McPHAIL ASSOCIATES, INC

Geotechnical Engineers

NOTICE OF INTENT FOR DISCHARGE UNDER REMEDIATION GENERAL PERMIT MAG9100000

CAMBRIDGE DISCOVERY PARK
BUILDING 200/300
ACORN PARK

CAMBRIDGE **MASSACHUSETTS**

to

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

December 18, 2009

Project No. 4214

McPHAIL ASSOCIATES, INC

Geotechnical Engineers

December 18, 2009

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

Attention: RGP-NOC Processing

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

Attention: Mr. Robert D. Kubit

Reference: Building 200/300; Cambridge Discovery Park; Cambridge, Massachusetts
Notice of Intent for Construction Dewatering Discharge Under RGP MAG9100000

Ladies and Gentlemen:

The purpose of this letter report is to provide a summary of the groundwater quality information and geotechnical engineering input in support of an application for permission from the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) for the temporary discharge of groundwater into the Little 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 BHX LLC, as Trustee for Acorn Park Holdings Realty Trust. 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-Remediation General Permit is:

BHX LLC, as Trustee for Acorn Park Holdings Realty Trust
250 First Avenue
Needham, MA 02494

Attention: Mr. Robert Schlager - President

Tel: 781-707-4000
Fax: 781-707-4001

BHX LLC will also serve as the operator.

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

Existing Site Conditions

Fronting onto Acorn Park to the south, Cambridge Discovery Park (CDP) is bounded on the north by Route 2 (Concord Turnpike) and commercial properties fronting onto Route 2. CDP is bounded on the east by Acorn Park and to the south by the Little River and to the west by undeveloped land. The proposed Building 200/300 is located within the central portion of the site and is bounded by the recently constructed Building 100 to the west and Acorn Park to the south. The Building 200/300 site was formerly utilized as a paved surface parking lot with landscaped margins and is currently an active construction site. The project site includes a proposed pumping station to be located to the south of proposed Building 200/300, on the south side of Acorn Park.

Existing ground surface across the proposed development area varies from about Elevation +5 to Elevation +7. Elevations as noted herein are in feet and referenced to the Project Datum which is the National Geodetic Vertical Datum (NGVD). Existing site conditions are shown on the attached **Figure 2**, Site and Discharge Location Plan.

Site History

According to previously prepared environmental assessments, prior to approximately 1952, the site and surrounding area was historically used for agricultural purposes, brick making, and ice production. In 1952, Arthur D. Little (ADL) Real Estate Corporation developed the subject site as a research campus. The ADL campus included buildings utilized for laboratories, offices and testing facilities. In 2000, CDP was purchased by Acorn Park Holdings Realty Trust which is redeveloping the site with new office and research buildings.

Proposed Scope of Site Development

The proposed Building 200/300 development includes the construction of a 6-story, steel-framed structure with an irregular footprint of about 37,200 square feet. The lowest level slab is at Elevation +10.8. Final grades surrounding Building 200/300 will be generally maintained at their existing levels, however, immediately adjacent to the structure, the existing ground surface will be bermed up to about Elevation +10.8.

The development also includes the construction of paved parking areas and the installation of utilities including sewer tanks and grease traps. Furthermore, a sewer pumping station is to be located to the west of proposed Building 200/300, north of Building 100, and south of the proposed parking garage. Preliminary plans for the sewer pumping station include the construction of a below-grade valve vault and wet well which will include eight-foot diameter structures installed to depths of approximately 8 to 18 feet below ground surface. The majority of construction dewatering activities will be conducted during utility installation and the construction of the pump station.

Site Environmental Setting and Regulatory Status

As indicated above, the project site and surrounding area are serviced by public utilities including water, electricity, surface drainage and sewer. According to 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. There are no surface water bodies located within the site boundaries. The nearest surface water body is the Little River/Alewife Brook, which is located approxi-

mately 600 feet to the south of the subject site.

Based on the Priority Resources Map, there is an area designated as protected open space located approximately 100 feet to the south of the subject site. The Priority Resource Map indicates that there is a solid waste site (landfill) located approximately 900 feet to the south of the subject site. Based on the resource map, the subject site is not located within a 100 year or 500 year flood plain.

Two portions of the CDP site are listed with the Massachusetts DEP as release sites. Specifically, the eastern portion of the subject site is listed under Release Tracking Number (RTN) 3-13573. Based upon a review of previous reports, the release occurred in the area of former Building 35. Specifically, a release of petroleum hydrocarbons to soil was reported to the DEP in conjunction with the filing of a Class B-1 Response Action Outcome (RAO) on March 18, 1996. The release was reported due to the detection of elevated petroleum hydrocarbons obtained during the closure of an underground storage tank (UST). A Class B-1 RAO indicates that a permanent solution has been achieved, a condition of No Significant Risk exists at the release site and the implementation of an Activity and Use Limitation (AUL) is not required.

In addition, RTN 3-2535 was reportedly assigned to a release of solvents in groundwater in the general area of the proposed pump station, which is located on the southern side of Acorn Park. In November 1997 a Class B-1 RAO was submitted to the DEP for the release site listed under RTN 3-2535. A Method 3 Risk Characterization was completed in support of the RAO. A Class B-1 RAO indicates that a permanent solution has been achieved, a condition of No Significant Risk exists at the release site and the implementation of an Activity and Use Limitation (AUL) is not required.

In summary, based upon the status of the two (2) release areas identified on the subject site and on the results of chemical testing conducted on groundwater samples on the subject site, no further action is necessary on these release sites. The results of recent groundwater chemical analysis, which did not indicate the presence of petroleum hydrocarbons or solvents, are discussed below.

Subsurface Investigations and Conditions

Several phases of subsurface investigations have been completed at the CDP site. Most recently, two (2) groundwater monitoring wells, MAI-201(OW) and MAI-202(OW), were installed on December 11, 2009 in the proposed utility easement and in the area of the proposed pump station for the specific purpose of evaluating groundwater quality for this RGP NOI.

A detailed description of the subsurface conditions encountered at each of the completed explorations is presented in the logs of the borings prepared by Carr-Dee Corp. of Medford, Massachusetts which are contained in **Appendix C**. The following are generalized subsurface conditions across the site, which were inferred primarily from these explorations, but also from our general knowledge of the local geology. Approximate exploration locations are as indicated on the enclosed Project Plan, **Figure 2**.

The existing bituminous concrete surface across the site is underlain by a deposit of granular fill varying from 4 to 10.5 feet in thickness. Underlying the fill deposit, several of the boreholes encountered an upper glacial outwash deposit which generally consists of compact to very dense, sand with trace silt varying to a silty fine sand.

Underlying the fill and/or upper glacial outwash deposits, the borings encountered a deposit of marine clay that was observed to vary from 11.5 feet to 107.5 feet in thickness. The marine clay deposit generally

increases in thickness from the southwest to northeast across the site. An intermittent lower deposit of glacial outwash was encountered below the marine clay and above a deposit of glacial till which is plastered directly on the bedrock surface. The top of the glacial till deposit was observed to range from depths of 50 to 126 feet below the existing ground surface. Split-spoon and rock core samples indicate that the bedrock deposit which underlies the glacial till consists of a shale-like deposit known locally as Cambridge Argillite.

Groundwater has been observed to vary between about Elevation +0.9 and Elevation +1.4 within observation wells installed in boreholes performed at the Building 100, Building 200/300, and proposed pumping station sites. It is anticipated that future groundwater levels across the site may vary from those reported herein due to factors such as normal seasonal changes, periods of heavy precipitation, and alterations of existing drainage patterns.

Summary of Soil Chemical Testing

Records available for review indicate that soil samples have been obtained by different consultants from across the 26.5-acre ADL campus during the time period of 1989 through 2000. The soil samples have reportedly been analyzed for the presence of total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), metals and/or polynuclear aromatic hydrocarbons (PAHs).

In 1995, a release of petroleum hydrocarbons was detected in soil to the east of proposed Building 200/300. The petroleum release was encountered during the removal of a UST. As indicated above, a Class B-1 RAO was submitted to the DEP for this release of petroleum hydrocarbons.

During 1999, soil samples obtained from within the footprint of proposed Building 200/300 were reportedly analyzed for the presence of PAHs. According to Oxford Engineers and Consultants, the results did not indicated PAHs at concentrations above the reporting standards.

During October 2009, McPhail Associates, Inc. obtained samples of the fill material and of the underlying natural soils from the general area of Building 200/300 for chemical testing. Chemical test results of recent soil samples are summarized in **Table 1**.

The samples of fill material obtained by McPhail were analyzed for the presence of RCRA-5 metals, TCLP lead, VOCs, semi-volatile organic compounds (SVOCs), PCBs and TPH. The results indicated concentrations of all analyzed compounds either below the laboratory method detection limits and/or well below the RCS-1 reporting standards.

The samples of natural soil obtained by McPhail were analyzed for the presence of RCRA-8 metals, VOCs, SVOCs, PCBs and TPH. The results indicated concentrations of all analyzed compounds either below the laboratory method detection limits and/or well below the RCS-1 reporting standards. Given the elevated concentrations of total chromium in the samples of Boston Blue Clay, the samples were analyzed for the presence of hexavalent chromium (chromium VI). The results indicated that hexavalent chromium was not detected above the laboratory method detection limits.

Summary of Previous Groundwater Chemical Testing

Similar to the soil chemical testing discussed above, records available for review indicate that groundwater samples have been obtained by different consultants from groundwater monitoring wells installed across

the 26.5-acre ADL campus during the time period of 1988 through 2000. The groundwater samples have reportedly been analyzed for the presence of petroleum hydrocarbons, volatile organic compounds (VOCs), metals and/or polynuclear aromatic hydrocarbons (PAHs).

In 1988, a monitoring well located within the footprint of proposed Building 200/300 was sampled and analyzed for the presence of TPH. Petroleum hydrocarbons were reportedly not detected above the laboratory method detection limits.

During 1990 chlorinated solvents (CVOCs) were detected in groundwater in the general area of the proposed pump station at concentrations exceeding the DEP reporting standards. However, as discussed above, a Class B-1 RAO was submitted to the DEP in 1997 for the release of solvents to groundwater. In addition, our recent groundwater analysis conducted in the area of the proposed pump station did not indicate the presence of CVOCs above the laboratory method detection limits and/or above the RCGW-2 standards.

In 1999 a groundwater monitoring well located within the footprint of Building 200/300 was sampled and analyzed for the presence of extractable petroleum hydrocarbons (EPH), VOCs, PAHs and RCRA-8 metals. According to the reports reviewed, EPH, VOCs, PAHs and RCRA-8 metals were not detected above the applicable RCGW-2 reporting standards. Also during 1999, chlorobenzene and 1,2-dichloroethane were detected in two (2) monitoring wells in the area of the former Pilot Plan, which is where the proposed pump station is to be located. The two VOCs were detected at concentrations below the RCGW-2 reporting thresholds, which are consistent with those included in the Class B RAO for the area of the proposed pump station.

RGP Groundwater Chemical Analyses Results

On December 14, 2009, a representative of McPhail Associates, Inc. obtained groundwater samples from observation wells MAI-201(OW) and MAI-202(OW), the location of which are shown on **Figure 2**. The samples were sent to a certified laboratory and chemically analyzed for the presence of compounds required under the EPA's Remediation General Permit (RGP) application, including pH, total suspended solids (TSS), total residual chlorine, total petroleum hydrocarbons (TPH), cyanide, volatile organic compounds (VOCs) including total benzene, toluene, ethylbenzene and xylenes (BTEX), poly-aromatic hydrocarbons (PAHs) and semi-volatile organic compounds (SVOCs) including total phenols and total phthalates, pesticides and PCBs, and total recoverable metals.

Chemical test results are summarized in **Table 2**, and laboratory data is included in **Appendix D**. The results of chemical testing indicate the following:

1. **pH:** The tested samples exhibited pH levels of 6.5 and 6.8 Standard Units (S.U.) which is within the recommended range of 6.5 to 8.5 S.U. for discharge into freshwater. As a result of pH being detected at the bottom of the allowable range, weekly pH monitoring of the influent will be performed. If pH is detected below the recommended 6.5 S.U., pH treatment compounds such as soda ash will be added to the settlement tank as necessary to raise the level of pH to within the recommended range for discharge into a fresh water body.

2. **TSS:** Total suspended solids (TSS) was not detected in the tested samples at concentrations in excess of the laboratory method detection limit of 5 milligrams per liter (mg/l). The limit established by the US EPA for discharge into surface water is 30 mg/l. However, it is likely that

construction activities associated with the proposed site development will cause concentrations of TSS in the influent to fluctuate which will require mitigation. As a result, groundwater will be pre-treated by passing the water through one (1) 5,000 gallon sediment settling tank and two (2) bag filters prior to discharge in order to reduce the concentration of TSS in the effluent.

3. **VOCs:** The groundwater sample indicated non-detected levels of any of the target VOCs, with the exception of acetone in the sample obtained from monitoring well MAI-202(OW). Acetone was detected at a concentration of 11 micrograms per liter (ug/l). Therefore, effluent through the discharge system will be analyzed for the presence of acetone.

4. **TPH:** Chemical analysis of the groundwater samples indicated non-detected levels of TPH.

5. **PAHs and SVOCs:** The laboratory reported non-detected levels of Group 1 or Group II PAH, pentachlorophenol, total phenols, no bis(2-ethylhexyl)phthalate and total phthalates.

6. **PCBs:** The laboratory results indicated non-detected levels of PCBs in the analyzed samples.

7. **Cyanide:** Cyanide was not detected in the tested groundwater samples at a concentration in excess of the laboratory method detection limit of 0.005 mg/l.

8. **Total Metals:** The laboratory reported non-detected levels of cadmium, chromium VI, mercury and silver in the two (2) monitoring wells. Antimony, chromium III, nickel, selenium and zinc were detected in one or both of the monitoring wells sampled at concentrations below the RGP permit limits for discharge to fresh water. Levels of arsenic, copper, lead and iron were reported at maximum levels of 15 ug/l, 15.3 ug/l, 25.9 ug/l and 41,000 ug/l, respectively. As a result the discharge system will include ionization treatment for metals prior to discharge into fresh water.

   Calculations of the mass of these compounds are included in **Table 3**.

In summary, the tested samples obtained from observation wells MAI-201(OW) and MAI-202(OW) did not exhibit the presence of a sheen or visual and/or olfactory evidence of contamination. Furthermore, arsenic, copper, lead and iron were detected above the allowable RGP limits.

Dilution Factor Application for Metals

A Dilution Factor (DF) was calculated for the detected levels of total metals pursuant to the procedure contained in MAG910000, Appendix V. The purpose of the DF calculation is to establish Total Recoverable Limits for metals, taking into consideration the anticipated dilution of the detected analytes upon discharge into the Little River. The calculated DF was then used to find the appropriate Dilution Range Concentrations (DRCs) contained in MAG910000, Appendix IV. The DF that was utilized in finding the appropriate DRCs was calculated as follows: $DF = (Qd + Qs)/Qd$

Where: Qd is the maximum discharge flow rate of 50 GPM = 0.0781 cubic feet per second (cfs), (1 GPM = 0.00223 cfs)

Qs is the receiving water flow rate (minimum for 7 consecutive days with a recurrence interval of 10 years)

The value for Qs used for identifying the DRCs contained in MAG 910000 Appendix IV is based on information provided by the US Geological Survey (USGS) - Massachusetts Stream Flow Data for the Alewife Brook obtained at the nearest USGS gauging station located in Cambridge. The Minimum Flow Rate reported by the USGS at the Cambridge Gauging Station for 7 consecutive days with a recurrence interval of 10 years (7Q10 flow) is 0.31 thus resulting in a DF = 3.8. According to Appendix IV of the Remediation General Permit, the ceiling limitations for the calculated dilution factor of 3.8 for arsenic, copper, lead and iron are 10 ug/l, 5,2 ug/l, 1.3 ug/l and 1,000 ug/l, respectively. Thus, maximum detected levels for arsenic, copper, lead and iron exceed the limitations established in Appendix IV and the RGP ceiling limitations will be utilized for these metals.

Construction Dewatering

Based upon the groundwater levels observed within the explorations, it is anticipated that dewatering will be required for installation of below-grade utilities in the easement to be located to the west of the new building and during construction of the pump station. 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 construction activities.

It is estimated that the typical continuous groundwater discharge required during construction activities will be on the order of 35 to 50 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 Remediation General Permit. A review of available plans provided by the City of Cambridge indicate that a dedicated storm drain is located beneath Acorn Park with a drain manhole located to the east of the subject site. Specifically, the 36-inch dedicated storm drain located beneath Acorn Park flows south before discharging into the Little River, a Class B water body, at outfall location CH008. The location of the drain manhole in 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 Cambridge, which are included in **Appendix E**.

Groundwater Treatment

As a result of anticipated construction activities associated with the proposed site development, a 5,000-gallon sedimentation settling tank will be utilized to settle particulate matter out of the effluent in order to meet allowable limits established by the EPA and Massachusetts DEP. To further reduce particulate matter, a set of bag filters will be utilized after the settling tank. Due to the detected presence of metals in the groundwater, an ion exchange chamber will be incorporated into the discharge system. A schematic of the proposed treatment system is included in **Appendix B**.

Due to the measured pH of the site groundwater, weekly pH monitoring of the influent will be performed. Depending upon the results of the monitoring, pH treatment compounds such as soda ash may be necessary to raise the pH in the effluent to within the acceptable range for discharge to freshwater. Should the pH continue to exceed the recommended range for discharge into a freshwater body, additional treatment such as a pH balancing system will be implemented.

Should the results of the required monitoring testing indicate an exceedance of the RGP limit parameters, appropriate treatment will be implemented. In addition, should other contaminants within the discharge water during the construction dewatering phase of the project be detected 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 groundwater data and geotechnical engineering input to support an application for a Remediation General Permit for off-site discharge of groundwater which is likely to be encountered during construction activities. Based upon the above chemical testing results, it is our opinion that groundwater at the project site is acceptable for discharge into the storm drain system and ultimately into the Little River under a Remediation General Permit. As discussed above, a sedimentation tank, bag filters, ion exchange and if necessary, pH treatment compounds will be utilized to control levels of TSS, metals and pH prior to discharge into the storm drain system during construction dewatering. Further, sampling and analyses of the effluent will be carried out in accordance with the terms of the Remediation General Permit.

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.

Peter J. DeChaves, L.S.P.

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

Enclosures

F:\WP5\REPORTS\4214-RGP.wpd

PJD/ajd

FIGURE 1

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

N

SCALE 1:25,000

PROJECT LOCATION PLAN

CAMBRIDGE DISCOVERY PARK

CAMBRIDGE MASSACHUSETTS

FIGURE 2

NORTH

EXISTING 20-FOOT WIDE SEWER, WATER, GAS, AND DRAIN EASEMENT

EXISTING BUILDING 100
LOWEST LEVEL SLAB EL.+10.8

PROPOSED BUILDING
200/300 LOWEST
LEVEL SLAB EL.+10.8

BUILDING HEIGHT
= 92.0'± (AT PARAPET)
= 90.0'± (AT ROOF)

BUILDING 100
6 STORY
(FF=10.83')

B-1 B-2 B-3 B-4 B-5 (OW) B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-101 B-102 B-103 B-104 B-105 B-106 B-107

MAI-202 (OW)

MAI-201 (OW)

APPROXIMATE LIMITS OF PROJECT SITE

DISCHARGE LOCATION

ACORN PARK DRIVE (PUBLIC WAY - 45' WIDE)

GRAPHIC SCALE
40 0 40 80

LEGEND

- ⊕ — APPROXIMATE LOCATION OF BORING PERFORMED BY CARR-DEE CORP. DURING THE PERIOD OF MAY 17 THROUGH JULY 12, 2004 FOR McPHAIL ASSOCIATES, INC.
- ⊕ — APPROXIMATE LOCATION OF BORING PERFORMED BY CARR-DEE CORP. ON DECEMBER 10, 2009 FOR McPHAIL ASSOCIATES, INC.
- ⊕ — APPROXIMATE LOCATION OF BORING PERFORMED BY CARR-DEE CORP. DURING THE PERIOD OF OCTOBER 21 THROUGH 28, 2009 FOR McPHAIL ASSOCIATES, INC.

(OW) — OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE

REFERENCE: THIS PLAN WAS PREPARED FROM A 30-SCALE DRAWING ENTITLED, "UTILITY PLAN (OVERALL PLAN)" DATED OCTOBER 22, 2009 PREPARED BY THE BSC GROUP AND A DRAWING ENTITLED, "2011 PROPOSED INTERIM SITE PLAN" DATED AUGUST 24, 2009 PREPARED BY ADD, INC.

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

CAMBRIDGE DISCOVERY PARK PHASE I

CAMBRIDGE MASSACHUSETTS

PROJECT PLAN

FOR

THE BULFINCH COMPANIES, INC.

BY

McPHAIL ASSOCIATES, INC.
CONSULTING GEOTECHNICAL ENGINEERS

Date: DECEMBER 2009	Dwn: I.J.M.	Chkd: W.J.B.	Scale: 1" = 40'
Project No: 4214			

FILE NAME: RGP Permit\4214-F02

Table 1
Soil Chemical Testing Summary Table
Cambridge Discovery Park Building 200/300
McPhail Project No. 4214.9.00

LOCATION			B-108/B-109 FILL COMP	B-104/B-105 FILL COMP	B-106/B-107 FILL COMP	B-101/B-102/ B-103 FILL	B108 S4+5/B109 S3+5 SAND	B-104/B-105 SAND COMP	B109 S6 TO S8 CLAY COMP	B-106/B-107 CLAY COMP
SAMPLING DATE			28-OCT-09	28-OCT-09	28-OCT-09	28-OCT-09	28-OCT-09	28-OCT-09	28-OCT-09	28-OCT-09
			FILL	FILL	FILL	FILL	SAND	SAND	CLAY	CLAY
	RCS-1-08	Units								
General Chemistry - Westborough Lab										
Specific Conductance		umhos/cm					39	42	40	60
Solids, Total		%	88	93	93	91	83	83	81	82
pH		SU	7.6	8	7.4	8.4	7.1	7.1	8	7.8
Cyanide, Reactive		mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Sulfide, Reactive		mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Ignitability of Solids - Westborough Lab										
Ignitability		-	NI	NI	NI	NI	NI	NI	NI	NI
MCP Total Metals - Westborough Lab										
Arsenic, Total	20	mg/kg	8.5	4.6	4.4	5.7	5.1	2.9	7.7	9.8
Barium, Total	1000	mg/kg					20	27	100	82
Cadmium, Total	2	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	30	mg/kg	16	18	13	13	16	17	45	39
Lead, Total	300	mg/kg	34	6.1	7.8	7.6	4.8	3.5	11	9.2
Mercury, Total	20	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND
Selenium, Total	400	mg/kg					ND	ND	ND	ND
Silver, Total	100	mg/kg					ND	ND	ND	ND
TCLP Metals by EPA 1311 - Westborough Lab										
Lead, TCLP		mg/kg	ND	ND	ND	ND				
MCP General Chemistry - Westborough Lab										
Chromium, Hexavalent	30	mg/kg							ND	ND
MCP Volatile Organics by 5035 High - Westborough Lab			ND	ND	ND	ND	ND	ND	ND	ND
MCP Semivolatile Organics - Westborough Lab										
Bis(2-Ethylhexyl)phthalate	200	mg/kg	ND	0.74	ND	ND	ND	ND	ND	ND
Fluoranthene	1000	mg/kg	0.47	ND	ND	ND	ND	ND	ND	ND
Pyrene	1000	mg/kg	0.4	ND	ND	ND	ND	ND	ND	ND
Total SVOCs			**0.87**	**0.74**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
MCP Polychlorinated Biphenyls - Westborough Lab			ND	ND	ND	ND	ND	ND	ND	ND
Petroleum Hydrocarbon Quantitation - Westborough Lab										
TPH	1000	mg/kg	95.6	150	234	ND	ND	ND	ND	ND

ND - Not Detected
Above Laboratory Method Detection Limits.
Blank - Not Analyzed

TABLE 2
RGP Permit Application Groudwater Chemical Analysis
Building 200/300, Cambridge Discovery Park
December 14, 2009
Project No. 4214

Sample ID		RGP Limits	Units	Average or Max?	Methods per EPA	Methods per Alpha (for DLs)	Sample Type	MAI-201(OW)	MAI-202(OW)
Date Sampled								14-Dec-09	14-Dec-09
Lab ID								L0918116-01	L0918116-02
1	TSS	30.0	mg/L	monthly average	160.2	160.2	grab	27	240
	pH (Class SA & SB Waters)	6.5-8.5	S.U.	effluent only	150.1	150.1	grab	6.8	6.5
2	Total Residual Chlorine (fresh water)	11.0	ug/L	monthly average	330.5	330.1	grab	ND [20]	ND [20]
3	TPH	5.0	mg/L	daily maximum	1664	1664	grab	ND [4]	ND [4]
4	Cyanide (fresh water)	5.2	ug/L	monthly average	335.4	335.2	grab	ND [5]	ND [5]
5	Benzene	5.0	ug/L	daily maximum	8260	624	grab	ND [1]	ND [1]
6	Toluene	Total BTEX	ug/L	daily maximum	624/8260C	624	grab	ND [1]	ND [1]
7	Ethylbenzene	Total BTEX	ug/L	daily maximum	624/8260C	624	grab	ND [1]	ND [1]
8	Total Xylenes	Total BTEX	ug/L	daily maximum	624/8260C	624	grab	ND [2]	ND [2]
9	**Total BTEX**	100.0	ug/L	daily maximum			grab	ND	ND
10	Ethylene Dibromide (1,2-Dibromoethane)	0.05	ug/L	daily maximum	504.1/8260C	504.1	grab	ND [0.019]	ND [0.019]
11	MTBE	70.0	ug/L	daily maximum	524.2/8260C	624	grab	ND [20]	ND [20]
12	tert-Butyl Alcohol	Monitor only	ug/L	daily maximum	8260C	624	grab	ND [100]	ND [100]
13	tert-Amyl Methyl Ether	Monitor only	ug/L	daily maximum	602/8260C	624	grab	ND [20]	ND [20]
14	Naphthalene	20	ug/L	daily maximum	625/8270D	624	grab	ND [4.9]	ND [4.9]
15	Carbon Tetrachloride	4.4	ug/L	daily maximum	8260	624	grab	ND [1]	ND [1]
16	1,4 Dichlorobenzene	5.0	ug/L	daily maximum	8260	624	grab	ND [5]	ND [5]
17	1,2 Dichlorobenzene	600	ug/L	daily maximum	8260	624	grab	ND [5]	ND [5]
18	1,3 Dichlorobenzene	320	ug/L	daily maximum	8260	624	grab	ND [5]	ND [5]
19	1,1 Dichloroethane	70	ug/L	daily maximum	8260	624	grab	ND [1.5]	ND [1.5]
20	1,2 Dichloroethane	5.0	ug/L	daily maximum	8260	624	grab	ND [1.5]	ND [1.5]
21	1,1 Dichloroethylene	3.2	ug/L	daily maximum	8260	624	grab	ND [1]	ND [1]
22	cis-1,2 Dichloroethyelene	70	ug/L	daily maximum	8260	624	grab	ND [1]	ND [1]
23	Dichloromethane (Methylene Chloride)	4.6	ug/L	daily maximum	8260	624	grab	ND [5]	ND [5]
24	Tetrachloroethylene	5.0	ug/L	daily maximum	8260	624	grab	ND [1.5]	ND [1.5]
25	1,1,1 Trichloroethane	300	ug/L	daily maximum	8260	624	grab	ND [2]	ND [2]
26	1,1,2 Trichloroethane	5.0	ug/L	daily maximum	8260	624	grab	ND [1.5]	ND [1.5]
27	Trichloroethylene	5.0	ug/L	daily maximum	8260	624	grab	ND [1]	ND [1]
28	Vinyl Chloride	2.0	ug/L	daily maximum	8260	624	grab	ND [2]	ND [2]
29	Acetone	Monitor only	ug/L	daily maximum	8260	624	grab	ND [10]	11
30	1,4 Dioxane	Monitor only	ug/L	daily maximum	8260	624	grab	ND [2,000]	ND [2,000]
31	total Phenols	300	ug/L	daily maximum	625/8270D	420.1	grab	ND[30]	ND [150]
32	Pentachlorophenol	1.0	ug/L	daily maximum	625/8270D	8270	grab	ND [0.78]	ND [0.78]
33	Total Phthalates (phthalate esthers)	3.0	ug/L	daily maximum	625/8270D	8270	grab	ND	ND
34	Bis (2-Ethylhexyl) Phthalate	6.0	ug/L	daily maximum	625/8270D	8270	grab	ND [5.0]	ND [5.0]
35	**Total Group 1 PAH**	10	ug/L	daily maximum			grab	ND	ND
a	Benzo(a)anthracene	0.0038	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
b	Benzo(a)pyrene	0.0038	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
c	Benzo(b)fluoranthene	0.0038	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
d	Benzo(k)fluoranthene	0.0038	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
e	Chrysene	0.0038	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
f	Dibenzo(a,h)anthracene	0.0038	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
g	Indeno (1,2,3-cd)pyrene	0.0038	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
36	**Total Group II PAH**	100	ug/L	daily maximum			grab	ND	ND
h	Acenaphthene	Total Group II PAH	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
i	Acenaphthylene	Total Group II PAH	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
j	Anthracene	Total Group II PAH	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
k	Benzo(ghi)perylene	Total Group II PAH	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
l	Fluoranthene	Total Group II PAH	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
m	Fluorene	Total Group II PAH	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
n	naphthalene	Total Group II PAH	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
o	Phenanthrene	Total Group II PAH	ug/L	daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
p	Pyrene	Total Group II PAH		daily maximum	625/8270D	8270-SIM	grab	ND [0.2]	ND [0.2]
37	**Total PCBs**	0.000064		daily maximum		608	grab	ND [0.258]	ND [0.258]
	Total Recoverable Metal Limits	H= 50 mg/l CaCO3							
38	Antimony	5.6	ug/L	daily maximum			grab	ND [0.5]	0.9
39	Arsenic (fresh water)	10	ug/L	monthly average		200.7	grab	1.5	15
40	Cadmium (fresh water)	0.2	ug/L	monthly average		GFAA	grab	ND [0.2]	ND [0.2]
41	Chromium III (fresh water)	48.8	ug/L	monthly average		200.7	grab	9.3	20.2
42	Chromium VI (fresh water)	11.4	ug/L	monthly average		200.7	grab	ND [10]	ND [10]
43	Copper (fresh water)	5.2	ug/L	monthly average		200.7	grab	7.3	15.3
44	Lead (fresh water)	1.3	ug/L	monthly average		GFAA	grab	2.5	25.9
45	Mercury (fresh water)	0.9	ug/L	monthly average		245.2	grab	ND [0.2]	ND [.2]
46	Nickel (fresh water)	29	ug/L	monthly average		200.7	grab	4.5	17.4
47	Selenium (fresh water)	5.0	ug/L	monthly average		200.7	grab	ND [1]	3
48	Silver (fresh water)	1.2	ug/L	monthly average		GFAA	grab	ND [0.4]	ND [.4]
49	Zinc (fresh water)	66.6	ug/L	monthly average		200.7	grab	12.8	48.8
50	Iron	1000	ug/L	daily maximum		200.7	grab	41000	1500

ND - denotes none detected above laboratory method detection limits
Shaded cell - denotes exceedance of RGP Limits

Table 3
Calculations of Mass of Compounds
Building 200, Cambridge Discovery Park
Cambridge, Massachusetts
McPhail Job No. 4214

Avg flow (GPM) =	35		
Avg Flow (MGD) =	0.0504		
Compound #	Max Concentration (ug/l)	Max Concentration (mg/l)	**MASS (kg)**
TSS	240,000	240	**52.406**
Antimony	1	0.0009	**0.000**
Arsenic	15	0.015	**0.00328**
Chromium III	20.2	0.0202	**0.004**
Copper	15.3	0.0153	**0.00334**
Lead	25.9	0.0259	**0.00566**
Nickel	17.4	0.0174	**0.00380**
Selenium	3	0.003	**0.00066**
Zinc	48.8	0.0488	**0.01066**
Iron	41000	41	**8.95261**

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

McPHAIL ASSOCIATES, INC

Geotechnical Engineers

APPENDIX A

Limitations

McPHAIL ASSOCIATES, INC

Geotechnical Engineers

Limitations

The purpose of this report is to present a summary of subsurface conditions, including the results of testing of samples of groundwater obtained from monitoring wells on the property identified as Cambridge Discovery Park located on Acorn Park in Cambridge, Massachusetts, in support of an application for approval of construction site dewatering discharge into surface waters of the Commonwealth of Massachusetts under EPA's Remediation General Permit MAG910000.

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

McPHAIL ASSOCIATES, INC

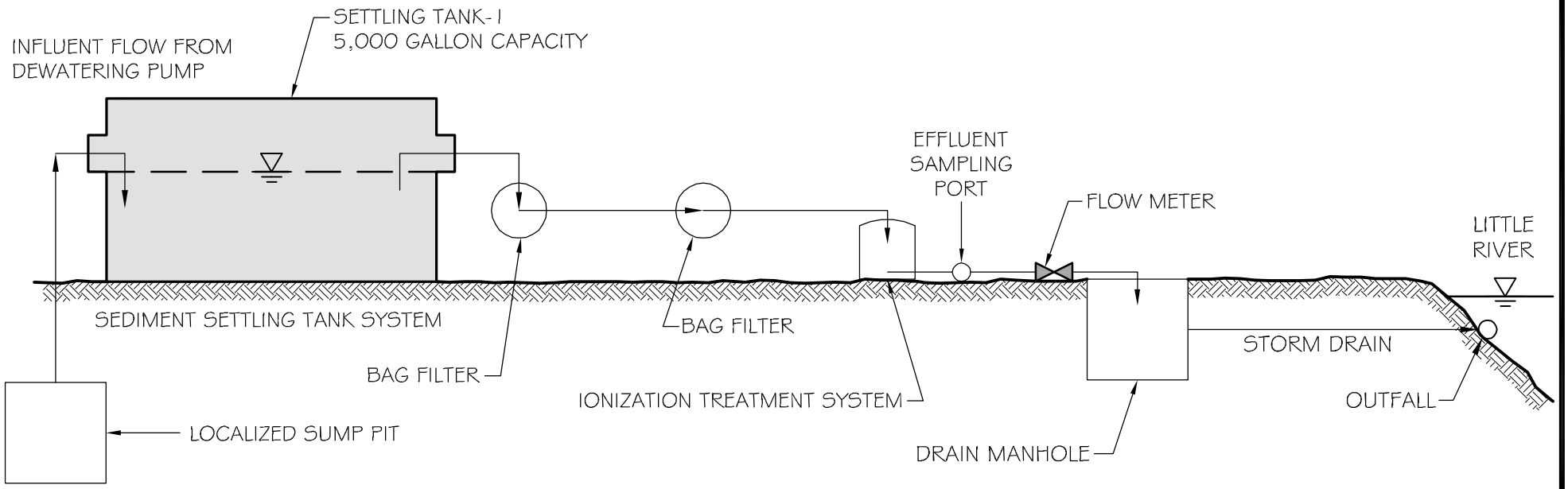
Geotechnical Engineers

APPENDIX B

Notice of Intent for Construction Site Dewatering

Massachusetts DEP Transmittal Form for Permit Application

FILE NAME: 4214-Schematic_Discharge



McPHAIL ASSOCIATES, INC.
Geotechnical Engineers
30 Norfolk Street
Cambridge, MA 02139
617/868-1420
617/868-1423 (Fax)

DISCOVERY PARK

CAMBRIDGE MASSACHUSETTS

SCHEMATIC OF WATER FLOW

FOR

U.S. ENVIRONMENTAL PROTECTION AGENCY

BY

McPHAIL ASSOCIATES, INC.

CONSULTING GEOTECHNICAL ENGINEERS

Date: DECEMBER 2009	Dwn: M.B.S.	Chkd: P.J.D.	Scale: N.T.S.
Project No: 4214			

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

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

<table>
<tr><td colspan="2">a) Name of facility/site:
Building 200/300 Cambridge Discovery Park</td><td colspan="4">Facility/site address:
60 Acorn Park
Cambridge, MA 02140</td></tr>
<tr><td colspan="2">Location of facility/site:
longitude: 71.08 latitude: 42.23</td><td>Facility SIC code(s):</td><td colspan="3">Street:
Acorn Park Drive</td></tr>
<tr><td colspan="3">b) Name of facility/site owner: BHX LLC, Trustee for Acorn Park Holdings RT</td><td colspan="3">Town: Cambrdge</td></tr>
<tr><td colspan="3" rowspan="2">Email address of owner:
ras@bulfinch.com

Telephone no.of facility/site owner: (781) 707-4000</td><td>State:
MA</td><td>Zip:
02140</td><td>County:
Middlesex</td></tr>
<tr><td colspan="3">Fax no. of facility/site owner: (781) 707-4001
Address of owner (if different from site):
Owner is (check one): 1. Federal____ 2. State/Tribal____
3. Private ✓ 4. other, if so, describe:</td></tr>
<tr><td colspan="6">Street: 250 First Avenue, Suite 200</td></tr>
<tr><td colspan="2">Town: Needham</td><td>State: MA</td><td>Zip: 02494</td><td colspan="2">County: Norfolk</td></tr>
<tr><td colspan="2" rowspan="2">c) Legal name of operator:
BHX LLC, as Trustee for Acorn Park Holdings Realty Trust</td><td colspan="4">Operator telephone no: (781) 707-4000</td></tr>
<tr><td colspan="2">Operator fax no.: (781) 707-4001</td><td colspan="2">Operator email:
ras@bulfinch.com</td></tr>
<tr><td colspan="6">Operator contact name and title: Mr. Robert A. Schlager, Member</td></tr>
</table>

Address of **operator** (if different from owner):	Street:		
Town:	State:	Zip:	County:

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

e) Is site/facility subject to any State permitting or other action which is causing the generation of discharge? Yes___ No ✓ If "yes," please list: 1. site identification # assigned by the state of NH or MA: 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number:	f) Is the site/facility covered by any other EPA permit, including: 1. multi-sector storm water general permit? Y___ N ✓, if Y, number: 2. phase I or II construction storm water general permit? Y ✓ N___, if Y, number: MAR100000 3. individual NPDES permit? Y___ N ✓, if Y, number: 4. any other water quality related permit? Y___ N ✓, if Y, number:

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

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

Construction dewatering to be performed concurrently with site excavation for the installation of utilities. Excavation and construction will be performed within an open excavaton. See attached report for further detail.

b) Provide the following information about each discharge:	1) Number of discharge points: 1	2) What is the **maximum** and **average flow rate** of discharge (in cubic feet per second, ft^3/s)? Max. flow 0.11 Average flow .056 Is maximum flow a **design value**? Y___ N ✓ For average flow, include the units and appropriate notation if this value is a design value or estimate if not available. Average Flow = .05575 cfs (25 gpm) (estimated value based on maximum excavation)

3) Latitude and longitude of each discharge within 100 feet: pt.1:long. 71.08 lat. 42.23 ; pt.2: long._____ lat._____; pt.3: long._____ lat._____; pt.4:long._____ lat._____; pt.5: long._____ lat._____; pt.6:long._____ lat._____; pt.7: long._____ lat._____; pt.8:long._____ lat._____; etc.

4) If hydrostatic testing, total volume of the discharge (gals):	5) Is the discharge intermittent ✓ or seasonal ____? Is discharge ongoing Yes ____ No ✓ ?
c) Expected dates of discharge (mm/dd/yy): start 01/01/10 end 01/01/11	
d) Please attach a line drawing or flow schematic showing water flow through the facility including: 1. sources of intake water, 2. contributing flow from the operation, 3. treatment units, and 4. discharge points and receiving waters(s).	

3. Contaminant information. In order to complete this section, the applicant will need to take a minimum of one sample of the untreated water and have it analyzed for **all** of the parameters listed in Appendix III. Historical data, (i.e., data taken no more than 2 years prior to the effective date of the permit) may be used if obtained pursuant to: i. Massachusetts' regulations 310 CMR 40.0000, the Massachusetts Contingency Plan ("Chapter 21E"); ii. New Hampshire's Title 50 RSA 485-A: Water Pollution and Waste Disposal or Title 50 RSA 485-C: Groundwater Protection Act; or iii. an EPA permit exclusion letter issued pursuant to 40 CFR 122.3, provided the data was analyzed with test methods that meet the requirements of this permit. Otherwise, a new sample shall be taken and analyzed.

a) Based on the analysis of the sample(s) of the untreated influent, the applicant must check the box of the sub-categories that the potential discharge falls within.

Gasoline Only	VOC Only	Primarily Metals	Urban Fill Sites	Contaminated Sumps	Mixed Contaminants	Aquifer Testing
Fuel Oils (and Other Oils) only	VOC with Other Contaminants	Petroleum with Other Contaminants	Listed Contaminated Sites	Contaminated Dredge Condensates	Hydrostatic Testing of Pipelines/Tanks	Well Development or Rehabilitation

b) Based on the analysis of the untreated influent, the applicant must indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

PARAMETER	**Believe Absent**	**Believe Present**	**# of Samples (1 min-imum)**	**Type of Sample (e.g., grab)**	**Analytical Method Used (method #)**	**Minimum Level (ML) of Test Method**	**Maximum daily value**		**Avg. daily value**	
							concentration (ug/l)	**mass (kg)**	**concentration (ug/l)**	**mass (kg)**
1. Total Suspended Solids		✓	2	Grab	160.2		24000	52	13350	
2. Total Residual Chlorine	✓				330.1	50	ND			
3. Total Petroleum Hydrocarbons	✓				1664	4	ND			
4. Cyanide	✓				335.4	0.5	ND			
5. Benzene	✓				624	1	ND			
6. Toluene	✓				624	1	ND			
7. Ethylbenzene	✓				624	1	ND			
8. (m,p,o) Xylenes	✓				624	2	ND			
9. Total BTEX[4]	✓				624		ND			

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
10. Ethylene Dibromide (1,2- Dibromo-methane)	✓				504.1	.019	ND			
11. Methyl-tert-Butyl Ether (MtBE)	✓				624	20	ND			
12. tert-Butyl Alcohol (TBA)	✓				624	100	ND			
13. tert-Amyl Methyl Ether (TAME)	✓				624	20	ND			
14. Naphthalene	✓				624	4.9	ND			
15. Carbon Tetra-chloride	✓				624	1	ND			
16. 1,4 Dichlorobenzene	✓				624	5	ND			
17. 1,2 Dichlorobenzene	✓				624	5	ND			
18. 1,3 Dichlorobenzene	✓				624	5	ND			
19. 1,1 Dichloroethane	✓				624	1.5	ND			
20. 1,2 Dichloroethane	✓				624	1.5	ND			
21. 1,1 Dichloroethylene	✓				624	1	ND			
22. cis-1,2 Dichloro-ethylene	✓				624	1	ND			
23. Dichloromethane (Methylene Chloride)	✓				624	5	ND			
24. Tetrachloroethylene	✓				624	1.5	ND			

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily Value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
25. 1,1,1 Trichloroethane	✓				624	2	ND			
26. 1,1,2 Trichloroethane	✓				624	1.5	ND			
27. Trichloroethylene	✓				624	1	ND			
28. Vinyl Chloride	✓				624	2	ND			
29. Acetone	✓				624	10	ND			
30. 1,4 Dioxane	✓				624	2,000	ND			
31. Total Phenols	✓				420.1		ND			
32. Pentachlorophenol	✓				8270	.78	ND			
33. Total Phthalates [5] (Phthalate esthers)	✓				8270		ND			
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✓				8270	9.8	ND			
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	✓				8270		ND			
a. Benzo(a) Anthracene	✓				8270	.2	ND			
b. Benzo(a) Pyrene	✓				8270	.2	ND			
c. Benzo(b)Fluoranthene	✓				8270	.2	ND			
d. Benzo(k) Fluoranthene	✓				8270	.2	ND			
e. Chrysene	✓				8270	.2	ND			

[5] The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
f. Dibenzo(a,h) anthracene	✓				8270	.2	ND			
g. Indeno(1,2,3-cd) Pyrene	✓				8270	.2	ND			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	✓									
h. Acenaphthene	✓				8270	.2	ND			
i. Acenaphthylene	✓				8270	.2	ND			
j. Anthracene	✓				8270	.2	ND			
k. Benzo(ghi) Perylene	✓				8270	.2	ND			
l. Fluoranthene	✓				8270	.2	ND			
m. Fluorene					8270	.2	ND			
n. Naphthalene-	✓				8270	.2	ND			
o. Phenanthrene	✓				8270	.2	ND			
p. Pyrene	✓				8270	.2	ND			
37. Total Polychlorinated Biphenyls (PCBs)	✓				608	.258	ND			
38. Antimony	✓				6020	.5	0.9	0		
39. Arsenic		✓	2	Grab	6020		15	0.00328	8.2	
40. Cadmium	✓				6020	.2	ND			
41. Chromium III		✓	2	Grab	6020		20.2	0.004	14.8	
42. Chromium VI	✓				3500C	10	ND			

PARAMETER	Believe Absent	Believe Present	# of Samples (1 min-imum)	Type of Sample (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Avg. daily value	
							concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
43. Copper		✓	2	Grab	6020		15.3	.00334	11.3	
44. Lead		✓	2	Grab	6020		25.9	.0259	14.2	
45. Mercury	✓				245.1	0.2	ND			
46. Nickel		✓	2	Grab	6020		17.4	.00380	11	
47. Selenium		✓	2	Grab	6020		3	.00066	2	
48. Silver	✓				6020	0.4	ND			
49. Zinc		✓	2	Grab	6020		48.8	.01066	30.8	
50. Iron		✓	2	Grab	200.7		41000	8.9526	21250	
Other (describe):										

c) For discharges where **metals** are believed present, please fill out the following:

Step 1: Do any of the metals in the influent have a **reasonable potential** to exceed the effluent limits in Appendix III (i.e., the limits set at zero to five dilutions)? Y ✓ N___	If yes, which metals? Arsenic, Copper, Lead, Iron
Step 2: For any metals which have **reasonable potential** to exceed the **Appendix III** limits, calculate the **dilution factor (DF)** using the formula in Part I.A.3.c) (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metals: Antimony, Arsenic, Chromium III, Copper, Lead, Nickel, Selenium, Lead, Iron DF: 3.9	Look up the limit calculated at the corresponding dilution factor in **Appendix IV.** Do any of the metals in the **influent** have the potential to exceed the corresponding **effluent** limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ✓ N___ If "Yes," list which metals: Arsenic, Copper, Lead, Iron

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

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

A sedimentation tanks with 5,000-gallons capacity, two (2) bag filters and an ion exchange system in series. A test of the effluent will be completed prior to discharge into the storm drain system, and additional filtration and/or treatment will be added to meet permit limits. See attached figure.

b) Identify each applicable treatment unit (check all that apply):	Frac. tank	Air stripper	Oil/water separator	Equalization tanks ✓	Bag filter ✓	GAC filter
	Chlorination	Dechlorination	Other (please describe): ion exchange system			

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate**(s) (gallons per minute) of the treatment system:
Average flow rate of discharge 35 Maximum flow rate of treatment system 50 Design flow rate of treatment system 50

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

None

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

a) Identify the discharge pathway:	Direct____	Within facility__	Storm drain ✓	River/brook ✓	Wetlands____	Other (describe):

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

See Figures 3 & 4 in attached report. The construction dewatering discharge will eventually be received into the Mystic River from Alewife Brook, to the Little River, to storm drains.

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

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

e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.31 cfs
Please attach any calculation sheets used to support stream flow and dilution calculations.

f) Is the receiving water a listed 303(d) water quality impaired or limited water? Yes ✓ No____ If yes, for which pollutant(s)?
Fecal Coliform and Priority Organics(Pesticides)

Is there a TMDL? Yes____ No ✓ If yes, for which pollutant(s)?

6. Results of Consultation with Federal Services: Please provide the following information according to requirements of Part I.B.4 and Appendices II and VII.

a) Are any listed threatened or endangered species, or designated critical habitat, in proximity to the discharge? Yes____ No ✓
Has any consultation with the federal services been completed ? No ✓ or is consultation underway? Yes No ✓
What were the results of the consultation with the U.S. Fish and Wildlife Service and/or National Marine 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?

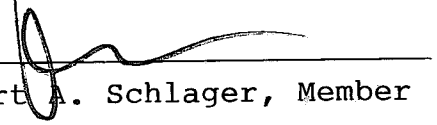
b) Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or site or in proximity to the discharge?
Yes_____ No ✓ Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes_____ No ✓

7. Supplemental information. :

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

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

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

Facility/Site Name:	Building 200 Cambridge Discovery Park
Operator signature:	BHX, LLC, as Trustee of Acorn Park Holdings Realty Trust
Title:	By:  Robert A. Schlager, Member
Date:	December 17, 2009

McPHAIL ASSOCIATES, INC

Geotechnical Engineers

APPENDIX C

Carr-Dee Corp.
Soil Boring Logs

CARR-DEE CORP.

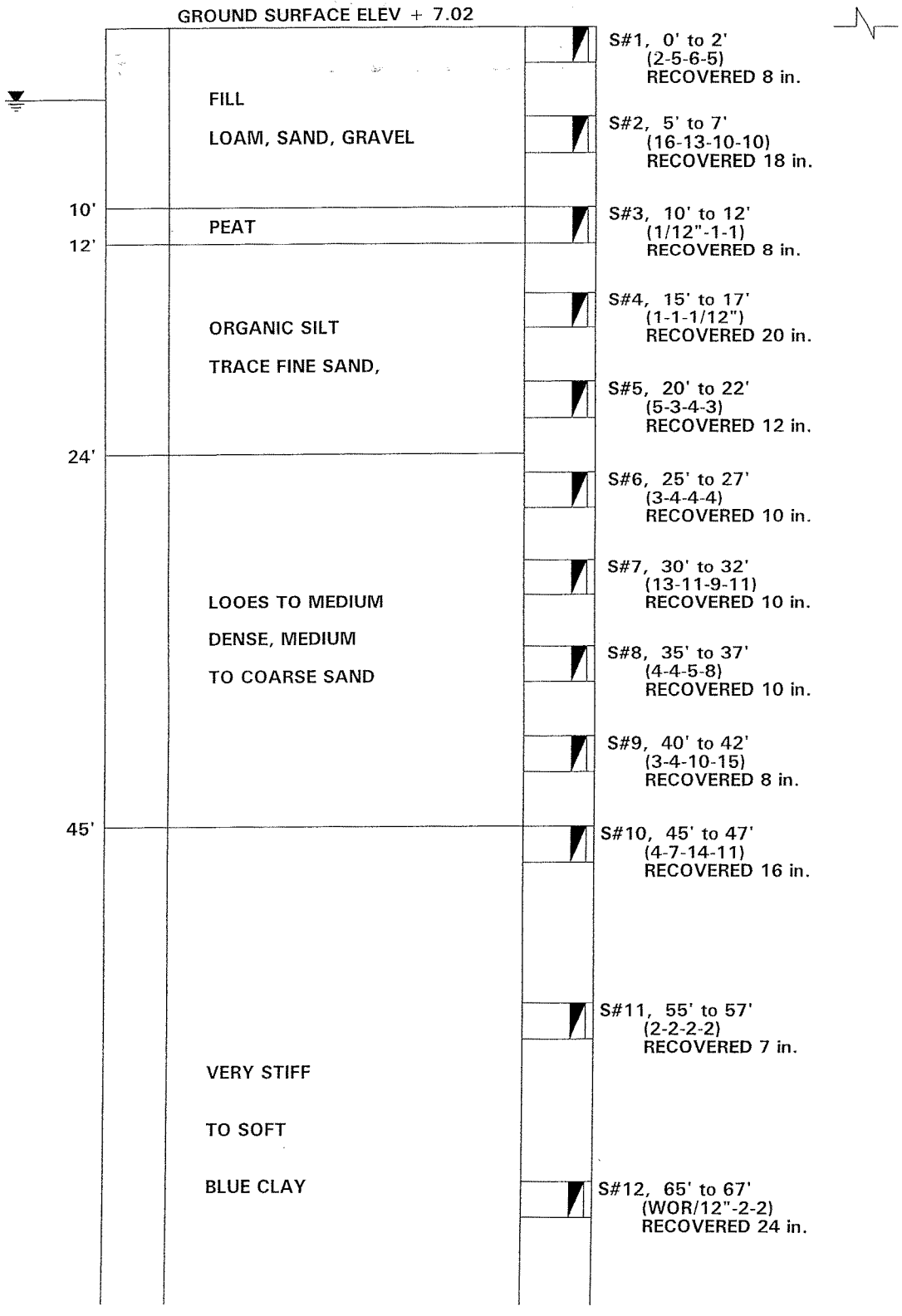
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500

To: McPHAIL ASSOCIATES,INC., 30 NORFOLK ST., CAMBRIDGE, MA Date: 7-9=2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale: 1 in.= 9 ft.

BORING 1

GROUND SURFACE ELEV + 7.02



All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

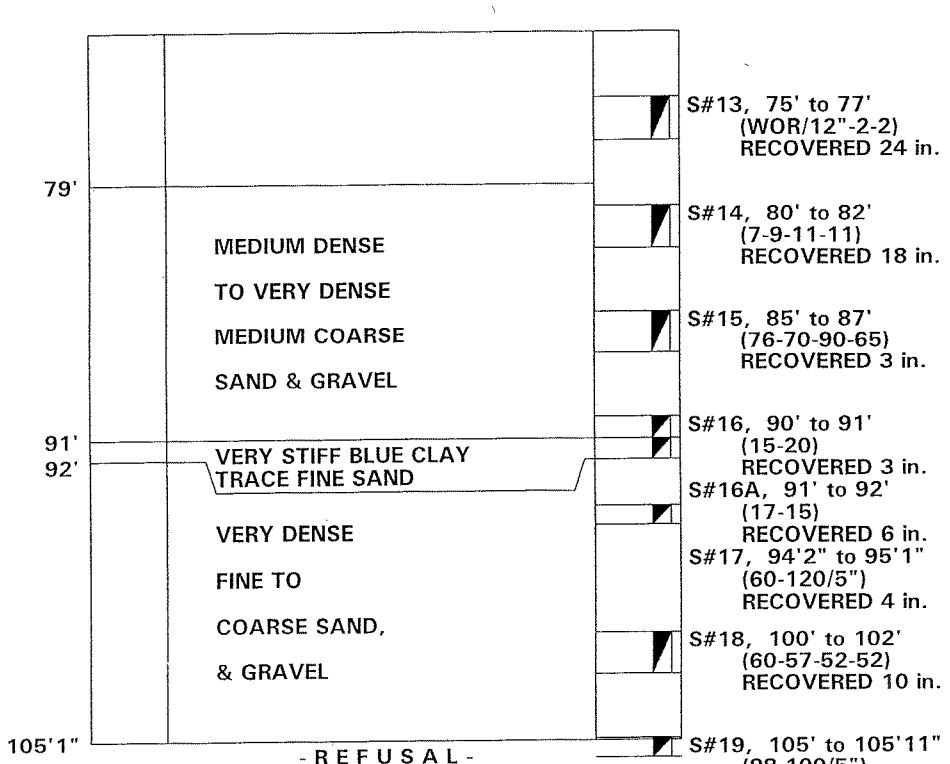
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500

To: McPHAIL ASSOCIATES,INC., 30 NORFOLK ST., CAMBRIDGE, MA Date: 7-9=2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale: 1 in.= 9 ft.

BORING 1



WATER LEVEL 4'
SIZE OF CASING NW LENGTH 105'0"
DRILLER: NEIL SMIYH, INSPECTOR: JIM McPHAIL
DATE STARTED & COMPLETED 5-26-6-1-2004

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

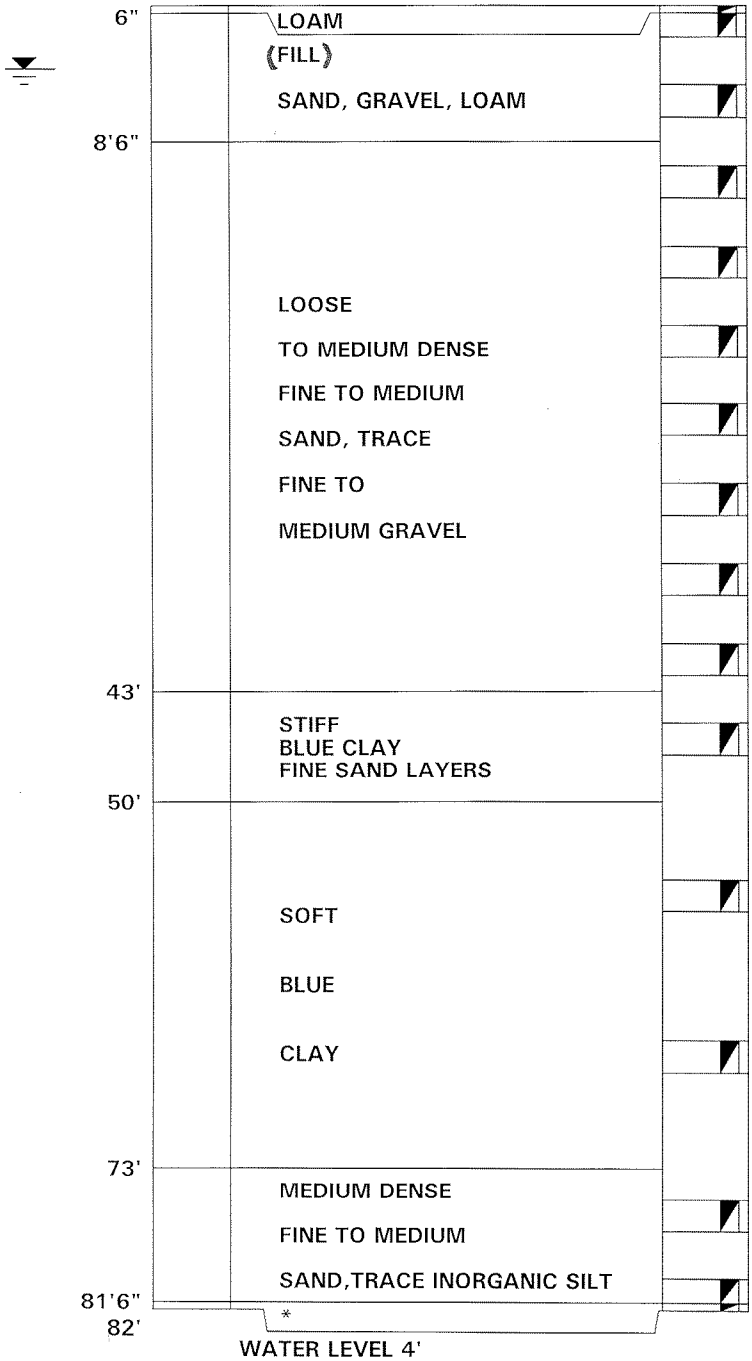
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 12 ft..

BORING 2

GROUND SURFACE ELEV + 6.51



S#1, 0' to 6'
(3)
RECOVERED 6 in.

S#1A, 6" to 2'
(5-5-7)
RECOVERED 12 in.

S#2, 5' to 7'
(3-3-2-1)
RECOVERED 14 in.

S#3, 10' to 12'
(7-5-5-6)
RECOVERED 15 in.

S#4, 15' to 17'
(3-3-5-5)
RECOVERED 17 in.

S#5, 20' to 22'
(9-6-7-7)
RECOVERED 10 in.

S#6, 25' to 27'
(7-5-6-6)
RECOVERED 20 in.

S#7, 30' to 32'
(6-8-7-8)
RECOVERED 13 in.

S#8, 35' to 37'
(6-8-7-10)
RECOVERED 12 in.

S#9, 40' to 42'
(9-12-18-19)
RECOVERED 22 in.

S#10, 45' to 47'
(6-7-7-12)
RECOVERED 24 in.

S#11, 55' to 57'
(3-2-2-3)
RECOVERED 24 in.

S#12, 65' to 67'
(2-2-1-2)
RECOVERED 24 in.

S#13, 75' to 77'
(5-5-5-5)
RECOVERED 20 in.

S#14, 80' to 81'6"
(5-6-6)
RECOVERED 10 in.

S#14A, 81'6" to 82'
(81)
RECOVERED 6 in.

WATER LEVEL 4'
SIZE OF CASING NW LENGTH 82'0"
DRILLER: GERALD SMITH, INSPECTOR: JIM McPHAIL
DATE STARTED & COMPLETED 5-25-26-2004

*
VERY DNESE FINE TO COARSE SAND.
SOME FINE TO COARSE GRAVEL, TRACE
INORGANIC SILT

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

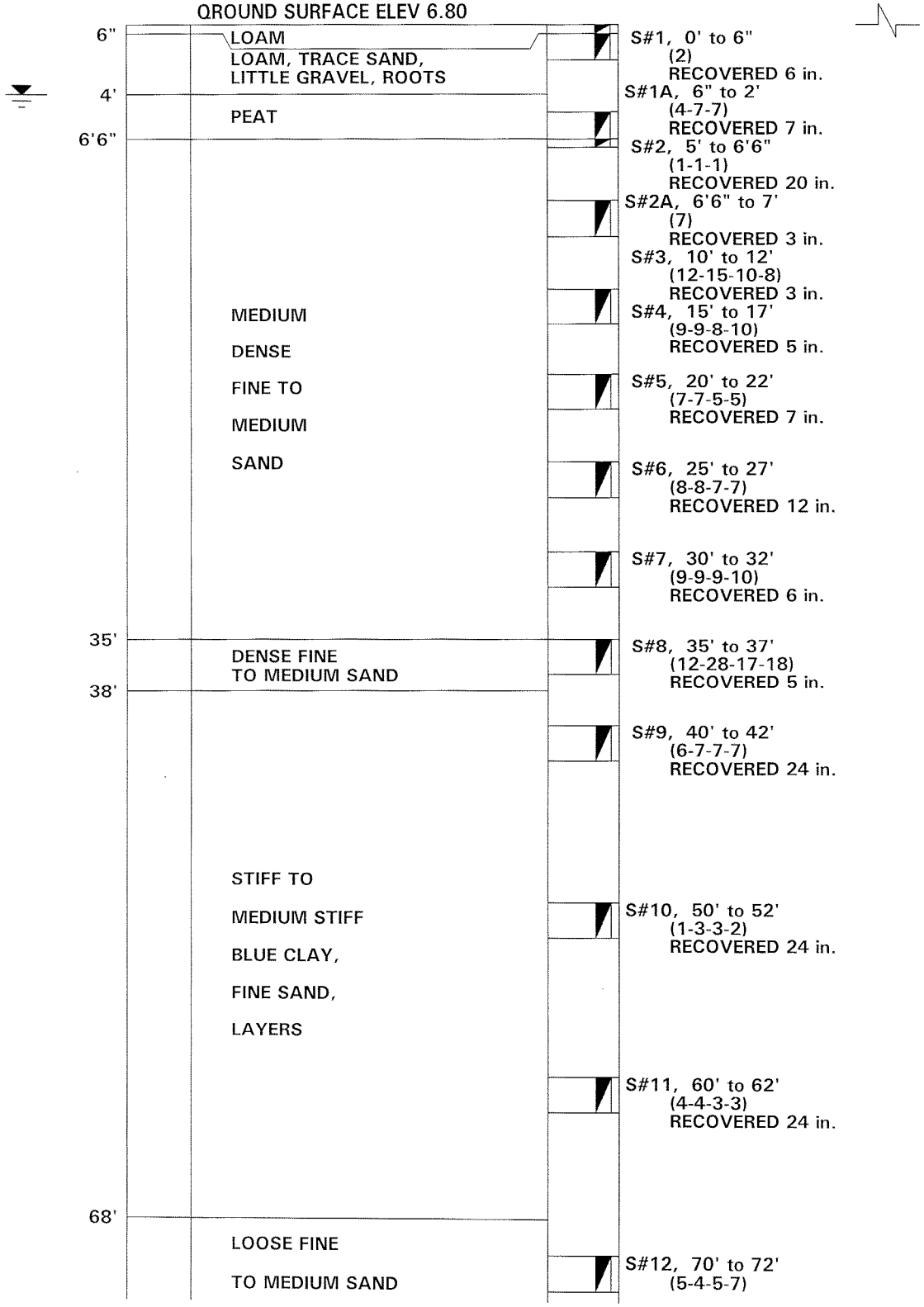
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 9 ft..

BORING 3

GROUND SURFACE ELEV 6.80



All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

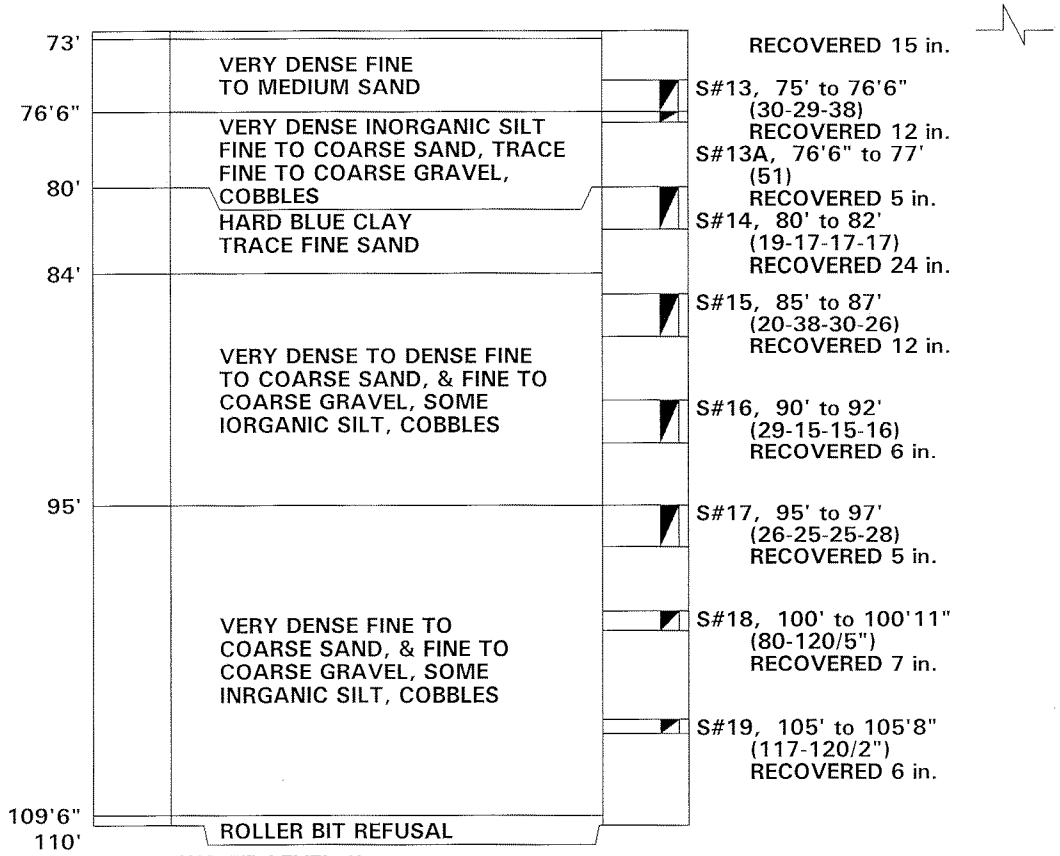
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 9 ft..

BORING 3



WATER LEVEL 4'
(120 BLOWS S.S. 140 LB, WGT., NO PENTRATION)
SIZE OF CASING NW LENGTH 109'6"
DRILLER: GERALD SMITH INSPECTOR: JIM McPHAIL
DATE STARTED & COMPLETED 5-25-26-2004

All samples have been visually classified by QRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

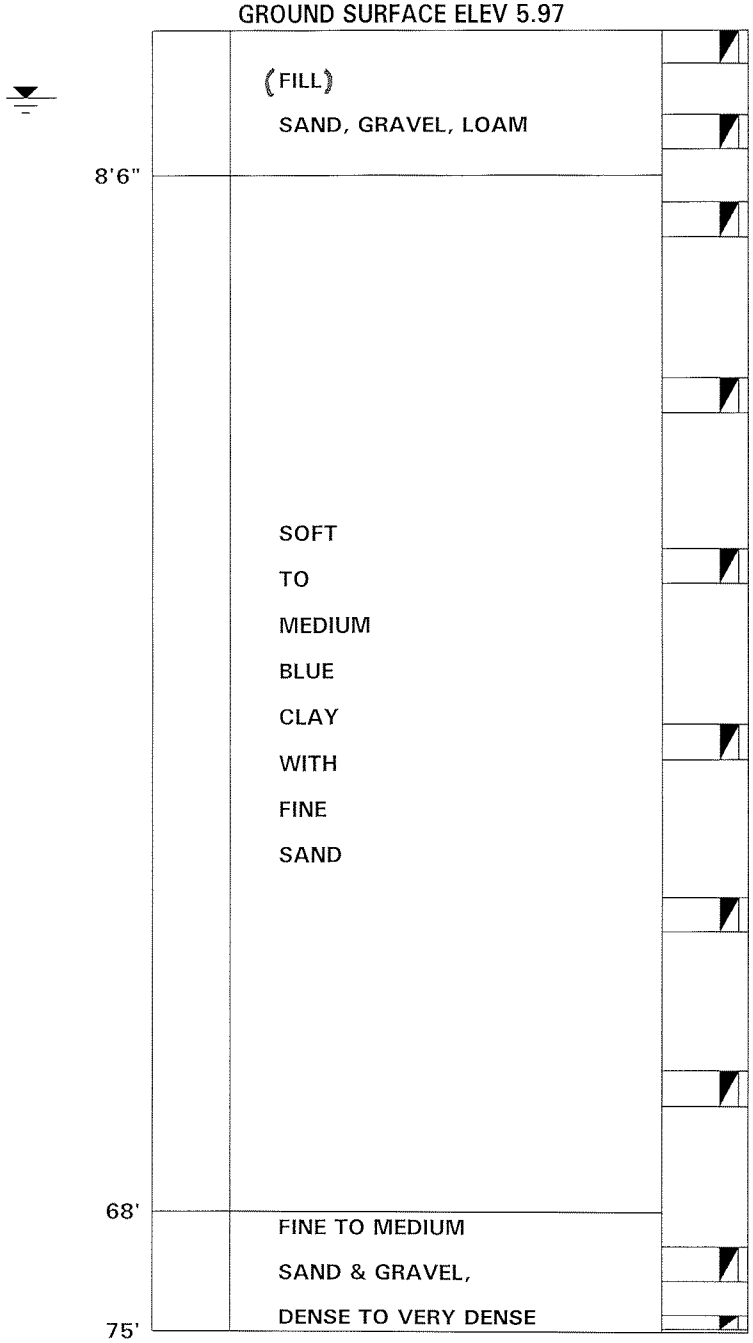
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 11 ft..

BORING 4

GROUND SURFACE ELEV 5.97



S#1, 0' to 2'
(2-5-11-13)
RECOVERED 14 in.

S#2, 5' to 7'
(3-6-15-16)
RECOVERED 20 in.

S#3, 10' to 12'
(3-2-3-3)
RECOVERED 20 in.

S#4, 20' to 22'
(4-2-5-4)
RECOVERED 20 in.

S#5, 30' to 32'
(WOR/6"-2-1-1)
RECOVERED 24 in.

S#6, 40' to 42'
(WOR/12"-1-3)
RECOVERED 24 in.

S#7, 50' to 52'
(WOR/12"-1-1)
RECOVERED 24 in.

S#8, 60' to 62'
(2-3-2-3)
RECOVERED 24 in.

S#9, 70' to 72'
(7-12-19-32)
RECOVERED 8 in.

S#10, 74' to 74'10"
(78-120/4")
RECOVERED 8 in.

WATER LEVEL 4'
SIZE OF CASING NW LENGTH 74'0"
DRILLER: RENE DE SIMONE,& GERALD SMITH
INSPECTOR: JIM McPHAIL
DATE STARTED & COMPLETED 5-25-26-2004
REFUSAL ENCOUNTED WITH ROLLER BIT @ 75'0"

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

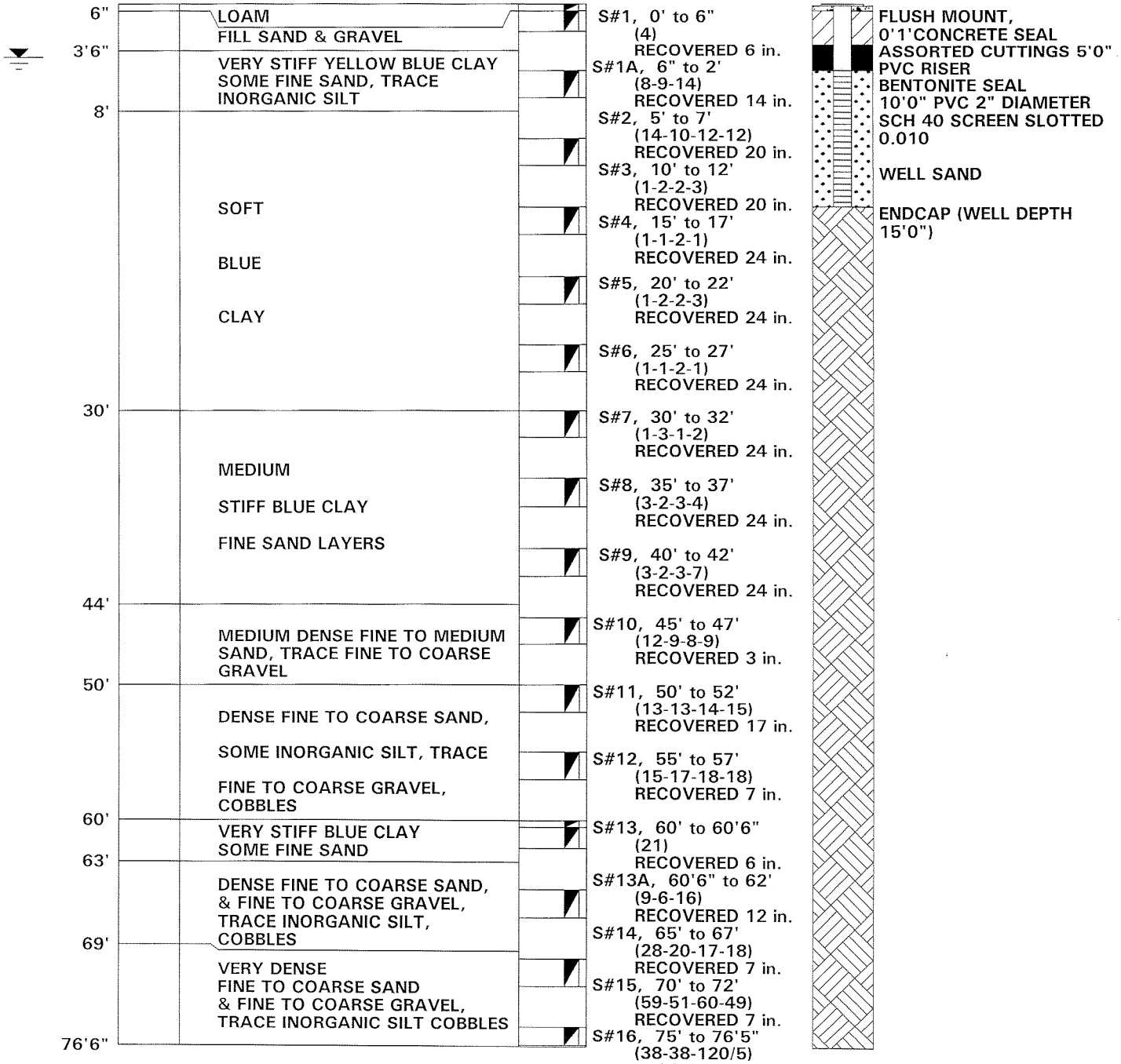
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 11 ft..

BORING 5-OW

GROUND SURFACE ELEV + 6.28



WATER LEVEL 4'
SIZE OF CASING NW LENGTH 75'0"
DRILLER" GERALD SMITH, INSPECTOR: JIM McPHAIL
DATE STARTED & COMPLETED 5-17-18-2004

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

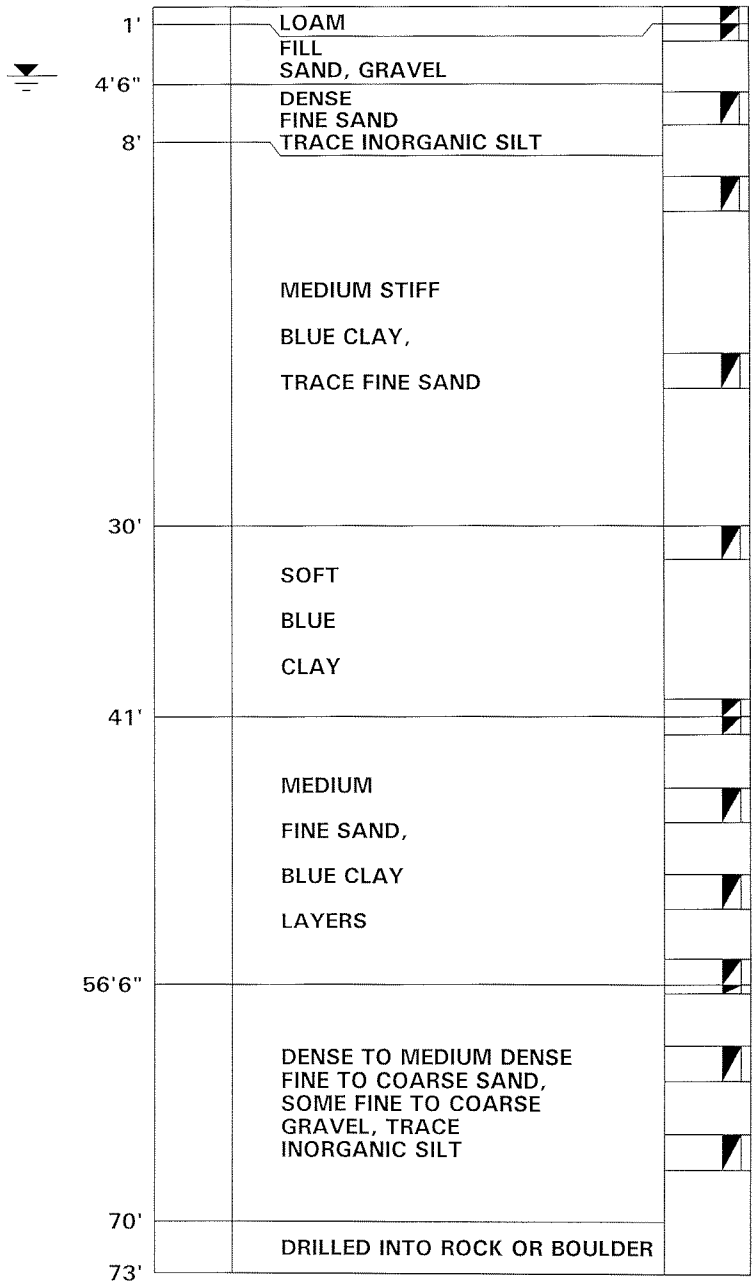
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 11 ft..

BORING 6

GROUND SURFACE ELEV + 6.70



S#1, 0' to 1'
(2-4)
RECOVERED 10 in.
S#1A, 1' to 2'
(8-10)
RECOVERED 12 in.
S#2, 5' to 7'
(14-21-21-19)
RECOVERED 18 in.
S#3, 10' to 12'
(2-3-5-4)
RECOVERED 20 in.
S#4, 20' to 22'
(2-2-3-2)
RECOVERED 24 in.
S#5, 30' to 32'
(1-2-2-2)
RECOVERED 24 in.
S#6, 40' to 41'
(1-2)
RECOVERED 12 in.
S#6A, 41' to 42'
(11-14)
RECOVERED 12 in.
S#7, 45' to 47'
(11-10-9-8)
RECOVERED 12 in.
S#8, 50' to 52'
(6-8-8-8)
RECOVERED 14 in.
S#9, 55' to 56'6"
(10-3-5)
RECOVERED 12 in.
S#9A, 56'6" to 57'
(39)
RECOVERED 4 in.
S#10, 60' to 62'
(20-20-12-16)
RECOVERED 3 in.
S#11, 65' to 67'
(24-10-18-9)
RECOVERED 3 in.

WATER LEVEL 4'
SIZE OF CASING NW LENGTH 70'6"
DRILLER" GERALD SMITH, INSPE8TOR: JIM McPHAIL
DATE STARTED & COMPLETED 5-17-19-2004

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

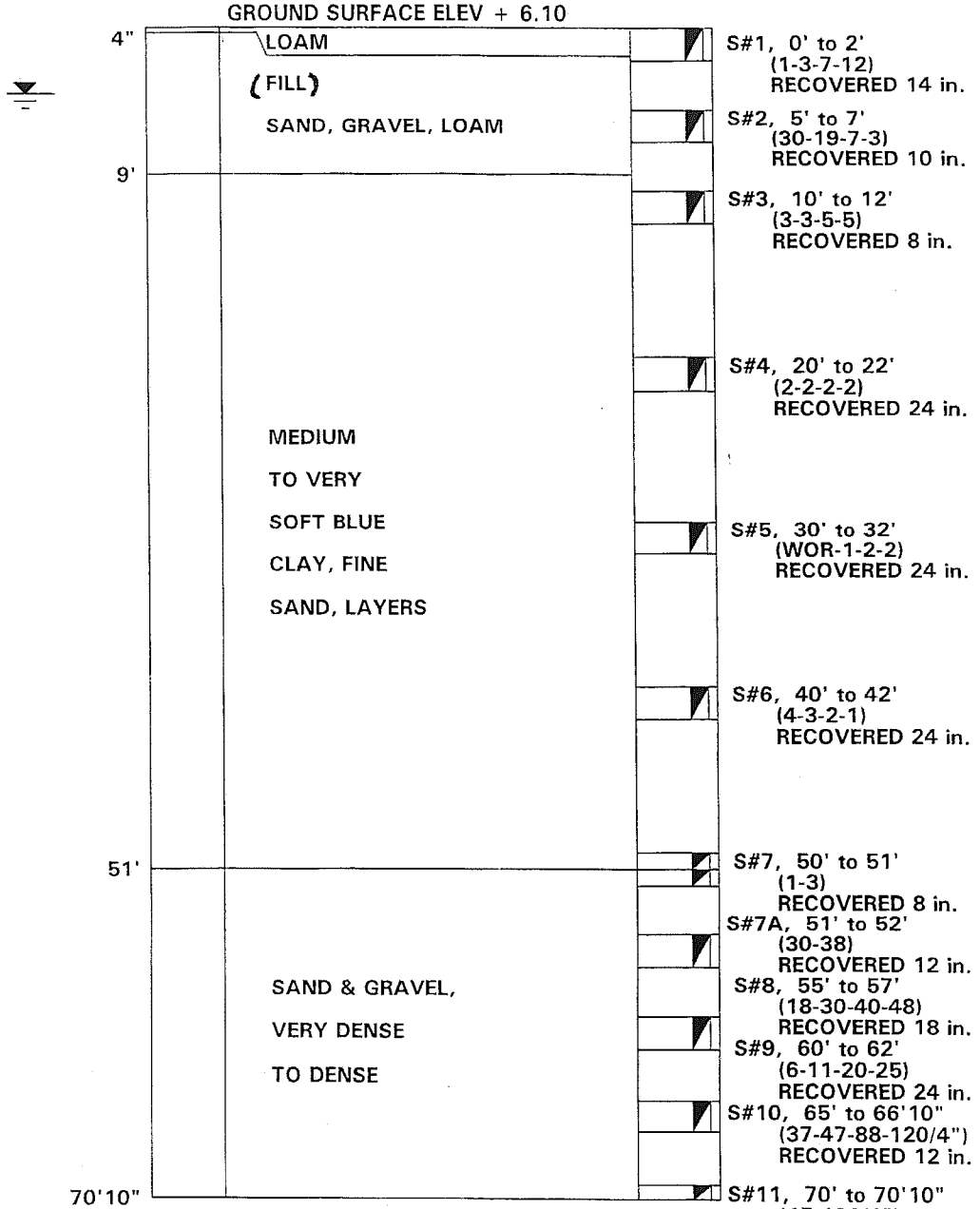
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 11 ft..

BORING 7

GROUND SURFACE ELEV + 6.10



WATER LEVEL 4'
SIZE OF CASING NW LENGTH 70'0"
DRILLER: GERALD SMITH, INSPECTOR: JIM McPHAIL
DATE STARTED & COMPLETED 5-24-25-2004

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

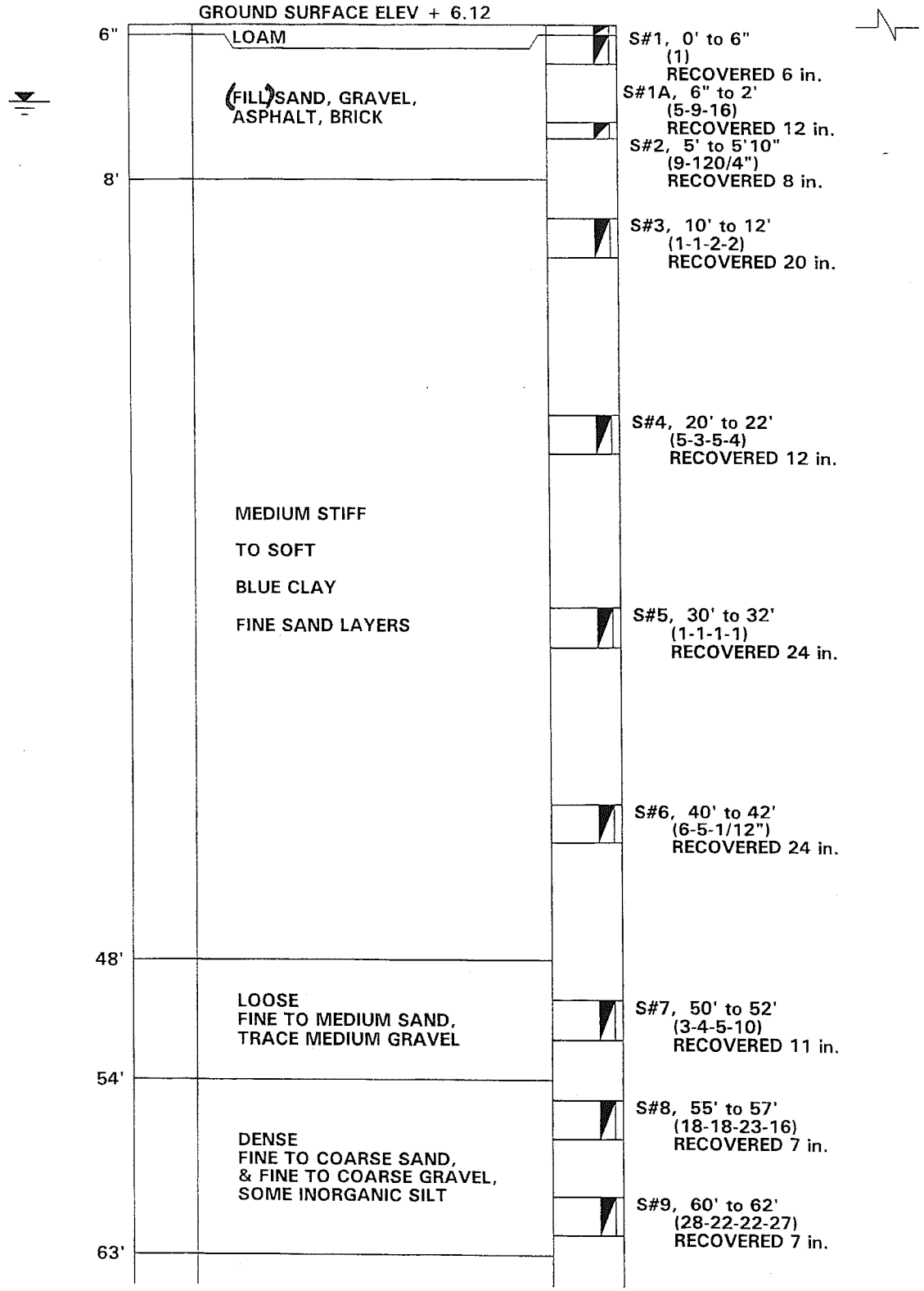
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 8 ft..

BORING 8



All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

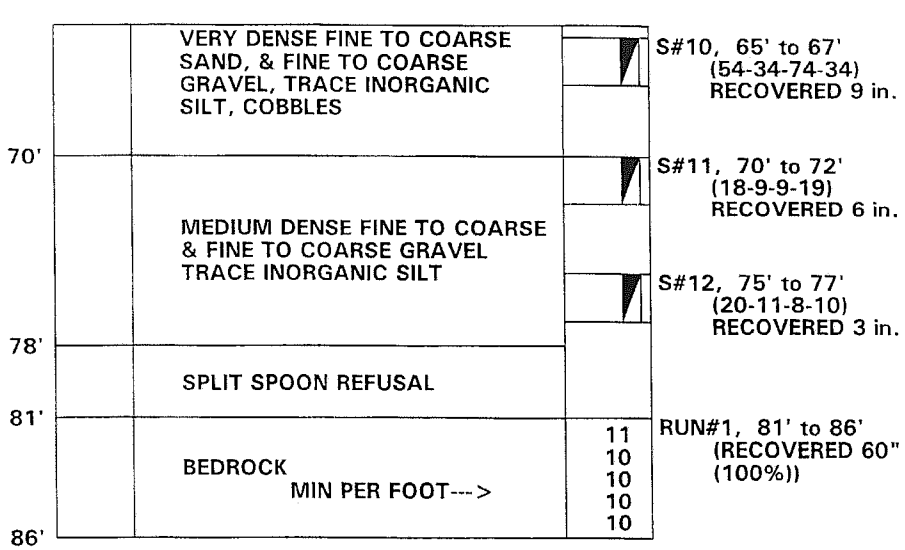
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 8 ft..

BORING 8



WATER LEVEL 4'
SIZE OF CASING NW LENGTH 78'6"
DRILLER: GERALD SMITH, INSPECTOR: JIM McPHAIL
DATE STARTED & COMPLETED 5-21-24-2004

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

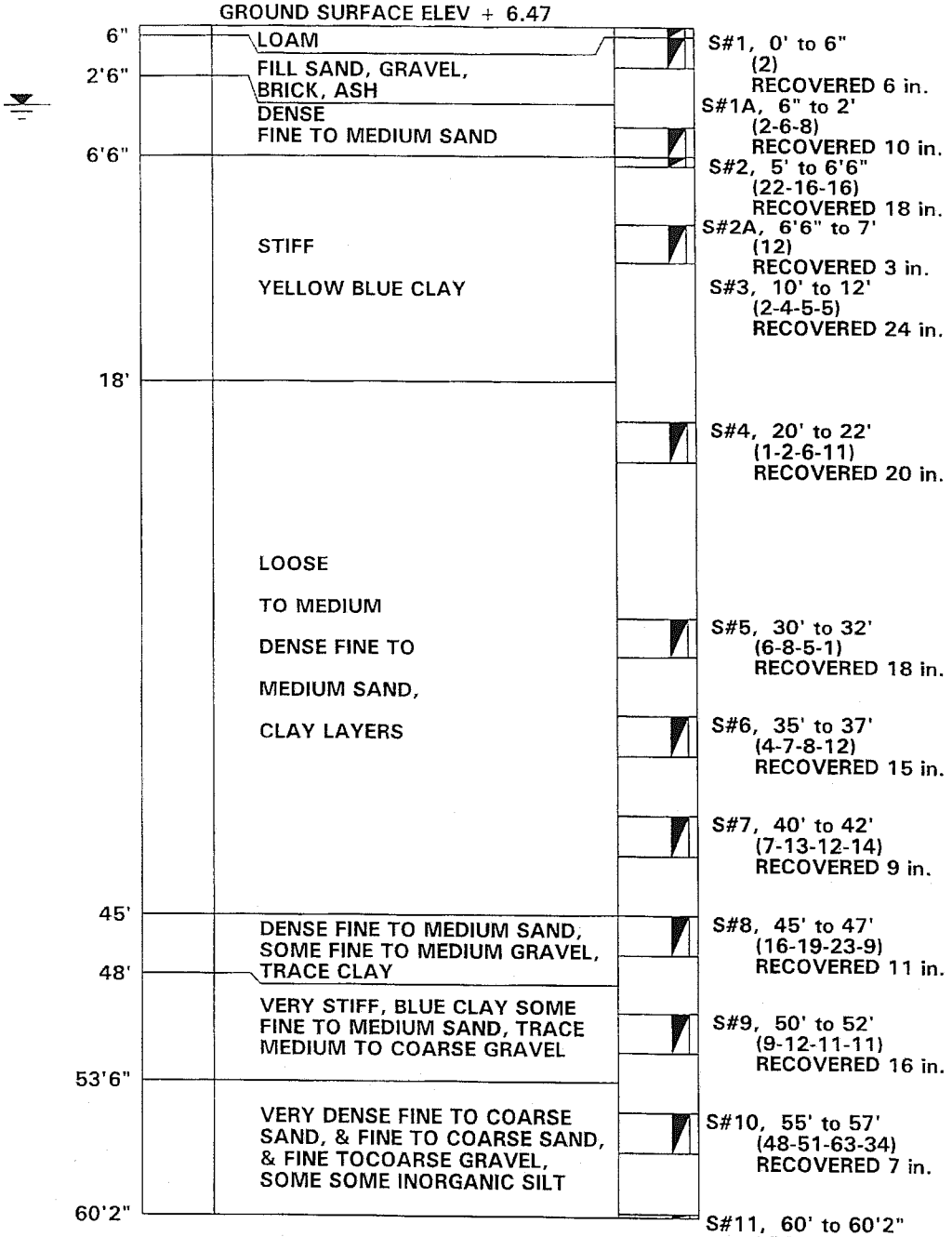
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 9 ft..

BORING 9

GROUND SURFACE ELEV + 6.47



WATER LEVEL 4'
SIZE OF CASING NW LENGTH 60'0"
DRILLER" GERALD SMITH, INSPE8TOR: JIM McPHAIL
DATE STARTED & COMPLETED 5-19-21-2004

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

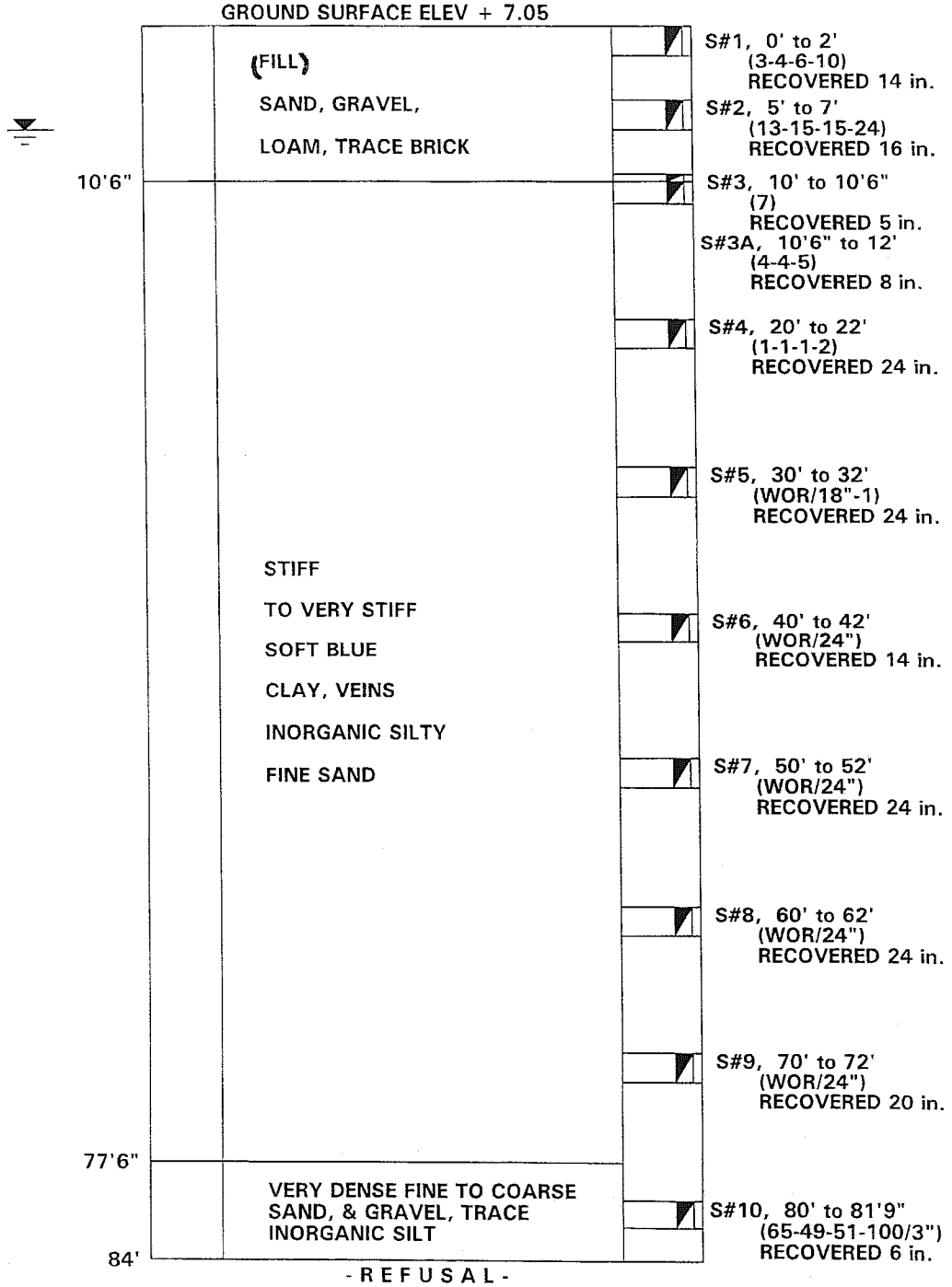
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 12 ft..

BORING 10

GROUND SURFACE ELEV + 7.05



- REFUSAL -
ENCOUNTED WITH ROLLER BIT

WATER LEVEL 7'
SIZE OF CASING NW LENGTH 80'0"
DRILLER: RENE DE SIMONE, INSPECTOR: JIM McPHAIL
DATE STARTED & COMPLETED 6-1-2-2004

All samples have been visually classified by QRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

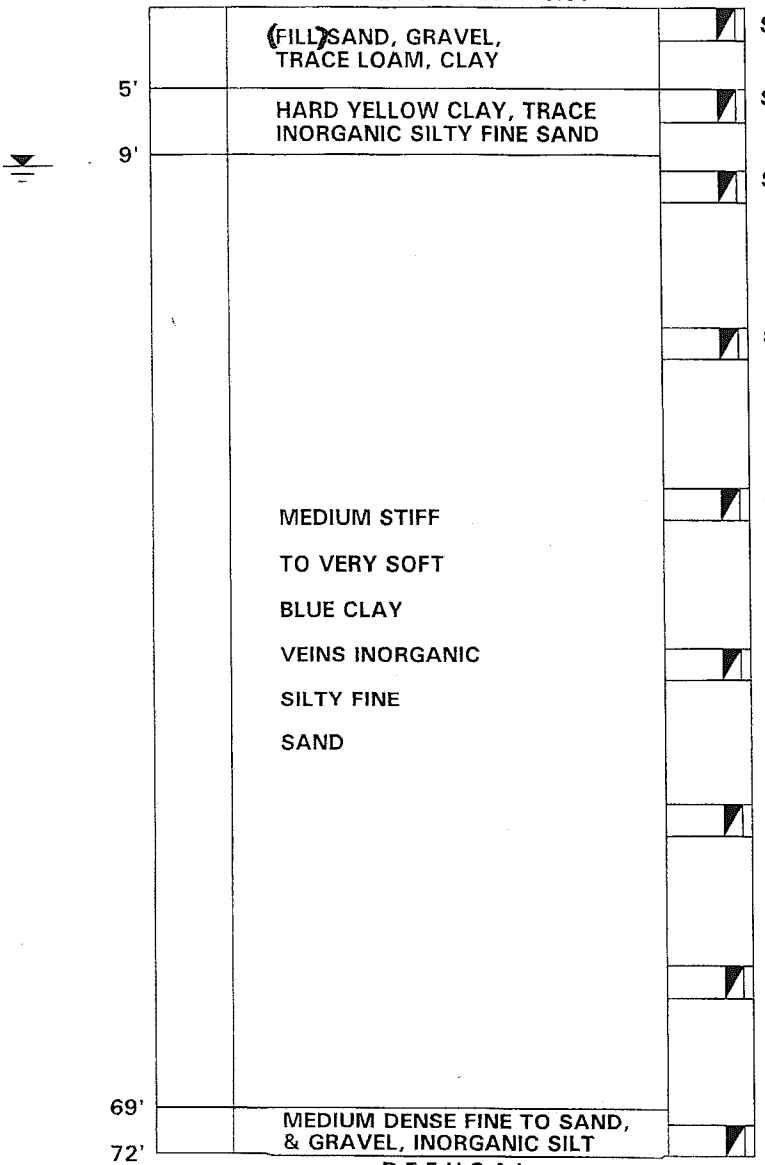
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 12 ft..

BORING 11

GROUND SURFACE ELEV + 6.36



- REFUSAL -
(120 BLOWS S.S. 140 LB, WGT., NO PENETRATION)

WATER LEVEL 9'9"
SIZE OF CASING NW LENGTH 72'0"
DRILLER: RENE DE SIMONE, INSPECTOR: JIM McPHAIL
DATE STARTED & COMPLETED 6-2-3-2004

All samples have been visually classified by QRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

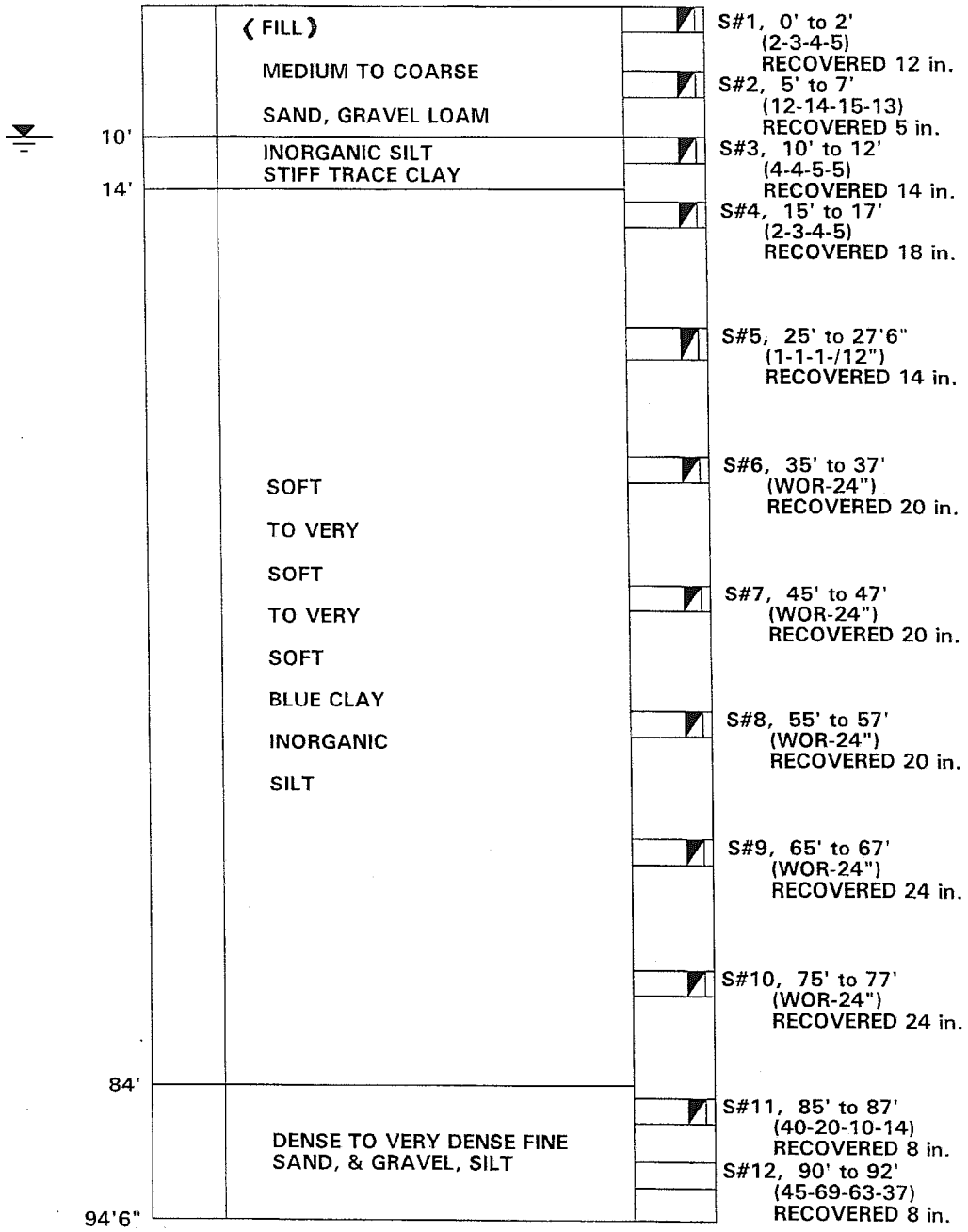
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: _____ Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 14 ft..

BORING 12

GROUND SURFACE ELEV + 6.67



WATER LEVEL 10'
SIZE OF CASING NW LENGTH 55'0"
DRILLER: RENE DE SIMONE, INSPECTOR: AMY FALCONARI
DATE STARTED & COMPLETED 6-3-7-2004
NOTE ROLLER BIT REFUSAL AT 94'6"

All samples have been visually classified by QRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

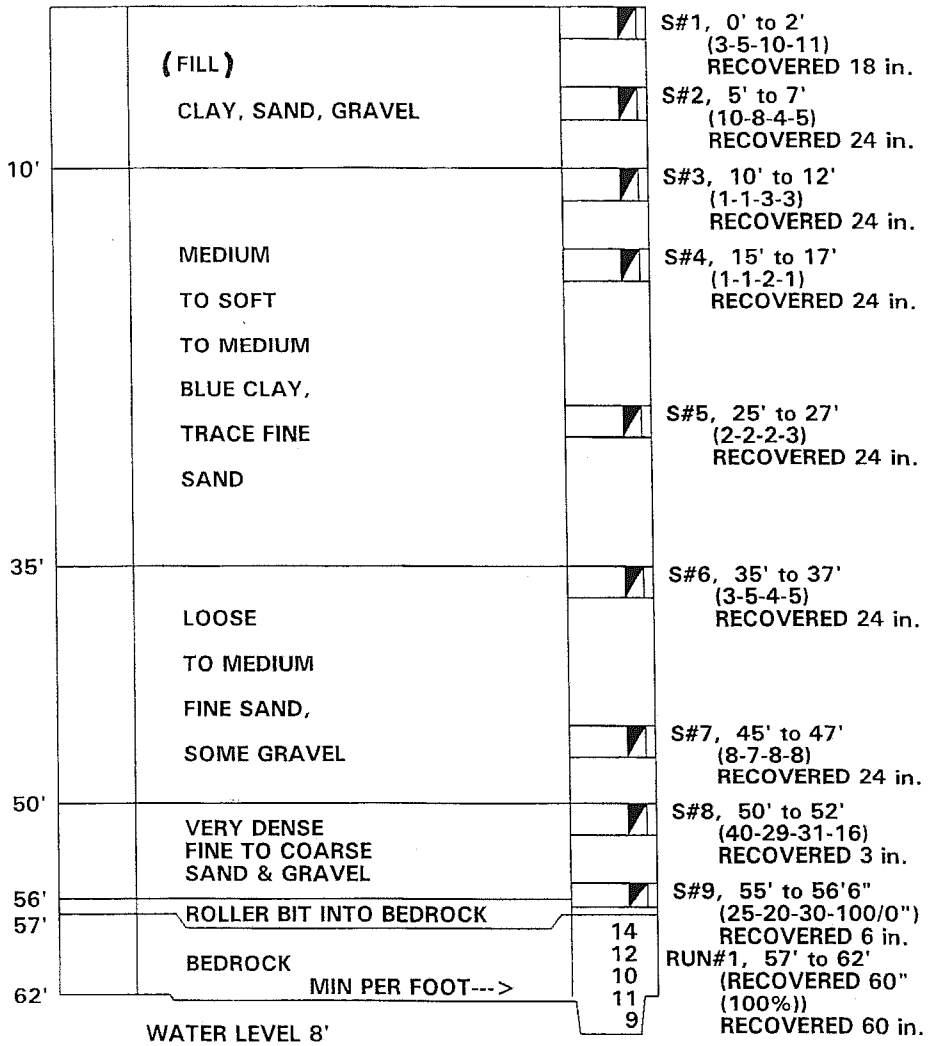
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 12 ft..

BORING 13

GROUND SURFACE ELEV + 6.66



WATER LEVEL 8'
SIZE OF CASING NW LENGTH 57'0"
SIZE OF ROCK BX LENGTH 5'0"
DRILLER: NEIL SMITH, INSPECTOR: AMY FALCONARI
DATE STARTED & COMPLETED 6-9-2004

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

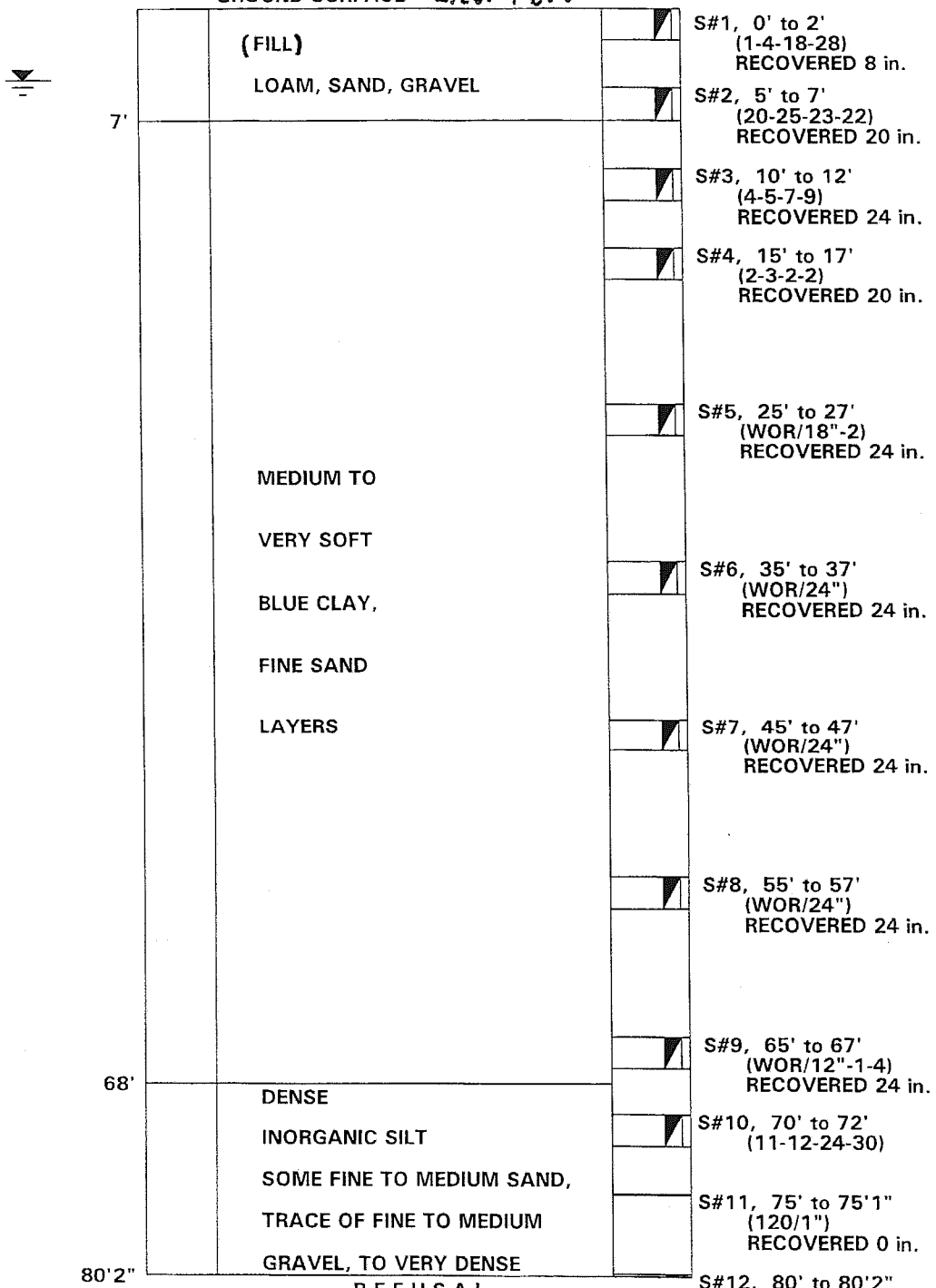
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781-391-4500)

To: McPHAIL ASSOCIATES, INC., 30 NORFOLK ST., CAMBRIDGE,MA Date: 7-9-2004 Job No.: 2004-93

Location: 20 ACORN PARK ROAD, BUILDING # 100 CAMBRIDGE, MA Scale 1 inch = 11 ft..

BORING 14

GROUND SURFACE Elev. +6.7



WATER LEVEL 4'6"
SIZE OF CASING NW LENGTH 15'0"
DRILLER: RENE DE SIMONE, INSPECTOR: AMY FALCONARI

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

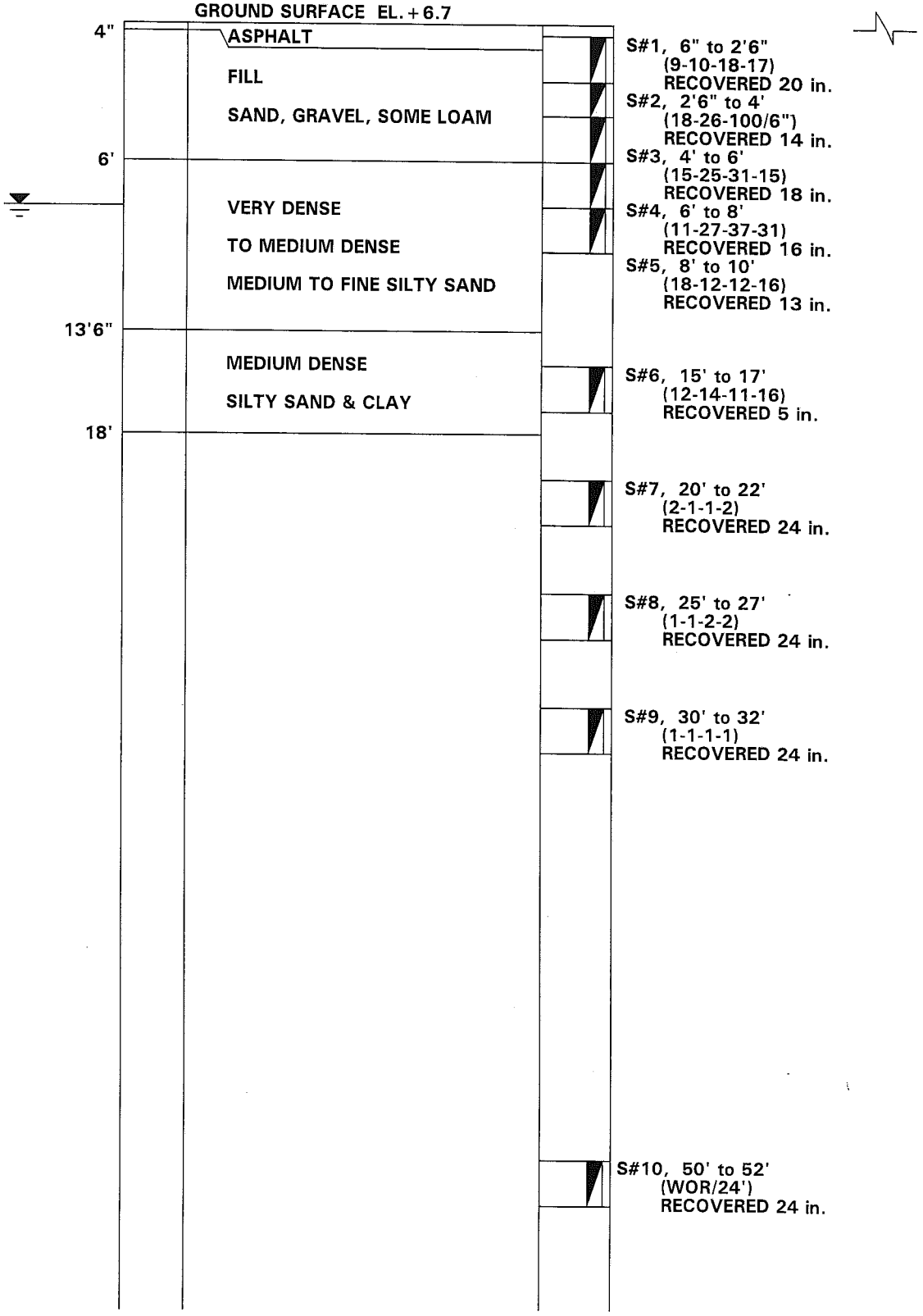
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: _____ Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDE, MA Scale: 1 in. = 7 ft.

BORING 101



All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

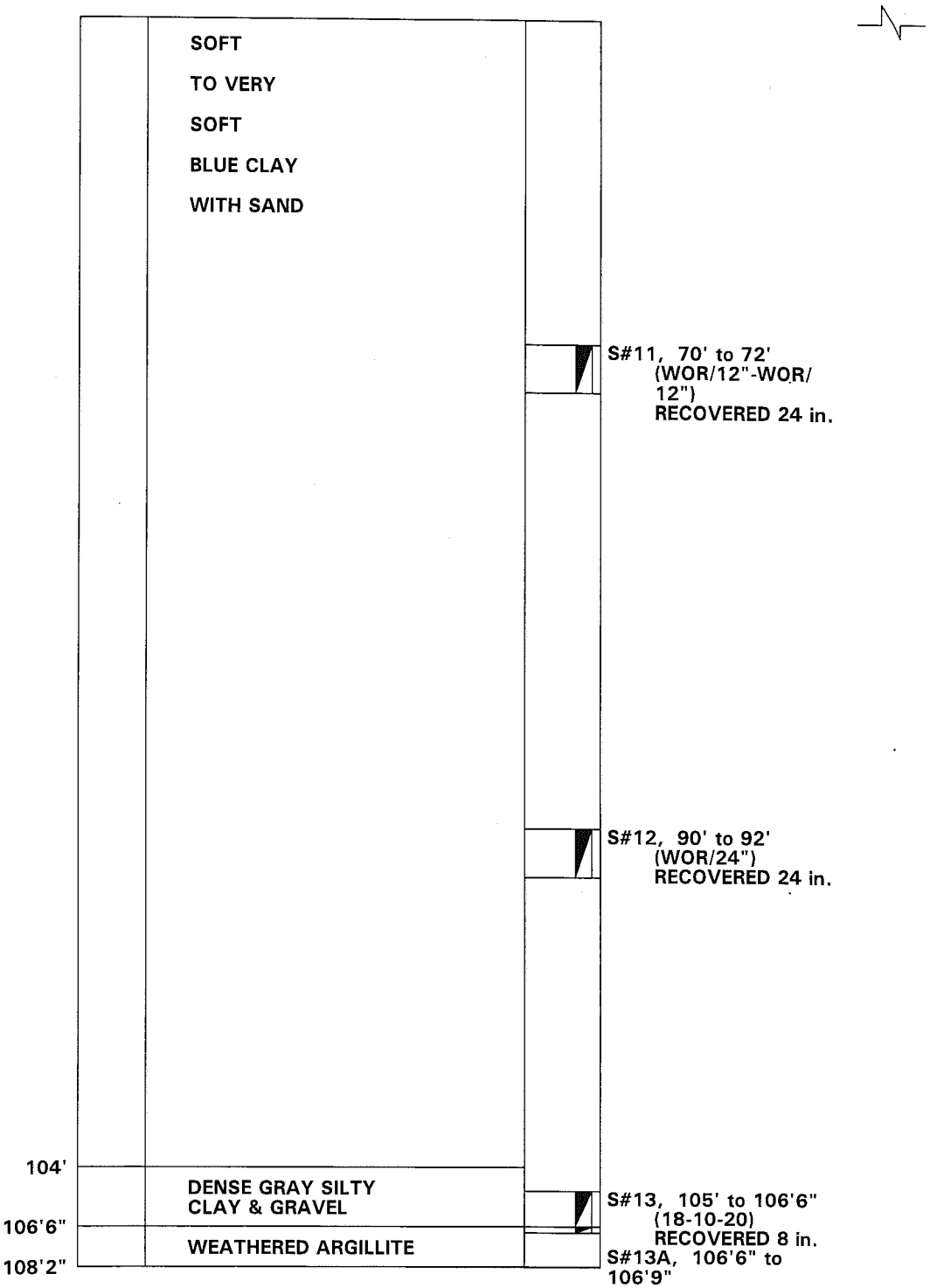
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: _____ Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDE, MA Scale: 1 in. = 7 ft.

BORING 101



WATER LEVEL 8'
SIZE OF AUGERS 3-3/4" I.D. LENGTH 10'0"
SIZE OF CASING NW LENGTH 20'0"
DRILLER: J.CENTRELLA, INSPECTOR: T.CORMICAN
DATE STARTED & COMPLETED 10-21-22-2009

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

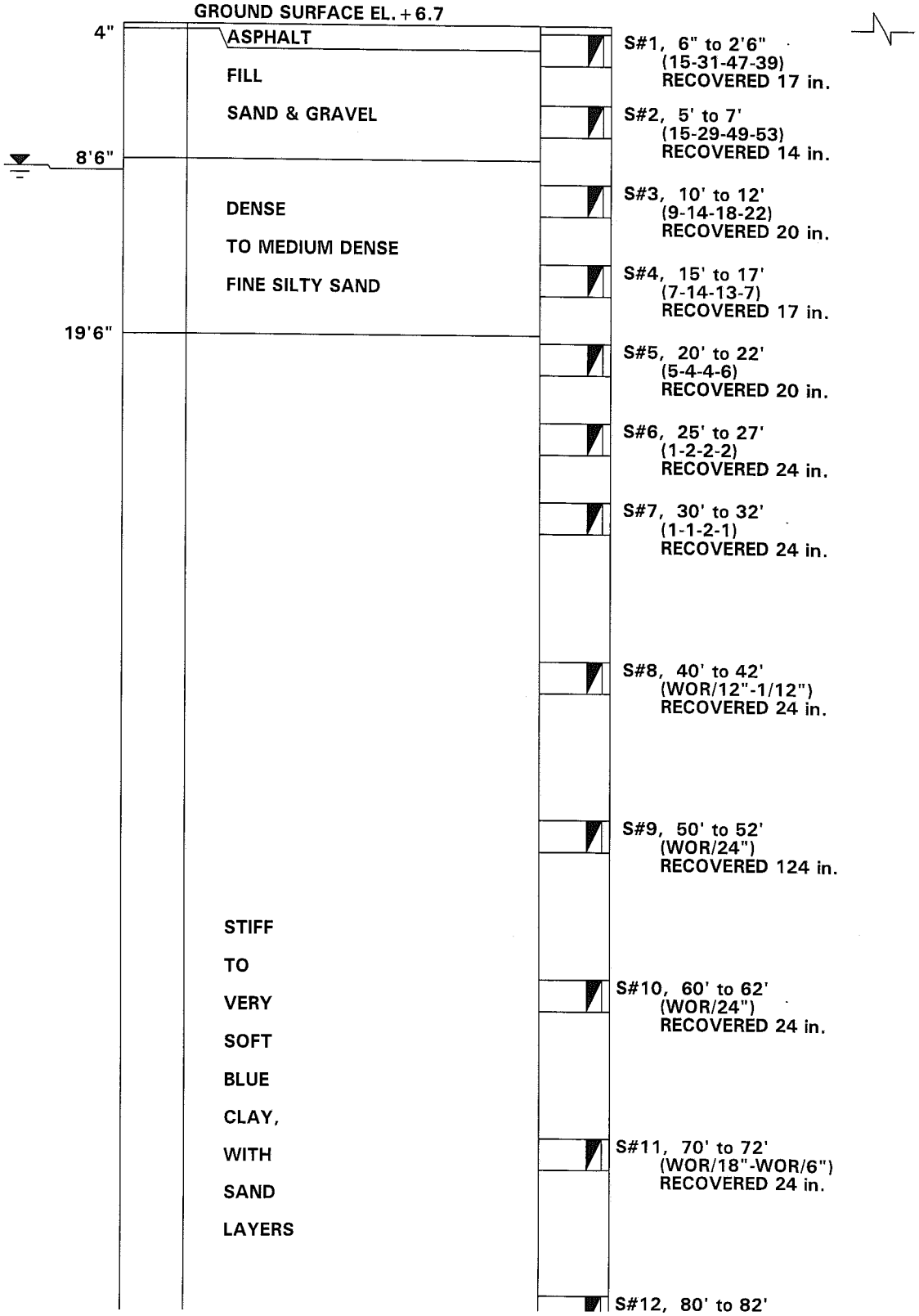
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: _____ Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDGE, MA Scale: 1 in. = 10 ft.

BORING 102



All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

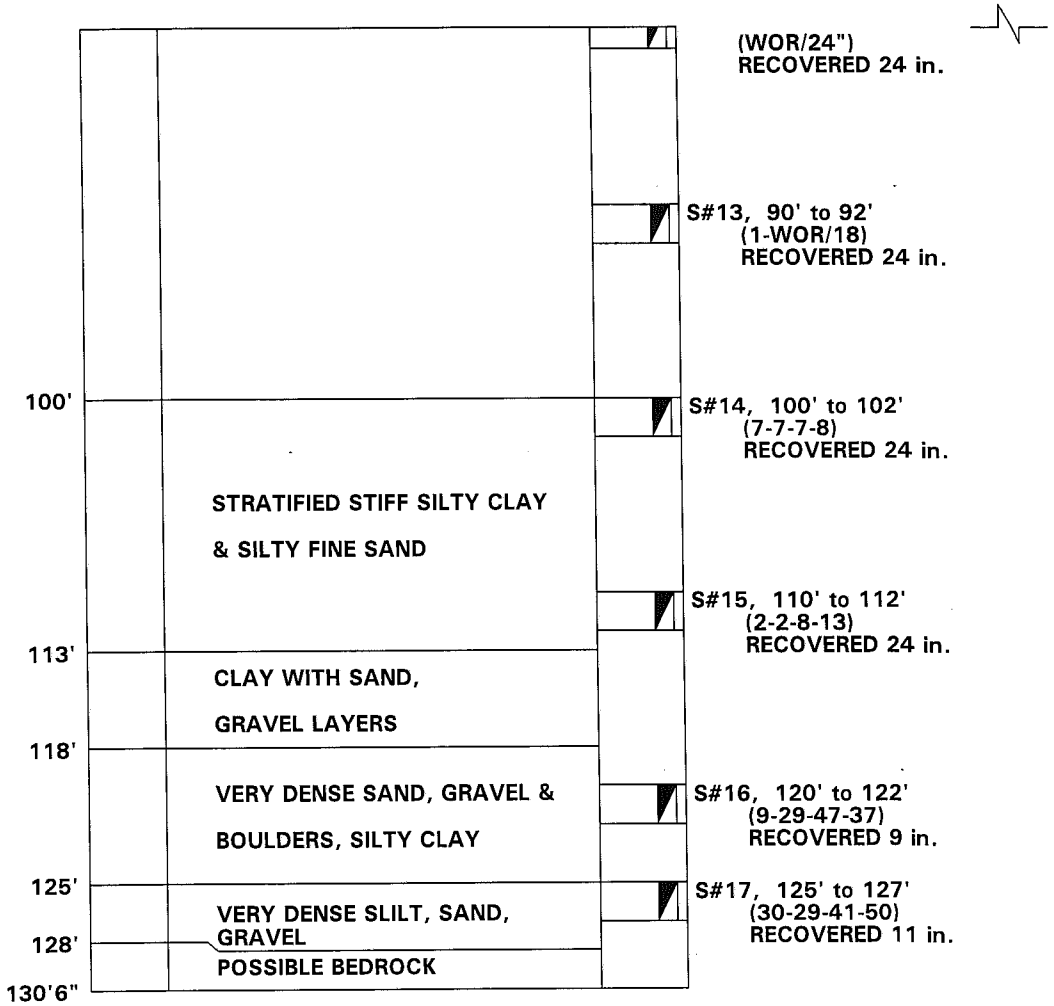
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: _____ Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDGE, MA Scale: 1 in. = 10 ft.

BORING 102



WATER LEVEL 9'
SIZE OF AUGERS 3-3/4" I.D. LENGTH 10'0"
SIZE OF CASING NW LENGTH 20'0"
DRILLER: J.CENTRELLA, INSPECTOR: T.CORMICAN
DATE STARTED & COMPLETED 10-20-21-2009

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

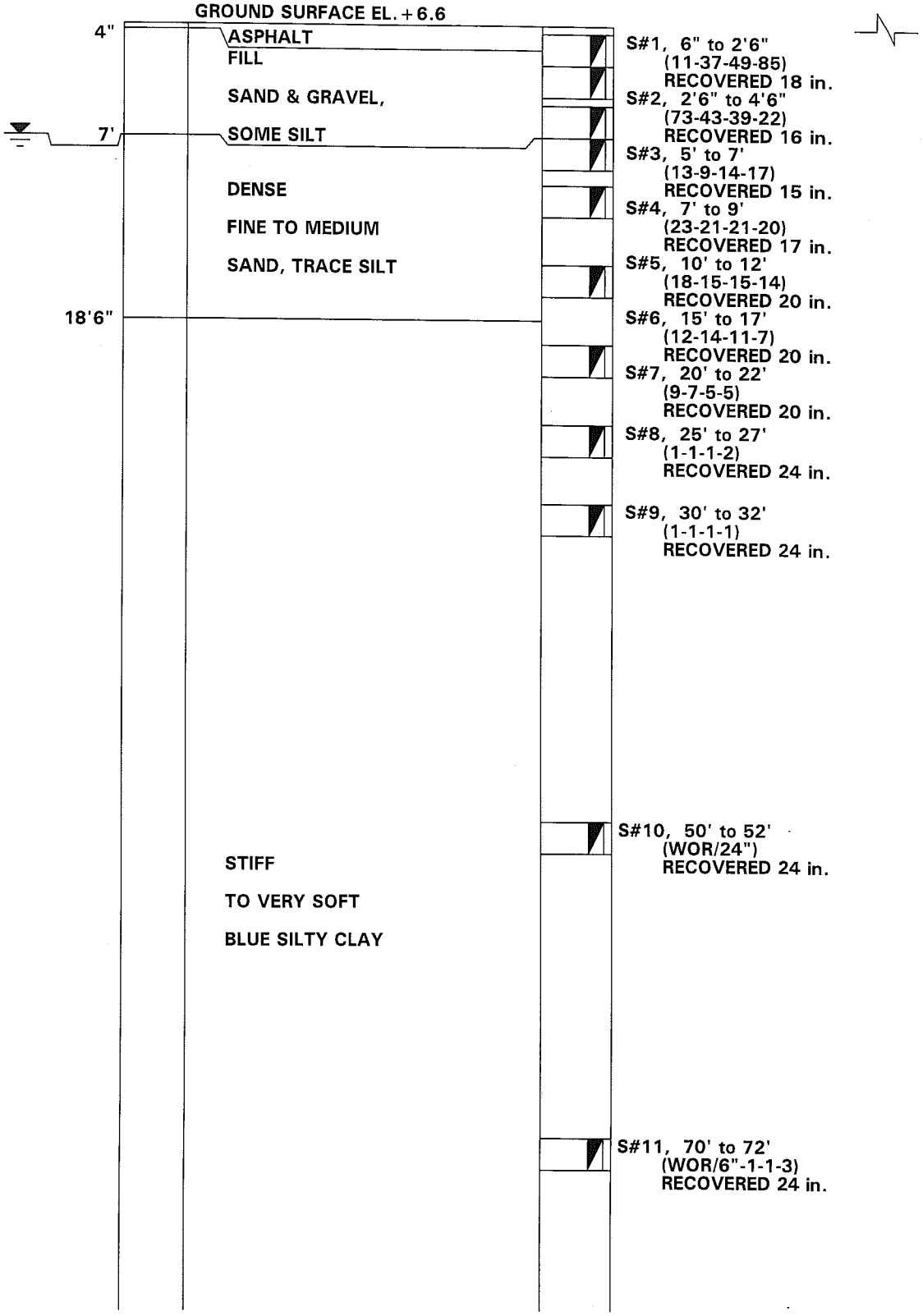
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDGE, MA Scale: 1 in.= 10 ft.

BORING 103



All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

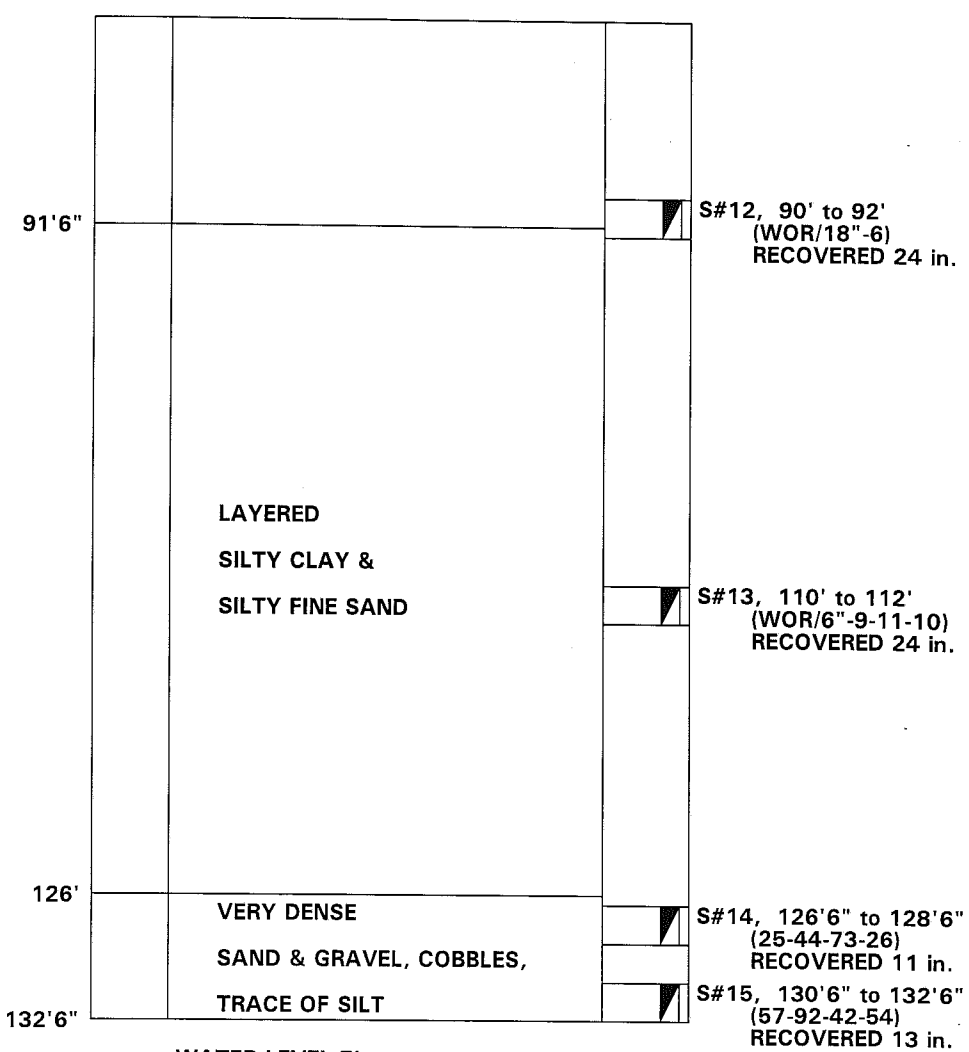
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: _____ Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDGE, MA Scale: 1 in. = 10 ft.

BORING 103



WATER LEVEL 7'
SIZE OF AUGERS 3-1/4" I.D. LENGTH 10'0"
SIZE OF CASING NW LENGTH 20'0"
DRILLER: J.CENTRELLA, INSPECTOR: T.CORMICAN
DATE STARTED & COMPLETED 10-26-27-2009

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

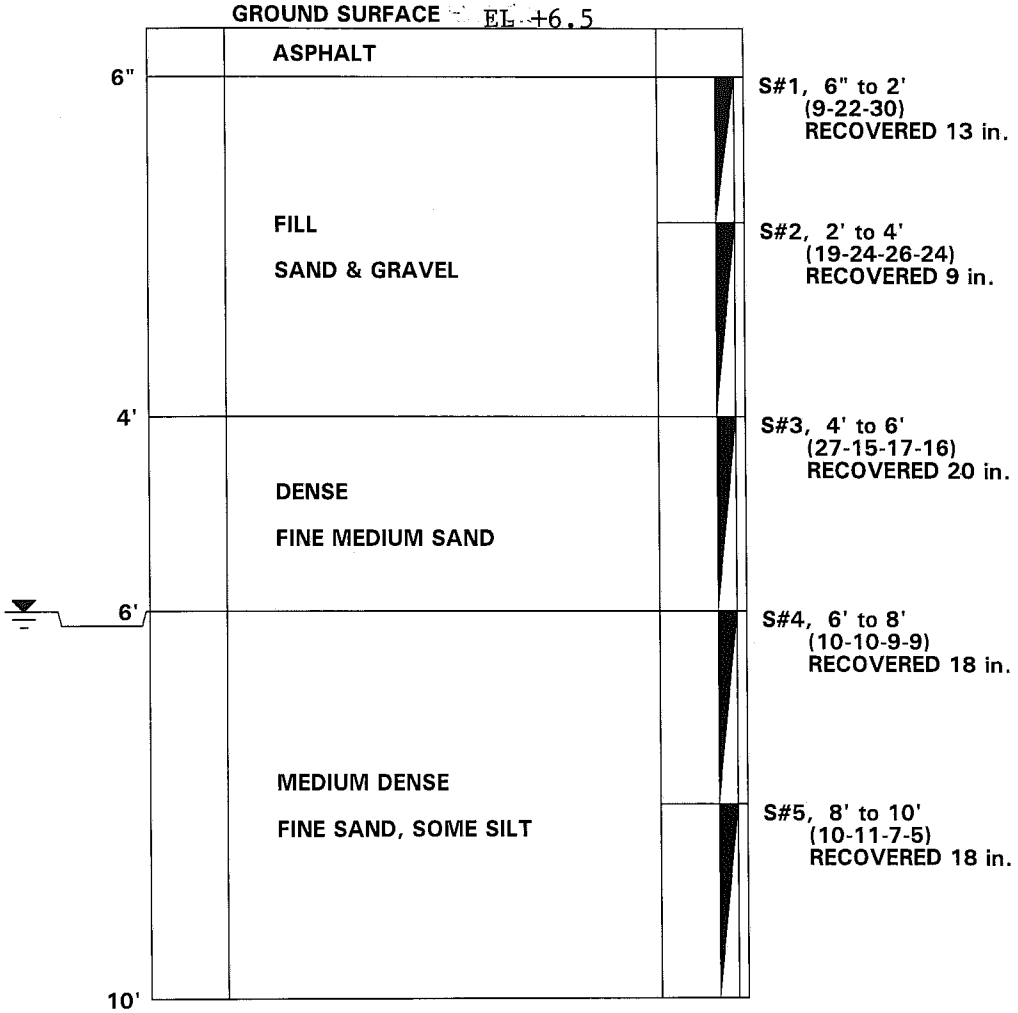
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: _____ Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDE, MA Scale: 1 in. = 2 ft.

BORING 104



WATER LEVEL 6'
SIZE OF AUGERS 3-1/4" I.D. LENGTH 8'0"
DRILLER: J.CENTRELLA. INSPECTOR: T.CORMICAN
DATE STARTED & COMPLETED 10-27-2009

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

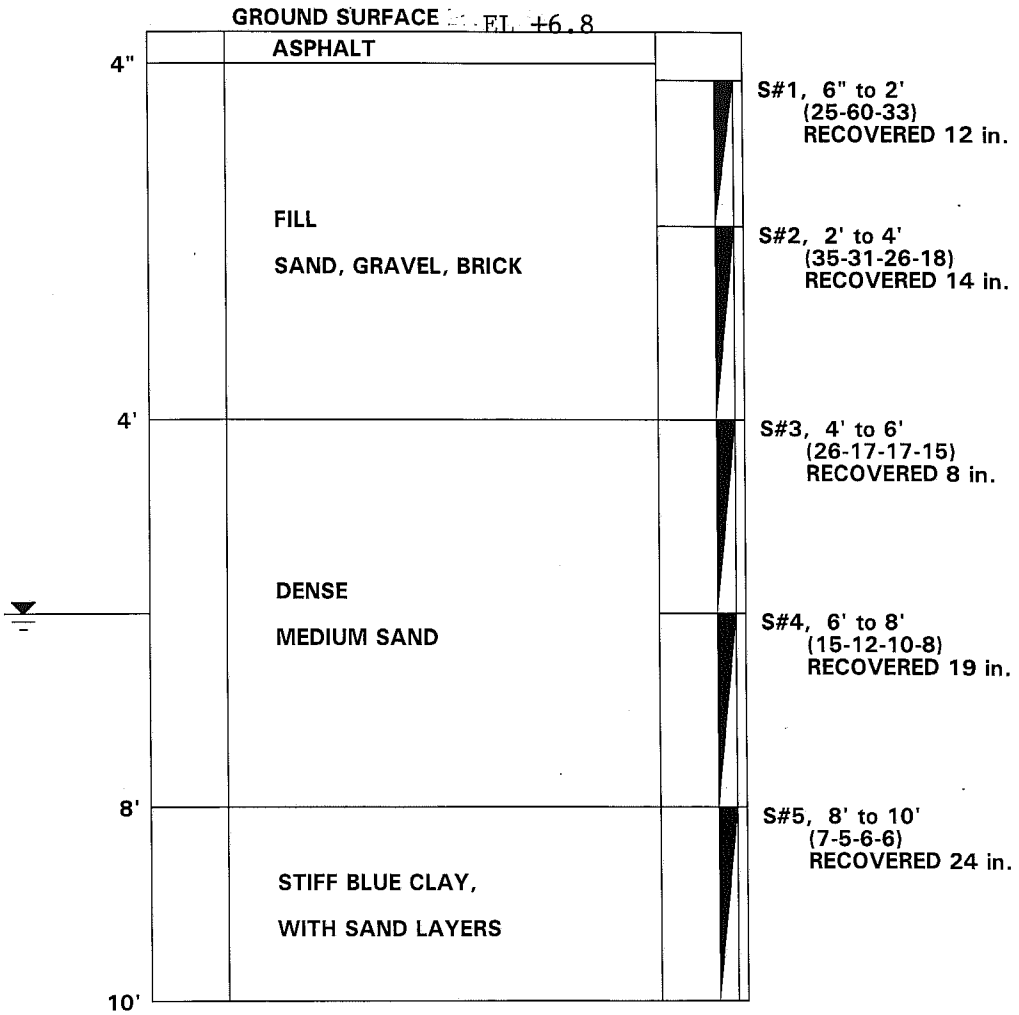
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: _____ Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDE, MA Scale: 1 in. = 2 ft.

BORING 105



WATER LEVEL 6'
SIZE OF AUGERS 3-1/4" I.D. LENGTH 8'0"
DRILLER: J.CENTRELLA. INSPECTOR: T.CORMICAN
DATE STARTED & COMPLETED 10-27-2009

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

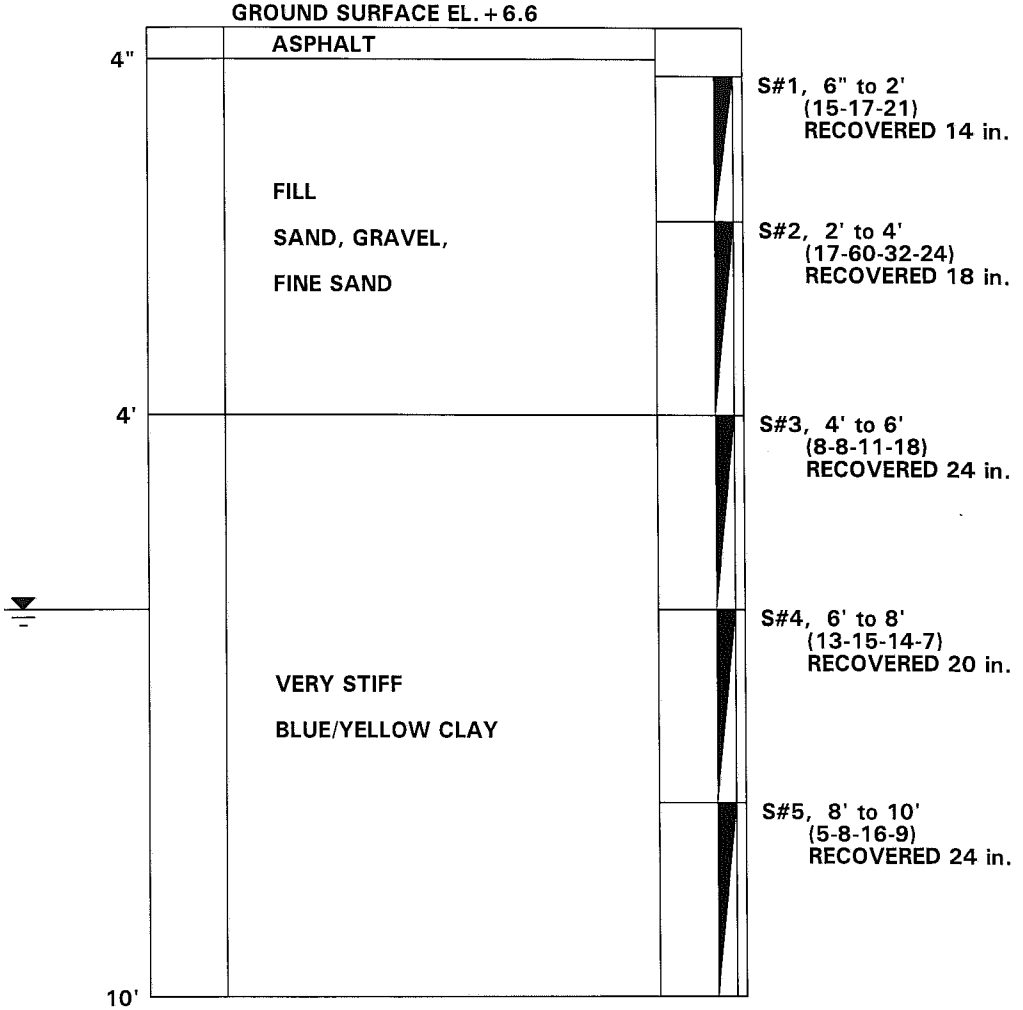
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: _____ Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDE, MA Scale: 1 in.= 2 ft.

BORING 106

GROUND SURFACE EL. +6.6



WATER LEVEL 6'
SIZE OF AUGERS 3-1/4" I.D. LENGTH 8'0"
DRILLER: J.CENTRELLA. INSPECTOR: T.CORMICAN
DATE STARTED & COMPLETED 10-27-2009

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

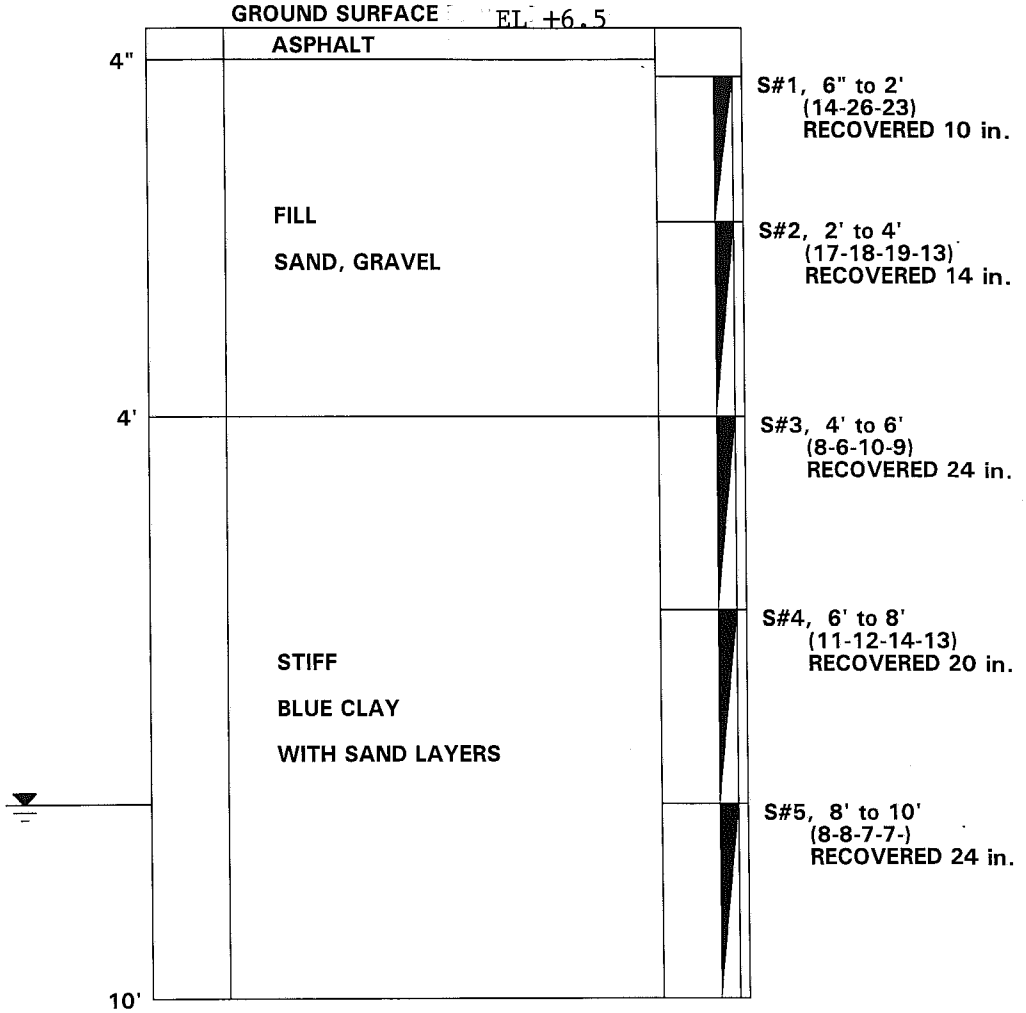
CARR-DEE CORP.

37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: _____ Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDGE, MA Scale: 1 in. = 2 ft.

BORING 107



WATER LEVEL 8'
SIZE OF AUGERS 3-1/4" I.D. LENGTH 8'0"
DRILLER: J.CENTRELLA. INSPECTOR: T.CORMICAN
DATE STARTED & COMPLETED 10-27-2009

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

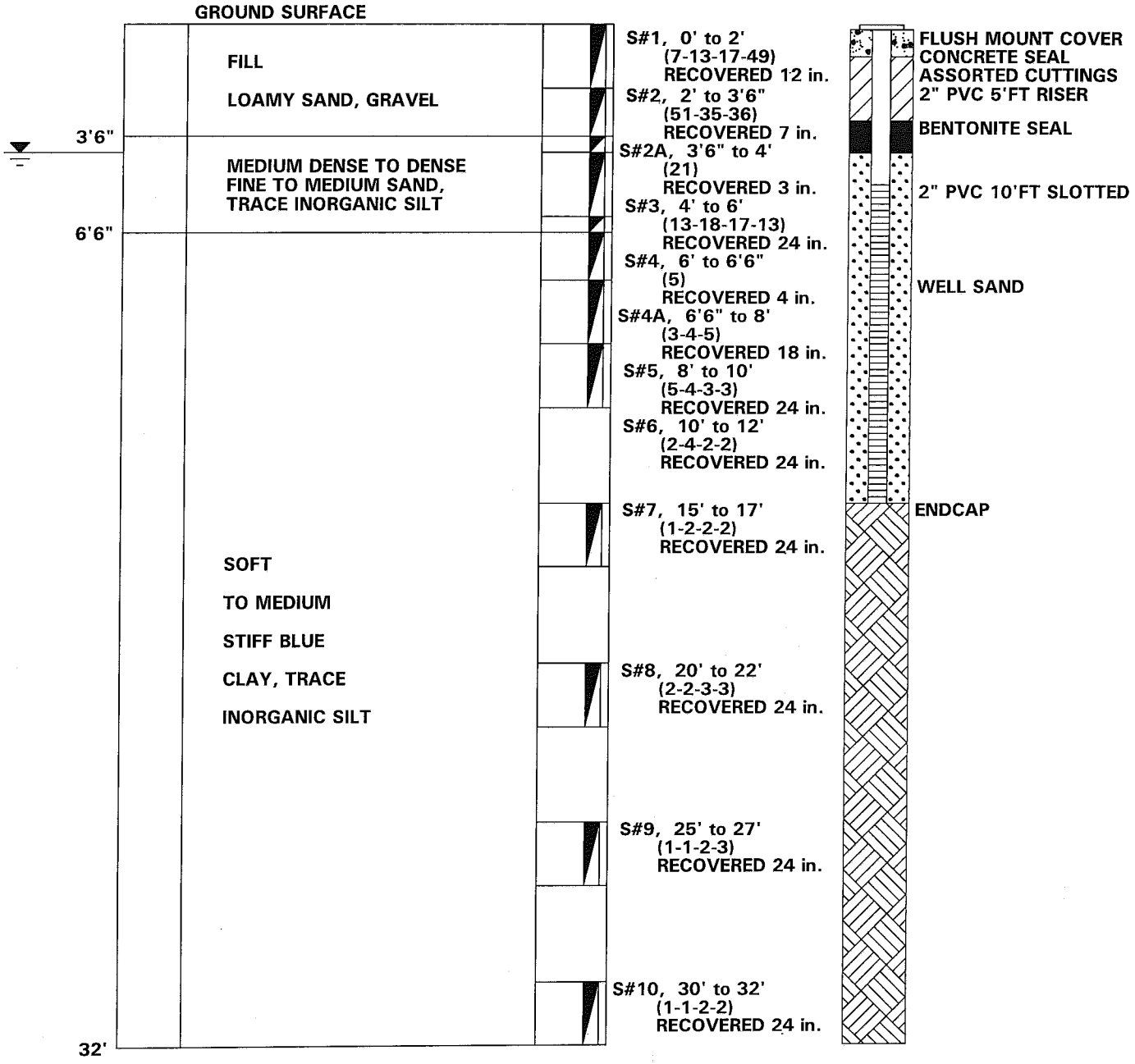
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: 12-11-2009 Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDE, MA Scale: 1 in. = 5 ft.

BORING MAI-201-OW

MONITORING WELL



WATER LEVEL 4'
SIZE OF CASING NW LENGTH 7'0"
DRILLER: G.SMITH, INSPECTOR: J.PATCH
DATE STARTED & COMPLETED 12-10-2009

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

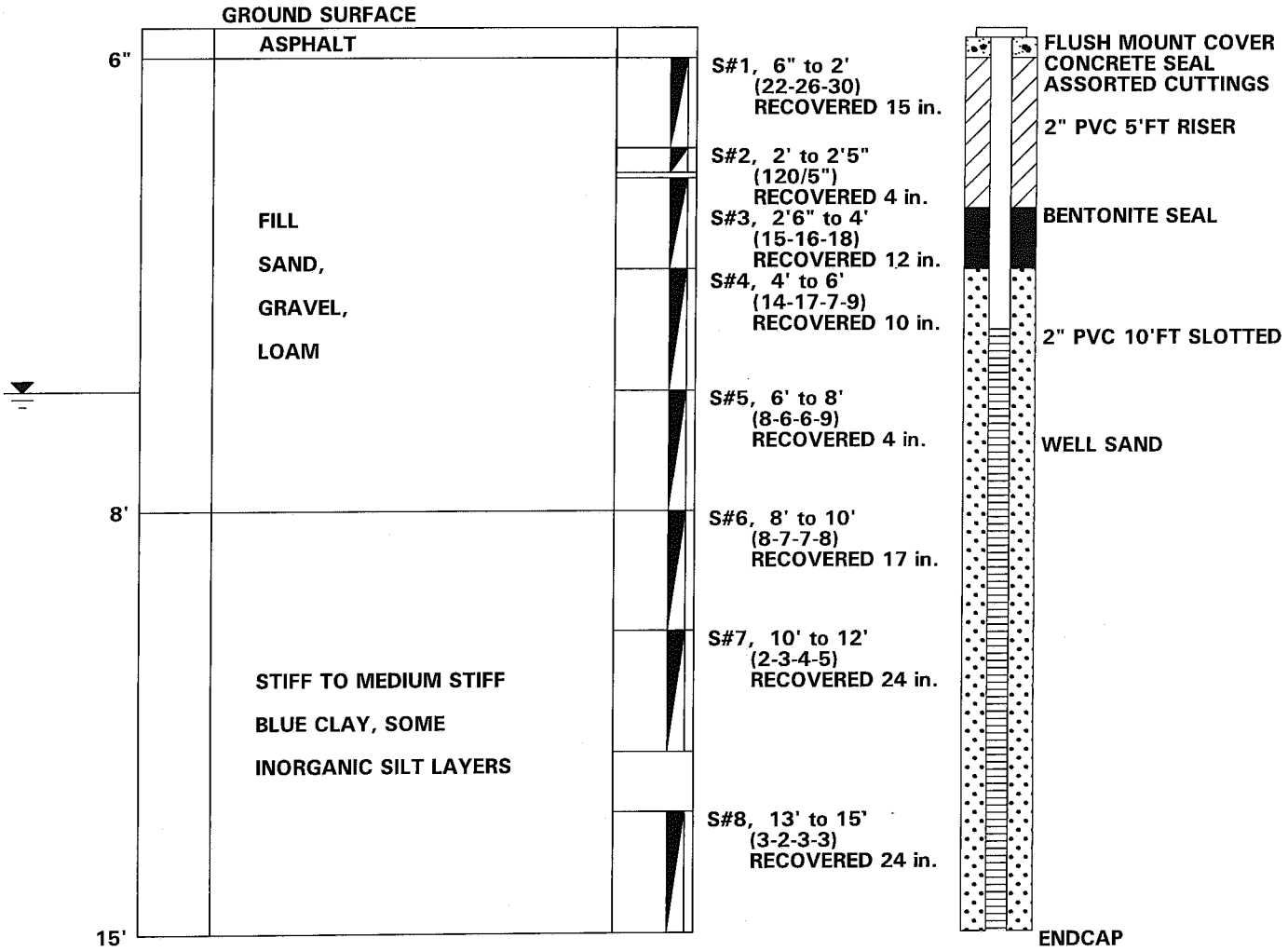
37 LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: McPHAIL ASSOCIATES, INC. 2269 MASS, AVE CAMBRIDGE, MA Date: 12-11-2009 Job No.: 2009-146

Location: DISCOVERY PARK BLDG, 200-300 BORINGS CAMBRIDE, MA Scale: 1 in.= 3 ft.

BORING MAI-202-OW

MONITORING WELL



WATER LEVEL 6'
SIZE OF AUGERS 3-1/4" I.D. LENGTH 15'0"
DRILLER: G.SMITH, INSPECTOR: J.PATCH
DATE STARTED & COMPLETED 12-10-2009

All samples have been visually classified by DRILLER. Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

McPHAIL ASSOCIATES, INC

Geotechnical Engineers

APPENDIX D

Chemical Test Results
Groundwater Samples

ALPHA ANALYTICAL

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com
MA:M-MA086 NH:2003 CT:PH-0574 ME:MA0086 RI:LAO00065 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: McPhail Associates

Address: 2269 Massachusetts Avenue

Cambridge, MA 02140

Attn: Mr. Ambrose Donovan

Project Number: 4214

Laboratory Job Number: L0918116

Date Received: 14-DEC-2009

Date Reported: 16-DEC-2009

Delivery Method: Client

Site: DISCOVERY PARK

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0918116-01	MAI-202	CAMBRIDGE, MA
L0918116-02	MAI-201	CAMBRIDGE, MA

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: Michelle M. Morris
Technical Representative

ALPHA ANALYTICAL
NARRATIVE REPORT

Laboratory Job Number: L0918116

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.

Report Submission

This final report replaces the partial report issued December 16, 2009. The results for all requested analyses are reported.

Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with ice and delivered directly from the sampling site.

Solids, Total Suspended

L0918116-01 has an elevated detection limit due to the 10x dilution required by the sample matrix.

L0918116-02 has an elevated detection limit due to the 2x dilution required by the sample matrix.

Phenolics, Total

L0918116-01 has an elevated detection limit due to the 5x dilution required by the sample matrix.

Metals

The WG393372-3 Laboratory Duplicate RPD associated with L0918116-02 is above the acceptance criteria for Lead (27%); however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

The WG393425-4 MS recovery associated with L0918116-02 is above the acceptance criteria for Mercury (136%). A post digestion spike was performed with an acceptable recovery of 119%.

Semivolatile Organics - SIM

Extraction Method: EPA 3510C

Semivolatile Organics

Extraction Method: EPA 3510C

The WG393208-2/-3 LCS/LCSD RPD associated with L0918116-01 and -02 is above the acceptance criteria for Butyl benzyl phthalate (34%); however, the individual LCS/LCSD recoveries are within method limits. The results of the associated samples are reported.

Polychlorinated Biphenyls by GC

Extraction Method: EPA 608

An LCS/LCSD was performed in lieu of an MS/dup.

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

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

Laboratory Sample Number: L0918116-01
MAI-202
Sample Matrix: WATER

Date Collected: 14-DEC-2009 15:00
Date Received : 14-DEC-2009
Date Reported : 16-DEC-2009

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 8-Amber,4-Plastic,4-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
General Chemistry - Westborough Lab								
Solids, Total Suspended	240	mg/l	50	30	2540D		1215 12:10	DW
Cyanide, Total	ND	mg/l	0.005	30	4500CN-CE	1215 11:15	1216 00:13	AT
Chlorine, Total Residual	ND	mg/l	0.02	30	4500CL-D		1214 20:00	BH
pH (H)	6.5	SU	-	30	4500H+-B		1214 21:26	BH
TPH	ND	mg/l	4.00	74	1664A	1215 14:30	1216 13:30	JO
Phenolics, Total	ND	mg/l	0.15	4	420.1		1215 19:30	TH
Chromium, Hexavalent	ND	mg/l	0.010	30	3500CR-D	1215 00:30	1215 00:30	JT
Total Metals - Westborough Lab								
Antimony, Total	0.0009	mg/l	0.0005	1	6020	1215 13:00	1215 20:57	BM
Arsenic, Total	0.0150	mg/l	0.0005	1	6020	1215 13:00	1215 20:57	BM
Cadmium, Total	ND	mg/l	0.0002	1	6020	1215 13:00	1215 20:57	BM
Chromium, Total	0.0202	mg/l	0.0005	1	6020	1215 13:00	1215 20:57	BM
Copper, Total	0.0153	mg/l	0.0005	1	6020	1215 13:00	1215 20:57	BM
Iron, Total	41	mg/l	0.05	19	200.7	1215 12:00	1216 09:26	MG
Lead, Total	0.0259	mg/l	0.0005	1	6020	1215 13:00	1215 20:57	BM
Mercury, Total	ND	mg/l	0.0002	3	245.1	1215 17:35	1216 10:50	EZ
Nickel, Total	0.0174	mg/l	0.0005	1	6020	1215 13:00	1215 20:57	BM
Selenium, Total	0.003	mg/l	0.001	1	6020	1215 13:00	1215 20:57	BM
Silver, Total	ND	mg/l	0.0004	1	6020	1215 13:00	1215 20:57	BM
Zinc, Total	0.0488	mg/l	0.0050	1	6020	1215 13:00	1215 20:57	BM
Pesticides by GC - Westborough Lab				14	504.1	1216 11:00	1216 12:44	SS
1,2-Dibromoethane	ND	ug/l	0.010					
Volatile Organics by GC/MS - Westborough Lab				5	624		1215 12:28	TT
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	1.5					
Chloroform	ND	ug/l	1.5					
Carbon tetrachloride	ND	ug/l	1.0					
1,2-Dichloropropane	ND	ug/l	3.5					
Dibromochloromethane	ND	ug/l	1.0					
1,1,2-Trichloroethane	ND	ug/l	1.5					
2-Chloroethylvinyl ether	ND	ug/l	10.					
Tetrachloroethene	ND	ug/l	1.5					
Chlorobenzene	ND	ug/l	3.5					

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

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0918116-01
MAI-202

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS - Westborough Lab cont'd				5	624		1215 12:28	TT
Trichlorofluoromethane	ND	ug/l	5.0					
1,2-Dichloroethane	ND	ug/l	1.5					
1,1,1-Trichloroethane	ND	ug/l	2.0					
Bromodichloromethane	ND	ug/l	1.0					
trans-1,3-Dichloropropene	ND	ug/l	1.5					
cis-1,3-Dichloropropene	ND	ug/l	1.5					
Bromoform	ND	ug/l	1.0					
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0					
Benzene	ND	ug/l	1.0					
Toluene	ND	ug/l	1.0					
Ethylbenzene	ND	ug/l	1.0					
Chloromethane	ND	ug/l	10.					
Bromomethane	ND	ug/l	5.0					
Vinyl chloride	ND	ug/l	2.0					
Chloroethane	ND	ug/l	2.0					
1,1-Dichloroethene	ND	ug/l	1.0					
trans-1,2-Dichloroethene	ND	ug/l	1.5					
cis-1,2-Dichloroethene	ND	ug/l	1.0					
Trichloroethene	ND	ug/l	1.0					
1,2-Dichlorobenzene	ND	ug/l	5.0					
1,3-Dichlorobenzene	ND	ug/l	5.0					
1,4-Dichlorobenzene	ND	ug/l	5.0					
p/m-Xylene	ND	ug/l	2.0					
o-xylene	ND	ug/l	1.0					
Xylene (Total)	ND	ug/l	2.0					
Styrene	ND	ug/l	1.0					
Acetone	11	ug/l	10					
Carbon disulfide	ND	ug/l	5.0					
2-Butanone	ND	ug/l	10.					
Vinyl acetate	ND	ug/l	20.					
4-Methyl-2-pentanone	ND	ug/l	10.					
2-Hexanone	ND	ug/l	10.					
Acrolein	ND	ug/l	8.0					
Acrylonitrile	ND	ug/l	10.					
Methyl tert butyl ether	ND	ug/l	20.					
1,4-Dioxane	ND	ug/l	2000					
Tert-Butyl Alcohol	ND	ug/l	100					
Tertiary-Amyl Methyl Ether	ND	ug/l	20.					
Surrogate(s)	Recovery		QC Criteria					
Pentafluorobenzene	93.0	%	80-120					
Fluorobenzene	102	%	80-120					
4-Bromofluorobenzene	101	%	80-120					
Semivolatile Organics by GC/MS - Westborough Lab				1	8270C	1214 20:41	1215 14:35	PS
Benzidine	ND	ug/l	50.					
1,2,4-Trichlorobenzene	ND	ug/l	5.0					
Bis(2-chloroethyl)ether	ND	ug/l	5.0					
1,2-Dichlorobenzene	ND	ug/l	5.0					

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

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0918116-01
MAI-202

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Semivolatile Organics by GC/MS - Westborough Lab cont'd				1	8270C	1214 20:41	1215 14:35	PS
1,3-Dichlorobenzene	ND	ug/l	5.0					
1,4-Dichlorobenzene	ND	ug/l	5.0					
3,3'-Dichlorobenzidine	ND	ug/l	50.					
2,4-Dinitrotoluene	ND	ug/l	6.0					
2,6-Dinitrotoluene	ND	ug/l	5.0					
Azobenzene	ND	ug/l	5.0					
4-Chlorophenyl phenyl ether	ND	ug/l	5.0					
4-Bromophenyl phenyl ether	ND	ug/l	5.0					
Bis(2-chloroisopropyl)ether	ND	ug/l	5.0					
Bis(2-chloroethoxy)methane	ND	ug/l	5.0					
Hexachlorocyclopentadiene	ND	ug/l	30.					
Isophorone	ND	ug/l	5.0					
Nitrobenzene	ND	ug/l	5.0					
NitrosoDiPhenylAmine(NDPA)/DPA	ND	ug/l	15.					
Bis(2-Ethylhexyl)phthalate	ND	ug/l	5.0					
Butyl benzyl phthalate	ND	ug/l	5.0					
Di-n-butylphthalate	ND	ug/l	5.0					
Di-n-octylphthalate	ND	ug/l	5.0					
Diethyl phthalate	ND	ug/l	5.0					
Dimethyl phthalate	ND	ug/l	5.0					
Aniline	ND	ug/l	20.					
4-Chloroaniline	ND	ug/l	5.0					
2-Nitroaniline	ND	ug/l	5.0					
3-Nitroaniline	ND	ug/l	5.0					
4-Nitroaniline	ND	ug/l	7.0					
Dibenzofuran	ND	ug/l	5.0					
n-Nitrosodimethylamine	ND	ug/l	50.					
2,4,6-Trichlorophenol	ND	ug/l	5.0					
P-Chloro-M-Cresol	ND	ug/l	5.0					
2-Chlorophenol	ND	ug/l	6.0					
2,4-Dichlorophenol	ND	ug/l	10.					
2,4-Dimethylphenol	ND	ug/l	10.					
2-Nitrophenol	ND	ug/l	20.					
4-Nitrophenol	ND	ug/l	10.					
2,4-Dinitrophenol	ND	ug/l	30.					
4,6-Dinitro-o-cresol	ND	ug/l	20.					
Phenol	ND	ug/l	7.0					
2-Methylphenol	ND	ug/l	6.0					
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0					
2,4,5-Trichlorophenol	ND	ug/l	5.0					
Benzoic Acid	ND	ug/l	50.					
Benzyl Alcohol	ND	ug/l	10.					
Carbazole	ND	ug/l	5.0					
Pyridine	ND	ug/l	50.					

Surrogate(s)	Recovery		QC Criteria
2-Fluorophenol	32.0	%	21-120
Phenol-d6	20.0	%	10-120
Nitrobenzene-d5	52.0	%	23-120

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

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0918116-01
MAI-202

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Semivolatile Organics by GC/MS - Westborough Lab cont'd				1	8270C	1214 20:41	1215 14:35	PS
2-Fluorobiphenyl	54.0	%	15-120					
2,4,6-Tribromophenol	66.0	%	10-120					
4-Terphenyl-d14	73.0	%	33-120					
Semivolatile Organics by GC/MS-SIM - Westborough Lab				1	8270C	1214 20:46	1215 11:55	AS
Acenaphthene	ND	ug/l	0.20					
2-Chloronaphthalene	ND	ug/l	0.20					
Fluoranthene	ND	ug/l	0.20					
Hexachlorobutadiene	ND	ug/l	0.50					
Naphthalene	ND	ug/l	0.20					
Benzo(a)anthracene	ND	ug/l	0.20					
Benzo(a)pyrene	ND	ug/l	0.20					
Benzo(b)fluoranthene	ND	ug/l	0.20					
Benzo(k)fluoranthene	ND	ug/l	0.20					
Chrysene	ND	ug/l	0.20					
Acenaphthylene	ND	ug/l	0.20					
Anthracene	ND	ug/l	0.20					
Benzo(ghi)perylene	ND	ug/l	0.20					
Fluorene	ND	ug/l	0.20					
Phenanthrene	ND	ug/l	0.20					
Dibenzo(a,h)anthracene	ND	ug/l	0.20					
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20					
Pyrene	ND	ug/l	0.20					
1-Methylnaphthalene	ND	ug/l	0.20					
2-Methylnaphthalene	ND	ug/l	0.20					
Pentachlorophenol	ND	ug/l	0.80					
Hexachlorobenzene	ND	ug/l	0.80					
Hexachloroethane	ND	ug/l	0.80					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	30.0	%	21-120					
Phenol-d6	19.0	%	10-120					
Nitrobenzene-d5	55.0	%	23-120					
2-Fluorobiphenyl	56.0	%	15-120					
2,4,6-Tribromophenol	81.0	%	10-120					
4-Terphenyl-d14	73.0	%	33-120					
Polychlorinated Biphenyls by GC - Westborough Lab				5	608	1214 22:15	1215 12:11	JB
Aroclor 1016	ND	ug/l	0.252					
Aroclor 1221	ND	ug/l	0.252					
Aroclor 1232	ND	ug/l	0.252					
Aroclor 1242	ND	ug/l	0.252					
Aroclor 1248	ND	ug/l	0.252					
Aroclor 1254	ND	ug/l	0.252					
Aroclor 1260	ND	ug/l	0.252					
Surrogate(s)	Recovery		QC Criteria					
2,4,5,6-Tetrachloro-m-xylene	82.0	%	30-150					
Decachlorobiphenyl	46.0	%	30-150					

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

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

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

Laboratory Sample Number: L0918116-02
MAI-201
Sample Matrix: WATER

Date Collected: 14-DEC-2009 16:00
Date Received : 14-DEC-2009
Date Reported : 16-DEC-2009

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 8-Amber,4-Plastic,4-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
General Chemistry - Westborough Lab								
Solids, Total Suspended	27	mg/l	10	30	2540D		1215 12:10	DW
Cyanide, Total	ND	mg/l	0.005	30	4500CN-CE	1215 11:15	1216 00:09	AT
Chlorine, Total Residual	ND	mg/l	0.02	30	4500CL-D		1214 20:00	BH
pH (H)	6.8	SU	-	30	4500H+-B		1214 21:26	BH
TPH	ND	mg/l	4.00	74	1664A	1215 14:30	1216 13:30	JO
Phenolics, Total	ND	mg/l	0.03	4	420.1		1215 19:31	TH
Chromium, Hexavalent	ND	mg/l	0.010	30	3500CR-D	1215 00:30	1215 00:30	JT
Total Metals - Westborough Lab								
Antimony, Total	ND	mg/l	0.0005	1	6020	1215 13:00	1215 21:03	BM
Arsenic, Total	0.0015	mg/l	0.0005	1	6020	1215 13:00	1215 21:03	BM
Cadmium, Total	ND	mg/l	0.0002	1	6020	1215 13:00	1215 21:03	BM
Chromium, Total	0.0093	mg/l	0.0005	1	6020	1215 13:00	1215 21:03	BM
Copper, Total	0.0073	mg/l	0.0005	1	6020	1215 13:00	1215 21:03	BM
Iron, Total	1.5	mg/l	0.05	19	200.7	1215 12:00	1216 09:30	MG
Lead, Total	0.0025	mg/l	0.0005	1	6020	1215 13:00	1215 21:03	BM
Mercury, Total	ND	mg/l	0.0002	3	245.1	1215 17:35	1216 10:52	EZ
Nickel, Total	0.0045	mg/l	0.0005	1	6020	1215 13:00	1215 21:03	BM
Selenium, Total	ND	mg/l	0.001	1	6020	1215 13:00	1215 21:03	BM
Silver, Total	ND	mg/l	0.0004	1	6020	1215 13:00	1215 21:03	BM
Zinc, Total	0.0128	mg/l	0.0050	1	6020	1215 13:00	1215 21:03	BM
Pesticides by GC - Westborough Lab				14	504.1	1216 11:00	1216 12:56	SS
1,2-Dibromoethane	ND	ug/l	0.010					
Volatile Organics by GC/MS - Westborough Lab				5	624		1215 13:02	TT
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	1.5					
Chloroform	ND	ug/l	1.5					
Carbon tetrachloride	ND	ug/l	1.0					
1,2-Dichloropropane	ND	ug/l	3.5					
Dibromochloromethane	ND	ug/l	1.0					
1,1,2-Trichloroethane	ND	ug/l	1.5					
2-Chloroethylvinyl ether	ND	ug/l	10.					
Tetrachloroethene	ND	ug/l	1.5					
Chlorobenzene	ND	ug/l	3.5					

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

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0918116-02
MAI-201

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS - Westborough Lab cont'd				5	624		1215 13:02	TT
Trichlorofluoromethane	ND	ug/l	5.0					
1,2-Dichloroethane	ND	ug/l	1.5					
1,1,1-Trichloroethane	ND	ug/l	2.0					
Bromodichloromethane	ND	ug/l	1.0					
trans-1,3-Dichloropropene	ND	ug/l	1.5					
cis-1,3-Dichloropropene	ND	ug/l	1.5					
Bromoform	ND	ug/l	1.0					
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0					
Benzene	ND	ug/l	1.0					
Toluene	ND	ug/l	1.0					
Ethylbenzene	ND	ug/l	1.0					
Chloromethane	ND	ug/l	10.					
Bromomethane	ND	ug/l	5.0					
Vinyl chloride	ND	ug/l	2.0					
Chloroethane	ND	ug/l	2.0					
1,1-Dichloroethene	ND	ug/l	1.0					
trans-1,2-Dichloroethene	ND	ug/l	1.5					
cis-1,2-Dichloroethene	ND	ug/l	1.0					
Trichloroethene	ND	ug/l	1.0					
1,2-Dichlorobenzene	ND	ug/l	5.0					
1,3-Dichlorobenzene	ND	ug/l	5.0					
1,4-Dichlorobenzene	ND	ug/l	5.0					
p/m-Xylene	ND	ug/l	2.0					
o-xylene	ND	ug/l	1.0					
Xylene (Total)	ND	ug/l	2.0					
Styrene	ND	ug/l	1.0					
Acetone	ND	ug/l	10.					
Carbon disulfide	ND	ug/l	5.0					
2-Butanone	ND	ug/l	10.					
Vinyl acetate	ND	ug/l	20.					
4-Methyl-2-pentanone	ND	ug/l	10.					
2-Hexanone	ND	ug/l	10.					
Acrolein	ND	ug/l	8.0					
Acrylonitrile	ND	ug/l	10.					
Methyl tert butyl ether	ND	ug/l	20.					
1,4-Dioxane	ND	ug/l	2000					
Tert-Butyl Alcohol	ND	ug/l	100					
Tertiary-Amyl Methyl Ether	ND	ug/l	20.					
Surrogate(s)	Recovery		QC Criteria					
Pentafluorobenzene	96.0	%	80-120					
Fluorobenzene	105	%	80-120					
4-Bromofluorobenzene	105	%	80-120					
Semivolatile Organics by GC/MS - Westborough Lab				1	8270C	1214 20:41	1215 14:59	PS
Benzidine	ND	ug/l	50.					
1,2,4-Trichlorobenzene	ND	ug/l	5.0					
Bis(2-chloroethyl)ether	ND	ug/l	5.0					
1,2-Dichlorobenzene	ND	ug/l	5.0					

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

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0918116-02
MAI-201

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Semivolatile Organics by GC/MS - Westborough Lab cont'd				1	8270C	1214 20:41	1215 14:59	PS
1,3-Dichlorobenzene	ND	ug/l	5.0					
1,4-Dichlorobenzene	ND	ug/l	5.0					
3,3'-Dichlorobenzidine	ND	ug/l	50.					
2,4-Dinitrotoluene	ND	ug/l	6.0					
2,6-Dinitrotoluene	ND	ug/l	5.0					
Azobenzene	ND	ug/l	5.0					
4-Chlorophenyl phenyl ether	ND	ug/l	5.0					
4-Bromophenyl phenyl ether	ND	ug/l	5.0					
Bis(2-chloroisopropyl)ether	ND	ug/l	5.0					
Bis(2-chloroethoxy)methane	ND	ug/l	5.0					
Hexachlorocyclopentadiene	ND	ug/l	30.					
Isophorone	ND	ug/l	5.0					
Nitrobenzene	ND	ug/l	5.0					
NitrosoDiPhenylAmine(NDPA)/DPA	ND	ug/l	15.					
Bis(2-Ethylhexyl)phthalate	ND	ug/l	5.0					
Butyl benzyl phthalate	ND	ug/l	5.0					
Di-n-butylphthalate	ND	ug/l	5.0					
Di-n-octylphthalate	ND	ug/l	5.0					
Diethyl phthalate	ND	ug/l	5.0					
Dimethyl phthalate	ND	ug/l	5.0					
Aniline	ND	ug/l	20.					
4-Chloroaniline	ND	ug/l	5.0					
2-Nitroaniline	ND	ug/l	5.0					
3-Nitroaniline	ND	ug/l	5.0					
4-Nitroaniline	ND	ug/l	7.0					
Dibenzofuran	ND	ug/l	5.0					
n-Nitrosodimethylamine	ND	ug/l	50.					
2,4,6-Trichlorophenol	ND	ug/l	5.0					
P-Chloro-M-Cresol	ND	ug/l	5.0					
2-Chlorophenol	ND	ug/l	6.0					
2,4-Dichlorophenol	ND	ug/l	10.					
2,4-Dimethylphenol	ND	ug/l	10.					
2-Nitrophenol	ND	ug/l	20.					
4-Nitrophenol	ND	ug/l	10.					
2,4-Dinitrophenol	ND	ug/l	30.					
4,6-Dinitro-o-cresol	ND	ug/l	20.					
Phenol	ND	ug/l	7.0					
2-Methylphenol	ND	ug/l	6.0					
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0					
2,4,5-Trichlorophenol	ND	ug/l	5.0					
Benzoic Acid	ND	ug/l	50.					
Benzyl Alcohol	ND	ug/l	10.					
Carbazole	ND	ug/l	5.0					
Pyridine	ND	ug/l	50.					

Surrogate(s)	Recovery		QC Criteria
2-Fluorophenol	39.0	%	21-120
Phenol-d6	25.0	%	10-120
Nitrobenzene-d5	59.0	%	23-120

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

ALPHA ANALYTICAL
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0918116-02
MAI-201

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Semivolatile Organics by GC/MS - Westborough Lab cont'd				1	8270C	1214 20:41	1215 14:59	PS
2-Fluorobiphenyl	63.0	%	15-120					
2,4,6-Tribromophenol	80.0	%	10-120					
4-Terphenyl-d14	75.0	%	33-120					
Semivolatile Organics by GC/MS-SIM - Westborough Lab				1	8270C	1214 20:46	1215 12:26	AS
Acenaphthene	ND	ug/l	0.20					
2-Chloronaphthalene	ND	ug/l	0.20					
Fluoranthene	ND	ug/l	0.20					
Hexachlorobutadiene	ND	ug/l	0.50					
Naphthalene	ND	ug/l	0.20					
Benzo(a)anthracene	ND	ug/l	0.20					
Benzo(a)pyrene	ND	ug/l	0.20					
Benzo(b)fluoranthene	ND	ug/l	0.20					
Benzo(k)fluoranthene	ND	ug/l	0.20					
Chrysene	ND	ug/l	0.20					
Acenaphthylene	ND	ug/l	0.20					
Anthracene	ND	ug/l	0.20					
Benzo(ghi)perylene	ND	ug/l	0.20					
Fluorene	ND	ug/l	0.20					
Phenanthrene	ND	ug/l	0.20					
Dibenzo(a,h)anthracene	ND	ug/l	0.20					
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20					
Pyrene	ND	ug/l	0.20					
1-Methylnaphthalene	ND	ug/l	0.20					
2-Methylnaphthalene	ND	ug/l	0.20					
Pentachlorophenol	ND	ug/l	0.80					
Hexachlorobenzene	ND	ug/l	0.80					
Hexachloroethane	ND	ug/l	0.80					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	36.0	%	21-120					
Phenol-d6	25.0	%	10-120					
Nitrobenzene-d5	69.0	%	23-120					
2-Fluorobiphenyl	75.0	%	15-120					
2,4,6-Tribromophenol	85.0	%	10-120					
4-Terphenyl-d14	79.0	%	33-120					
Polychlorinated Biphenyls by GC - Westborough Lab				5	608	1214 22:15	1215 12:23	JB
Aroclor 1016	ND	ug/l	0.252					
Aroclor 1221	ND	ug/l	0.252					
Aroclor 1232	ND	ug/l	0.252					
Aroclor 1242	ND	ug/l	0.252					
Aroclor 1248	ND	ug/l	0.252					
Aroclor 1254	ND	ug/l	0.252					
Aroclor 1260	ND	ug/l	0.252					
Surrogate(s)	Recovery		QC Criteria					
2,4,5,6-Tetrachloro-m-xylene	69.0	%	30-150					
Decachlorobiphenyl	73.0	%	30-150					

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

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0918116

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
General Chemistry - Westborough Lab for sample(s) 01-02 (L0918116-01, WG393263-2)					
Solids, Total Suspended	240	210	mg/l	13	32
General Chemistry - Westborough Lab for sample(s) 01-02 (L0918116-01, WG393293-4)					
Cyanide, Total	ND	ND	mg/l	NC	30
General Chemistry - Westborough Lab for sample(s) 01-02 (L0918087-01, WG393230-3)					
Chlorine, Total Residual	ND	ND	mg/l	NC	20
General Chemistry - Westborough Lab for sample(s) 01-02 (L0918087-01, WG393225-2)					
pH (H)	6.4	6.6	SU	3	5
General Chemistry - Westborough Lab for sample(s) 01-02 (L0918116-01, WG393379-4)					
TPH	ND	ND	mg/l	NC	34
General Chemistry - Westborough Lab for sample(s) 01-02 (L0918116-02, WG393430-4)					
Phenolics, Total	ND	ND	mg/l	NC	12
General Chemistry - Westborough Lab for sample(s) 01-02 (L0918116-02, WG393235-3)					
Chromium, Hexavalent	ND	ND	mg/l	NC	20
Total Metals - Westborough Lab for sample(s) 01-02 (L0918116-02, WG393372-3)					
Antimony, Total	ND	ND	mg/l	NC	20
Arsenic, Total	0.0015	0.0015	mg/l	1	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	0.0093	0.0093	mg/l	0	20
Copper, Total	0.0073	0.0076	mg/l	4	20
Lead, Total	0.0025	0.0019	mg/l	27	20
Nickel, Total	0.0045	0.0047	mg/l	5	20
Selenium, Total	ND	ND	mg/l	NC	20
Silver, Total	ND	ND	mg/l	NC	20
Zinc, Total	0.0128	0.0139	mg/l	8	20
Total Metals - Westborough Lab for sample(s) 01-02 (L0918116-02, WG393425-3)					
Mercury, Total	ND	ND	mg/l	NC	20
Volatile Organics by GC/MS - Westborough Lab for sample(s) 01-02 (L0918040-01, WG393138-4)					
Methylene chloride	ND	ND	ug/l	NC	30
Chloroform	ND	ND	ug/l	NC	30
Chlorobenzene	ND	ND	ug/l	NC	30
1,2-Dichloroethane	ND	ND	ug/l	NC	30
Benzene	ND	ND	ug/l	NC	30
Toluene	ND	ND	ug/l	NC	30
1,2-Dichlorobenzene	ND	ND	ug/l	NC	30
1,3-Dichlorobenzene	ND	ND	ug/l	NC	30
1,4-Dichlorobenzene	ND	ND	ug/l	NC	30
Carbon disulfide	ND	ND	ug/l	NC	30
1,4-Dioxane	ND	ND	ug/l	NC	30

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0918116

Continued

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Volatile Organics by GC/MS - Westborough Lab for sample(s) 01-02 (L0918040-01, WG393138-4)					
Surrogate(s)	Recovery				QC Criteria
Pentafluorobenzene	94.0	96.0	%		80-120
Fluorobenzene	100	104	%		80-120
4-Bromofluorobenzene	103	103	%		80-120

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0918116

Parameter	% Recovery	QC Criteria
General Chemistry - Westborough Lab LCS for sample(s) 01-02 (WG393293-2)		
Cyanide, Total	100	80-120
General Chemistry - Westborough Lab LCS for sample(s) 01-02 (WG393230-1)		
Chlorine, Total Residual	97	90-110
General Chemistry - Westborough Lab LCS for sample(s) 01-02 (WG393225-1)		
pH	101	99-101
General Chemistry - Westborough Lab LCS for sample(s) 01-02 (WG393379-1)		
TPH	80	64-132
General Chemistry - Westborough Lab LCS for sample(s) 01-02 (WG393430-2)		
Phenolics, Total	99	82-111
General Chemistry - Westborough Lab LCS for sample(s) 01-02 (WG393235-2)		
Chromium, Hexavalent	99	85-115
Total Metals - Westborough Lab LCS for sample(s) 01-02 (WG393360-2)		
Iron, Total	96	85-115
Total Metals - Westborough Lab LCS for sample(s) 01-02 (WG393372-2)		
Antimony, Total	96	80-120
Arsenic, Total	99	80-120
Cadmium, Total	105	80-120
Chromium, Total	103	80-120
Copper, Total	106	80-120
Lead, Total	105	80-120
Nickel, Total	105	80-120
Selenium, Total	103	80-120
Silver, Total	103	80-120
Zinc, Total	106	80-120
Total Metals - Westborough Lab LCS for sample(s) 01-02 (WG393425-2)		
Mercury, Total	114	85-115
Pesticides by GC - Westborough Lab LCS for sample(s) 01-02 (WG393589-2)		
1,2-Dibromoethane	92	70-130
Volatile Organics by GC/MS - Westborough Lab LCS for sample(s) 01-02 (WG393138-5)		
Methylene chloride	101	1-221
1,1-Dichloroethane	93	59-155
Chloroform	95	51-138
Carbon tetrachloride	136	70-140
1,2-Dichloropropane	95	1-210
Dibromochloromethane	107	53-149
1,1,2-Trichloroethane	88	52-150
2-Chloroethylvinyl ether	87	1-305
Tetrachloroethene	79	64-148

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0918116

Continued

Parameter	% Recovery	QC Criteria
Volatile Organics by GC/MS - Westborough Lab	LCS for sample(s) 01-02 (WG393138-5)	
Chlorobenzene	94	37-160
Trichlorofluoromethane	83	17-181
1,2-Dichloroethane	92	49-155
1,1,1-Trichloroethane	106	52-162
Bromodichloromethane	103	35-155
trans-1,3-Dichloropropene	102	17-183
cis-1,3-Dichloropropene	101	1-227
Bromoform	130	45-169
1,1,2,2-Tetrachloroethane	100	46-157
Benzene	95	37-151
Toluene	83	47-150
Ethylbenzene	95	37-162
Chloromethane	100	1-273
Bromomethane	82	1-242
Vinyl chloride	82	1-251
Chloroethane	96	14-230
1,1-Dichloroethene	101	1-234
trans-1,2-Dichloroethene	91	54-156
cis-1,2-Dichloroethene	87	60-140
Trichloroethene	89	71-157
1,2-Dichlorobenzene	88	18-190
1,3-Dichlorobenzene	88	59-156
1,4-Dichlorobenzene	88	18-190
p/m-Xylene	92	40-160
o-Xylene	86	40-160
XYLENE (TOTAL)	90	40-160
Styrene	78	40-160
Acetone	100	40-160
Carbon disulfide	93	40-160
2-Butanone	86	40-160
Vinyl acetate	107	40-160
4-Methyl-2-pentanone	74	40-160
2-Hexanone	68	40-160
Acrolein	91	40-160
Acrylonitrile	100	40-160
Surrogate(s)		
Pentafluorobenzene	97	80-120
Fluorobenzene	102	80-120
4-Bromofluorobenzene	104	80-120
General Chemistry - Westborough Lab	SPIKE for sample(s) 01-02 (L0918116-02, WG393293-3)	
Cyanide, Total	89	80-120
General Chemistry - Westborough Lab	SPIKE for sample(s) 01-02 (L0918116-02, WG393379-3)	
TPH	76	64-132

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0918116

Continued

Parameter	% Recovery	QC Criteria
General Chemistry - Westborough Lab SPIKE for sample(s) 01-02 (L0918116-02, WG393430-3)		
Phenolics, Total	94	77-124
General Chemistry - Westborough Lab SPIKE for sample(s) 01-02 (L0918116-02, WG393235-4)		
Chromium, Hexavalent	101	85-115
Total Metals - Westborough Lab SPIKE for sample(s) 01-02 (L0917897-03, WG393360-4)		
Iron, Total	110	75-125
Total Metals - Westborough Lab SPIKE for sample(s) 01-02 (L0918116-02, WG393372-4)		
Antimony, Total	101	80-120
Arsenic, Total	110	80-120
Cadmium, Total	113	80-120
Chromium, Total	106	80-120
Copper, Total	110	80-120
Lead, Total	112	80-120
Nickel, Total	107	80-120
Selenium, Total	106	80-120
Silver, Total	108	80-120
Zinc, Total	115	80-120
Total Metals - Westborough Lab SPIKE for sample(s) 01-02 (L0918116-02, WG393425-4)		
Mercury, Total	136	70-130
Pesticides by GC - Westborough Lab SPIKE for sample(s) 01-02 (L0918116-01, WG393589-3)		
1,2-Dibromoethane	95	70-130
Volatile Organics by GC/MS - Westborough Lab SPIKE for sample(s) 01-02 (L0918040-01, WG393138-3)		
Methylene chloride	94	1-221
1,1-Dichloroethane	89	59-155
Chloroform	90	51-138
Carbon tetrachloride	129	70-140
1,2-Dichloropropane	88	1-210
Dibromochloromethane	100	53-149
1,1,2-Trichloroethane	83	52-150
2-Chloroethylvinyl ether	82	1-305
Tetrachloroethene	75	64-148
Chlorobenzene	84	37-160
Trichlorofluoromethane	82	17-181
1,2-Dichloroethane	85	49-155
1,1,1-Trichloroethane	101	52-162
Bromodichloromethane	95	35-155
trans-1,3-Dichloropropene	93	17-183
cis-1,3-Dichloropropene	90	1-227
Bromoform	122	45-169
1,1,2,2-Tetrachloroethane	93	46-157
Benzene	89	35-151
Toluene	77	47-150
Ethylbenzene	85	37-162

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0918116

Continued

Parameter	% Recovery	QC Criteria
Volatile Organics by GC/MS - Westborough Lab	SPIKE for sample(s) 01-02 (L0918040-01, WG393138-3)	
Chloromethane	94	1-273
Bromomethane	80	1-242
Vinyl chloride	79	1-251
Chloroethane	90	14-230
1,1-Dichloroethene	99	1-234
trans-1,2-Dichloroethene	80	54-156
cis-1,2-Dichloroethene	82	60-140
Trichloroethene	83	71-157
1,2-Dichlorobenzene	78	18-190
1,3-Dichlorobenzene	78	59-156
1,4-Dichlorobenzene	76	18-190
p/m-Xylene	83	40-160
o-Xylene	80	40-160
XYLENE (TOTAL)	82	40-160
Styrene	68	40-160
Acetone	121	40-160
Carbon disulfide	79	40-160
2-Butanone	96	40-160
Vinyl acetate	111	40-160
4-Methyl-2-pentanone	79	40-160
2-Hexanone	72	40-160
Acrolein	89	40-160
Acrylonitrile	116	40-160
Surrogate(s)		
Pentafluorobenzene	98	80-120
Fluorobenzene	104	80-120
4-Bromofluorobenzene	99	80-120

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0918116

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Semivolatile Organics by GC/MS - Westborough Lab for sample(s) 01-02 (WG393208-2, WG393208-3)					
1,2,4-Trichlorobenzene	42	41	2	30	39-98
1,2-Dichlorobenzene	42	41	2	30	40-140
1,4-Dichlorobenzene	40	40	0	30	36-97
2,4-Dinitrotoluene	62	77	22	30	24-96
2,6-Dinitrotoluene	56	70	22	30	40-140
4-Chlorophenyl phenyl ether	60	66	10	30	40-140
n-Nitrosodi-n-propylamine	45	48	6	30	41-116
Butyl benzyl phthalate	72	102	34	30	40-140
P-Chloro-M-Cresol	56	69	21	30	23-97
2-Chlorophenol	46	49	6	30	27-123
2-Nitrophenol	40	50	22	30	30-130
4-Nitrophenol	35	46	27	30	10-80
2,4-Dinitrophenol	48	64	29	30	20-130
Phenol	20	25	22	30	12-110
Surrogate(s)					
2-Fluorophenol	29	33	13		21-120
Phenol-d6	18	22	20		10-120
Nitrobenzene-d5	46	53	14		23-120
2-Fluorobiphenyl	53	58	9		15-120
2,4,6-Tribromophenol	76	86	12		10-120
4-Terphenyl-d14	79	102	25		33-120
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s) 01-02 (WG393209-2, WG393209-3					
Acenaphthene	66	51	26	40	40-140
2-Chloronaphthalene	73	55	28	40	40-140
Fluoranthene	87	79	10	40	40-140
Anthracene	82	69	17	40	40-140
Pyrene	86	78	10	40	40-140
Pentachlorophenol	61	55	10	40	9-103
Surrogate(s)					
2-Fluorophenol	36	29	22		21-120
Phenol-d6	23	20	14		10-120
Nitrobenzene-d5	71	57	22		23-120
2-Fluorobiphenyl	73	57	25		15-120
2,4,6-Tribromophenol	76	68	11		10-120
4-Terphenyl-d14	78	76	3		33-120
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s) 01-02 (WG393219-2, WG393219-3)					
Aroclor 1016	108	98	10	30	40-126
Aroclor 1260	117	106	10	30	40-127
Surrogate(s)					
2,4,5,6-Tetrachloro-m-xylene	79	77	3		30-150
Decachlorobiphenyl	91	86	6		30-150

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0918116

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG393263-1)								
General Chemistry - Westborough Lab								
Solids, Total Suspended	ND	mg/l	5.0	30	2540D		1215 12:10	DW
Blank Analysis for sample(s) 01-02 (WG393293-1)								
General Chemistry - Westborough Lab								
Cyanide, Total	ND	mg/l	0.005	30	4500CN-CE	1215 11:15	1215 23:42	AT
Blank Analysis for sample(s) 01-02 (WG393230-2)								
General Chemistry - Westborough Lab								
Chlorine, Total Residual	ND	mg/l	0.02	30	4500CL-D		1214 20:00	BH
Blank Analysis for sample(s) 01-02 (WG393379-2)								
General Chemistry - Westborough Lab								
TPH	ND	mg/l	4.00	74	1664A	1215 14:30	1216 13:30	JO
Blank Analysis for sample(s) 01-02 (WG393430-1)								
General Chemistry - Westborough Lab								
Phenolics, Total	ND	mg/l	0.03	4	420.1		1215 19:28	TH
Blank Analysis for sample(s) 01-02 (WG393235-1)								
General Chemistry - Westborough Lab								
Chromium, Hexavalent	ND	mg/l	0.010	30	3500CR-D	1215 00:30	1215 00:30	JT
Blank Analysis for sample(s) 01-02 (WG393360-1)								
Total Metals - Westborough Lab				19	200.7			
Iron, Total	ND	mg/l	0.05	19	200.7	1215 12:00	1216 08:41	MG
Blank Analysis for sample(s) 01-02 (WG393372-1)								
Total Metals - Westborough Lab								
Antimony, Total	ND	mg/l	0.0005	1	6020	1215 13:00	1215 20:21	BM
Arsenic, Total	ND	mg/l	0.0005	1	6020	1215 13:00	1215 20:21	BM
Cadmium, Total	ND	mg/l	0.0002	1	6020	1215 13:00	1215 20:21	BM
Chromium, Total	ND	mg/l	0.0005	1	6020	1215 13:00	1215 20:21	BM
Copper, Total	ND	mg/l	0.0005	1	6020	1215 13:00	1215 20:21	BM
Lead, Total	ND	mg/l	0.0005	1	6020	1215 13:00	1215 20:21	BM
Nickel, Total	ND	mg/l	0.0005	1	6020	1215 13:00	1215 20:21	BM
Selenium, Total	ND	mg/l	0.001	1	6020	1215 13:00	1215 20:21	BM
Silver, Total	ND	mg/l	0.0004	1	6020	1215 13:00	1215 20:21	BM
Zinc, Total	ND	mg/l	0.0050	1	6020	1215 13:00	1215 20:21	BM

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0918116

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG393425-1)								
Total Metals - Westborough Lab								
Mercury, Total	ND	mg/l	0.0002	3	245.1	1215 17:35	1216 10:34	EZ
Blank Analysis for sample(s) 01-02 (WG393589-1)								
Pesticides by GC - Westborough Lab				14	504.1	1216 11:00	1216 12:07	SS
1,2-Dibromoethane	ND	ug/l	0.010					
Blank Analysis for sample(s) 01-02 (WG393138-6)								
Volatile Organics by GC/MS - Westborough Lab				5	624		1215 07:26	TT
Methylene chloride	ND	ug/l	5.0					
1,1-Dichloroethane	ND	ug/l	1.5					
Chloroform	ND	ug/l	1.5					
Carbon tetrachloride	ND	ug/l	1.0					
1,2-Dichloropropane	ND	ug/l	3.5					
Dibromochloromethane	ND	ug/l	1.0					
1,1,2-Trichloroethane	ND	ug/l	1.5					
2-Chloroethylvinyl ether	ND	ug/l	10.					
Tetrachloroethene	ND	ug/l	1.5					
Chlorobenzene	ND	ug/l	3.5					
Trichlorofluoromethane	ND	ug/l	5.0					
1,2-Dichloroethane	ND	ug/l	1.5					
1,1,1-Trichloroethane	ND	ug/l	2.0					
Bromodichloromethane	ND	ug/l	1.0					
trans-1,3-Dichloropropene	ND	ug/l	1.5					
cis-1,3-Dichloropropene	ND	ug/l	1.5					
Bromoform	ND	ug/l	1.0					
1,1,2,2-Tetrachloroethane	ND	ug/l	1.0					
Benzene	ND	ug/l	1.0					
Toluene	ND	ug/l	1.0					
Ethylbenzene	ND	ug/l	1.0					
Chloromethane	ND	ug/l	10.					
Bromomethane	ND	ug/l	5.0					
Vinyl chloride	ND	ug/l	2.0					
Chloroethane	ND	ug/l	2.0					
1,1-Dichloroethene	ND	ug/l	1.0					
trans-1,2-Dichloroethene	ND	ug/l	1.5					
cis-1,2-Dichloroethene	ND	ug/l	1.0					
Trichloroethene	ND	ug/l	1.0					
1,2-Dichlorobenzene	ND	ug/l	5.0					
1,3-Dichlorobenzene	ND	ug/l	5.0					
1,4-Dichlorobenzene	ND	ug/l	5.0					
p/m-Xylene	ND	ug/l	2.0					
o-xylene	ND	ug/l	1.0					
Xylene (Total)	ND	ug/l	2.0					
Styrene	ND	ug/l	1.0					
Acetone	ND	ug/l	10.					

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0918116

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG393138-6)								
Volatile Organics by GC/MS - Westborough Lab cont'd				5	624		1215 07:26	TT
Carbon disulfide	ND	ug/l	5.0					
2-Butanone	ND	ug/l	10.					
Vinyl acetate	ND	ug/l	20.					
4-Methyl-2-pentanone	ND	ug/l	10.					
2-Hexanone	ND	ug/l	10.					
Acrolein	ND	ug/l	8.0					
Acrylonitrile	ND	ug/l	10.					
Methyl tert butyl ether	ND	ug/l	20.					
1,4-Dioxane	ND	ug/l	2000					
Tert-Butyl Alcohol	ND	ug/l	100					
Tertiary-Amyl Methyl Ether	ND	ug/l	20.					
Surrogate(s)	Recovery		QC Criteria					
Pentafluorobenzene	94.0	%	80-120					
Fluorobenzene	104	%	80-120					
4-Bromofluorobenzene	107	%	80-120					
Blank Analysis for sample(s) 01-02 (WG393208-1)								
Semivolatile Organics by GC/MS - Westborough Lab				1	8270C	1214 20:41	1215 09:00	PS
Benzidine	ND	ug/l	50.					
1,2,4-Trichlorobenzene	ND	ug/l	5.0					
Bis(2-chloroethyl)ether	ND	ug/l	5.0					
1,2-Dichlorobenzene	ND	ug/l	5.0					
1,3-Dichlorobenzene	ND	ug/l	5.0					
1,4-Dichlorobenzene	ND	ug/l	5.0					
3,3'-Dichlorobenzidine	ND	ug/l	50.					
2,4-Dinitrotoluene	ND	ug/l	6.0					
2,6-Dinitrotoluene	ND	ug/l	5.0					
Azobenzene	ND	ug/l	5.0					
4-Chlorophenyl phenyl ether	ND	ug/l	5.0					
4-Bromophenyl phenyl ether	ND	ug/l	5.0					
Bis(2-chloroisopropyl)ether	ND	ug/l	5.0					
Bis(2-chloroethoxy)methane	ND	ug/l	5.0					
Hexachlorocyclopentadiene	ND	ug/l	30.					
Isophorone	ND	ug/l	5.0					
Nitrobenzene	ND	ug/l	5.0					
NitrosoDiPhenylAmine(NDPA)/DPA	ND	ug/l	15.					
Bis(2-Ethylhexyl)phthalate	ND	ug/l	5.0					
Butyl benzyl phthalate	ND	ug/l	5.0					
Di-n-butylphthalate	ND	ug/l	5.0					
Di-n-octylphthalate	ND	ug/l	5.0					
Diethyl phthalate	ND	ug/l	5.0					
Dimethyl phthalate	ND	ug/l	5.0					
Aniline	ND	ug/l	20.					
4-Chloroaniline	ND	ug/l	5.0					
2-Nitroaniline	ND	ug/l	5.0					

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0918116

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG393208-1)								
Semivolatile Organics by GC/MS - Westborough Lab cont'd				1	8270C	1214 20:41	1215 09:00	PS
3-Nitroaniline	ND	ug/l	5.0					
4-Nitroaniline	ND	ug/l	7.0					
Dibenzofuran	ND	ug/l	5.0					
n-Nitrosodimethylamine	ND	ug/l	50.					
2,4,6-Trichlorophenol	ND	ug/l	5.0					
P-Chloro-M-Cresol	ND	ug/l	5.0					
2-Chlorophenol	ND	ug/l	6.0					
2,4-Dichlorophenol	ND	ug/l	10.					
2,4-Dimethylphenol	ND	ug/l	10.					
2-Nitrophenol	ND	ug/l	20.					
4-Nitrophenol	ND	ug/l	10.					
2,4-Dinitrophenol	ND	ug/l	30.					
4,6-Dinitro-o-cresol	ND	ug/l	20.					
Phenol	ND	ug/l	7.0					
2-Methylphenol	ND	ug/l	6.0					
3-Methylphenol/4-Methylphenol	ND	ug/l	6.0					
2,4,5-Trichlorophenol	ND	ug/l	5.0					
Benzoic Acid	ND	ug/l	50.					
Benzyl Alcohol	ND	ug/l	10.					
Carbazole	ND	ug/l	5.0					
Pyridine	ND	ug/l	50.					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	35.0	%	21-120					
Phenol-d6	21.0	%	10-120					
Nitrobenzene-d5	65.0	%	23-120					
2-Fluorobiphenyl	72.0	%	15-120					
2,4,6-Tribromophenol	72.0	%	10-120					
4-Terphenyl-d14	88.0	%	33-120					
Blank Analysis for sample(s) 01-02 (WG393209-1)								
Semivolatile Organics by GC/MS-SIM - Westborough Lab				1	8270C	1214 20:46	1215 10:20	AS
Acenaphthene	ND	ug/l	0.20					
2-Chloronaphthalene	ND	ug/l	0.20					
Fluoranthene	ND	ug/l	0.20					
Hexachlorobutadiene	ND	ug/l	0.50					
Naphthalene	ND	ug/l	0.20					
Benzo(a)anthracene	ND	ug/l	0.20					
Benzo(a)pyrene	ND	ug/l	0.20					
Benzo(b)fluoranthene	ND	ug/l	0.20					
Benzo(k)fluoranthene	ND	ug/l	0.20					
Chrysene	ND	ug/l	0.20					
Acenaphthylene	ND	ug/l	0.20					
Anthracene	ND	ug/l	0.20					
Benzo(ghi)perylene	ND	ug/l	0.20					
Fluorene	ND	ug/l	0.20					

ALPHA ANALYTICAL
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0918116

Continued

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG393209-1)								
Semivolatile Organics by GC/MS-SIM - Westborough Lab cont'				1	8270C	1214 20:46	1215 10:20	AS
Phenanthrene	ND	ug/l	0.20					
Dibenzo(a,h)anthracene	ND	ug/l	0.20					
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20					
Pyrene	ND	ug/l	0.20					
1-Methylnaphthalene	ND	ug/l	0.20					
2-Methylnaphthalene	ND	ug/l	0.20					
Pentachlorophenol	ND	ug/l	0.80					
Hexachlorobenzene	ND	ug/l	0.80					
Hexachloroethane	ND	ug/l	0.80					
Surrogate(s)	Recovery		QC Criteria					
2-Fluorophenol	33.0	%	21-120					
Phenol-d6	21.0	%	10-120					
Nitrobenzene-d5	77.0	%	23-120					
2-Fluorobiphenyl	75.0	%	15-120					
2,4,6-Tribromophenol	87.0	%	10-120					
4-Terphenyl-d14	83.0	%	33-120					
Blank Analysis for sample(s) 01-02 (WG393219-1)								
Polychlorinated Biphenyls by GC - Westborough Lab				5	608	1214 22:15	1215 11:32	JB
Aroclor 1016	ND	ug/l	0.250					
Aroclor 1221	ND	ug/l	0.250					
Aroclor 1232	ND	ug/l	0.250					
Aroclor 1242	ND	ug/l	0.250					
Aroclor 1248	ND	ug/l	0.250					
Aroclor 1254	ND	ug/l	0.250					
Aroclor 1260	ND	ug/l	0.250					
Surrogate(s)	Recovery		QC Criteria					
2,4,5,6-Tetrachloro-m-xylene	79.0	%	30-150					
Decachlorobiphenyl	98.0	%	30-150					

REFERENCES

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

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

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

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

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

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

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

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

REFERENCES

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

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.

Certificate/Approval Program Summary

Last revised December 1, 2009 - 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: Haloacetic Acids, Volatile Organics 524.2, Total Trihalomethanes 524.2, 1,2-Dibromo-3-chloropropane (DBCP), Ethylene Dibromide (EDB).)
Wastewater/Non-Potable Water (Inorganic Parameters: Color, pH, Conductivity, Acidity, Alkalinity, Chloride, Total Residual Chlorine, Fluoride, Total Hardness, Calcium 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, Extractable Petroleum Hydrocarbons (ETPH), MA-EPH, MA-VPH.)
Solid Waste/Soil (Inorganic Parameters: Lead in Paint, pH, 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), Reactivity. Organic Parameters: PCBs, 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, 9221E, 9222B, 9222D, 9223B, EPA 180.1, 300.0, 353.2, SM2130B, 2320B, 4500Cl-D, 4500CN-C, 4500CN-E, 4500F-C, 4500H+B,4500NO3-F, EPA 200.7, EPA 200.8, 245.1. Organic Parameters: 504.1, 524.2, SM 6251B.)
Wastewater/Non-Potable Water (Inorganic Parameters: EPA 120.1, 1664A, 350.1, 351.1, 353.2, 410.4, 420.1, Lachat 10-107-06-1-B, SM2320B, 2340B, 2510B, 2540C, 2540D, 426C, 4500Cl-D, 4500Cl-E, 4500CN-C, 4500CN-E, 4500F-B, 4500F-C, 4500H+B, 4500Norg-B, 4500Norg-C, 4500NH3-B, 4500NH3-G, 4500NH3-H, 4500NO3-F, 4500P-B.5, 4500P-E, 5210B, 5220D, 5310C, EPA 200.7, 200.8, 245.1. Organic Parameters: 608, 624.)

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)
353.2 for: Nitrate-N, Nitrite-N; SM4500NO3-F, 4500F-C, 4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, 2320B, SM2540C, SM4500H-B.
Organic Parameters: (EPA 524.2 for: Trihalomethanes, Volatile Organics)
(504.1 for: 1,2-Dibromoethane, 1,2-Dibromo-3-Chloropropane), 314.0, 332.
Microbiology Parameters: SM9215B; ENZ. SUB. SM9223; 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,Cr,Co,Cu,Fe,Pb,Mn,Mo,Ni,Se,Ag,Sr,Tl,Ti,V,Zn,Ca,Mg,Na,K)
245.1, SM4500H,B, EPA 120.1, SM2510B, 2540C, 2540B, 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-B,C-Titr, SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, 4500P-B,E, 5220D, EPA 410.4, SM 5210B, 5310C, 4500CN-CE, 2540D, 4500CL-D, EPA 1664, SM14 510AC, EPA 420.1
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

New Hampshire Department of Environmental Services Certificate/Lab ID: 200307. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM6215B, 9222B, 9223B Colilert, EPA 200.7, 200.8, 245.2, 120.1, 300.0, 314.0, SM4500CN-E, 4500H+B, 4500NO3-F, 2320B, 2510B, 2540C, 4500F-C, 5310C, 2120B, EPA 331.0. Organic Parameters: 504.1, 524.2, SM6251B.)
Non-Potable Water (Inorganic Parameters: SM9222D, 9221B, 9222B, 9221E-EC, EPA 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, 420.1, 1664A, SW-846 9010, 9030, 9040B, SM426C, SM2310B, 2540B, 2540D, 4500H+B, 4500NH3-H, 4500NH3-E, 4500NO2-B, 4500P-E, 4500-S2-D, 5210B, 2320B, 2540C, 4500F-C, 5310C, 5540C, LACHAT 10-117-07-1-B, LACHAT 10-107-06-1-B, LACHAT 10-107-04-1-C, LACHAT 10-107-04-1-J, LACHAT 10-117-07-1-A, SM4500CL-E, LACHAT 10-204-00-1-A, LACHAT 10-107-06-2-D. Organic Parameters: SW-846 3005A, 3015A, 3510C, 5030B, 8021B, 8260B, 8270C, 8330, EPA 624, 625, 608, SW-846 8082, 8081A.)
Solid & Chemical Materials (Inorganic Parameters: SW-846 6010B, 7196A, 7471A, 7.3.3.2, 7.3.4.2, 1010, 1030, 9010, 9012A, 9014, 9030B, 9040, 9045C, 9050C, 1311, 3005A, 3050B, 3051A. Organic Parameters: SW-846 3540C, 3545, 3580A, 5030B, 5035, 8021B, 8260B, 8270C, 8330, 8151A, 8082, 8081A.)

New Jersey Department of Environmental Protection Certificate/Lab ID: MA935. ***NELAP Accredited.***
Drinking Water (Inorganic Parameters: SM9222B, 9221E, 9223B, 9215B, 4500NO3-F, 4500F-C, EPA 300.0, 200.7, 2540C, 2320B, 314.0, SM2120B, 2510B, 5310C, SM4500H-B, EPA 200.8, 245.2. Organic Parameters: 504.1, SM6251B, 524.2.)
Non-Potable Water (Inorganic Parameters: SM5210B, EPA 410.4, SM5220D, 4500Cl-D, 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, SM4500P-B5+E, 2540B, 2540C, 2540D, EPA 120.1, SM2510B, SM15 426C, SM9221CE, 9222D, 9221B, 9222B, 9215B, 2310B, 2320B, 4500NH3-H, 4500-S D, EPA 350.1, SM5210B, SW-846 3015, 6020, 7470A, 5540C, 4500H-B, EPA 200.8, SM3500Cr-D, EPA 245.1, 245.2, SW-846 9040B, 3005A, EPA 6010B, 7196A, SW-846 9010B, 9030B. Organic Parameters: SW-846 8260B, 8270C, 3510C, EPA 608, 624, 625, SW-846 5030B, 8021B, 8081A, 8082, 8151A, 8330, NJ OQA-QAM-025 Rev.7.)
Solid & Chemical Materials (Inorganic Parameters: SW-846 9040B, 3005A, 6010B, 7196A, 5030B, 9010B, 9030B, 1030, 1311, 3050B, 3051, 7471A, 9014, 9012A, 9045C, 9050A, 9065. Organic Parameters: SW-846 8021B, 8081A, 8082, 8151A, 8330, 8260B, 8270C, 1311, 1312, 3540C, 3545, 3550B, 3580A, 5035L, 5035H, NJ OQA-QAM-025 Rev.7.)

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 314.0, 332.0, SM2320B, EPA 300.0, SM2120B, 4500CN-E, 4500F-C, 4500H-B, 4500NO3-F, 2540C, EPA 120.1, SM 2510B. Organic Parameters: EPA 524.2, 504.1.)
Non-Potable Water (Inorganic Parameters: SM9221E, 9222D, 9221B, 9222B, 9215B, 5210B, EPA 410.4, SM5220D, 2310B-4a, 2320B, EPA 200.7, 300.0, LACHAT 10-117-07-1A or B, SM4500Cl-E, 4500F-C, SM15 426C, EPA 350.1, LACHAT 10-107-06-1-B, SM4500NH3-H, EPA 351.1, LACHAT 10-107-06-2, EPA 353.2, LACHAT 10-107-041-C, SM4500-NO3-F, 4500-NO2-B, 4500P-E, 2540C, 2540B, 2540D, EPA 200.8, EPA 6010B, 6020, EPA 7196A, S\M3500Cr-D, EPA 245.1, 245.2, 7470A, SM2120B, SM4500-CN-E LACHAT 10-204-00-1-A, EPA 9040B, SM4500-HB, EPA 1664A, SM5310C, EPA 420.1, SM14 510C, EPA 120.1, SM2510B, SM4500S-D, SM5540C, EPA 3005A, 3015. Organic Parameters: EPA 624, 8260B, 8270C, 625, 608, 8081A, 8151A, 8330, 8082, EPA 3510C, 5030B, 9010B, 9030B.)
Solid & Hazardous Waste (Inorganic Parameters: 1010, 1030, SW-846 Ch 7 Sec 7.3, EPA 6010B, 7196A, 7471A, 9012A, 9014, 9040B, 9045C, 9065, 9050, EPA 1311, 1312, 3005A, 3050B, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 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.***
Non-Potable Water (Organic Parameters: EPA 3510C, 5030B, 625, 624. 608, 8081A, 8082, 8151A, 8260B, 8270C, 8330)
Solid & Hazardous Waste (Inorganic Parameters: EPA 1010, 1030, 1311, 3050B, 3051, 6010B, EPA 7.3.3.2, EPA 7.3.4.2, 7196A, 7471A, 9010B, 9012A, 9014, 9040B, 9045C, 9050, 9065. Organic Parameters: 3540C, 3545, 3580A, 5035, 8021B, 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 NY-DOH Certificate for Potable and Non-Potable Water.

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

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

Utah Department of Health Certificate/Lab ID: AAMA. ***NELAP Accredited.***
Non-Potable Water (Inorganic Parameters: Chloride EPA 300.0)

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, 9251, 9038, 350.1, 353.2, 351.1, 314, 120.1, 9050A , 410.4, 9060, 1664, 420.1, LACHAT 10-107-06-1-B, SM 4500CN-E, 4500H-B, 4500CL-E, 4500F-BC, 4500SO4-E, 426C, 4500NH3-B, 4500NH3-H, 4500NO3-F, 4500NO2-B, 4500Norg-C, 4500PE, 2510B, 5540C, 5220D, 5310C, 2540B, 2540C, 2540D, 510C, 4500S2-AD, 3005A, 3015, 9010B, 9030B. Organic Parameters: EPA 8260B, 8270C, 8330, 625, 8082, 8151A, 8081A, 3510C, 5030B.)

Solid & Hazardous Waste (Inorganic Parameters: EPA 200.7, 6010B, 7471A, 9040B, 9045C, 9065, 420.1, 9012A, 6860, 1311, 1312, 3050B, 9030B, 3051, 9010B, 3540C, SM 510ABC, 4500CN-CE, 2540G, SW-846 7.3, Organic Parameters: EPA 8260B, 8270C, 8330, 8082, 8081A, 8151A, 3545, 3546, 3580, 5035.)

Analytes Not Accredited by NELAP
Certification is not available by NELAP for the following analytes: **EPA 8260B:** Freon-113, 1,2,4,5-Tetramethylbenzene. **EPA 8330A:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT. **EPA 8270C:** Methyl naphthalene, Dimethyl naphthalene, Total Methylnapthalenes, Total Dimethylnaphthalenes, 1,4-Diphenylhydrazine (Azobenzene). **EPA 625:** 4-Chloroaniline. **EPA 350.1** for Ammonia in a Soil matrix.

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

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

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

Date Rec'd in Lab: 12/14/09

ALPHA Job #: L0918110

Client Information

Client: McPhail Assoc.

Address: CAMBRIDGE, MA

Phone: 617-868-1420

Fax:

Email:

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Discovery Park

Project Location: CAMBRIDGE, MA

Project #: 4214

Project Manager: JWP/WJB

ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!) 48 hr

Date Due: 12/16/09 Time:

Other Project Specific Requirements/Comments/Detection Limits:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l. Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria
EPA	RGP

MA MCP PRESUMPTIVE CERTAINTY - CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

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

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	EDB 504	VOC 624	Total Metals	TSS	PCB (608)	8270/PAHSIM	TPH-1664	TCN	Total Phenol HexCr, TRC, pH	Sample Specific Comments	TOTAL # BOTTLES
18116-1	MAI-202	12/14	3:00pm	GW	CC	✓	✓	✓	✓	✓	✓	✓	✓	✓		16
2	MAI-201	12/14	4:00pm	GW	CC	✓	✓	✓	✓	✓	✓	✓	✓	✓		16
																32

SAMPLE HANDLING

Filtration

☐ Done ☐ Not needed ☐ Lab to do

Preservation

☐ Lab to do (Please specify below)

Container Type

Preservative

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	12/14/09		12/14/09 1840

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

FORM NO: 01-01 (rev. 14-OCT-07)

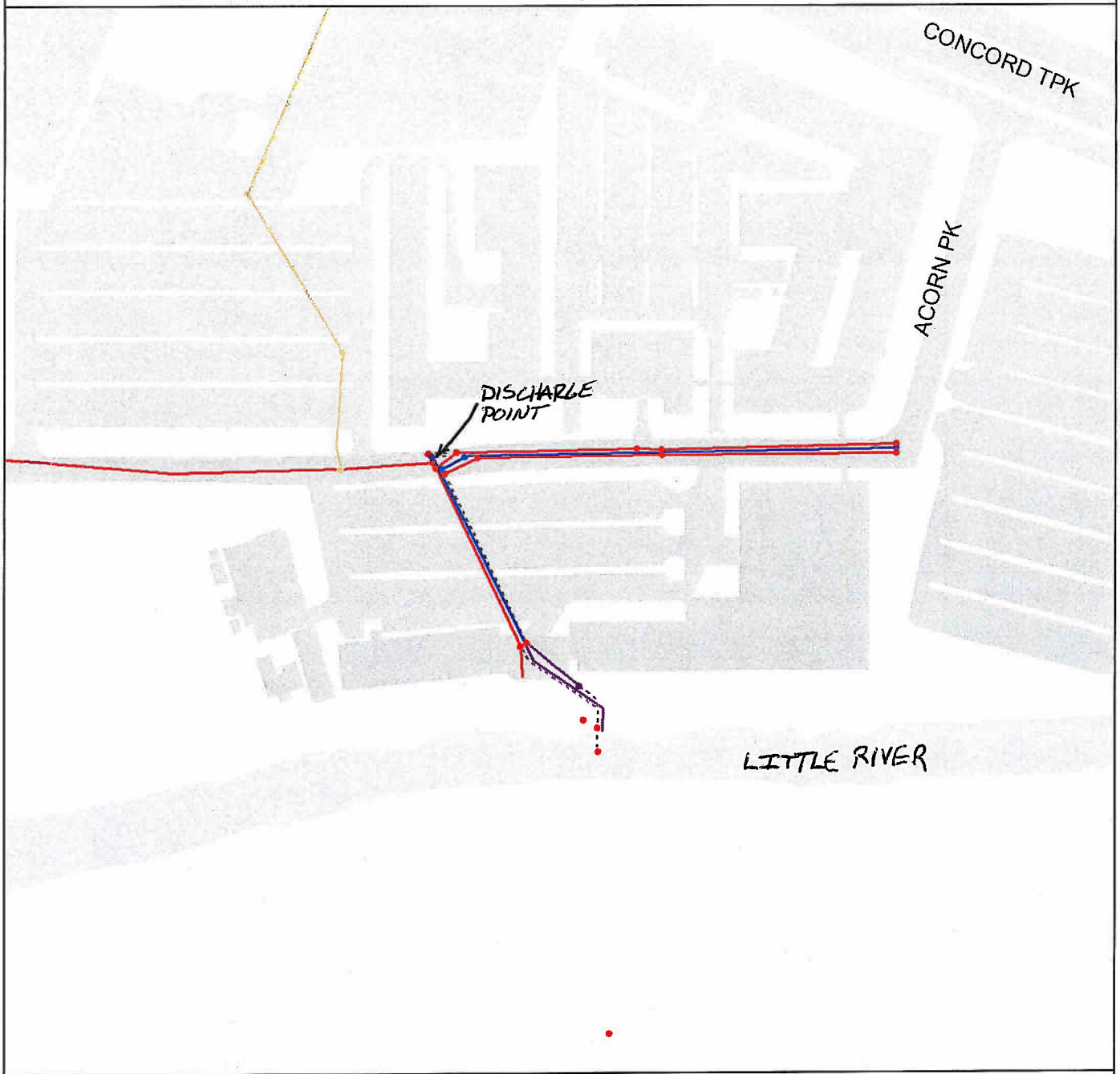
McPHAIL ASSOCIATES, INC

Geotechnical Engineers

APPENDIX E

City of Cambridge
Drainage Plans

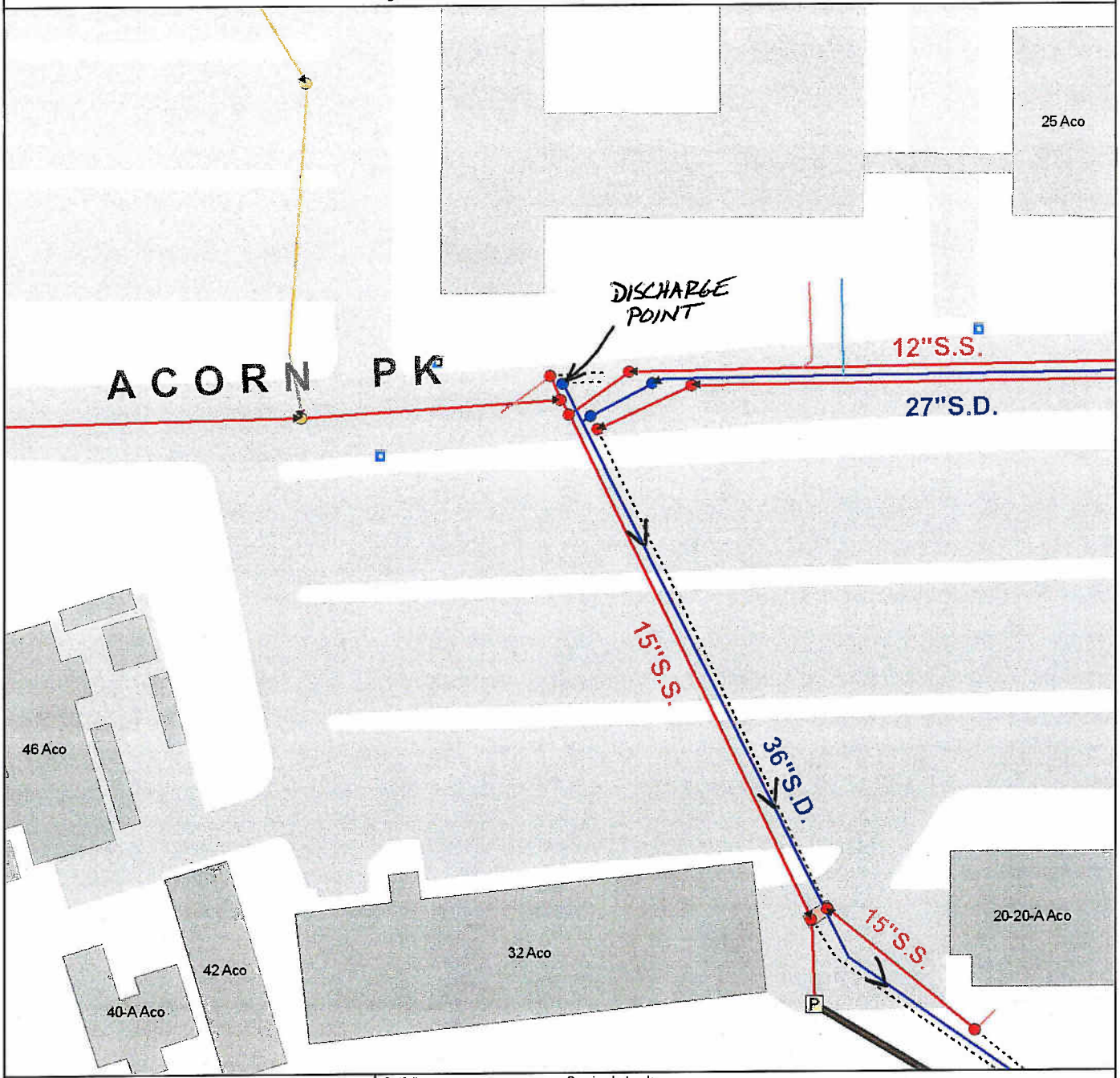
Discovery Park



City of Cambridge
Massachusetts

Gravity Mai
Stormwater
Sewage
Combined Sewage
Abandoned

City of Cambridge Drain Plan 2



City of Cambridge
Massachusetts

All data is provided for graphic representation only. The City of Cambridge expressly disclaims all warranties of any type, expressed or implied, including, but not limited to, any warranty as to the accuracy of the data, merchantability, or fitness for a particular purpose.

Outfalls
- Stormwater
- Combined Sewer Overflow
- Abandoned

Pumping Structures
- Pump Station
- Lift Station

Manholes
- Stormwater
- Sewage
- Combined Sewage
- Abandoned

Lampholes
- Stormwater
- Sewage

Catchbasins
- Standard Sump
- Drop Inlet
- Area Drain
- Drywell
- Oil/Water Separator
- Abandoned

Trench Drains

Service Laterals
- Stormwater
- Sewage
- Abandoned

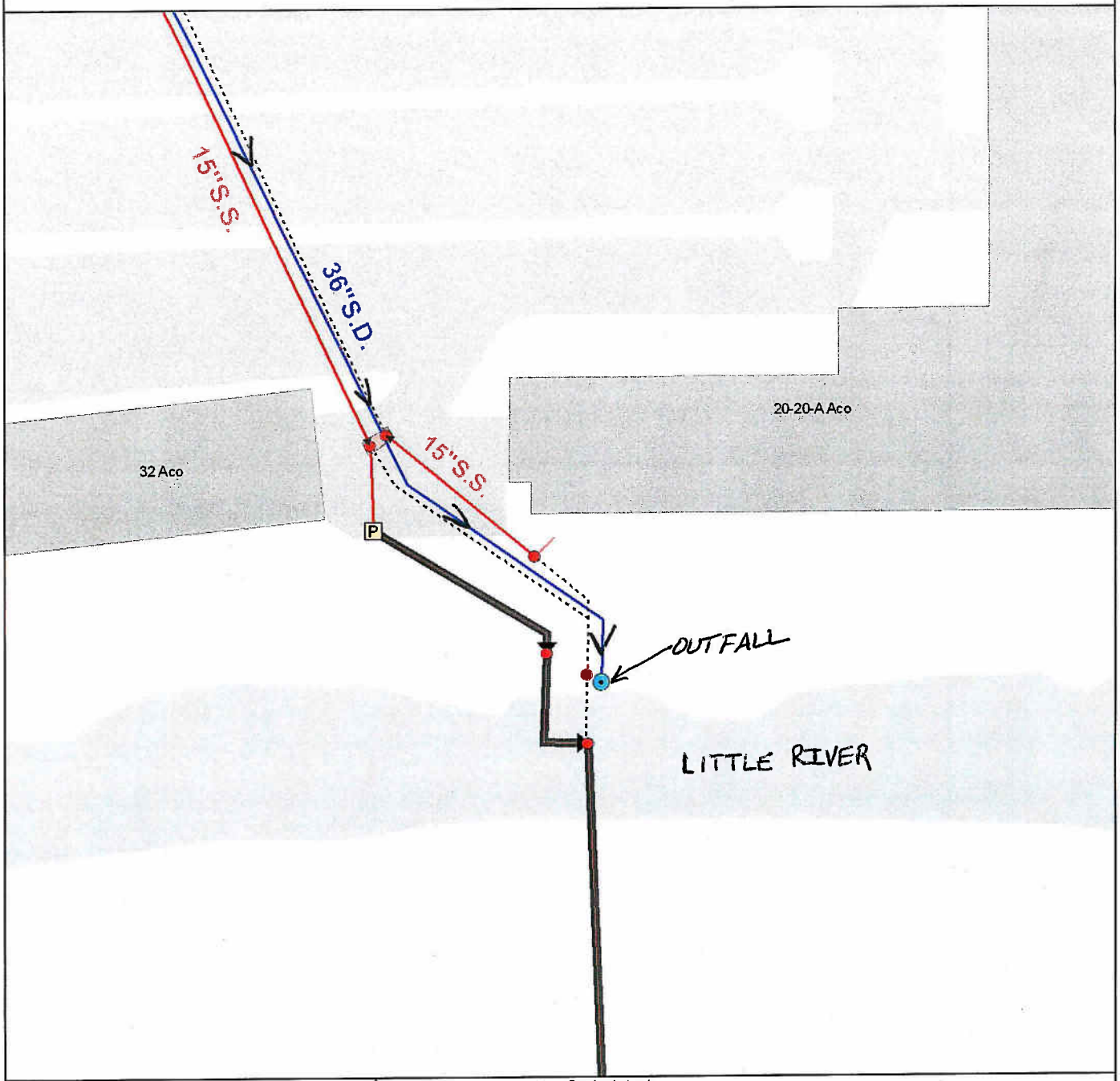
Force Mains
- Combined Wastewater
- Sewage
- Storm Runoff

MWRA Mains
- Abandoned
- In Service

Underground Structures
- Stormwater
- Sewage
- Combined Sewage

> DIRECTION OF FLOW

Outfall Location



City of Cambridge
Massachusetts

All data is provided for graphic representation only. The City of Cambridge expressly disclaims all warranties of any type, expressed or implied, including, but not limited to, any warranty as to the accuracy of the data, merchantability, or fitness for a particular purpose.

Outfalls
- Stormwater
- Combined Sewer Overflow
- Abandoned

Pumping Structures
- Pump Station
- Lift Station

Manholes
- Stormwater
- Sewage
- Combined Sewage
- Abandoned

Lampholes
- Stormwater
- Sewage

Catchbasins
- Standard Sump
- Drop Inlet
- Area Drain
- Drywell
- Oil/Water Separator
- Abandoned

Trench Drains

Service Laterals
- Stormwater
- Sewage
- Abandoned

Force Mains
- Combined Wastewater
- Sewage
- Storm Runoff

MWRA Mains
- Abandoned
- In Service

Underground Structures
- Stormwater
- Sewage
- Combined Sewage