



Geotechnical Engineers

**NOTICE OF INTENT FOR DISCHARGE  
UNDER MASSACHUSETTS  
DEWATERING GENERAL PERMIT  
MAG070000**

**CODMAN SQUARE HEALTH AND  
EDUCATION CENTER  
12-16 EPPING STREET AND 26  
NORFOLK STREET**

**DORCHESTER      MASSACHUSETTS**

to

**U.S. Environmental Protection Agency,  
Massachusetts Department of  
Environmental Protection**

October 24, 2011

Project No. 5237



Geotechnical Engineers

October 24, 2011

U.S Environmental Protection Agency  
Office of Ecosystem Protection (OEP06-3)  
5 Post Office Square  
Boston, MA 02109-3912

Attention: Dewatering GP Processing

Massachusetts Department of Environmental Protection  
Division of Watershed Management  
627 Main Street  
Worcester, MA 01608

Attention: Mr. Robert D. Kubit

Reference: Codman Square Health and Education Center; Dorchester, Massachusetts  
Notice of Intent for Construction Dewatering Discharge Under Massachusetts General  
Discharge MAG070000

Ladies and Gentlemen:

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

These services were performed and this permit application was prepared in accordance with authorization of Codman Square Health Center. These services are subject to the limitations contained in **Appendix A**.

The required NOI Form and the Massachusetts DEP Transmittal Form for Permit Application and Payment are included in **Appendix B**.

**Applicant/Owner**

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

Codman Square Health Center  
637 Washington Street  
Dorchester, MA 02124

Attention: Mr. Anthony Stankiewicz

Tel: 617-822-8358



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### **Existing Site Conditions**

Located at the southeastern corner of the intersection of Norfolk Street and Epping Street, the subject site occupies an area of approximately 10,900 square feet. The subject site fronts to the north onto Epping Street and to the northwest onto Norfolk Street and is bound by an automotive repair shop to the southwest and the existing Codman Square Health Center to the south and east. Ground surface across the subject site is relatively flat with elevations varying from about +80 to +78.

Prior to the start of construction, the majority of the subject site was occupied by three, 2-story residential buildings which were demolished during the middle of September 2011. In general, the remainder of the subject site consisted of a paved and gravel parking area, a paved driveway and areas of overgrown vegetation. The site is currently a vacant lot with all former structures and surface treatments having been demolished and removed from the site.

The existing site conditions shown on **Figure 2** is based on a 20-scale plan entitled "ALTA/ACSM Land Title Survey" dated April 29, 2011 and prepared by Nitsch Engineering, Inc.. Elevations as noted herein are in feet and referenced to the Boston City Base Datum which is 5.65 feet below the National Geodetic Vertical Datum.

The area surrounding the subject site is generally occupied by commercial and residential property. The site and surrounding area are serviced by public utilities including water and electricity. Wastewater is discharged into the City of Boston sanitary sewer system. Catch basins on Norfolk Street and Epping Street are utilized to control surface water on the subject site which discharge into the combined sewer system. Catch basins on nearby Washington Street discharge surface water into the storm drain system.

### **Proposed Scope of Site Development**

It is understood that the proposed construction consists of demolition of the existing building (completed during September 2011) followed by construction of a three-story commercial building occupying approximately 9,500 square feet with one level of below grade space. The basement slab is proposed at about Elevation +72. The proposed construction is also understood to include exterior ground surface treatments and utility installation.

### **A Review of Site History and Surrounding Historical Places**

According to a review of historical Sanborn Maps dating from 1888, the subject site was occupied by a residence located at 26 Norfolk Street and by 1899 the two residences fronting onto Epping Street had been constructed. The Sanborn Maps indicate that the site remained occupied by the three residential structures through 1996. It is understood that the three structures were demolished during September 2011.

A review of the most recent National Register of Historical Places for Suffolk County in Dorchester, Massachusetts identified the Codman Square District located at Norfolk, Talbot, Epping, Lithgow, Centre, and Moultrie Streets, however, no historic places are located on the subject site and the Codman Square District is well beyond the area of impact of the proposed site development. Additionally, the discharge from the site will not impact an historic property. No historic places are located adjacent to the outfall



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location. A list of Historical Places listed on the National Register of Historic Places on-line database is included in **Appendix C**.

### **Site Environmental Setting**

Based on a review of the DEP Priority Resources Map, the site is not located within a Zone II of a public water supply, an Interim Wellhead Protection Area, or a Zone A of a Class A surface water supply reservoir. The site is not located within a Non-Potential Drinking Water Source Area of medium yield. There are no surface water bodies located within the site boundaries. The nearest surface water body is the Neponset River, located approximately 6,000 feet to the southeast of the subject site. The subject site is not located within an Area of Critical Environmental Concern (ACEC) nor are ACECs located within 1-mile of the subject site. However, the Davenport Brook which immediately discharges into the Neponset River Estuary is an ACEC.

A review of the most recent federal listing of threatened and endangered species published by the U.S. Fish and Wildlife Service did not identify the presence of threatened and/or endangered species at or in the vicinity of the discharge location and/or discharge outfall. In addition, a review of the Massachusetts Division of Fisheries and Wildlife on-line database did not report the presence of threatened or endangered species at the point of discharge and/or the discharge outfall. A list of threatened and endangered species from the U.S. Fish and Wildlife Services and Massachusetts Division of Fisheries on-line databases is included in **Appendix D**.

### **Site Regulatory Status and Review of Surrounding DEP Release Sites**

A review of the current DEP Waste Site Cleanup on-line database indicates that the property located at 12-16 Epping Street and 26 Norfolk Street is not a DEP-listed MCP site.

The following DEP release sites, based on their proximity to the subject site, were evaluated for the potential to impact the subject site.

#### ***32 Norfolk Street, Release Tracking Number (RTN) 3-10216***

This release site is located adjacent to the southwest corner of the subject site. Reportedly, groundwater flow direction at this site is to the southwest away from the subject site.

Four (4) underground gasoline and fuel oil storage tanks were removed from the site on November 13, 1993. At the time of the UST's removal, contamination was reportedly identified in soil at the limits of the UST excavation. Specifically, headspace screening of soil indicated the presence of total volatile organic compounds (TVOC) at levels above 100 parts per million (ppm), therefore triggering a 72-hour notification to the DEP. The Massachusetts DEP (Mass DEP) was notified of the release on November 22, 1993. On August 9, 2006 the Mass DEP issued a Notice of Noncompliance for the failure to submit a Phase I Report and a Tier Classification.

As part of a Phase I/II Environmental Site Assessment prepared by McPhail Associates, Inc. for the 26 Norfolk Street site, chemical testing of both groundwater and soil samples for the presence of Volatile Organic Compounds and Extractable Petroleum Hydrocarbons along the border of the subject site with 32



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Norfolk Street did not detect the presence of contamination. Results of the soil and groundwater chemical testing from boring B-2-07 (OW) are included in **Tables 1 and 2**, respectively. A Phase I Initial Site Investigation Report for 32 Norfolk Street dated March 26, 2007 was submitted to Mass DEP. Lastly, a Class A-2 Response Action Outcome (RAO) was filed at the DEP on September 8, 2008 indicating that a permanent solution has been achieved for the release and that "No Significant Risk" exists at the site. Given that this site is located downgradient from the subject site and a Permanent Solution has been achieved for the release, this site is not considered to pose a threat of impact to the subject site.

***6 Norfolk Street, Dorchester RTNs 3-17808, 3-17981, 3-18219***

The release at 6 Norfolk Street is located to the north of the subject site across Epping Street. On December 31, 1998 a release of fuel oil was reported to the Mass DEP from a 2,000-gallon UST. RTN 3-17808 was issued by the DEP for the performance of an Immediate Response Action to remove the UST and up to 100 cubic yards of soil. During the removal of the tank, a second 2,000 gallon UST was encountered and soil headspace readings in excess of 100 parts per million (ppm) were identified. The Mass DEP was notified of the release on February 12, 1999 and approved an IRA to remove 150 cubic yards of petroleum contaminated soil under RTN 3-17981. On April 16, 1999, 4.58 inches of light non-aqueous phase liquid (LNAPL) was measured within a 10-inch diameter well installed in the vicinity of the former second UST. Mass DEP issued RTN 3-18219 and approved the periodic bailing of the well to remove LNAPL as well as the installation of groundwater monitoring wells to assess the limits of the LNAPL.

In response, the site owner retained an LSP to conduct a Phase 3 Remedial Action Plan consisting of the periodic bailing of LNAPL from the wells, perform a Method 3 Risk Assessment, and prepare a Response Action Outcome (RAO) Statement. During the performance of remedial actions, each of the UST's was removed from the site, approximately 50 cubic yards of petroleum contaminated soil was excavated and removed from the site and approximately 20 gallons of LNAPL/groundwater was recovered and disposed. Lastly, analysis of the direction of groundwater flow across the site indicated that the flow direction is from east to west, cross gradient of the subject site. The Method 3 Risk Assessment indicated that a level of "No Significant Risk" exists at the site and that the sources of the contamination have been removed. Additionally, no evidence of LNAPL or other uncontrolled sources were present on-site. A Class A-2 Response Action Outcome (RAO) was filed at the DEP on March 9, 2004 indicating that a Permanent Solution had been achieved for the release and that "No Significant Risk" exists at the site. Given that this site is located cross-gradient from the subject site and a Permanent Solution has been achieved for the release, this site is not considered to pose a threat of impact to the subject site.

**Summary of Soil Chemical Testing**

During subsurface investigations performed at the site in March 2007 and August 2011, selected soil samples obtained from three completed borings and three test pits were submitted to a laboratory for chemical analysis. Two samples obtained from the three borings performed in 2007 were submitted for chemical analysis for total lead, Volatile Organic Compounds (VOCs) and Extractable Petroleum Hydrocarbons (EPH). Additionally, four (4) samples of the soil obtained from the test pits were chemically tested for total petroleum hydrocarbons (TPH), VOCs, polychlorinated biphenyls (PCB's), RCRA-8 metals, TCLP-Lead, semi-volatile organic compounds (SVOC), pH, reactivity, conductivity and ignitability. Chemical test results of soil samples are summarized in **Table 1**.



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A total of three (3) samples of fill material and one (1) sample of the natural glacial outwash were submitted to the laboratory for chemical analysis for the presence of total metals which included arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver. The concentrations of total metals detected were at levels well below the applicable, RCS-1, Reportable Concentrations in soil as defined in the MCP, 310 CMR 40.0000 with the exception of total lead.

Within the fill deposit, the samples exhibited total lead concentrations ranging from 210 milligrams per kilogram (mg/kg) to 840 mg/kg which is above the RCS-1 reporting threshold of 300 mg/kg. The natural outwash sample exhibited a total lead concentration of 6.5 mg/kg. The detected levels of lead in the fill samples are considered to be attributable to the presence of ash and cinder as well as lead-based paint associated with former buildings that occupied the site and therefore were not considered a reportable release pursuant to the provisions contained in Section 40.0317 of the MCP.

SVOCs were detected in each of the four (4) fill samples submitted for chemical analysis. Each of the SVOC constituents were detected at concentrations below the RCS-1 reporting thresholds with the exception of benzo(a)pyrene in the surficial fill sample chemically tested in 2007 from the 26 Norfolk Street site. The presence of benzo(a)pyrene was detected in a concentration of 5.74 mg/kg, which is above the RCS-1 reporting threshold of 2 mg/kg, however, the concentration is below the Massachusetts DEP established background level of 7 mg/kg for fill material containing ash and cinders. As the soil was observed to contain ash and cinders, the detected concentration of benzo(a)pyrene is not considered to be a reportable release.

With the exception of benzo(a)pyrene, testing did not detect the presence of SVOCs at concentrations above the laboratory method detection limits and/or the applicable RCS-1 reporting thresholds. Benzo(a)pyrene was detected in sample B-203 S-1/S-2 comp at a concentration of 2 mg/kg, which is equal to the RCS-1 reporting standard. However, given the presence of ash and cinders observed in the sample, the detected concentration is considered to be exempt from reporting to the Massachusetts DEP.

TPH was detected in two (2) of the three (3) fill samples submitted for chemical analysis. TPH was detected at concentrations of 111 mg/kg and 118 mg/kg, both of which are well below the applicable RCS-1 reporting threshold of 1,000 mg/kg. TPH was not detected above the laboratory method detection limits in the remaining fill sample as well as the natural soil sample.

A total of three (3) samples of fill material and one (1) sample of the natural glacial outwash were submitted to the laboratory for chemical analysis for the presence of Volatile Organic Compounds (VOC) and PCB's. The concentrations of VOC's and PCB's were not detected at levels above the laboratory method detection limits, which are well below the applicable, RCS-1, Reportable Concentrations in soil as defined in the MCP, 310 CMR 40.0000.

### **Summary of Groundwater Chemical Testing**

In March 2007, McPhail Associates, Inc. obtained a groundwater sample from observation well B-2-07(OW) located on the 26 Norfolk Street property. The groundwater sample was chemically tested for dissolved lead, EPH and VOCs. Additionally, during August and October, 2011, two additional ground water observation wells identified as B-2-06 (OW) and B-4 (OW) were sampled and chemically tested for the presence of compounds required under the EPA's Discharge General Permit (DGP) application, including pH, chloride, total metals (antimony, arsenic, cadmium, chromium, hexavalent chromium,



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copper, iron, mercury, nickel, silver and zinc) as well as dissolved copper, nickel, silver and zinc. The location of the observation wells are shown on **Figure 2** and the chemical test results of these groundwater samples are summarized in **Table 2**. The results of chemical testing indicate the following:

1. **pH:** The tested sample exhibited a pH level of 6.6 Standard Units (S.U.) which is within the recommended range of 6.5 to 8.5 S.U. for discharge into saltwater.
2. **VOCs:** The groundwater sample indicated no detected level of any of the target VOCs.
3. **EPH:** Chemical analysis of the groundwater sample indicated a concentration of C19-C36 aliphatics at a concentration of 253 micrograms per liter (ug/l). All additional EPH fractions and constituents were not detected above the laboratory method detection limit.
4. **Total and Dissolved Metals:** The results of groundwater analysis from B-2-06 (OW) indicated that the laboratory reported no detectable levels of antimony, arsenic, cadmium, chromium, hexavalent chromium, mercury, nickel and silver. Levels of copper, iron and zinc were reported at levels of 105 ug/l, 250 ug/l and 157 ug/l respectively. The detected concentrations of total metals or the detection limits for copper, nickel, silver and zinc were above the discharge limits for salt water. The elevated total metals is believed to be due to total suspended solids in the water. Since the groundwater wells within the project site were destroyed during demolition of the former houses, an observation well located on the Codman Health Center site B-4 (OW) which is adjacent to the subject site was sampled and chemically analyzed for total and dissolved metals. The detected levels of total copper, nickel and zinc were 4.9 ug/l, 3.7 ug/l and 19.1 ug/l. Silver was not detected above the laboratory method detection limit of 0.5 ug/l. Each of the total metals, with the exception of copper, is below the discharge limit for saltwater. Dissolved copper was detected at 2.5 ug/l, which is below the EPA discharge limit for saltwater. Groundwater pumped at the subject site will be passed through a settling tank as well as a bag filter. Therefore, we anticipate that the total copper level will be able to be reduced below the EPA effluent limits for salt water since the dissolved copper is less than the effluent limit.

### **Construction Dewatering**

It is anticipated that dewatering will be required for construction of the proposed building foundation. In addition, rainwater is anticipated to accumulate within localized trenches after periods of heavy precipitation. It is anticipated that dewatering by means of strategically located sumps and trenches should suffice during foundation construction operations.

It is estimated that the typical continuous groundwater discharge required during the foundation construction will be on the order of 25 to 30 gallons per minute (GPM). This estimate of discharge does not include surface runoff which will be removed from the excavation during the limited duration of a rain storm and shortly thereafter.

Construction dewatering will require the discharge of collected groundwater into the storm drain system under the requested Dewatering General Permit. A review of available plans provided by the City of Boston indicate that dedicated storm drains are located beneath Washington Street to the east of the site. The storm drains located along Epping and Norfolk Streets discharge into combined sewers and will not be utilized for discharge. The closest storm drain for the project site is catch basin No. 218 located along



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Washington Street which is located east of the project site. The catch basin is connected to a 15-inch dedicated storm drain located beneath Washington Street which flows south and passes beneath a series of public streets and private property until it combines with dual 74-inch by 93-inch box culverts near the intersection of Adams Street and Minot Street. The dual 72-inch culverts flow southeast and eventually discharge into the Davenport Brook which is connected to the Neponset River, a Class SB water body, at outfall location SDO094. The location of the relevant catch basin with relation to the subject site is indicated on **Figure 2**. The flow path of the discharge is shown in plans provided by the City of Boston which are included in **Appendix E**.

### **Groundwater Treatment**

The groundwater samples obtained from both observations wells B-2-06 (OW) and B-4 (OW) indicated levels of total copper above the EPA standards for discharge into salt water, however, the dissolved copper level in the groundwater sample obtained from B-4 (OW) was below the EPA standard for discharge into salt water. It is anticipated that the elevated total copper level is the result of total suspended solids in the water samples, therefore, the groundwater discharge will be filtered through a bag filter to remove total suspended solids.

In addition, given the proposed scope of development, which includes excavation for footings, it is our opinion that a sedimentation tank will be required to settle particulate matter out of the effluent to meet allowable total suspended solids (TSS) discharge limits established by the US EPA and Massachusetts DEP prior to discharge. A sedimentation tank, 5,000-gallons in capacity, will be incorporated into the discharge system in order to meet allowable discharge limits for TSS established by the DGP. A schematic of the treatment system is shown on **Figure 3**.

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

Should the results of testing for TSS, total copper or pH continue to indicate an exceedance of the DGP limit parameters appropriate treatment will be implemented. In addition, should other contaminants be detected within the discharge water during the construction dewatering phase of the project at levels that exceed the effluent limitations, mitigative measures will be implemented to meet the allowable discharge limits.

### **Summary and Conclusions**

The purpose of this report is to assess site environmental conditions and groundwater data to support an application for a Massachusetts Dewatering General Permit for off-site discharge of groundwater which will be encountered during construction at the Codman Square Health and Education Center project located at 12-16 Epping Street and 26 Norfolk Street in Dorchester.

Based on the results of groundwater chemical analyses discussed above, it is our opinion that groundwater quality meets the DEP and the EPA requirements for discharge into a Class SB Surface Water Body





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without any special treatment. In order to ensure that the levels of TSS, total copper and pH in the effluent meet the terms of the discharge permit, a sedimentation settling tank system with a discharge bag filter will be utilized to settle particulate matter out of the water prior to discharge. A sample of the effluent will be obtained prior to discharge to document that the sediment removal system has addressed levels of TSS, total copper and pH. However, should the effluent monitoring results indicate a level of TSS or total copper in excess of the limits established in the Massachusetts Dewatering General Permit, additional filtration will be installed. In addition, if pH levels exceed the DGP permit limits a specialized pH balancing system will be implemented.

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

Very truly yours,

McPHAIL ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Jason Huestis".

Jason S. Huestis

A handwritten signature in black ink, appearing to read "Ambrose J. Donovan".

Ambrose J. Donovan, L.S.P.

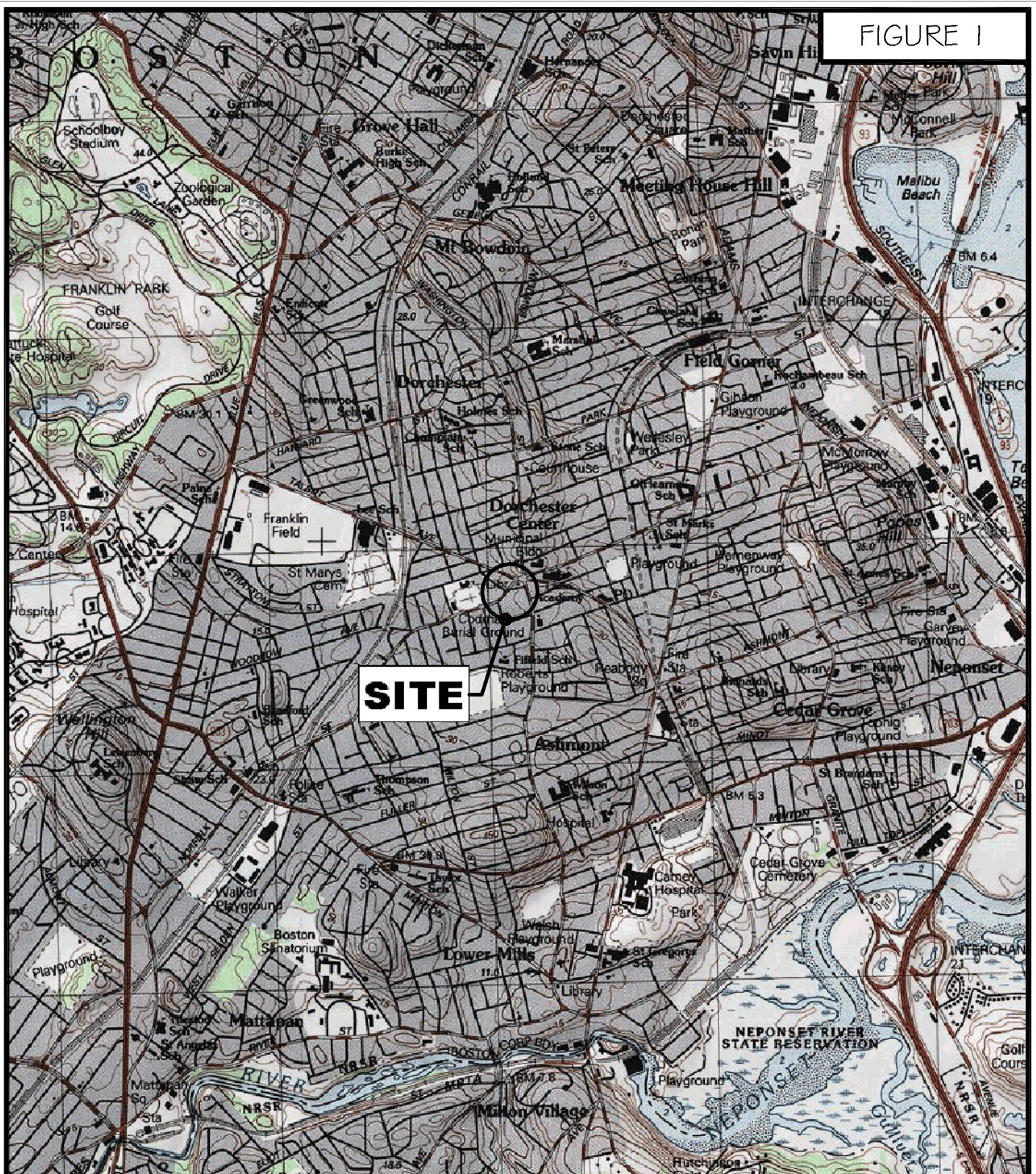
Enclosures

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JSH/ajd

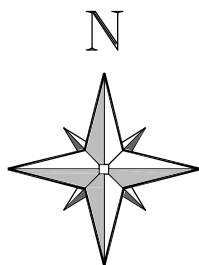


FIGURE 1



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



SCALE 1:25,000

## PROJECT LOCATION PLAN

CODMAN SQUARE

HEALTH AND EDUCATION CENTER

DORCHESTER

MASSACHUSETTS



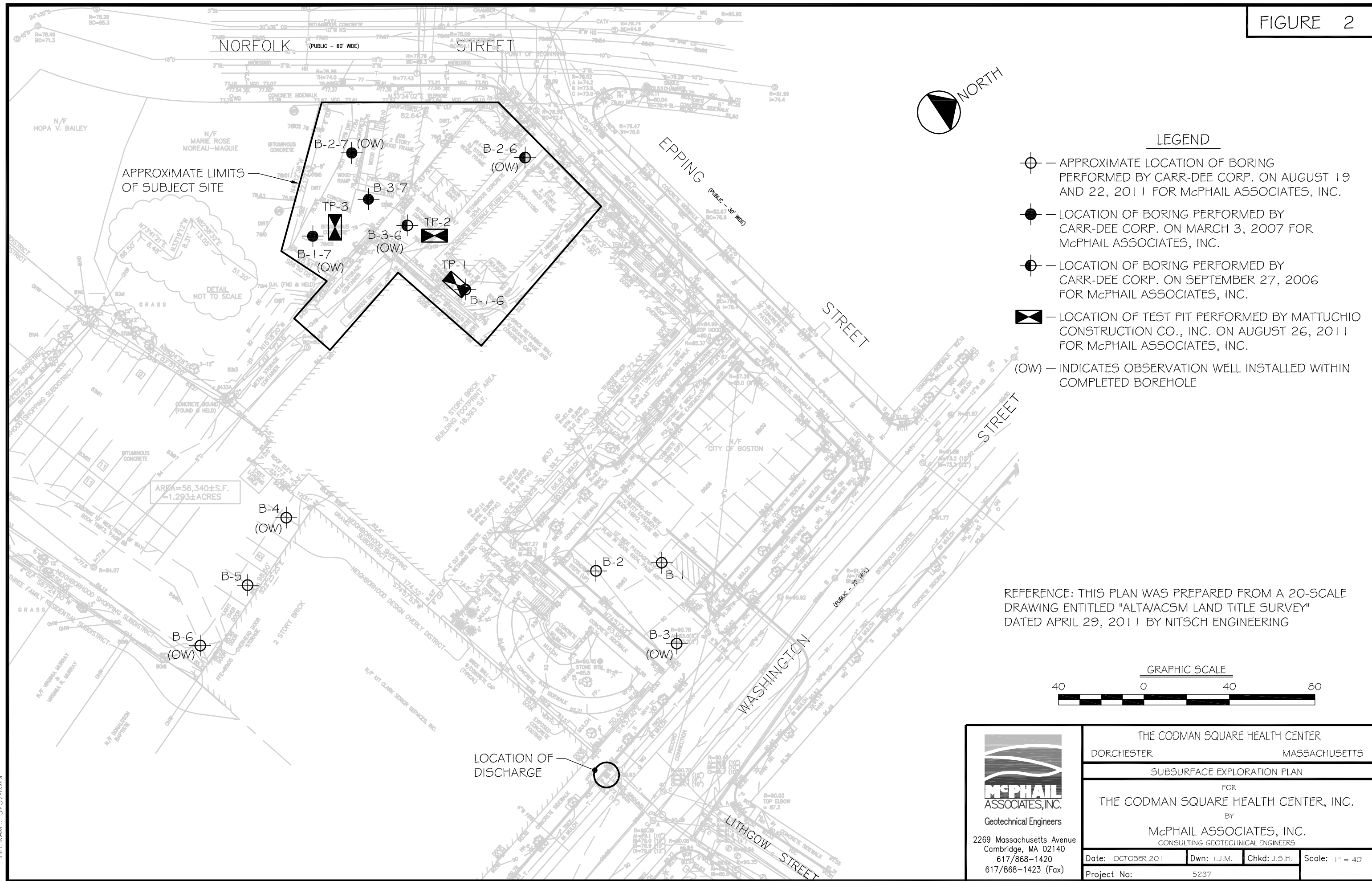
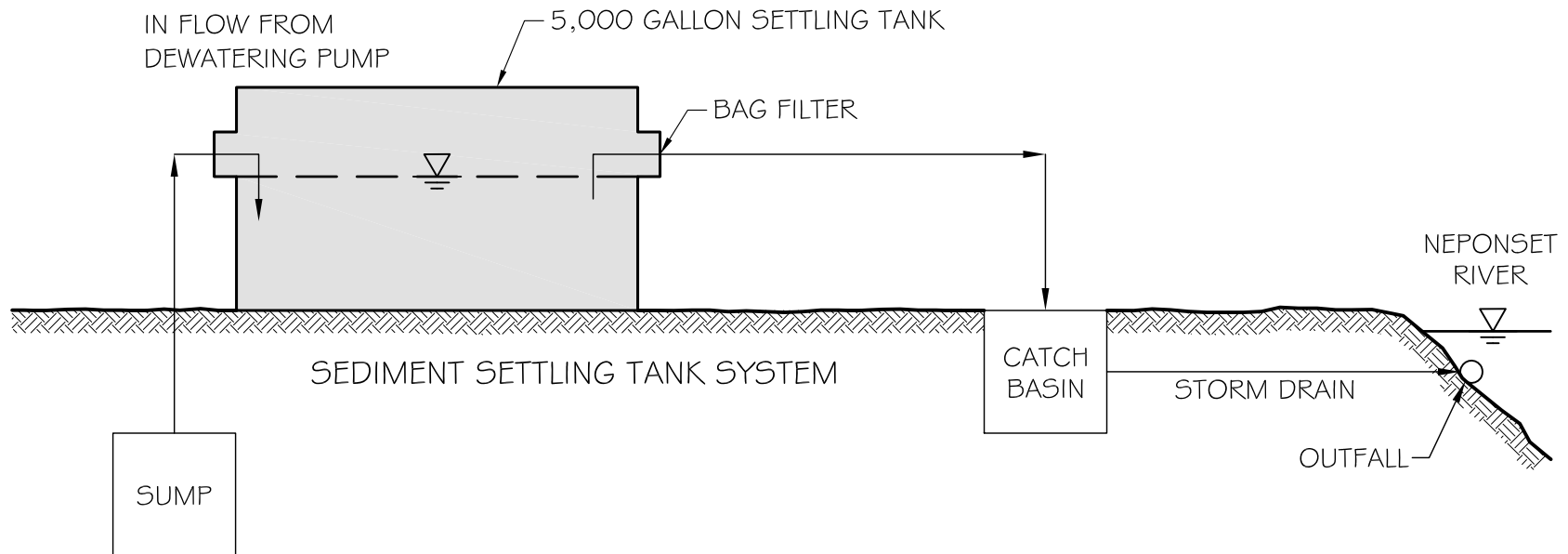


FIGURE 3



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

THE CODMAN SQUARE HEALTH CENTER  
DORCHESTER MASSACHUSETTS

SCHEMATIC OF WATER FLOW

FOR  
THE CODMAN SQUARE HEALTH CENTER, INC.

BY  
McPHAIL ASSOCIATES, INC.  
CONSULTING GEOTECHNICAL ENGINEERS

Date: OCTOBER 2011	Dwn: I.J.M.	Chkd: J.S.H.	Scale: N.T.S.
Project No: 5237			

TABLE 1: CHEMICAL TEST RESULTS - FILL/NATURAL MATERIAL  
Codman Square Health Center Addition  
PROJECT #5237  
(all results in milligrams per kilogram (mg/kg) unless noted otherwise)

LOCATION	RCS-1 Soil Standard	DEP BACKGROUND (Fill Material with Ash/"Natural") 5/23/02	Reuse Levels In-State Unlined Landfill	TP-1 S-1 0'-6	TP-2 S-1 0'-6	TP-3 S-1 0-7	TP-2 S-2 6'-7.5'	B-1(07),B- 2(07),B-3(07) (S-1)	B-2(07), S-5
				8/26/2011	8/26/2011	8/26/2011	8/26/2011	3/8/2007	3/8/2007
				L1113319-01	L1113319-02	L1113319-03	L1113319-04	L0703354-01	L0703354-02
				FILL	FILL	FILL	OUTWASH	FILL	G. TILL
SAMPLING DATE				0-6	0-6	0-7	6-7.5	0-2	15-17
LAB SAMPLE ID									
SAMPLE TYPE									
SAMPLE DEPTH (ft.)									
General Chemistry									
Cyanide, Reactive				ND(10)	ND(10)	ND(10)	ND(10)	-	-
pH				6.8	6.4	6.7	6.4	-	-
Solids, Total				83	80	82	88	78	93
Specific Conductance			4000	19	25	29	ND(10)	-	-
Sulfide, Reactive				ND(10)	ND(10)	ND(10)	ND(10)	-	-
Ignitability of Solids									
Ignitability				NI	NI	NI	NI	-	-
MCP Total Metals (mg/kg)									
Arsenic, Total	20	20/20	40	6.2	4.2	7.8	0.69	-	-
Barium, Total	1000	50/50		150	77	120	27	-	-
Cadmium, Total	2	3/2	30	0.51	ND(0.48)	ND(0.47)	ND(0.43)	-	-
Chromium, Total	30	40/30	1000	15	13	13	9.7	-	-
Lead, Total	300	600/100	1000	640	210	330	6.5	840	-
Mercury, Total	20	1/0.3	10	0.55	0.33	1.1	ND(0.08)	-	-
Selenium, Total	400	1/0.5		ND(2.2)	ND(2.4)	ND(2.4)	ND(2.2)	-	-
Silver, Total	100	5/0.6		0.46	ND(0.48)	ND(0.47)	ND(0.43)	-	-
TCLP Metals by EPA 1311 (mg/l)									
Lead, TCLP			<5	0.7	ND(0.5)	ND(0.5)	ND(0.5)		
MCP Volatile Organics by 5035 High (mg/kg)									
SUM			4	ND	ND	ND	ND	-	ND
MCP Semivolatile Organics (mg/kg)									
Anthracene	1000	4/1		0.32	ND(0.23)	ND(0.23)	ND(0.21)	-	-
Benzo(a)anthracene	7	9/2		1.2	0.27	0.66	ND(0.21)	-	-
Benzo(a)pyrene	2	7/2		1.2	0.32	0.69	ND(0.28)	-	-
Benzo(b)fluoranthene	7	8/2		1.6	0.4	0.83	ND(0.21)	-	-
Benzo(ghi)perylene	1000	3/1		0.69	ND(0.31)	0.42	ND(0.28)	-	-
Benzo(k)fluoranthene	70	4/1		0.54	ND(0.23)	0.36	ND(0.21)	-	-
Chrysene	70	7/2		1.2	0.31	0.76	ND(0.21)	-	-
Fluoranthene	1000	10/4		2.3	0.64	1	ND(0.21)	-	-
Indeno(1,2,3-cd)Pyrene	7	3/1		0.84	ND(0.31)	0.45	ND(0.28)	-	-
Phenanthrene	10	20/3		1.5	0.41	0.64	ND(0.21)	-	-
Pyrene	1000	20/4		2	0.56	0.98	ND(0.21)	-	-
SUM			100	13.39	2.91	6.79	-	-	-
MCP Polychlorinated Biphenyls (mg/kg)									
Aroclor 1016	2			ND(0.039)	ND(0.0394)	ND(0.0385)	ND(0.0359)	-	-
Aroclor 1221	2			ND(0.039)	ND(0.0394)	ND(0.0385)	ND(0.0359)	-	-
Aroclor 1232	2			ND(0.039)	ND(0.0394)	ND(0.0385)	ND(0.0359)	-	-
Aroclor 1242	2			ND(0.039)	ND(0.0394)	ND(0.0385)	ND(0.0359)	-	-
Aroclor 1248	2			ND(0.039)	ND(0.0394)	ND(0.0385)	ND(0.0359)	-	-
Aroclor 1254	2			ND(0.039)	ND(0.0394)	ND(0.0385)	ND(0.0359)	-	-
Aroclor 1260	2			ND(0.039)	ND(0.0394)	ND(0.0385)	ND(0.0359)	-	-
Aroclor 1262	2			ND(0.039)	ND(0.0394)	ND(0.0385)	ND(0.0359)	-	-
Aroclor 1268	2			ND(0.039)	ND(0.0394)	ND(0.0385)	ND(0.0359)	-	-
SUM			2	-	-	-	-	-	-
Petroleum Hydrocarbon Quantitation -(mg/kg)									
TPH	1000		2500	111	ND(41.6)	118	ND(37.5)	-	-
EPH w/MS Targets (mg/kg)									
2-Methylnaphthalene	0.7	1/0.5		-	-	-	-	ND(0.171)	0.314
Acenaphthene	4	2/0.5		-	-	-	-	0.429	ND(0.029)
Acenaphthylene	1	1/0.5		-	-	-	-	ND(0.171)	ND(0.029)
Anthracene	1000	4/1		-	-	-	-	2.63	ND(0.029)
Benzo(a)anthracene	7	9/2		-	-	-	-	5.4	ND(0.029)
Benzo(a)pyrene	2	7/2		-	-	-	-	5.74	ND(0.029)
Benzo(b)fluoranthene	7	8/2		-	-	-	-	3.4	ND(0.029)
Benzo(ghi)perylene	1000	3/1		-	-	-	-	2.16	ND(0.029)
Benzo(k)fluoranthene	70	4/1		-	-	-	-	4.27	ND(0.029)
C11-C22 Aromatics				-	-	-	-	141	ND(7.17)
C11-C22 Aromatics, Adjusted	1000			-	-	-	-	76.8	ND(7.17)
C19-C36 Aliphatics	3000			-	-	-	-	14.8	ND(7.17)
C9-C18 Aliphatics	1000			-	-	-	-	ND(8.55)	ND(7.17)
Chrysene	70	7/2		-	-	-	-	4.25	ND(0.029)
Dibenzo(a,h)anthracene	0.7	1/0.5		-	-	-	-	0.498	ND(0.029)
Fluoranthene	1000	10/4		-	-	-	-	14.5	ND(0.029)
Fluorene	1000	2/1		-	-	-	-	0.442	ND(0.029)
Indeno(1,2,3-cd)Pyrene	7	3/1		-	-	-	-	2.21	ND(0.029)
Naphthalene	4	1/0.5		-	-	-	-	0.229	0.085
Phenanthrene	10	20/3		-	-	-	-	7.18	ND(0.029)
Pyrene	1000	20/4		-	-	-	-	11.1	ND(0.029)
SVOC SUM			100	-	-	-	-	64.44	0.40

TABLE 2  
Analytical Results - Groundwater  
Codman Square Health and Education Center

LOCATION	EPA Effluent Limits	B-2-07 OW 032207 GW	B-2-06 (OW)	B-4 (OW)
SAMPLING DATE	Salt Water	3/22/2007	8/23/2011	10/12/2011
LAB SAMPLE ID		L0703967-01	L1113059-01	L1116489-01
<b>General Chemistry</b>				
Chloride			1540000	-
pH	6.5-8.5		6.6	-
<b>MCP Dissolved Metals (ug/l)</b>				
Copper, Dissolved	3.7		-	2.5
Nickel, Dissolved	8.2		-	1.9
Silver, Dissolved	2.2		-	ND(0.5)
Zinc, Dissolved	85.6		-	22.1
Lead, Dissolved		ND(10)		
<b>MCP Total Metals (ug/l)</b>				
Antimony, Total	5.6		ND(4)	-
Arsenic, Total	36		ND(5)	-
Cadmium, Total	8.9		ND(4)	-
Chromium, Total	100		ND(10)	-
Chromium, Hexavalent	50.3		ND(10)	-
Copper, Total	3.7		105	4.9
Iron, Total	1000		250	-
Mercury, Total	1.1		ND(0.2)	-
Nickel, Total	8.2		ND(25)	3.7
Silver, Total	2.2		ND(7)	ND(0.5)
Zinc, Total	85.6		157	19.1
<b>Extractable Petroleum Hydrocarbons (ug/l)</b>				
2-Methylnaphthalene		ND(11.9)		
Acenaphthene		ND(11.9)		
Acenaphthylene		ND(11.9)		
Anthracene		ND(11.9)		
Benzo(a)anthracene		ND(11.9)		
Benzo(a)pyrene		ND(11.9)		
Benzo(b)fluoranthene		ND(11.9)		
Benzo(ghi)perylene		ND(11.9)		
Benzo(k)fluoranthene		ND(11.9)		
C11-C22 Aromatics		ND(119)		
C11-C22 Aromatics, Adjusted		ND(119)		
C19-C36 Aliphatics		253		
C9-C18 Aliphatics		ND(119)		
Chrysene		ND(11.9)		
Dibenzo(a,h)anthracene		ND(11.9)		
Fluoranthene		ND(11.9)		
Fluorene		ND(11.9)		
Indeno(1,2,3-cd)Pyrene		ND(11.9)		
Naphthalene		ND(11.9)		
Phenanthrene		ND(11.9)		
Pyrene		ND(11.9)		
<b>MCP Volatile Organics (ug/l)</b>				
SUM		ND		

ND(detection limit) - not detected above  
laboratory method detection limits

McPhail Associates, Inc.

Table 2.xls  
10/26/2011  
Page 1 of 1



Geotechnical Engineers

## **APPENDIX A**

### **LIMITATIONS**

The purpose of this report is to present the results of testing of groundwater samples obtained from monitoring wells on Codman Square Health Center property in Dorchester, 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 Dewatering General Permit MAG070000.

The observations were made under the conditions stated in this report. The conclusions presented above were based on these observations. If variations in the nature and extent of subsurface conditions between the widely 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 chemical 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.

Chemical analyses have been performed for specific constituents during the course of this site assessment, as described in the text. However, it should be noted that additional chemical 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 the Codman Square Health Center. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party nor used in whole or in part by any other party without prior written consent of McPhail Associates, Inc.



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## **Appendix B**

Notice of Intent Form  
DEP Transmittal Form for Permit Application  
Payment Records



## II. Suggested Notice of Intent (NOI) Form

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

<b>a) Name of facility:</b> Codman Square Health and Education Center		<b>Mailing Address for the Facility:</b> Codman Square Health Center, 637 Washington Street Dorchester, MA 02124	
<b>b) Location Address of the Facility (if different from mailing address):</b> 12-16 Epping Street and 26 Norfolk Street, Dorchester, MA 02124	<b>Facility Location</b> longitude: <u>71.072</u> latitude: <u>42.289</u>		<b>Type of Business:</b>
			<b>Facility SIC codes:</b>
<b>c) Name of facility owner:</b> <u>Codman Square Health Center</u> <b>Owner's email:</b> <u>Anthonyv.Stankiewicz@codman.org</u> <b>Owner's Tel #:</b> <u>617-822-8358</u> <b>Owner's Fax #:</b> <u>617-825-0328</u> <b>Address of owner (if different from facility address)</b>			
<b>Owner is (check one):</b> 1. Federal ____ 2. State ____ 3. Tribal ____ 4. Private <input checked="" type="checkbox"/> 4. Other ____ (Describe)			
<b>Legal name of Operator, if not owner:</b> _____ <b>Operator Contact Name:</b> _____ <b>Operator Tel Number:</b> _____ <b>Fax Number:</b> _____ <b>Operator's email:</b> _____ <b>Operator Address (if different from owner)</b>			
<b>d) Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water. Map attached?</b> <input checked="" type="checkbox"/>			
<b>e) Check Yes or No for the following:</b> 1. Has a prior NPDES permit been granted for the discharge? Yes ____ No <input checked="" type="checkbox"/> If Yes, Permit Number: _____ 2. Is the discharge a "new discharge" as defined by 40 CFR Section 122.22? Yes <input checked="" type="checkbox"/> No ____ 3. Is the facility covered by an individual NPDES permit? Yes ____ No <input checked="" type="checkbox"/> If Yes, Permit Number ____ 4. Is there a pending application on file with EPA for this discharge? Yes ____ No <input checked="" type="checkbox"/> If Yes, date of submittal:			

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

a) Name of receiving water into which discharge will occur: Davenport Brook / Neponset River  
State Water Quality Classification: SB Freshwater:        Marine Water: x

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

c) Number of outfalls 1

For each outfall:

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

e) What is the maximum and minimum monthly pH of the discharge (in s.u.)? Max pH 8.0 Min pH 6.5

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

g) What treatment does the wastewater receive prior to discharge? Sedimentation settling tanks, discharge bag filter, see attached report

h) Is the discharge continuous? Yes        No ✓ If no, is the discharge periodic (P) (occurs regularly, i.e., monthly or seasonally, but is not continuous all year) or intermittent (I) (occurs sometimes but not regularly) or both (B) B  
If (P), number of days or months per year of the discharge        and the specific months of discharge       ;  
If (I), number of days/year there is a discharge         
Is the discharge temporary? Yes ✓ No         
If yes, approximate start date of dewatering 11/1/2011 approximate end date of dewatering 11/1/2012

i) Latitude and longitude of each discharge within 100 feet (See [http://www.epa.gov/tri/report/siting\\_tool](http://www.epa.gov/tri/report/siting_tool)): Outfall 1: long. 71.047 lat. 42.282 ;  
Outfall 2: long.        lat.        ; Outfall 3: long.        lat.        .

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

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

- k) Does the discharge occur in an ACEC? Yes ☒ No ☐  
If yes, provide the name of the ACEC: Neponset River Estuary

**3. Contaminant Information**

- a) Are any pH neutralization and/or dechlorination chemicals used in the discharge? If so, include the chemical name and manufacturer; maximum and average daily quantity used as well as the maximum and average daily expected concentrations (mg/l) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC<sub>50</sub> in percent for aquatic organism(s)). See Report
- b) Please report any known remediation activities or water-quality issues in the vicinity of the discharge. See Report

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

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

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

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

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

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

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

dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product or finished product; (4) if the discharge of dewatering subsequently mixes with other permitted wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for dewatering discharge; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name:	Coolman Square Health Center, Inc.
Operator signature:	Anthony J. Jail CAO/COS
Title:	Chief of Staff
Date:	10/28/11 *Based on Dewatering GP Processing Rpt. (msphaile) dated 10/24/11 - attached

Federal regulations require this application to be signed as follows:

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



Enter your transmittal number

X240715

Transmittal Number

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

## Massachusetts Department of Environmental Protection

# Transmittal Form for Permit Application and Payment

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

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

3. Three copies of this form will be needed.

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

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

MassDEP  
P.O. Box 4062  
Boston, MA  
02211

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

### A. Permit Information

X240715

1. Permit Code: 7 or 8 character code from permit instructions

Temporary Construction Dewatering

3. Type of Project or Activity

Dewatering General Permit

2. Name of Permit Category

### B. Applicant Information – Firm or Individual

Codman Square Health Center

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

Stankiewicz

Anthony

2. Last Name of Individual

3. First Name of Individual

4. MI

637 Washington Street

5. Street Address

Dorchester

MA

02124

6178228358

6. City/Town

7. State

8. Zip Code

9. Telephone #

10. Ext. #

11. Contact Person

12. e-mail address (optional)

### C. Facility, Site or Individual Requiring Approval

Codman Square Health and Education Center

1. Name of Facility, Site Or Individual

12-16 Epping Street/26 Norfolk Street

2. Street Address

Dorchester

MA

02124

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

8. DEP Facility Number (if Known)

9. Federal I.D. Number (if Known)

10. BWSC Tracking # (if Known)

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

McPhail Associates, Inc.

1. Name of Firm Or Individual

2269 Massachusetts Avenue

2. Address

Cambridge

MA

02140

3. City/Town

4. State

5. Zip Code

6178681420

6. Telephone #

7. Ext. #

8. Contact Person

9. LSP Number (BWSC Permits only)

### E. Permit - Project Coordination

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

EOEA File Number

### F. Amount Due

#### Special Provisions:

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

DEP Use Only

Permit No:

Rec'd Date:

Reviewer:

29731

Check Number

385.00

Dollar Amount

10/27/2011

Date

29731

**MCPHAIL ASSOCIATES, LLC.**

2269 MASSACHUSETTS AVENUE  
CAMBRIDGE, MA 02140

**Cambridge Trust Company**  
CAMBRIDGE, MASS.

53-59-113

10/27/2011

PAY  
TO THE  
ORDER OF

Commonwealth of Mass.

\$ \*\*385.00

Three Hundred Eighty-Five and 00/100\*\*\*\*\* DOLLARS

Commonwealth of Mass.

MEMO

5237.9.01

AUTHORIZED SIGNATURE

Security features. Details on back.

⑈029731⑈ ⑆011300595⑆ ⑈50552801⑈

MCPHAIL ASSOCIATES, LLC.

Commonwealth of Mass.

5237.9.01

10/27/2011

29731

385.00

McPhail LLC

5237.9.01

385.00



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

## DEWATERING DISCHARGE PERMIT APPLICATION

### OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: Codman Square Health Cntr. Address: 637 Washington Street, Dorchester, MA.  
Phone number: 617-822-8358 Fax number: 617-825-0328  
Contact person name: Mr. Anthony Stankiewicz Title: Chief Advancement Officer/Chief of Staff  
Cell number: 978-407-2724 Email address: anthony.stankiewicz@codman.org

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

### Owner's Information (if different from above):

Owner of property being dewatered: \_\_\_\_\_

Owner's mailing address: \_\_\_\_\_ Phone number: \_\_\_\_\_

### Location of Discharge & Proposed Treatment System(s):

Street number and name: 12-16 Epping Street, 26 Norfolk St. Neighborhood Codman Square, Dorchester  
Dorchester, MA 02124

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

Describe Proposed Pre-Treatment System(s): 5000 gallon settling tank, discharge bag filter

BWSC Outfall No. SD0094 Receiving Waters Davenport Brook/Neponset River

**Temporary Discharges** (Provide Anticipated Dates of Discharge): From 11/1/2011 To 11/1/2012  
☐ 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: Francis M. McLaughlin, Manager Engineering Customer Services  
E-mail: [MclaughlinF@bwsc.org](mailto:MclaughlinF@bwsc.org)  
Phone: 617-989-7208 Fax: 617-989-7716

**BWSC Use Only:** Date Received \_\_\_\_\_ Comments: \_\_\_\_\_



Geotechnical Engineers

## **Appendix C**

### **NATIONAL REGISTER OF HISTORIC PLACES**

The National Register of Historic Places on-line database was reviewed for listings located within the immediate vicinity of the subject site in Dorchester, Massachusetts. A review of the most recent National Register of Historical Places for Suffolk County, Massachusetts did not identify records or addresses of Historic Places that exist in the immediate vicinity of the subject site and/or outfall location. The nearest National Historic Place to the subject site is Historic Codman Square which is located approximately 200 feet to the north of the subject site. It is not anticipated that dewatering activities at the subject site will affect the Historic Codman Square National Historic Place.





## **Appendix D**

### **Threatened and Endangered Species**



# Species Reports

## Environmental Conservation Online System

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(<http://www.fws.gov>)

### Listings and occurrences for Massachusetts

#### Notes:

- This report shows the listed species associated in some way with this state.
- This list does not include experimental populations and similarity of appearance listings.
- This list includes non-nesting sea turtles and whales in State/Territory coastal waters.
- This list includes species or populations under the sole jurisdiction of the National Marine Fisheries Service.
- Click on the highlighted scientific names below to view a Species Profile for each listing.

#### Summary of Animals listings

Animal species listed in this state and that occur in this state (17 species)	
Status ( <a href="javascript:launch('/tess_public/html/db-status.html');">javascript:launch('/tess_public/html/db-status.html');</a> )	Species
E	Beetle, American burying ( <a href="#"><i>Nicrophorus americanus</i> (/speciesProfile/profile/speciesProfile.action?scode=I028))</a>
T	Plover, piping except Great Lakes watershed ( <a href="#"><i>Charadrius melodus</i> (/speciesProfile/profile/speciesProfile.action?scode=B079))</a>
E	Plymouth Red-Bellied Turtle ( <a href="#"><i>Pseudemys rubriventris bangsi</i> (/speciesProfile/profile/speciesProfile.action?scode=C021))</a>
E	Sea turtle, hawksbill ( <a href="#"><i>Eretmochelys imbricata</i> (/speciesProfile/profile/speciesProfile.action?scode=C00E))</a>
E	Sea turtle, Kemp's ridley ( <a href="#"><i>Lepidochelys kempii</i> (/speciesProfile/profile/speciesProfile.action?scode=C00O))</a>
E	Sea turtle, leatherback ( <a href="#"><i>Dermochelys coriacea</i> (/speciesProfile/profile/speciesProfile.action?scode=C00F))</a>
T	Sea turtle, loggerhead ( <a href="#"><i>Caretta caretta</i> (/speciesProfile/profile/speciesProfile.action?scode=C00U))</a>
E	Sturgeon, shortnose ( <a href="#"><i>Acipenser brevirostrum</i> (/speciesProfile/profile/speciesProfile.action?scode=E00B))</a>
E	Tern, roseate northeast U.S. nesting pop. ( <a href="#"><i>Sterna dougallii dougallii</i> (/speciesProfile/profile/speciesProfile.action?scode=B07O))</a>
T	Tiger beetle, northeastern beach ( <a href="#"><i>Cicindela dorsalis dorsalis</i> (/speciesProfile/profile/speciesProfile.action?scode=I02C))</a>
T	Tiger beetle, Puritan ( <a href="#"><i>Cicindela puritana</i> (/speciesProfile/profile/speciesProfile.action?scode=I02D))</a>
E	Wedgemussel, dwarf ( <a href="#"><i>Alasmidonta heterodon</i> (/speciesProfile/profile/speciesProfile.action?scode=F029))</a>
E	Whale, blue ( <a href="#"><i>Balaenoptera musculus</i> (/speciesProfile/profile/speciesProfile.action?scode=A02M))</a>
E	Whale, finback ( <a href="#"><i>Balaenoptera physalus</i> (/speciesProfile/profile/speciesProfile.action?scode=A02O))</a>
E	Whale, humpback ( <a href="#"><i>Megaptera novaeangliae</i> (/speciesProfile/profile/speciesProfile.action?scode=A02Q))</a>
E	Whale, North Atlantic Right ( <a href="#"><i>Eubalaena glacialis</i> (/speciesProfile/profile/speciesProfile.action?scode=A02R))</a>
E	Whale, Sei ( <a href="#"><i>Balaenoptera borealis</i> (/speciesProfile/profile/speciesProfile.action?scode=A02S))</a>

<a href="#">Status (javascript:launch('/tess_public/html/db-status.html');)</a>	Species
<b>Animal species listed in this state that do not occur in this state (4 species)</b>	
<a href="#">Status (javascript:launch('/tess_public/html/db-status.html');)</a>	Species
E	Butterfly, Karner blue ( <a href="#"><i>Lycaeides melissa samuelis</i> (/speciesProfile/profile/speciesProfile.action?scode=I00F)</a> )
E	Puma (=cougar), eastern ( <a href="#"><i>Puma (=Felis) concolor couguar</i> (/speciesProfile/profile/speciesProfile.action?scode=A046)</a> )
T	Turtle, bog (=Muhlenberg) northern ( <a href="#"><i>Clemmys muhlenbergii</i> (/speciesProfile/profile/speciesProfile.action?scode=C048)</a> )
E	Wolf, gray Lower 48 States, except MN, MT, ID, portions of eastern OR, eastern WA, north-central UT, and where EXPN. Mexico. ( <a href="#"><i>Canis lupus</i> (/speciesProfile/profile/speciesProfile.action?scode=A00D)</a> )
<b>Animal listed species occurring in this state that are not listed in this state (1 species)</b>	
<a href="#">Status (javascript:launch('/tess_public/html/db-status.html');)</a>	Species
T	Sea turtle, green except where endangered ( <a href="#"><i>Chelonia mydas</i> (/speciesProfile/profile/speciesProfile.action?scode=C00S)</a> )

### Summary of Plant listings

<b>Plant species listed in this state and that occur in this state (3 species)</b>	
<a href="#">Status (javascript:launch('/tess_public/html/db-status.html');)</a>	Species
E	Bulrush, Northeastern ( <a href="#"><i>Scirpus ancistrochaetus</i> (/speciesProfile/profile/speciesProfile.action?scode=Q21H)</a> )
E	Gerardia, sandplain ( <a href="#"><i>Agalinis acuta</i> (/speciesProfile/profile/speciesProfile.action?scode=Q24K)</a> )
T	Pogonia, small whorled ( <a href="#"><i>Isotria medeoloides</i> (/speciesProfile/profile/speciesProfile.action?scode=Q1XL)</a> )
<b>Plant species listed in this state that do not occur in this state (2 species)</b>	
<a href="#">Status (javascript:launch('/tess_public/html/db-status.html');)</a>	Species
T	Amaranth, seabeach ( <a href="#"><i>Amaranthus pumilus</i> (/speciesProfile/profile/speciesProfile.action?scode=Q2MZ)</a> )
E	Chaffseed, American ( <a href="#"><i>Schwalbea americana</i> (/speciesProfile/profile/speciesProfile.action?scode=Q2I4)</a> )

Last updated: October 24, 2011

[ECOS Home \(/ecos/indexPublic.do\)](#) | [Contact Us \(/ecos/helpdesk.do?version=TESS\\_PUBLIC-1\\_0\\_110\)](#)

# MassDEP - Bureau of Waste Site Cleanup

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

Site Name:

RTN:

NAD83 MA Coordinates:  
0mE, 0mN

September 2, 2011



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



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail

Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct

Basins: Major, Sub; Streams: Perennial, Intermittent, Man Made Shore, Dam

Aquifers: Medium Yield, High Yield, EPA Sole Source.....

Non Potential Drinking Water Source Area: Medium, High (Yield)...

PWS Protection Areas: Zone II, IWPA, Zone A .....

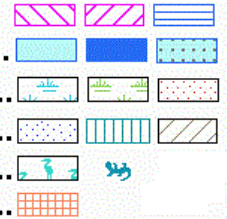
Hydrography: Open Water, PWS Reservoir, Tidal Flat .....

Wetlands: Freshwater, Saltwater, Cranberry Bog .....

FEMA 100yr Floodplain, Protected Open Space, ACEC .....

NHESP: Est Rare Wetland Habitat, Certified Vernal Pool .....

DEP Permitted Solid Waste Landfill.....



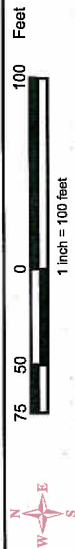
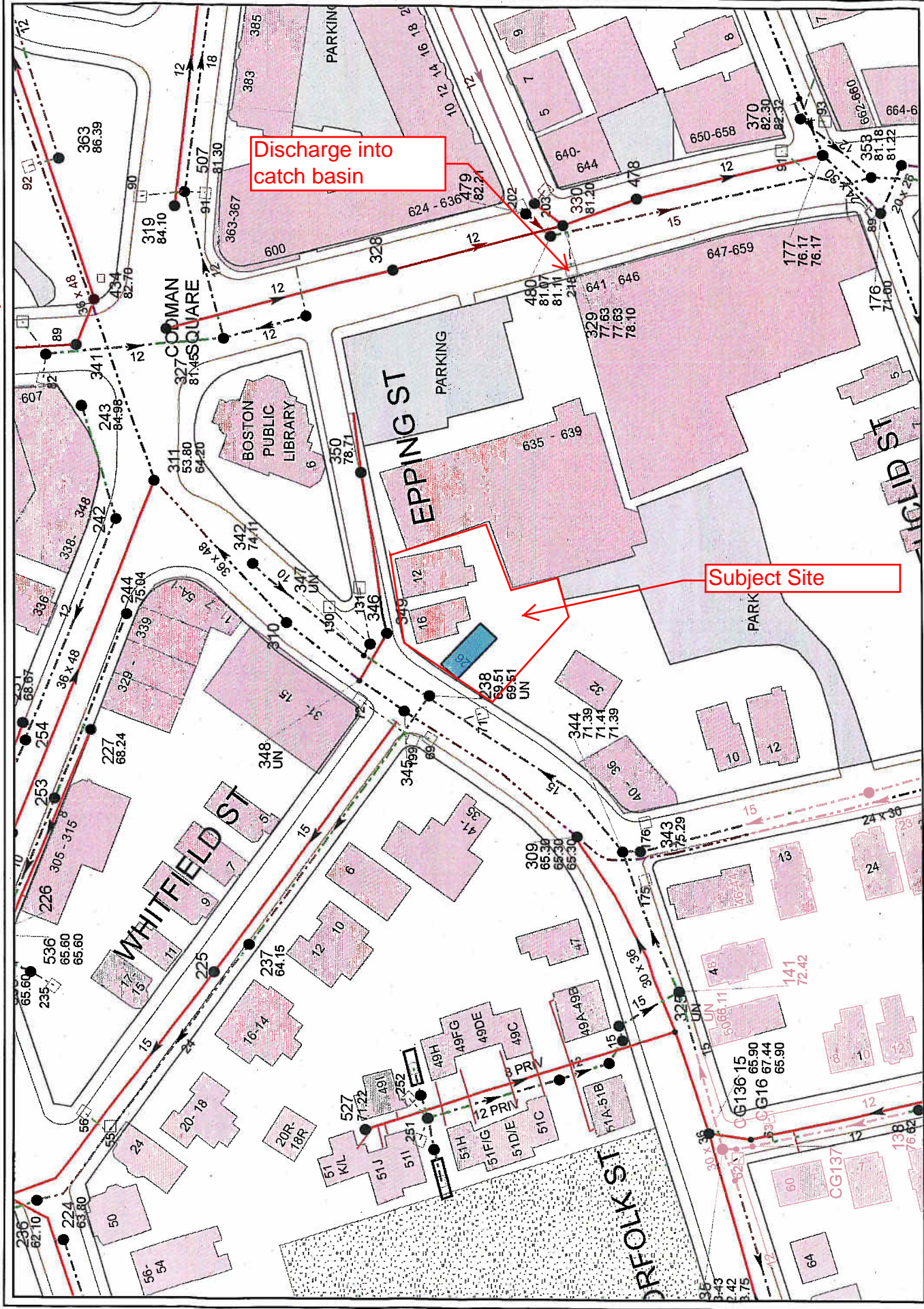


## **Appendix E**

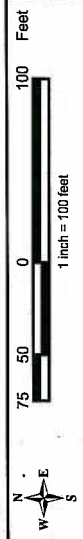
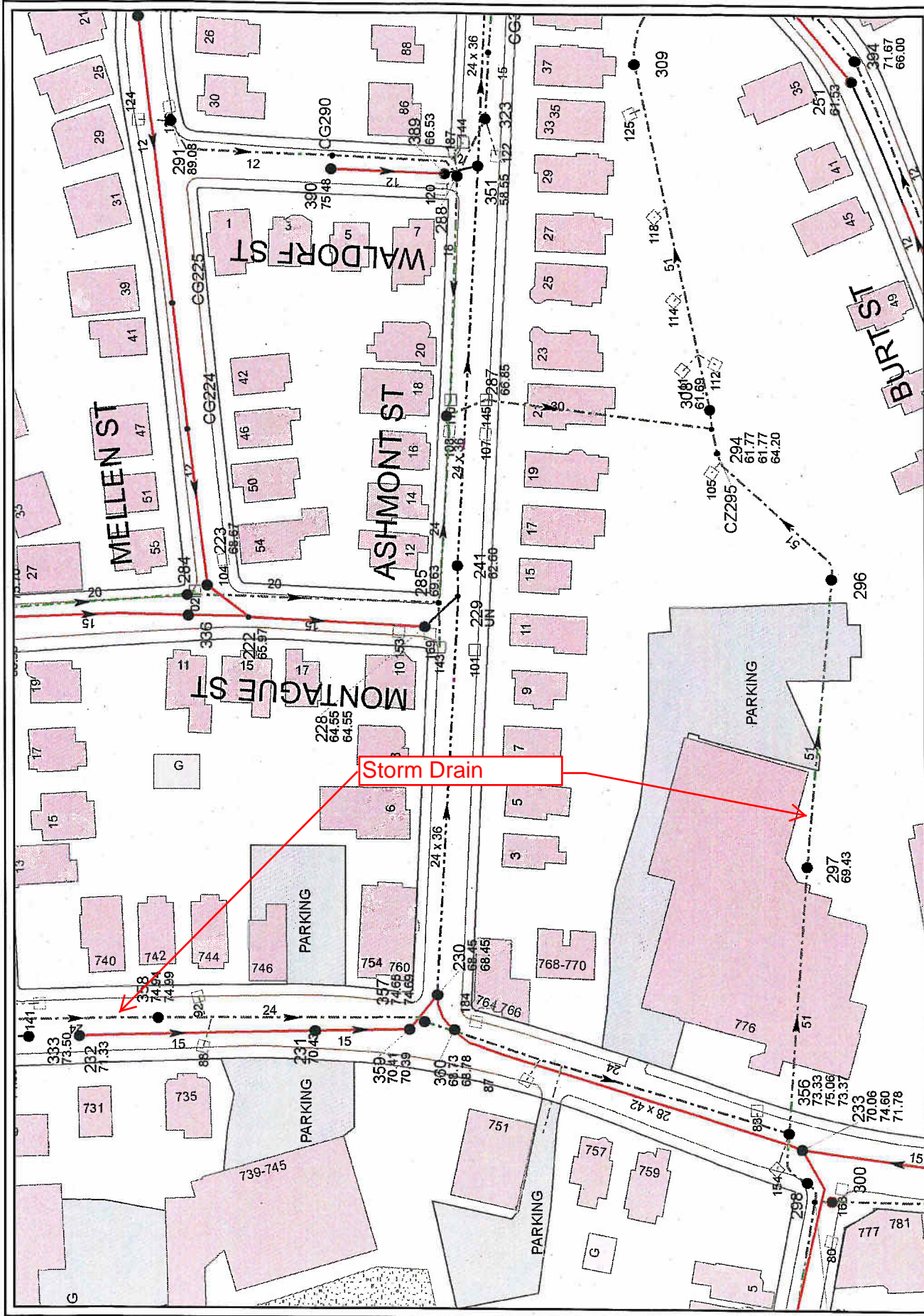
### **Storm Drainage Flow Path - Boston Water and Sewer**



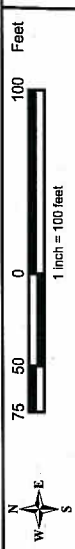
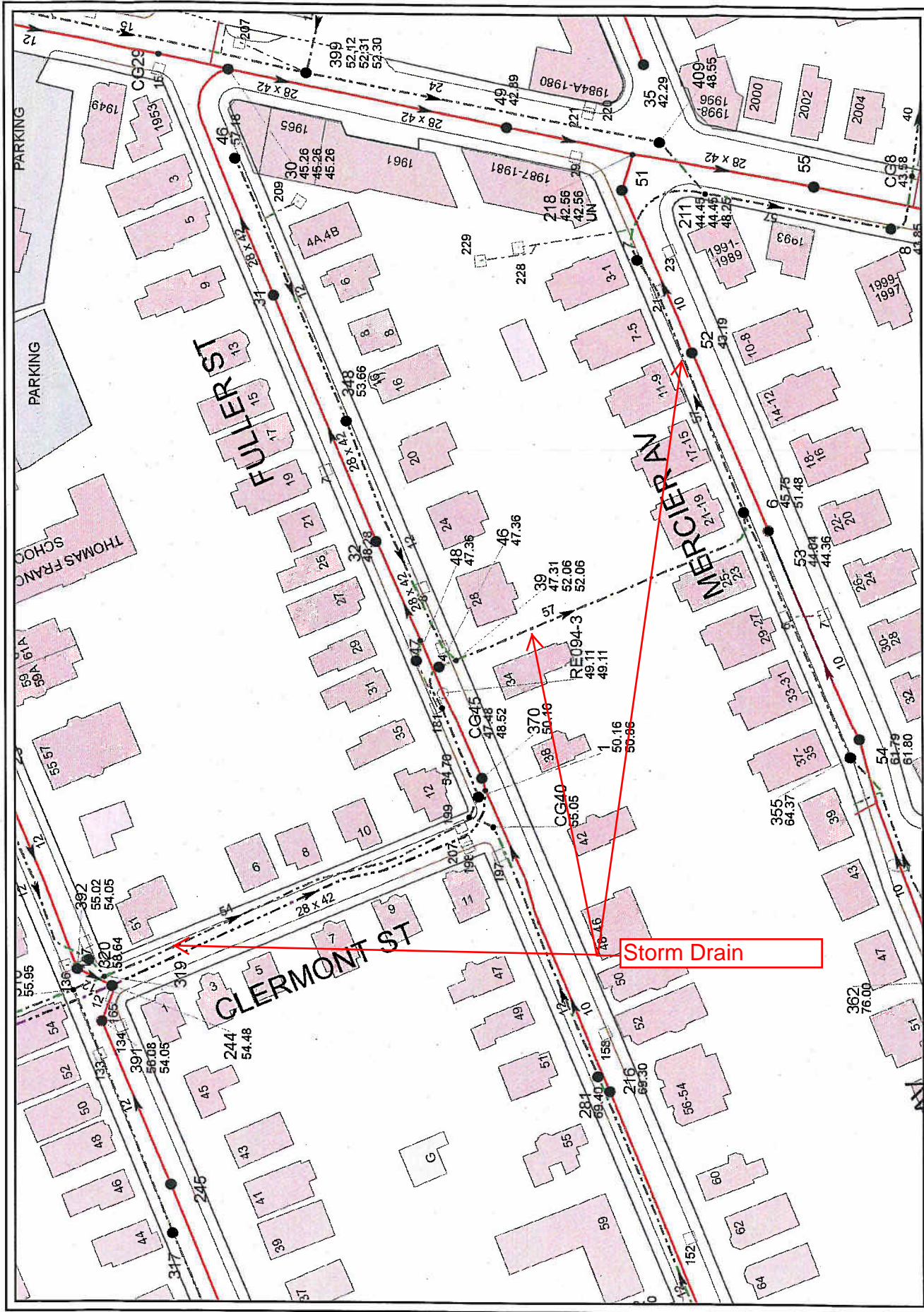
5232



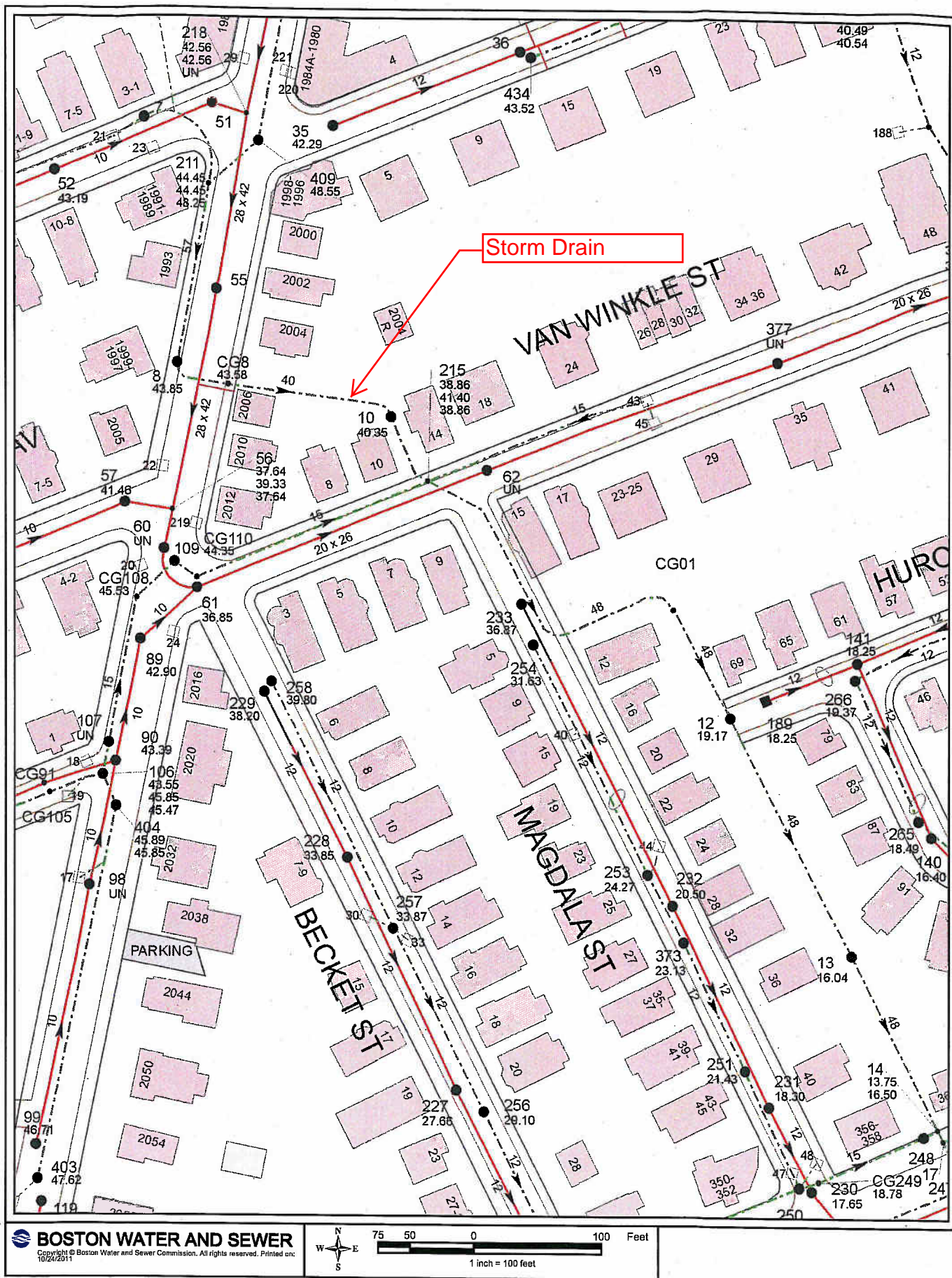




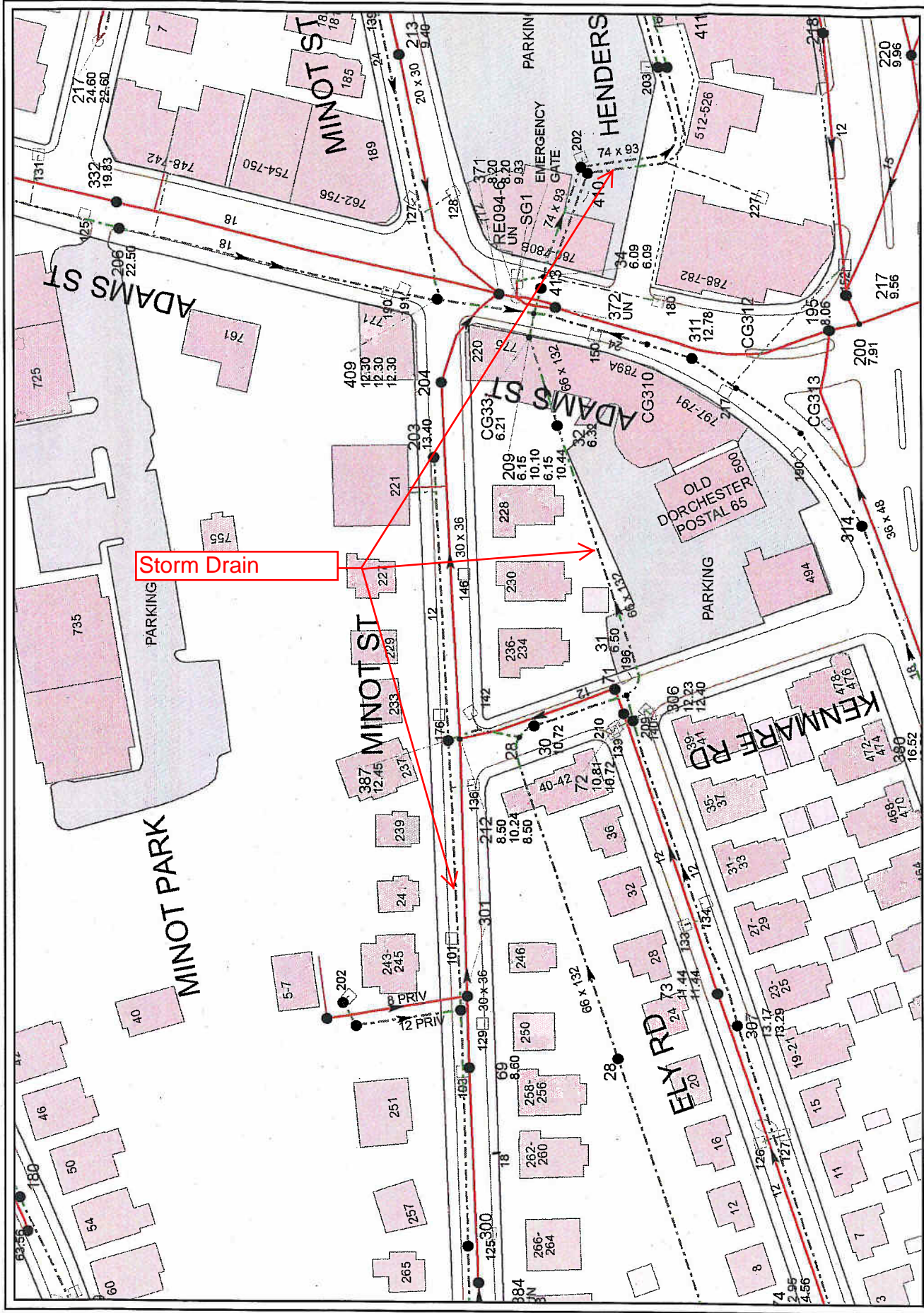




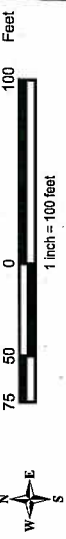




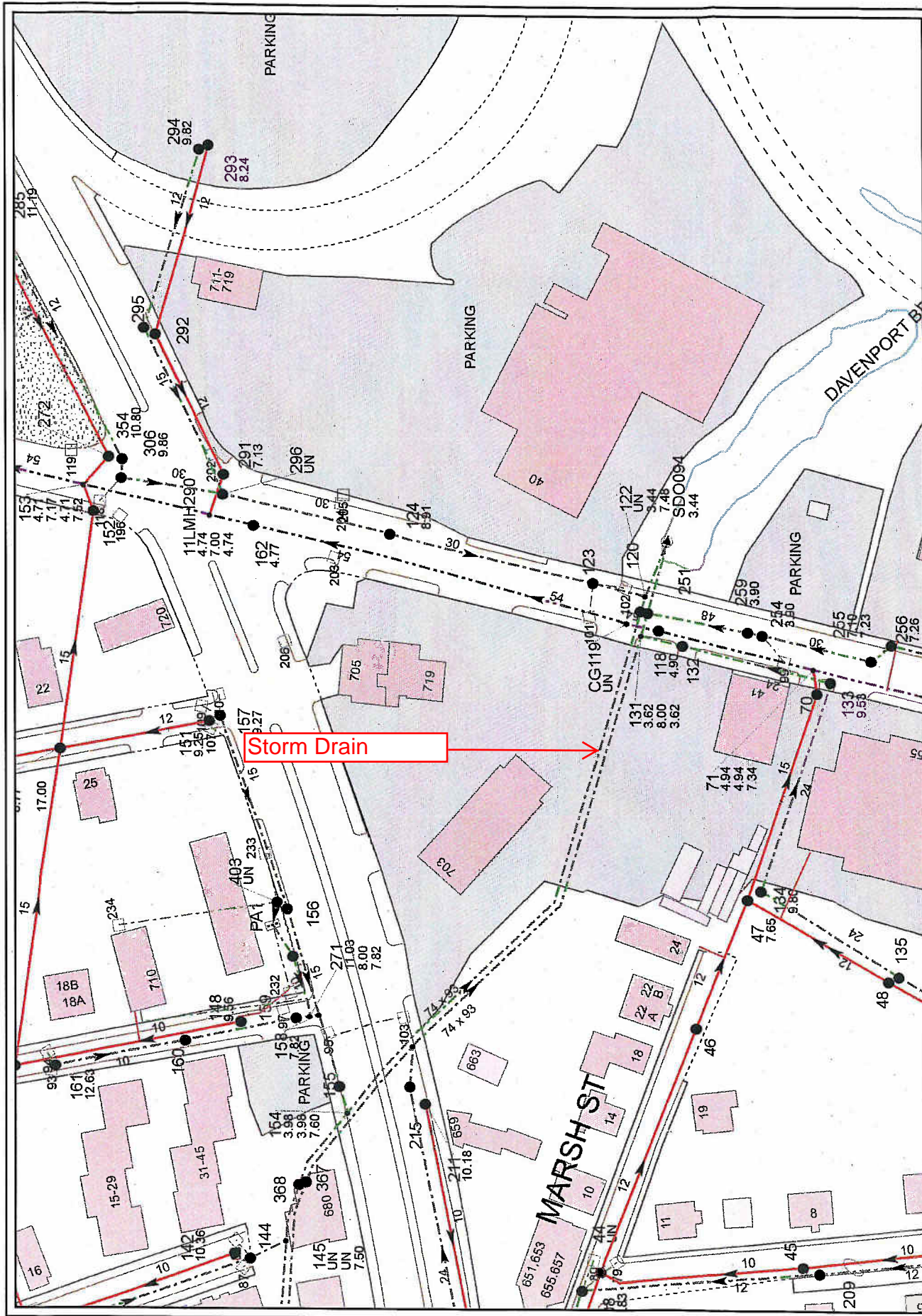




Storm Drain







Storm Drain





## **Appendix F**

Groundwater Chemical Test Results - Alpha Analytical, Inc.

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive  
Westborough, Massachusetts 01581-1019  
(508) 898-9220      www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: McPhail Associates

Laboratory Job Number: L0703967

Address: 30 Norfolk Street

Cambridge, MA 02139

Date Received: 22-MAR-2007

Attn: Mr. Ambrose Donovan

Date Reported: 20-APR-2007

Project Number: 4675.9.00

Delivery Method: Alpha

Site: 26 NORFOLK ST.

---

The following questions pertain only to MCP Analytical Methods

An affirmative response to questions A,B,C & D is required for "Presumptive Certainty" status

- A. Were all samples received by the laboratory in a condition consistent with those described on their Chain-of-Custody documentation for the data set? YES
- B. Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines? YES
- C. Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? YES
- D. **VPH and EPH methods only:** Was the VPH or EPH method run without significant modifications, as specified in Section 11.3? YES

A response to questions E and F is required for "Presumptive Certainty" status

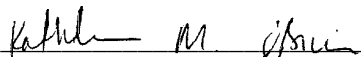
- E. Were all QC performance standards and recommendations for the specified method(s) achieved? NO
- F. Were results for all analyte-list compounds/elements for the specified method(s) reported? NO

Any answers of NO to the above questions are addressed in the case narrative.

---

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

---

Authorized by:   
Technical Representative

ALPHA ANALYTICAL LABORATORIES

Laboratory Job Number: L0703967

Date Reported: 20-APR-2007

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ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0703967-01	B-2 OW 032207 GW	DORCHESTER, MA

**ALPHA ANALYTICAL LABORATORIES**  
**NARRATIVE REPORT**

**Laboratory Job Number: L0703967**

---

Report Submission

This report replaces the report issued on March 29, 2007. It has been amended to correct the client sample identification on L0703967-01.

The samples were received in accordance with the chain of custody and no significant deviations were encountered during preparation or analysis unless otherwise noted below.

MCP Related Narratives

Volatile Organics

L0703967-01 was processed against a calibration curve that utilized a quadratic fit for Bromomethane, Chloroethane, Acetone, Ethyl-tert-butyl-ether, 2,2-Dichloropropene and Tertiary-amyl methyl ether.

In reference to question E:

The LCS/LCSD % recoveries are below method acceptance criteria for Dichlorodifluoromethane, a difficult analyte.

EPH by method EPH-04-1

Extraction method: 3510C

In reference to question E:

The LCS/LCSD RPDs are above method acceptance criteria for Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene and Pyrene.

Metals

In reference to question F:

At the client's request, all submitted samples were not analyzed for the full MCP list of compounds specified for the Method.



**ALPHA ANALYTICAL LABORATORIES**  
**CERTIFICATE OF ANALYSIS**

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

<b>Laboratory Sample Number:</b> L0703967-01	<b>Date Collected:</b> 22-MAR-2007 08:00
B-2 OW 032207 GW	<b>Date Received :</b> 22-MAR-2007
<b>Sample Matrix:</b> WATER	<b>Date Reported :</b> 20-APR-2007
<b>Condition of Sample:</b> Satisfactory	<b>Field Prep:</b> None
<b>Number &amp; Type of Containers:</b> 2-Amber,1-Plastic,2-Vial	

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Dissolved Metals by MCP 6000/7000 series				60 6010B		
Lead, Dissolved	ND	mg/l	0.010	60 6010B	0327 16:30 0328 16:32	AI
Volatile Organics by MCP 8260B				60 8260B	0328 21:57	RY
Methylene chloride	ND	ug/l	5.0			
1,1-Dichloroethane	ND	ug/l	0.75			
Chloroform	ND	ug/l	0.75			
Carbon tetrachloride	ND	ug/l	0.50			
1,2-Dichloropropane	ND	ug/l	1.8			
Dibromochloromethane	ND	ug/l	0.50			
1,1,2-Trichloroethane	ND	ug/l	0.75			
Tetrachloroethene	ND	ug/l	0.50			
Chlorobenzene	ND	ug/l	0.50			
Trichlorofluoromethane	ND	ug/l	2.5			
1,2-Dichloroethane	ND	ug/l	0.50			
1,1,1-Trichloroethane	ND	ug/l	0.50			
Bromodichloromethane	ND	ug/l	0.50			
trans-1,3-Dichloropropene	ND	ug/l	0.50			
cis-1,3-Dichloropropene	ND	ug/l	0.50			
1,1-Dichloropropene	ND	ug/l	2.5			
Bromoform	ND	ug/l	2.0			
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50			
Benzene	ND	ug/l	0.50			
Toluene	ND	ug/l	0.75			
Ethylbenzene	ND	ug/l	0.50			
Chloromethane	ND	ug/l	2.5			
Bromomethane	ND	ug/l	1.0			
Vinyl chloride	ND	ug/l	1.0			
Chloroethane	ND	ug/l	1.0			
1,1-Dichloroethene	ND	ug/l	0.50			
trans-1,2-Dichloroethene	ND	ug/l	0.75			
Trichloroethene	ND	ug/l	0.50			
1,2-Dichlorobenzene	ND	ug/l	2.5			
1,3-Dichlorobenzene	ND	ug/l	2.5			
1,4-Dichlorobenzene	ND	ug/l	2.5			
Methyl tert butyl ether	ND	ug/l	1.0			
p/m-Xylene	ND	ug/l	1.0			
o-Xylene	ND	ug/l	1.0			

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL LABORATORIES**  
**CERTIFICATE OF ANALYSIS**

**Laboratory Sample Number:** L0703967-01  
B-2 OW 032207 GW

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B cont'd				60 8260B	0328 21:57 RY		
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	0.60				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Isopropyl Ether	ND	ug/l	2.0				
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0				
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0				
1,4-Dioxane	ND	ug/l	250				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	91.0	%	70-130				
Toluene-d8	93.0	%	70-130				
4-Bromofluorobenzene	109	%	70-130				
Dibromofluoromethane	95.0	%	70-130				

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL LABORATORIES**  
**CERTIFICATE OF ANALYSIS**

**Laboratory Sample Number:** L0703967-01  
B-2 OW 032207 GW

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP      ANAL	ID
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Extractable Petroleum Hydrocarbons				61 EPH-04-1	0323 10:45 0327 11:03 BN	
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Quality Control Information

Condition of sample received:	Satisfactory
Aqueous preservative:	Laboratory Provided Preserved Container
Sample temperature upon receipt:	Received on Ice
Sample extraction method:	Extracted Per the Method

C9-C18 Aliphatics	ND	ug/l	119
C19-C36 Aliphatics	253	ug/l	119
C11-C22 Aromatics	ND	ug/l	119
C11-C22 Aromatics, Adjusted	ND	ug/l	119
Naphthalene	ND	ug/l	11.9
2-Methylnaphthalene	ND	ug/l	11.9
Acenaphthylene	ND	ug/l	11.9
Acenaphthene	ND	ug/l	11.9
Fluorene	ND	ug/l	11.9
Phenanthrene	ND	ug/l	11.9
Anthracene	ND	ug/l	11.9
Fluoranthene	ND	ug/l	11.9
Pyrene	ND	ug/l	11.9
Benzo(a)anthracene	ND	ug/l	11.9
Chrysene	ND	ug/l	11.9
Benzo(b)fluoranthene	ND	ug/l	11.9
Benzo(k)fluoranthene	ND	ug/l	11.9
Benzo(a)pyrene	ND	ug/l	11.9
Indeno(1,2,3-cd)Pyrene	ND	ug/l	11.9
Dibenzo(a,h)anthracene	ND	ug/l	11.9
Benzo(ghi)perylene	ND	ug/l	11.9

Surrogate(s)	Recovery		QC Criteria
Chloro-Octadecane	49.0	%	40-140
o-Terphenyl	57.0	%	40-140
2-Fluorobiphenyl	64.0	%	40-140
2-Bromonaphthalene	61.0	%	40-140

Comments: Complete list of References and Glossary of Terms found in Addendum I

**ALPHA ANALYTICAL LABORATORIES**  
**QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS**

**Laboratory Job Number: L0703967**

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Dissolved Metals by MCP 6000/7000 series for sample(s) 01 (WG274624-2, WG274624-3)					
Lead, Dissolved	92	92	0	20	80-120
Volatile Organics by MCP 8260B for sample(s) 01 (WG274914-1, WG274914-2)					
Methylene chloride	96	103	7	25	70-130
1,1-Dichloroethane	94	98	4	25	70-130
Chloroform	94	100	6	25	70-130
Carbon tetrachloride	90	96	6	25	70-130
1,2-Dichloropropane	98	103	5	25	70-130
Dibromochloromethane	82	84	2	25	70-130
1,1,2-Trichloroethane	89	91	2	25	70-130
Tetrachloroethene	92	95	3	25	70-130
Chlorobenzene	88	89	1	25	70-130
Trichlorofluoromethane	94	95	1	25	70-130
1,2-Dichloroethane	94	95	1	25	70-130
1,1,1-Trichloroethane	95	99	4	25	70-130
Bromodichloromethane	92	94	2	25	70-130
trans-1,3-Dichloropropene	82	85	4	25	70-130
cis-1,3-Dichloropropene	89	91	2	25	70-130
1,1-Dichloropropene	99	100	1	25	70-130
Bromoform	88	90	2	50	70-130
1,1,2,2-Tetrachloroethane	91	94	3	25	70-130
Benzene	94	96	2	25	70-130
Toluene	88	90	2	25	70-130
Ethylbenzene	92	93	1	25	70-130
Chloromethane	70	78	11	50	70-130
Bromomethane	99	113	13	50	70-130
Vinyl chloride	81	83	2	25	70-130
Chloroethane	79	85	7	25	70-130
1,1-Dichloroethene	97	102	5	25	70-130
trans-1,2-Dichloroethene	94	98	4	25	70-130
Trichloroethene	93	98	5	25	70-130
1,2-Dichlorobenzene	91	93	2	25	70-130
1,3-Dichlorobenzene	90	91	1	25	70-130
1,4-Dichlorobenzene	90	91	1	25	70-130
Methyl tert butyl ether	100	110	10	25	70-130
p/m-Xylene	92	92	0	25	70-130
o-Xylene	93	95	2	25	70-130
cis-1,2-Dichloroethene	101	107	6	25	70-130
Dibromomethane	88	92	4	25	70-130
1,2,3-Trichloropropane	101	107	6	25	70-130
Styrene	91	93	2	25	70-130
Dichlorodifluoromethane	43	45	5	50	70-130
Acetone	110	103	7	50	70-130
Carbon disulfide	77	81	5	25	70-130
2-Butanone	92	102	10	50	70-130
4-Methyl-2-pentanone	102	114	11	50	70-130
2-Hexanone	96	102	6	50	70-130
Bromochloromethane	97	97	0	25	70-130

**ALPHA ANALYTICAL LABORATORIES**  
**QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS**

**Laboratory Job Number: L0703967**

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 01 (WG274914-1, WG274914-2)					
Tetrahydrofuran	86	94	9	25	70-130
2,2-Dichloropropane	72	79	9	50	70-130
1,2-Dibromoethane	89	88	1	25	70-130
1,3-Dichloropropane	91	91	0	25	70-130
1,1,1,2-Tetrachloroethane	90	90	0	25	70-130
Bromobenzene	90	91	1	25	70-130
n-Butylbenzene	95	93	2	25	70-130
sec-Butylbenzene	95	95	0	25	70-130
tert-Butylbenzene	95	97	2	25	70-130
o-Chlorotoluene	90	90	0	25	70-130
p-Chlorotoluene	94	92	2	25	70-130
1,2-Dibromo-3-chloropropane	79	77	3	50	70-130
Hexachlorobutadiene	86	89	3	25	70-130
Isopropylbenzene	103	101	2	25	70-130
p-Isopropyltoluene	98	98	0	25	70-130
Naphthalene	92	99	7	25	70-130
n-Propylbenzene	95	94	1	25	70-130
1,2,3-Trichlorobenzene	95	97	2	25	70-130
1,2,4-Trichlorobenzene	89	94	5	25	70-130
1,3,5-Trimethylbenzene	93	93	0	25	70-130
1,2,4-Trimethylbenzene	93	91	2	25	70-130
Ethyl ether	91	100	9	25	70-130
Isopropyl Ether	101	103	2	25	70-130
Ethyl-Tert-Butyl-Ether	95	103	8	25	70-130
Tertiary-Amyl Methyl Ether	98	103	5	25	70-130
1,4-Dioxane	91	103	12	50	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	97	96	1		70-130
Toluene-d8	96	95	1		70-130
4-Bromofluorobenzene	106	102	4		70-130
Dibromofluoromethane	99	101	2		70-130
Extractable Petroleum Hydrocarbons for sample(s) 01 (WG274282-2, WG274282-3)					
C9-C18 Aliphatics	68	64	6	25	40-140
C19-C36 Aliphatics	80	80	0	25	40-140
C11-C22 Aromatics	76	95	22	25	40-140
Naphthalene	66	81	20	25	40-140
2-Methylnaphthalene	62	80	25	25	40-140
Acenaphthylene	62	86	32	25	40-140
Acenaphthene	63	89	34	25	40-140
Fluorene	65	91	33	25	40-140
Phenanthrene	68	97	35	25	40-140
Anthracene	69	99	36	25	40-140
Fluoranthene	72	97	30	25	40-140
Pyrene	73	97	28	25	40-140
Benzo(a)anthracene	79	92	15	25	40-140

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0703967

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Extractable Petroleum Hydrocarbons for sample(s) 01 (WG274282-2, WG274282-3)					
Chrysene	78	92	16	25	40-140
Benzo(b)fluoranthene	86	90	5	25	40-140
Benzo(k)fluoranthene	83	87	5	25	40-140
Benzo(a)pyrene	83	86	4	25	40-140
Indeno(1,2,3-cd)Pyrene	85	87	2	25	40-140
Dibenzo(a,h)anthracene	88	88	0	25	40-140
Benzo(ghi)perylene	88	91	3	25	40-140
Nonane (C9)	55	45	20	25	30-140
Decane (C10)	64	54	17	25	40-140
Dodecane (C12)	69	63	9	25	40-140
Tetradecane (C14)	70	68	3	25	40-140
Hexadecane (C16)	74	76	3	25	40-140
Octadecane (C18)	77	79	3	25	40-140
Nonadecane (C19)	79	80	1	25	40-140
Eicosane (C20)	81	83	2	25	40-140
Docosane (C22)	83	84	1	25	40-140
Tetracosane (C24)	84	84	0	25	40-140
Hexacosane (C26)	83	82	1	25	40-140
Octacosane (C28)	82	81	1	25	40-140
Triacontane (C30)	80	79	1	25	40-140
Hexatriacontane (C36)	82	80	2	25	40-140
Surrogate(s)					
Chloro-Octadecane	74	60	21		40-140
o-Terphenyl	67	91	30		40-140
2-Fluorobiphenyl	68	92	30		40-140
2-Bromonaphthalene	66	94	35		40-140
% Naphthalene Breakthrough	0	0	NC		
% 2-Methylnaphthalene Breakthrough	0	0	NC		

**ALPHA ANALYTICAL LABORATORIES**  
**QUALITY ASSURANCE FRACTIONATION CHECK**

**Laboratory Job Number: L0703967**

Parameter	% Recovery	QC Criteria
-----------	------------	-------------

Fractionation Check Standard Recoveries for Lot FISH55554
---

C9-C18 Aliphatics	78	40-140
C19-C36 Aliphatics	82	40-140
C11-C22 Aromatics	101	40-140
Naphthalene	91	40-140
2-Methylnaphthalene	90	40-140
Acenaphthylene	96	40-140
Acenaphthene	94	40-140
Fluorene	95	40-140
Phenanthrene	99	40-140
Anthracene	104	40-140
Fluoranthene	102	40-140
Pyrene	103	40-140
Benzo(a)anthracene	102	40-140
Chrysene	102	40-140
Benzo(b)fluoranthene	93	40-140
Benzo(k)fluoranthene	103	40-140
Benzo(a)pyrene	96	40-140
Indeno(1,2,3-cd)Pyrene	88	40-140
Dibenzo(a,h)anthracene	95	40-140
Benzo(ghi)perylene	95	40-140
Nonane (C9)	65	30-140
Decane (C10)	70	40-140
Dodecane (C12)	73	40-140
Tetradecane (C14)	74	40-140
Hexadecane (C16)	75	40-140
Octadecane (C18)	76	40-140
Nonadecane (C19)	78	40-140
Eicosane (C20)	79	40-140
Docosane (C22)	84	40-140
Tetracosane (C24)	86	40-140
Hexacosane (C26)	86	40-140
Octacosane (C28)	84	40-140
triacontane (C30)	83	40-140
Hexatriacontane (C36)	86	40-140
Surrogate(s)		
Chloro-Octadecane	74	40-140
o-Terphenyl	95	40-140
2-Fluorobiphenyl	90	40-140
2-Bromonaphthalene	97	40-140



**ALPHA ANALYTICAL LABORATORIES**  
**QUALITY ASSURANCE BATCH BLANK ANALYSIS**

**Laboratory Job Number: L0703967**

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Blank Analysis for sample(s) 01 (WG274624-1)						
Dissolved Metals by MCP 6000/7000 series				60 6010B		
Lead, Dissolved	ND	mg/l	0.010	60 6010B	0327 16:30 0328 16:08	AI
Blank Analysis for sample(s) 01 (WG274914-3)						
Volatile Organics by MCP 8260B				60 8260B		0328 17:17 RY
Methylene chloride	ND	ug/l	5.0			
1,1-Dichloroethane	ND	ug/l	0.75			
Chloroform	ND	ug/l	0.75			
Carbon tetrachloride	ND	ug/l	0.50			
1,2-Dichloropropane	ND	ug/l	1.8			
Dibromochloromethane	ND	ug/l	0.50			
1,1,2-Trichloroethane	ND	ug/l	0.75			
Tetrachloroethene	ND	ug/l	0.50			
Chlorobenzene	ND	ug/l	0.50			
Trichlorofluoromethane	ND	ug/l	2.5			
1,2-Dichloroethane	ND	ug/l	0.50			
1,1,1-Trichloroethane	ND	ug/l	0.50			
Bromodichloromethane	ND	ug/l	0.50			
trans-1,3-Dichloropropene	ND	ug/l	0.50			
cis-1,3-Dichloropropene	ND	ug/l	0.50			
1,1-Dichloropropene	ND	ug/l	2.5			
Bromoform	ND	ug/l	2.0			
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50			
Benzene	ND	ug/l	0.50			
Toluene	ND	ug/l	0.75			
Ethylbenzene	ND	ug/l	0.50			
Chloromethane	ND	ug/l	2.5			
Bromomethane	ND	ug/l	1.0			
Vinyl chloride	ND	ug/l	1.0			
Chloroethane	ND	ug/l	1.0			
1,1-Dichloroethene	ND	ug/l	0.50			
trans-1,2-Dichloroethene	ND	ug/l	0.75			
Trichloroethene	ND	ug/l	0.50			
1,2-Dichlorobenzene	ND	ug/l	2.5			
1,3-Dichlorobenzene	ND	ug/l	2.5			
1,4-Dichlorobenzene	ND	ug/l	2.5			
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			
Dibromomethane	ND	ug/l	5.0			
1,2,3-Trichloropropane	ND	ug/l	5.0			
Styrene	ND	ug/l	1.0			
Dichlorodifluoromethane	ND	ug/l	5.0			
Acetone	ND	ug/l	5.0			
Carbon disulfide	ND	ug/l	5.0			

**ALPHA ANALYTICAL LABORATORIES**  
**QUALITY ASSURANCE BATCH BLANK ANALYSIS**

Laboratory Job Number: L0703967

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Blank Analysis for sample(s) 01 (WG274914-3)						
Volatile Organics by MCP 8260B cont'd				60 8260B	0328 17:17 RY	
2-Butanone	ND	ug/l	5.0			
4-Methyl-2-pentanone	ND	ug/l	5.0			
2-Hexanone	ND	ug/l	5.0			
Bromochloromethane	ND	ug/l	2.5			
Tetrahydrofuran	ND	ug/l	10.			
2,2-Dichloropropane	ND	ug/l	2.5			
1,2-Dibromoethane	ND	ug/l	2.0			
1,3-Dichloropropane	ND	ug/l	2.5			
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50			
Bromobenzene	ND	ug/l	2.5			
n-Butylbenzene	ND	ug/l	0.50			
sec-Butylbenzene	ND	ug/l	0.50			
tert-Butylbenzene	ND	ug/l	2.5			
o-Chlorotoluene	ND	ug/l	2.5			
p-Chlorotoluene	ND	ug/l	2.5			
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5			
Hexachlorobutadiene	ND	ug/l	0.60			
Isopropylbenzene	ND	ug/l	0.50			
p-Isopropyltoluene	ND	ug/l	0.50			
Naphthalene	ND	ug/l	2.5			
n-Propylbenzene	ND	ug/l	0.50			
1,2,3-Trichlorobenzene	ND	ug/l	2.5			
1,2,4-Trichlorobenzene	ND	ug/l	2.5			
1,3,5-Trimethylbenzene	ND	ug/l	2.5			
1,2,4-Trimethylbenzene	ND	ug/l	2.5			
Ethyl ether	ND	ug/l	2.5			
Isopropyl Ether	ND	ug/l	2.0			
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0			
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0			
1,4-Dioxane	ND	ug/l	250			
Surrogate(s)	Recovery		QC Criteria			
1,2-Dichloroethane-d4	96.0	%	70-130			
Toluene-d8	96.0	%	70-130			
4-Bromofluorobenzene	107	%	70-130			
Dibromofluoromethane	101	%	70-130			
Blank Analysis for sample(s) 01 (WG274282-1)						
Extractable Petroleum Hydrocarbons				61 EPH-04-1	0323 10:45 0323 14:54 BN	
C9-C18 Aliphatics	ND	ug/l	100			
C19-C36 Aliphatics	ND	ug/l	100			
C11-C22 Aromatics	ND	ug/l	100			
C11-C22 Aromatics, Adjusted	ND	ug/l	100			
Naphthalene	ND	ug/l	10.0			
2-Methylnaphthalene	ND	ug/l	10.0			
Acenaphthylene	ND	ug/l	10.0			

ALPHA ANALYTICAL LABORATORIES  
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0703967

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ANAL	ID
Blank Analysis for sample(s) 01 (WG274282-1)							
Extractable Petroleum Hydrocarbons cont'd				61 EPH-04-1	0323 10:45	0323 14:54	BN
Acenaphthene	ND	ug/l	10.0				
Fluorene	ND	ug/l	10.0				
Phenanthrene	ND	ug/l	10.0				
Anthracene	ND	ug/l	10.0				
Fluoranthene	ND	ug/l	10.0				
Pyrene	ND	ug/l	10.0				
Benzo(a)anthracene	ND	ug/l	10.0				
Chrysene	ND	ug/l	10.0				
Benzo(b)fluoranthene	ND	ug/l	10.0				
Benzo(k)fluoranthene	ND	ug/l	10.0				
Benzo(a)pyrene	ND	ug/l	10.0				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	10.0				
Dibenzo(a,h)anthracene	ND	ug/l	10.0				
Benzo(ghi)perylene	ND	ug/l	10.0				
Surrogate(s)	Recovery		QC Criteria				
Chloro-Octadecane	67.0	%	40-140				
o-Terphenyl	84.0	%	40-140				
2-Fluorobiphenyl	92.0	%	40-140				
2-Bromonaphthalene	91.0	%	40-140				

**ALPHA ANALYTICAL LABORATORIES**  
**ADDENDUM I**

---

**REFERENCES**

60. Quality Assurance and Quality Control Requirements and Performance Standards for SW-846 Methods. MADEP BWSC. WSC-CAM-IIA (Revision 4), WSC-CAM-V C (Revision 2), WSC-CAM-IIIA (Revision 5). May 2004.
61. Method for the Determination of Extractable Petroleum Hydrocarbons (EPH). Massachusetts Department of Environmental Protection, DEA/ORS/BWSC. May 2004, Revision 1.1.

**GLOSSARY OF TERMS AND SYMBOLS**

REF	Reference number in which test method may be found.
METHOD	Method number by which analysis was performed.
ID	Initials of the analyst.
ND	Not detected in comparison to the reported detection limit.
NI	Not Ignitable.
ug/cart	Micrograms per Cartridge.

**LIMITATION OF LIABILITIES**

Alpha Analytical, Inc. 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, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. 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, Inc.

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

ALPHA ANALYTICAL LABORATORIES  
LOGIN SPECIFIC INFORMATION

Laboratory Job Number: L0703967

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0703967-01A	Vial HCl preserved	A	N/A	2.4C	Y	Absent	MCP-8260-04
L0703967-01B	Vial HCl preserved	A	N/A	2.4C	Y	Absent	MCP-8260-04
L0703967-01D	Plastic 250ml HNO3 preserved spl	A	<2	2.4C	Y	Absent	MCP-PB-6010S
L0703967-01E	Plastic 1000ml unpreserved	A	7	2.4C	Y	Absent	PREPS
L0703967-01F	Amber 1000ml HCl preserved	A	<2	2.4C	Y	Absent	EPH-DELUX-04
L0703967-01G	Amber 1000ml HCl preserved	A	<2	2.4C	Y	Absent	EPH-DELUX-04

Container Comments

Container ID	Comments
--------------	----------

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

## CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 3/26/07

ALPHA Job #: 6070.3967

## Client Information

Client: McPhail Assoc  
Address: 30 Norfolk St  
Cambridge MA 02139  
Phone: 617 868 1420  
Fax: 617 868 1423  
Email:

## Project Information

Project Name: 26 Norfolk St  
Project Location: Dorchester MA  
Project #: 4675.9.00  
Project Manager: Jason Huestis

ALPHA Quote #:

### Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)  
Date Due: 3/29/07 Time:

## Report Information - Data Deliverables

☐ FAX                      ☐ EMAIL  
☐ ADEx                   ☐ Accl Deliverables

## Regulatory Requirements/Report Limits

State /Fed Program <b>MCP</b>	Criteria <b>GW2/GW</b>
----------------------------------	---------------------------

## MA MCP PRESUMPTIVE CERTANTY ---CT REASONABLE CONFIDENCE PROTOCOLS

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

## SAMPLEHANDLING

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

100

[illegible]

**PLEASE ANSWER QUESTIONS ABOVE!**

IS YOUR PROJECT  
MA MCP *or* CT RCP?

Container Type

Preservative

Relinquished By:

Date/Time

Received By.

Date/Time

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



## ANALYTICAL REPORT

Lab Number:	L1113059
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	CODMEN SQUARE HEALTH CENTER
Project Number:	5237.9.01
Report Date:	09/01/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

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





**Project Name:** CODMEN SQUARE HEALTH CENTER  
**Project Number:** 5237.9.01

**Lab Number:** L1113059  
**Report Date:** 09/01/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1113059-01	B-2 (OW)	DORCHESTER, MA	08/23/11 14:00

Project Name: CODMEN SQUARE HEALTH CENTER

Lab Number: L1113059

Project Number: 5237.9.01

Report Date: 09/01/11

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** CODMEN SQUARE HEALTH CENTER  
**Project Number:** 5237.9.01

**Lab Number:** L1113059  
**Report Date:** 09/01/11

### Case Narrative

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

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

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

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

---

### MCP Related Narratives

#### Metals

L1113059-01 has an elevated detection limit for Antimony due to the dilution required by the high concentrations of non-target analytes. The requested regulatory limit was achieved.

In reference to question G:

One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

**Project Name:** CODMEN SQUARE HEALTH CENTER  
**Project Number:** 5237.9.01

**Lab Number:** L1113059  
**Report Date:** 09/01/11

### Case Narrative (continued)

#### Non-MCP Related Narratives

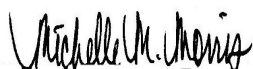
##### Chloride

L1113059-01 has an elevated detection limit due to the dilution required to quantitate the result within the calibration range.

The WG486096-3 MS recovery (50%), performed on L1113059-01, does not apply because the sample concentration is greater than four times the spike amount added.

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:



Michelle M. Morris

Title: Technical Director/Representative

Date: 09/01/11

## METALS

**Project Name:** CODMEN SQUARE HEALTH CENTER**Lab Number:** L1113059**Project Number:** 5237.9.01**Report Date:** 09/01/11**SAMPLE RESULTS****Lab ID:** L1113059-01**Date Collected:** 08/23/11 14:00**Client ID:** B-2 (OW)**Date Received:** 08/23/11**Sample Location:** DORCHESTER, MA**Field Prep:** Not Specified**Matrix:** Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Westborough Lab											
Antimony, Total	ND		mg/l	0.0040	--	4	08/26/11 12:30	08/31/11 16:53	EPA 3005A	97,6020A	BM
Arsenic, Total	ND		mg/l	0.005	--	1	08/26/11 12:30	08/30/11 15:52	EPA 3005A	97,6010B	AI
Cadmium, Total	ND		mg/l	0.004	--	1	08/26/11 12:30	08/30/11 15:52	EPA 3005A	97,6010B	AI
Chromium, Total	ND		mg/l	0.01	--	1	08/26/11 12:30	08/30/11 15:52	EPA 3005A	97,6010B	AI
Copper, Total	0.105		mg/l	0.010	--	1	08/26/11 12:30	08/30/11 15:52	EPA 3005A	97,6010B	AI
Iron, Total	0.25		mg/l	0.05	--	1	08/26/11 12:30	08/30/11 15:52	EPA 3005A	97,6010B	AI
Mercury, Total	ND		mg/l	0.0002	--	1	08/25/11 17:50	08/26/11 14:20	EPA 7470A	97,7470A	JP
Nickel, Total	ND		mg/l	0.025	--	1	08/26/11 12:30	08/30/11 15:52	EPA 3005A	97,6010B	AI
Silver, Total	ND		mg/l	0.007	--	1	08/26/11 12:30	08/30/11 15:52	EPA 3005A	97,6010B	AI
Zinc, Total	0.157		mg/l	0.050	--	1	08/26/11 12:30	08/30/11 15:52	EPA 3005A	97,6010B	AI



Project Name: CODMEN SQUARE HEALTH CENTER

Lab Number: L1113059

Project Number: 5237.9.01

Report Date: 09/01/11

## Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01 Batch: WG486692-1									
Mercury, Total	ND	mg/l	0.0002	--	1	08/25/11 17:50	08/26/11 14:09	97,7470A	JP

### Prep Information

Digestion Method: EPA 7470A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01 Batch: WG486753-1									
Arsenic, Total	ND	mg/l	0.005	--	1	08/26/11 12:30	08/30/11 15:44	97,6010B	AI
Cadmium, Total	ND	mg/l	0.004	--	1	08/26/11 12:30	08/30/11 15:44	97,6010B	AI
Chromium, Total	ND	mg/l	0.01	--	1	08/26/11 12:30	08/30/11 15:44	97,6010B	AI
Copper, Total	ND	mg/l	0.010	--	1	08/26/11 12:30	08/30/11 15:44	97,6010B	AI
Iron, Total	ND	mg/l	0.05	--	1	08/26/11 12:30	08/30/11 15:44	97,6010B	AI
Nickel, Total	ND	mg/l	0.025	--	1	08/26/11 12:30	08/30/11 15:44	97,6010B	AI
Silver, Total	ND	mg/l	0.007	--	1	08/26/11 12:30	08/30/11 15:44	97,6010B	AI
Zinc, Total	ND	mg/l	0.050	--	1	08/26/11 12:30	08/30/11 15:44	97,6010B	AI

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01 Batch: WG487247-1									
Antimony, Total	ND	mg/l	0.0010	--	1	08/26/11 12:30	08/31/11 15:59	97,6020A	BM

### Prep Information

Digestion Method: EPA 3005A



# **Lab Control Sample Analysis** Batch Quality Control

**Project Name:** CODMEN SQUARE HEALTH CENTER  
**Project Number:** 5237.9.01

**Lab Number:** L1113059  
**Report Date:** 09/01/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG486692-2 WG486692-3								
Mercury, Total	102		109		80-120	7		20
MCP Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG486753-2 WG486753-3								
Arsenic, Total	107		111		80-120	4		20
Cadmium, Total	106		108		80-120	2		20
Chromium, Total	95		95		80-120	0		20
Copper, Total	102		104		80-120	2		20
Iron, Total	94		95		80-120	1		20
Nickel, Total	99		102		80-120	3		20
Silver, Total	103		103		80-120	0		20
Zinc, Total	98		100		80-120	2		20
MCP Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG487247-2 WG487247-3								
Antimony, Total	101		98		80-120	3		20

# **INORGANICS & MISCELLANEOUS**

**Project Name:** CODMEN SQUARE HEALTH CENTER  
**Project Number:** 5237.9.01

**Lab Number:** L1113059  
**Report Date:** 09/01/11

### SAMPLE RESULTS

**Lab ID:** L1113059-01  
**Client ID:** B-2 (OW)  
**Sample Location:** DORCHESTER, MA  
**Matrix:** Water

**Date Collected:** 08/23/11 14:00  
**Date Received:** 08/23/11  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP General Chemistry - Westborough Lab										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	08/24/11 00:50	08/24/11 01:09	97,7196A	KK
General Chemistry - Westborough Lab										
Chloride	1540		mg/l	20.0	--	20	-	08/23/11 22:05	1,9251	LA
pH	6.6		SU	-	NA	1	-	08/24/11 01:40	1,9040B	KK



**Project Name:** CODMEN SQUARE HEALTH CENTER  
**Project Number:** 5237.9.01

**Lab Number:** L1113059  
**Report Date:** 09/01/11

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG486096-1										
Chloride	ND		mg/l	1.0	--	1	-	08/23/11 21:26	1,9251	LA
MCP General Chemistry - Westborough Lab for sample(s): 01 Batch: WG486121-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	08/24/11 00:50	08/24/11 01:08	97,7196A	KK

**Lab Control Sample Analysis****Batch Quality Control****Project Name:** CODMEN SQUARE HEALTH CENTER**Project Number:** 5237.9.01**Lab Number:** L1113059**Report Date:** 09/01/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG486096-2								
Chloride	93		-		90-110	-		
MCP General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG486121-2 WG486121-3								
Chromium, Hexavalent	97		98		80-120	1		20
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG486124-1								
pH	101		-		99-101	-		5

# **Matrix Spike Analysis** Batch Quality Control

**Project Name:** CODMEN SQUARE HEALTH CENTER

**Lab Number:** L1113059

**Project Number:** 5237.9.01

**Report Date:** 09/01/11

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01    QC Batch ID: WG486096-3    QC Sample: L1113059-01    Client ID: B-2 (OW)												
Chloride	1540	20	1550	50	Q	-	-		58-140	-		7
MCP General Chemistry - Westborough Lab Associated sample(s): 01    QC Batch ID: WG486121-5    QC Sample: L1113059-01    Client ID: B-2 (OW)												
Chromium, Hexavalent	ND	0.1	0.103	103		-	-		75-125	-		20

# Lab Duplicate Analysis

## Batch Quality Control

**Project Name:** CODMEN SQUARE HEALTH CENTER

**Project Number:** 5237.9.01

**Lab Number:** L1113059

**Report Date:** 09/01/11

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG486096-4 QC Sample: L1113059-01 Client ID: B-2 (OW)						
Chloride	1540	1520	mg/l	1		7
MCP General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG486121-4 QC Sample: L1113059-01 Client ID: B-2 (OW)						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG486124-2 QC Sample: L1113059-01 Client ID: B-2 (OW)						
pH	6.6	6.7	SU	2		5



**Project Name:** CODMEN SQUARE HEALTH CENTER**Project Number:** 5237.9.01**Lab Number:** L1113059**Report Date:** 09/01/11**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1113059-01A	Plastic 500ml unpreserved	A	7	2.6	Y	Absent	PH-9040(1),MCP-HEXCR7196-10(1)
L1113059-01B	Plastic 500ml unpreserved	A	7	2.6	Y	Absent	CL-9251(28)
L1113059-01C	Plastic 500ml HNO3 preserved	A	<2	2.6	Y	Absent	MCP-CR-6010T-10(180),MCP-FE-6010T-10(180),MCP-7470T-10(28),MCP-AS-6010T-10(180),MCP-CD-6010T-10(180),MCP-AG-6010T-10(180),MCP-CU-6010T-10(180),MCP-ZN-6010T-10(180),MCP-SB-6020T-10(180),MCP-NI-6010T-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** CODMEN SQUARE HEALTH CENTER  
**Project Number:** 5237.9.01

**Lab Number:** L1113059  
**Report Date:** 09/01/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

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

### Data Qualifiers

- |          |  |
|----------|--|
| <b>A</b> | - Spectra identified as "Aldol Condensation Product".  |
| <b>B</b> | - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. |
| <b>C</b> | - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.   |
| <b>D</b> | - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.  |
| <b>E</b> | - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.   |
| <b>G</b> | - 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.   |
| <b>H</b> | - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.   |
| <b>I</b> | - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.   |
| <b>M</b> | - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.   |
| <b>P</b> | - The RPD between the results for the two columns exceeds the method-specified criteria.   |
| <b>Q</b> | - The quality control sample exceeds the associated acceptance criteria. 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   |

**Report Format:** Data Usability Report



**Project Name:** CODMEN SQUARE HEALTH CENTER  
**Project Number:** 5237.9.01

**Lab Number:** L1113059  
**Report Date:** 09/01/11

**Data Qualifiers**

than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

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

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

**Project Name:** CODMEN SQUARE HEALTH CENTER  
**Project Number:** 5237.9.01

**Lab Number:** L1113059  
**Report Date:** 09/01/11

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.
- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## LIMITATION OF LIABILITIES

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

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



## Certificate/Approval Program Summary

Last revised July 28, 2011 - Westboro Facility

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

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

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

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

*Solid Waste/Soil* (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons. )

### Maine Department of Human Services Certificate/Lab ID: 2009024.

*Drinking Water* (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500CI-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

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

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

### Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

*Drinking Water* (Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl) (EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate); (EPA 353.2 for: Nitrate-N, Nitrite-N); (SM4500NO3-F for: Nitrate-N and Nitrite-N); 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, 2320B, SM2540C, SM4500H-B. Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics); (504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), EPA 332. Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; ColilertQT SM9223B; MF-SM9222D.)

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

SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. Microbiology Parameters: (ColilertQT SM9223B;Enterolert-QT: SM9222D-MF.)

**New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. *NELAP Accredited.***

*Drinking Water* (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 245.2, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. Organic Parameters: 504.1, 524.2.)

*Non-Potable Water* (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 3005A, 200.7, 200.8, 245.1, 245.2, SW-846 6010B, 6020, 7196A, 7470A, SM3500-CR-D, EPA 120.1, 300.0, 350.1, 351.1, 353.2, 410.4, 420.1, 1664A, SW-846 9010, 9030, 9040B, 9050A, SM426C, SM2120B, 2310B, 2320B, 2540B, 2540D, 4500H+B, 4500CL-E, 4500CN-E, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 5220D, 2510B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3510C, 5030B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A, 8151A.)

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

**New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. *NELAP Accredited.***

*Drinking Water* (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.2, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. Organic Parameters: EPA 332, 504.1, 524.2.)

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

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

**New York Department of Health Certificate/Lab ID: 11148. *NELAP Accredited.***

*Drinking Water* (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

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

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

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

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

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

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

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

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

**Texas Commissoon on Environmental Quality** Certificate/Lab ID: T104704476-09-1. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 S<sup>2-</sup>D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

**Department of Defense** Certificate/Lab ID: L2217.

*Drinking Water* (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

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

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

**The following analytes are not included in our current NELAP/TNI Scope of Accreditation:**

**EPA 8260B:** Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnaphthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO<sub>2</sub> in a soil matrix, NO<sub>3</sub> in a soil matrix, SO<sub>4</sub> in a soil matrix.







## ANALYTICAL REPORT

Lab Number:	L1116489
Client:	McPhail Associates 2269 Massachusetts Avenue Cambridge, MA 02140
ATTN:	Ambrose Donovan
Phone:	(617) 868-1420
Project Name:	COPMAN SQUARE
Project Number:	5237.9.01
Report Date:	10/14/11

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY NELAC (11148), CT (PH-0574), NH (2003), NJ (MA935), RI (LAO00065), ME (MA0086), PA (Registration #68-03671), USDA (Permit #S-72578), US Army Corps of Engineers, Naval FESC.

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



**Project Name:** COPMAN SQUARE  
**Project Number:** 5237.9.01

**Lab Number:** L1116489  
**Report Date:** 10/14/11

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>
L1116489-01	B-4 (OW)	DORCHESTER, MA	10/12/11 14:00

Project Name: COPMAN SQUARE

Lab Number: L1116489

Project Number: 5237.9.01

Report Date: 10/14/11

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	YES
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** COPMAN SQUARE  
**Project Number:** 5237.9.01

**Lab Number:** L1116489  
**Report Date:** 10/14/11

### Case Narrative

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

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

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

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

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### MCP Related Narratives

#### Metals

L1116489-01: The Dissolved result is greater than the Total result for Zinc. The sample containers were verified as being labeled correctly by the laboratory, and aliquots were analyzed from each bottle, confirming the original results.

In reference to question I:

All samples were analyzed for a subset of MCP elements per the Chain of Custody.

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

Authorized Signature:  Elizabeth Simmons

Title: Technical Director/Representative

Date: 10/14/11

## METALS

Project Name: COPMAN SQUARE

Lab Number: L1116489

Project Number: 5237.9.01

Report Date: 10/14/11

## SAMPLE RESULTS

Lab ID: L1116489-01

Date Collected: 10/12/11 14:00

Client ID: B-4 (OW)

Date Received: 10/12/11

Sample Location: DORCHESTER, MA

Field Prep: Not Specified

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Westborough Lab											
Copper, Total	0.0049		mg/l	0.0005	--	1	10/12/11 22:00	10/13/11 19:47	EPA 3005A	97,6020A	BM
Nickel, Total	0.0037		mg/l	0.0010	--	1	10/12/11 22:00	10/13/11 19:47	EPA 3005A	97,6020A	BM
Silver, Total	ND		mg/l	0.0005	--	1	10/12/11 22:00	10/13/11 19:47	EPA 3005A	97,6020A	BM
Zinc, Total	0.0191		mg/l	0.0100	--	1	10/12/11 22:00	10/13/11 19:47	EPA 3005A	97,6020A	BM
MCP Dissolved Metals - Westborough Lab											
Copper, Dissolved	0.0025		mg/l	0.0005	--	1	10/13/11 10:00	10/13/11 19:16	EPA 3005A	97,6020A	BM
Nickel, Dissolved	0.0019		mg/l	0.0010	--	1	10/13/11 10:00	10/13/11 19:16	EPA 3005A	97,6020A	BM
Silver, Dissolved	ND		mg/l	0.0005	--	1	10/13/11 10:00	10/13/11 19:16	EPA 3005A	97,6020A	BM
Zinc, Dissolved	0.0221		mg/l	0.0100	--	1	10/13/11 10:00	10/13/11 19:16	EPA 3005A	97,6020A	BM





Project Name: COPMAN SQUARE

Lab Number: L1116489

Project Number: 5237.9.01

Report Date: 10/14/11

## Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01 Batch: WG495586-1										
Copper, Total	ND		mg/l	0.0005	--	1	10/12/11 22:00	10/13/11 19:22	97,6020A	BM
Nickel, Total	ND		mg/l	0.0010	--	1	10/12/11 22:00	10/13/11 19:22	97,6020A	BM
Silver, Total	ND		mg/l	0.0005	--	1	10/12/11 22:00	10/13/11 19:22	97,6020A	BM
Zinc, Total	ND		mg/l	0.0100	--	1	10/12/11 22:00	10/13/11 19:22	97,6020A	BM

### Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Dissolved Metals - Westborough Lab for sample(s): 01 Batch: WG495587-1										
Copper, Dissolved	ND		mg/l	0.0005	--	1	10/13/11 10:00	10/13/11 18:39	97,6020A	BM
Nickel, Dissolved	ND		mg/l	0.0010	--	1	10/13/11 10:00	10/13/11 18:39	97,6020A	BM
Silver, Dissolved	ND		mg/l	0.0005	--	1	10/13/11 10:00	10/13/11 18:39	97,6020A	BM
Zinc, Dissolved	ND		mg/l	0.0100	--	1	10/13/11 10:00	10/13/11 18:39	97,6020A	BM

### Prep Information

Digestion Method: EPA 3005A

## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** COPMAN SQUARE

**Project Number:** 5237.9.01

**Lab Number:** L1116489

**Report Date:** 10/14/11

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Westborough Lab Associated sample(s): 01 Batch: WG495586-2 WG495586-3								
Copper, Total	103		103		80-120	0		20
Nickel, Total	102		103		80-120	1		20
Silver, Total	101		100		80-120	1		20
Zinc, Total	106		105		80-120	1		20
MCP Dissolved Metals - Westborough Lab Associated sample(s): 01 Batch: WG495587-2 WG495587-3								
Copper, Dissolved	103		102		80-120	1		20
Nickel, Dissolved	103		102		80-120	1		20
Silver, Dissolved	98		99		80-120	1		20
Zinc, Dissolved	106		105		80-120	1		20

**Project Name:** COPMAN SQUARE**Lab Number:** L1116489**Project Number:** 5237.9.01**Report Date:** 10/14/11**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1116489-01A	Plastic 1000ml unpreserved	A	7	5.0	Y	Absent	-
L1116489-01B	Plastic 500ml HNO3 preserved	A	<2	5.0	Y	Absent	MCP-CU-6020T-10(180),MCP-ZN-6020T-10(180),MCP-NI-6020T-10(180),MCP-AG-6020T-10(180)
L1116489-01X	Plastic 500ml HNO3 preserved spl	A	<2	5.0	Y	Absent	MCP-CU-6020S-10(180),MCP-NI-6020S-10(180),MCP-AG-6020S-10(180),MCP-ZN-6020S-10(180)

\*Values in parentheses indicate holding time in days

**Project Name:** COPMAN SQUARE  
**Project Number:** 5237.9.01

**Lab Number:** L1116489  
**Report Date:** 10/14/11

## GLOSSARY

### Acronyms

EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

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

### Terms

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

### Data Qualifiers

- |           |   |
|-----------|---|
| <b>A</b>  | - Spectra identified as "Aldol Condensation Product".   |
| <b>B</b>  | - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than five times (5x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. |
| <b>C</b>  | - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.  |
| <b>D</b>  | - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.   |
| <b>E</b>  | - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.  |
| <b>G</b>  | - 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.  |
| <b>H</b>  | - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.  |
| <b>I</b>  | - The RPD between the results for the two columns exceeds the method-specified criteria; however, the lower value has been reported due to obvious interference.  |
| <b>M</b>  | - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.  |
| <b>NJ</b> | - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.  |

**Report Format:** Data Usability Report



**Project Name:** COPMAN SQUARE**Lab Number:** L1116489**Project Number:** 5237.9.01**Report Date:** 10/14/11**Data Qualifiers**

- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** COPMAN SQUARE  
**Project Number:** 5237.9.01

**Lab Number:** L1116489  
**Report Date:** 10/14/11

## REFERENCES

- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## LIMITATION OF LIABILITIES

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

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



## Certificate/Approval Program Summary

Last revised September 19, 2011 - Westboro Facility

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

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

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

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

*Solid Waste/Soil* (Inorganic Parameters: pH, Sulfide, Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Hexavalent Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Total Cyanide, Ignitability, Phenolics, Corrosivity, TCLP Leach (1311), SPLP Leach (1312 metals only), Reactivity. Organic Parameters: PCBs, PCBs in Oil, Organochlorine Pesticides, Technical Chlordane, Toxaphene, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH, Dicamba, 2,4-D, 2,4,5-T, 2,4,5-TP(Silvex), Volatile Organics, Acid Extractables (Phenols), 3,3'-Dichlorobenzidine, Phthalates, Nitrosamines, Nitroaromatics & Cyclic Ketones, PAHs, Haloethers, Chlorinated Hydrocarbons.)

### Maine Department of Human Services Certificate/Lab ID: 2009024.

*Drinking Water* (Inorganic Parameters: SM9215B, 9222D, 9223B, EPA 180.1, 353.2, SM2130B, 2320B, 2540C, 4500CI-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B, 4500NO3-F, EPA 200.7, EPA 200.8, 245.1, EPA 300.0. Organic Parameters: 504.1, 524.2.)

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

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

### Massachusetts Department of Environmental Protection Certificate/Lab ID: M-MA086.

*Drinking Water* (Inorganic Parameters: (EPA 200.8 for: Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl) (EPA 200.7 for: Ba,Be,Ca,Cd,Cr,Cu,Na,Ni) 245.1, (300.0 for: Nitrate-N, Fluoride, Sulfate); (EPA 353.2 for: Nitrate-N, Nitrite-N); (SM4500NO3-F for: Nitrate-N and Nitrite-N); 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, 2320B, SM2540C, SM4500H-B. Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics); (504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), EPA 332. Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; ColilertQT SM9223B; MF-SM9222D.)

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



SM2510B, 2540C, 2340B, 2320B, 4500CL-E, 4500F-BC, 426C, SM4500NH3-BH, (EPA 350.1 for: Ammonia-N), LACHAT 10-107-06-1-B for Ammonia-N, SM4500NO3-F, 353.2 for Nitrate-N, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.

Organic Parameters: (EPA 624 for Volatile Halocarbons, Volatile Aromatics),(608 for: Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, PCBs-Water), (EPA 625 for SVOC Acid Extractables and SVOC Base/Neutral Extractables), 600/4-81-045-PCB-Oil. Microbiology Parameters: (ColilertQT SM9223B;Enterolert-QT: SM9222D-MF.)

**New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. *NELAP Accredited.***

*Drinking Water* (Inorganic Parameters: SM 9222B, 9223B, 9215B, EPA 200.7, 200.8, 245.2, 300.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 332.0. Organic Parameters: 504.1, 524.2.)

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

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

**New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. *NELAP Accredited.***

*Drinking Water* (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500CN-CE, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 200.8, 245.2, 2540C, SM2120B, 2320B, 2510B, 5310C, SM4500H-B. Organic Parameters: EPA 332, 504.1, 524.2.)

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

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

**New York Department of Health Certificate/Lab ID: 11148. *NELAP Accredited.***

*Drinking Water* (Inorganic Parameters: SM9223B, 9222B, 9215B, EPA 200.8, 200.7, 245.2, SM5310C, EPA 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)

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

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

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

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

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

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

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

**Texas Commission on Environmental Quality** Certificate/Lab ID: T104704476-09-1. **NELAP Accredited.**

*Non-Potable Water* (Inorganic Parameters: EPA 120.1, 1664, 200.7, 200.8, 245.1, 245.2, 300.0, 350.1, 351.1, 353.2, 376.2, 410.4, 420.1, 6010, 6020, 7196, 7470, 9040, SM 2120B, 2310B, 2320B, 2510B, 2540B, 2540C, 2540D, 426C, 4500CL-E, 4500CN-E, 4500F-C, 4500H+B, 4500NH3-H, 4500NO2B, 4500P-E, 4500 S<sup>2-</sup> D, 510C, 5210B, 5220D, 5310C, 5540C. Organic Parameters: EPA 608, 624, 625, 8081, 8082, 8151, 8260, 8270, 8330.)

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

**Department of Defense** Certificate/Lab ID: L2217.

*Drinking Water* (Inorganic Parameters: SM 4500H-B. Organic Parameters: EPA 524.2, 504.1.)

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

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

**The following analytes are not included in our current NELAP/TNI Scope of Accreditation:**

**EPA 8260B:** Freon-113, 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methyl naphthalenes, Total Dimethyl naphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline, 4-Methylphenol. Total Phosphorus in a soil matrix, Chloride in a soil matrix, TKN in a soil matrix, NO<sub>2</sub> in a soil matrix, NO<sub>3</sub> in a soil matrix, SO<sub>4</sub> in a soil matrix.

