosion control. Site security for the treatment system will be addressed within the overall site security plan.

No adverse effects on designated uses of surrounding surface water bodies is anticipated. The nearest surface water body is the Muddy River which is located approximately 250 feet to the southeast of the subject site. Dewatering effluent will be pumped into a settling tank. Water within the settling tank will pumped through bag filters and an ion exchange filter in series prior to discharge into the storm drains.

Management of Treatment System Materials

Dewatering effluent will be pumped directly to the treatment system from the excavation with use of hoses and localized sumps to minimize handling. The Contractor will establish staging areas for equipment or materials storage that may be possible sources of pollution away from any dewatering activities, to the extent practicable.

Sediment from the tank used in the treatment system will be characterized and removed from the site to an appropriate receiving facility, in accordance with applicable laws and regulations. The spent resin from the ion exchange filter will be recycled and/or removed from the site to an appropriate receiving facility. Bag filters will be disposed of as necessary.