



Geotechnical Engineers

MAG910272

**CONSTRUCTION SITE DEWATERING
DISCHARGE PERMIT APPLICATION
UNDER MAG910000**

71 AMHERST STREET

CAMBRIDGE MASSACHUSETTS

for

US Environmental Protection Agency
and City of Cambridge

October 18, 2006

Project No. 3460.9.04



October 18, 2006

Geotechnical Engineers

US Environmental Protection Agency
RGP - NOC Processing
Municipal Assistance Unit
One Congress Street, Suite 1100
Boston, MA 02114

Attention: Mr. George Papadopoulos

City of Cambridge
Department of Public Works
147 Hampshire Street
Cambridge, MA 02139

Attention: Mr. Owen O'Riordan

Reference: 71 Amherst Street; Cambridge, Massachusetts
Temporary Construction Dewatering Discharge Permit Application
Under Massachusetts General Permit No. MAG910000

This letter report was prepared by McPhail Associates, Inc. on behalf of Massachusetts Institute of Technology (MIT) in support of an application for permission from the US Environmental Protection Agency (EPA) and the City of Cambridge Department of Public Works (DPW) for the temporary discharge of groundwater into a storm drain line, and ultimately into the Charles River, for the purpose of construction dewatering at the above referenced location. Refer to **Figure 1** for the general site locus. The required US EPA Notice of Intent (NOI) and the City of Cambridge Permit to Dewater are included in **Appendix A**.

Applicant

Massachusetts Institute of Technology
Department of Facilities
77 Massachusetts Avenue, NE49-2100
Cambridge, MA 02110

Contact: Mr. Arne Abramson
Telephone: 617-452-4962

Existing Site Conditions

The subject site consists of a rectangularly shaped parcel of about 47,600 square feet in area and is bounded to the north and east by buildings and landscaped areas of the MIT campus. The approximate boundaries of the subject site are shown on the enclosed **Figure 2**. The subject site is part of the MIT campus and is currently a vacant lot surrounded by a chain link fence. Access is restricted by a locked gate. Most recently, the subject site was occupied by two MIT buildings that were demolished in 2001.



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The existing ground surface across the subject site is relatively level, varying from approximately Elevation +19 at the southwest corner of the subject site to about Elevation +21 at the northeast corner, across a horizontal distance of approximately 300 feet. Ground surface elevations are referenced to the City of Cambridge vertical datum which is 10.84 feet below the National Vertical Geodetic Datum (NGVD).

Background Information and Environmental Setting

The site is not located within a Zone II of a public water supply, an Interim Wellhead Protection Area, a Potentially Productive Aquifer or a Zone A of a Class A surface water supply, as defined in the Massachusetts Contingency Plan (MCP). There are no surface water bodies located within the site boundaries. The nearest surface water body is the Charles River that is classified as a Class B Surface Water, located approximately 400 feet southeast from the subject site. There are no known private or public drinking water supply wells located either within the site boundaries nor within 0.5 miles of the site, and groundwater at the subject site is not considered a current or potential source of drinking water.

Environmental investigation at the subject site was performed by McPhail Associates during 2000 through 2005, the results of which are summarized in the following reports, copies of which are included in **Appendix B** in electronic format: (1) "Phase II Comprehensive Site Assessment Report, 71 Amherst Street; Cambridge, Massachusetts, RTN 3-20649", dated April 13, 2004, prepared by McPhail Associates; (2) "Phase III Comprehensive Remedial Action Plan, 71 Amherst Street; Cambridge, Massachusetts, RTN 3-20649" dated July 11, 2005, prepared by McPhail Associates; and (3) "Class C Response Action Outcome Statement, 71 Amherst Street; Cambridge, Massachusetts, RTN 3-20649", dated August 5, 2005, prepared by McPhail Associates.

The results of the environmental investigation, summarized in the above referenced reports, indicate that concentrations of volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), mercury and lead were detected in the subject site soil at levels that require implementation of response actions under the MCP. Results of groundwater sampling and chemical testing performed to-date indicate that groundwater at the subject site has not been impacted by the above referenced contaminants. The subject site is classified as a Tier II Disposal Site for which a Class C-1 Response Action Outcome (RAO) Statement was submitted to the Massachusetts DEP on August 9, 2005. It should be noted that it is anticipated that subsequent to the completion of additional remedial actions that will be performed in conjunction with the upcoming redevelopment of the site, a Permanent Solution, as defined in the MCP, will be achieved.

Site History and Usage

According to readily available historic information, this section of Cambridge was gradually filled during the period from about 1850 to 1897 by reclaiming tidal flats and low lands associated with the Charles River. At the end of the 19th century the area was completely filled and subdivided into parcels that were initially occupied by coal and lumber yards.

By 1934 the subject site was occupied by several metal storage buildings, a scientific instruments manufacturing facility and a one-story warehouse. The Sanborn Map dated 1934 depicts the presence of one underground storage tank (UST) at the Amherst Street frontage of the subject site. Other commercial establishments in the vicinity of the subject site included a plumbing supplies warehouse, a bakery and a printing shop.



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By 1950, the subject site was occupied by two buildings, the above referenced scientific instrument manufacturer, and a paper products warehouse.

During 1962, the above buildings were incorporated into the MIT campus. One of the buildings was renovated for use as laboratories and classrooms. The other building continued to be used for storage of office supplies, furniture and paper products. No changes occurred in the usage of these buildings until they were demolished in 2001 in preparation for the site redevelopment. The former MIT buildings that occupied the subject site were heated by steam that was generated off-site and transmitted through a subsurface steam distribution system situated within the MIT campus.

It should be noted that no underground storage tanks were encountered during the performance of the subsurface explorations or during the demolition of the former MIT buildings.

Proposed Site Development

It is understood that the proposed development of the subject site includes the construction of a new MIT building of which the below-grade portion is understood to occupy a 200-foot by 150-foot rectangularly-shaped footprint and consists of three levels of below-grade structure. The above-grade portion of the proposed structure is understood to consist of six stories. The depth of the excavation for the lowest basement level is estimated to be about 21 feet below the existing ground surface. Approximate limits of the proposed building footprint are shown on **Figure 2**.

A continuously interlocking steel sheet pile cofferdam will be installed around the perimeter of the proposed below grade structure as part of the temporary earth support system and to provide a groundwater cut-off. In order to achieve the perimeter groundwater cut-off, the steel sheet piling will extend into the relatively impervious marine clay stratum underlying the project site.

Subsurface Conditions

A detailed description of the subsurface conditions encountered at each of the completed soil borings is presented in the boring logs prepared by New Hampshire Boring and Carr-Dee Corp. contained in **Appendix C**. The following is a discussion of the generalized subsurface conditions across the site which are inferred primarily from the explorations and from our knowledge of the geology of this section of Cambridge, and our foundation design and construction experience.

The soil borings indicate that ground surface across the subject site surface is underlain by a 5 to 10-foot thick fill stratum that is typically described as loose to dense, brown and gray sand and gravel with some silt and varying amounts of brick, concrete, asphalt, wood, glass, ash and cinders.

Underlying the fill stratum, the borings encountered an 8 to 15-foot thick organic deposit consisting of a soft to firm, dark brown organic silt and fibrous peat. This stratum was observed to contain occasional layers of fine sand and silt.

The bottom of the organic deposit was generally encountered at depths ranging from 18 to 23 feet below the existing ground surface. The organic silt and peat stratum is underlain by a deposit of compact to dense glacial outwash consisting of sand with trace to some gravel and trace amounts of silt ranging in thickness from 3 to 10 feet.



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Underlying the glacial outwash sand, the explorations encountered a relatively thick marine deposit which typically consists of silty clay, with occasional layers of fine sand and silt. The consistency of this material ranged from stiff to very stiff near its upper portion, to soft and very soft with increasing depth. The surface of the marine deposit was encountered at depths ranging from 22 feet to about 33 feet below existing grade.

Underlying the marine stratum, the borings encountered a relatively thin deposit of glacial till consisting of a very dense, gray mixture of sand, gravel and silt. The surface of the glacial till deposit was encountered at a depth of about 95 feet below existing grade. Bedrock was not encountered in any of the borings, however, it is anticipated that bedrock beneath the subject site would be located at a depth of about 100 feet below existing grade.

As indicated in the boring logs contained in **Appendix C**, groundwater was observed within the completed boreholes at depths ranging from 8 feet to 10 feet below the existing ground surface within the proposed building footprint. The observed groundwater is considered to be seasonally perched on the surface of the relatively impervious organic deposit, particularly following periods of heavy precipitation. 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.

Proposed Construction Dewatering

Based upon the configuration of the proposed Media Lab Expansion building, with its two levels of below grade structure, as well as the conditions encountered in the subsurface explorations, the foundation of the proposed building will extend to the top of the outwash sand deposit present at the base of the proposed mat foundation. In order to allow construction of the below-grade portion of the structure, it will be necessary to create a groundwater cut-off extending down into the cohesive marine deposit around the entire perimeter of the structure. As indicated above, groundwater cut-off will be achieved by driving continuously interlocking steel sheet piling into the impervious strata that underlies the site.

Excavation within the proposed footprint will likely extend to a depth of approximately 10 to 15 feet below the observed groundwater level. Hence, construction dewatering will be required within the groundwater cut-off area to allow the construction of the below-grade portion of the structure. The majority of the anticipated dewatering will occur during excavation following the installation of the steel sheet piling. Additional dewatering may occur during installation of the mat foundation.

It is estimated that the typical continuous groundwater discharge required during the initial stages of the excavation phase of the construction project will be on the order of 35 to 60 gallons per minute (GPM). The quantity of groundwater discharge is based on the relatively pervious nature of the existing fill material and the presence of the steel sheet piling surrounding the excavation which will act as a groundwater cut-off.

A reduction in the rate of discharge is anticipated to occur during excavation of the less permeable organic silt and peat. An average rate of discharge of 30 - 40 GPM is envisioned during this stage of excavation. These estimates of discharge do not include surface runoff which will be removed from the excavation during a limited duration of precipitation events.



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Finally, it should be noted that on-site recharge is not considered feasible for the subject site. As indicated above, the interlocking steel sheet piling will not allow recharge within the building footprint, and the area situated outside the proposed building footprint is not considered sufficient for recharge of the anticipated volume of water pumped from the construction excavation.

A review of maps contained in the City of Cambridge Sewer and Drain Atlas indicate that 15-inch diameter and 24-inch diameter storm drain lines are located along Amherst Street and Ames Street, respectively. The 15-inch line discharges into the 24-inch line at a junction located at the corner of Ames and Amherst Streets, adjacent to the subject site. The 24-inch line located beneath Ames Street discharges through an outfall into the Charles River located approximately 400 feet south of the site. It is anticipated that the effluent from the construction dewatering at the subject site will be discharged through the 24-inch drain line into the Charles River.

Based on the results of groundwater chemical analyses discussed below, it is our opinion that no special treatment of the groundwater prior to discharge is required. However, the groundwater will be pumped from the excavation into a sedimentation tank in order to settle particulate matter out of the effluent prior to discharge and to meet allowable discharge limits established in MAG910000.

The location of the storm drain and relevant catch basins with relation to the subject site are indicated on **Figure 3** which is based on a 100-scale Map No. 765956.4, Tile 48.4 of the City of Cambridge Sewer and Drain Atlas compiled June 7, 1999.

Chemical Analyses of Groundwater Samples

I. 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 Charles 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:

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

Where: Q_d is the maximum discharge flow rate of 60 GPM = 0.1338 cubic feet per second (cfs),
(1 GPM = 0.00223 cfs)

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

The value for Q_s 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 Charles River obtained at the nearest USGS gauging station located in Waltham. The Minimum Flow Rate reported by the USGS at the Waltham Gauging Station for 7 consecutive days with a recurrence interval of 10 years (7Q10 flow) is 31 cfs. However, since this survey station is located upstream of the proposed discharge location, and the flow rate of the Charles River at the proposed discharge location is



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anticipated to be less than the above 7Q10 value, a conservative assumption of one-half of the above 7Q10 value was used to calculate the DF. Therefore, the value for Qs is 15.5 cfs, thus resulting in DF = 116.8. Based on this DF value, the applicable DRCs contained in MAG910000, Appendix IV, are equal to those shown for DF > 100. A summary of the metals Total Recoverable Limits (TRL) is presented in **Table 2**.

II. Previous Groundwater Chemical Test Data

How many wells?
Results of the previous groundwater chemical analyses are included in **Appendix D**, summarized in **Table 1** and discussed below. Groundwater samples were obtained by McPhail Associates from monitoring wells located at the subject site. The approximate locations of the sampled wells are shown on the enclosed **Figure 2**. *Was a combined sample taken?*

On December 28, 2000, groundwater samples were obtained from monitoring wells A-4 (OW), C-3(OW) and B-99-5(PZ). One of the tested samples was analyzed for the presence of volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), volatile petroleum hydrocarbons (VPH), extractable petroleum hydrocarbons (EPH), total and dissolved metals (PP13), pesticides/PCB's, pH and total suspended solids. The remaining two samples were tested for TPH, VOCs and EPH.

Where are they?
On January 27, 2004 a groundwater sample was obtained from well B-4 (7) and submitted to the laboratory for analyses for VOCs, EPH and dissolved PP-13 metals. On May 27, 2005 groundwater samples were obtained from wells B-101, B-102, B-103 and B-104. The samples were tested for VOCs, EPH, PAHs total lead and mercury.

The results of the chemical testing indicate that none of the analytes were detected at concentrations in excess of the RGP Discharge Limits contained in MAG910000. In addition, none of the total metals were detected at concentrations in excess of the TRLs for metals contained in MAG910000 Appendix IV.

III. Recent Groundwater Chemical Test Results

Why?
On September 26, 2006 McPhail Associates obtained a groundwater sample from monitoring well B-101(OW) that is located at the subject site. See **Figure 2** for the approximate well location.

Why?
The groundwater sample was submitted to a Massachusetts DEP-certified chemical testing laboratory for analyses for the following parameters:

1. Volatile Organic Compounds (EPA Method 624)
2. Semivolatile Organic Compounds and polynuclear aromatic hydrocarbons (PAHs), (EPA Method 8270)
3. Total Petroleum Hydrocarbons (EPA Method 1664)
4. Total Metals (arsenic, antimony, beryllium, cadmium, chromium, copper, lead, nickel, mercury, silver, selenium, thallium and zinc) EPA Methods 6020, 6010 and 245.2;
5. pH, EPA Method 150.1;
6. Total Suspended Solids (TSS) EPA Method 160.2; and
7. Total Residual Chlorine (TRC) EPA Method 330.1



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The groundwater chemical analyses results, summarized in **Table 1** and included in **Appendix D**, indicate the following:

1. None of the VOCs were detected in the tested sample at concentrations in excess of the laboratory reported method detection limits (MDL), which are well below the MAG910000 limits;
2. None of the SVOCs and PAHs were detected in the tested sample at concentrations in excess of the MDLs, which are well below the MAG910000 limits;
3. TPH was not detected in the tested sample at a concentration in excess of the MDL, which is well below the MAG910000 limit;
4. None of the total metals were detected in at concentrations in excess of the TRLs contained in MAG910000 Appendix IV limits. Arsenic, copper, nickel, selenium and zinc were detected at concentrations that are orders of magnitude below the TRLs. The remaining total metals (antimony, beryllium, cadmium, chromium, lead, mercury, silver and thallium) were not detected at concentrations in excess of the MDLs, which are well below the above referenced TRLs; and
5. Total suspended solids (TSS) was not detected at a level in excess of the MDL, which well below the MAG910000 limit of 30 mg/l, total residual chlorine (TRC) was not detected in the tested sample and pH was measured at 7.1 Standard Units, which is well within the range of 6.5 - 8.3 SU for discharge into a Class B Surface Water.

Summary and Conclusions

Proposed redevelopment of the subject site includes the construction of a building that will occupy most of the subject site area and will contain a two-level below grade structure. Excavation for the below-grade structure will require the implementation of a temporary construction dewatering system and discharge of the effluent off-site.

Based on information provided to McPhail Associates by the City of Cambridge Sewer Department, it is anticipated that temporary discharge of the effluent from the subject construction site will be implemented utilizing a storm drain line that discharges into the Charles River

The results of the previous and recent groundwater chemical tests indicate that the effluent meets the discharge limits contained in MAG910000 and in Appendix IV of the MAG910000.

Based on the groundwater chemical test results, it is concluded that special treatment of the effluent is not required in order to meet the MAG910000 Discharge Limits. However, the effluent will be pumped through a sedimentation tank in order to remove the particulate matter and meet the TSS Limit contained in MAG910000. Sampling and chemical testing of the influent and effluent will be performed in accordance with the requirements contained in MAG910000.



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We trust that the above satisfies your present requirements. Please do not hesitate to contact us should you have any questions or require additional information.

Very truly yours,

McPHAIL ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Arie BarJosef".

Arie BarJosef, P.C.

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

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

JOBS\3460-RGP Application and NOI

Enclosures

cc: Massachusetts Institute of Technology (Mr. Arne Abramson)

FIGURE 1

SITE

Charles River Basin

RIVER

MIDDLESEX CO

SUFFOLK CO

HARVARD BRIDGE

LONGFELLOW BRIDGE

MASS GENERAL HOSPITAL

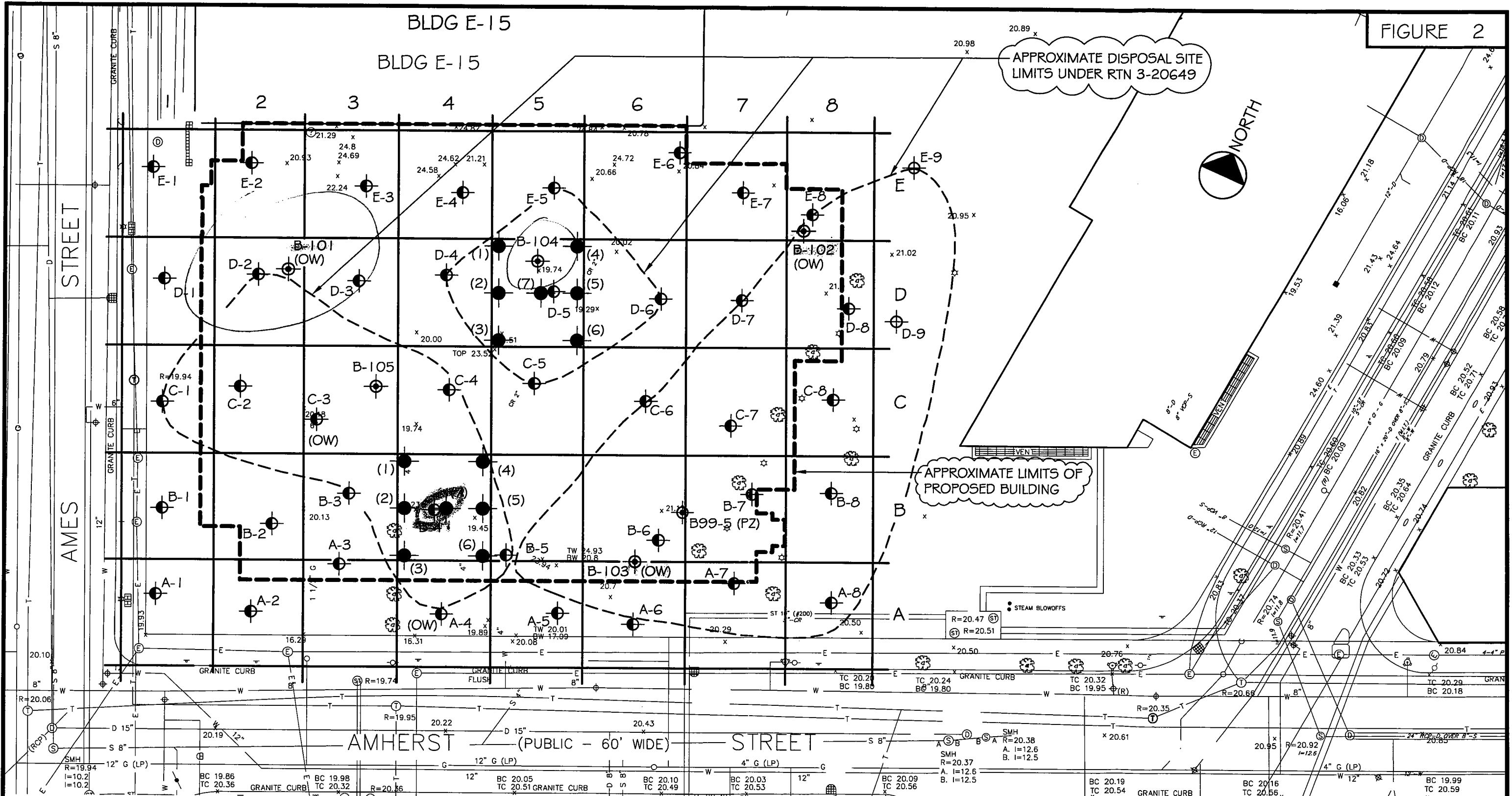
BOSTON COMMON

NORTHEASTERN UNIVERSITY

INTERCHANGE 15



FIGURE 2



LEGEND

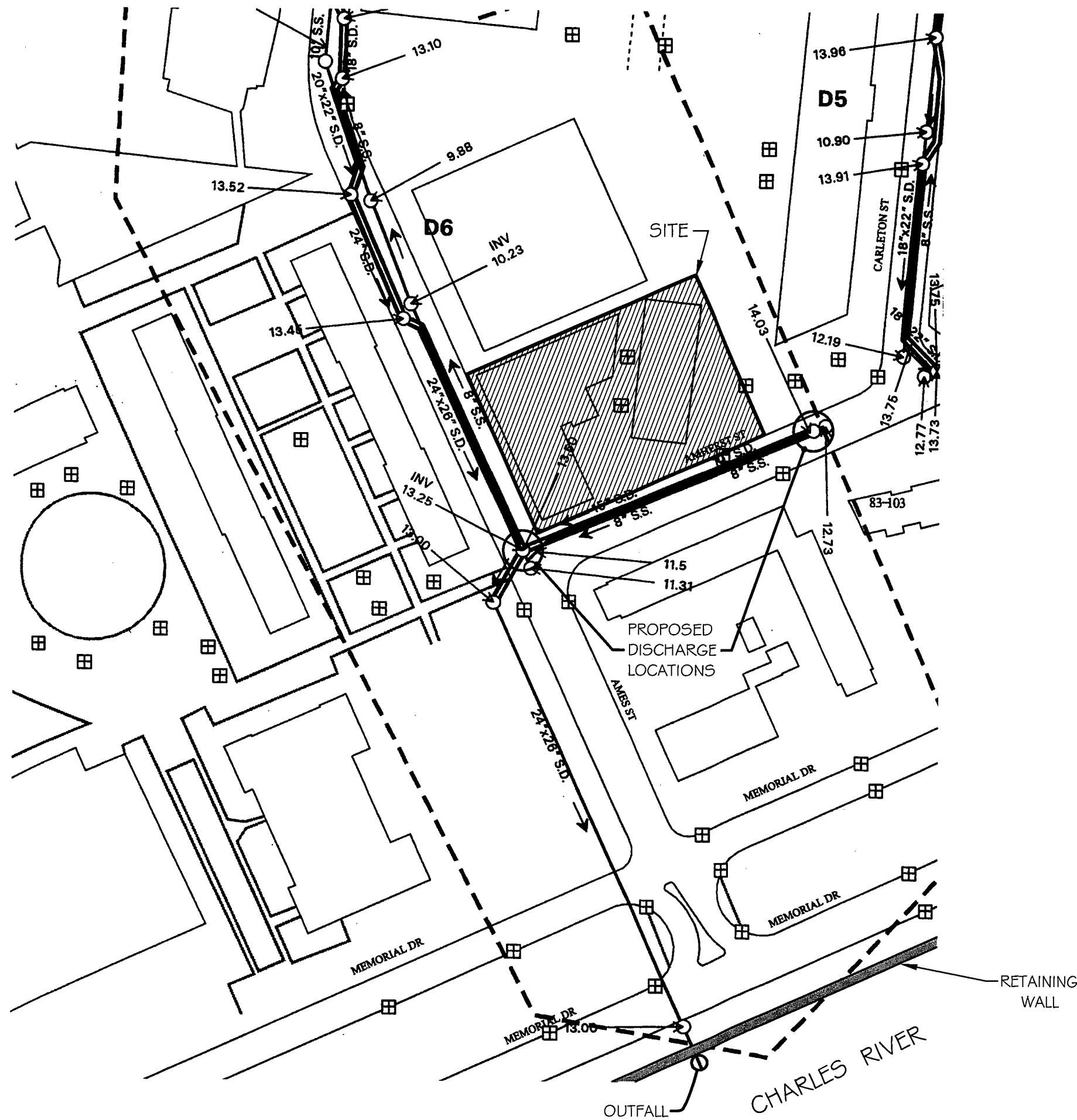
- (1) — APPROXIMATE LOCATION OF BOREHOLES PERFORMED BY CARR-DEE CORP. ON JANUARY 27, 2004 FOR McPHAIL ASSOCIATES, INC.
- A-1 THRU E-8 — APPROXIMATE LOCATION OF BOREHOLES PERFORMED BY NEW HAMPSHIRE BORING, INC. DURING AUGUST AND SEPTEMBER 2000 FOR McPHAIL ASSOCIATES, INC.
- D-9 & E-9 — LOCATION OF BOREHOLES PERFORMED BY CARR-DEE CORP. ON DECEMBER 28, 2000 FOR McPHAIL ASSOCIATES, INC.
- (OW) — INDICATES OBSERVATION WELL INSTALLED IN COMPLETED BOREHOLE.
- B-101 — APPROXIMATE LOCATION OF SOIL BORINGS PERFORMED BY CARR-DEE CORP ON MAY 23, 2005 FOR McPHAIL ASSOCIATES, INC.

REFERENCE: THIS PLAN WAS PREPARED FROM A 20-SCALE DRAWING ENTITLED "TOPOGRAPHIC PLAN OF LAND, M.I.T., AMES AND AMHERST STREETS, CAMBRIDGE, MA" DATED APRIL 19, 1999 BY CULLINAN ENGINEERING CO., INC.

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

71 AMHERST STREET				
CAMBRIDGE		MASSACHUSETTS		
SUBSURFACE EXPLORATION PLAN				
FOR				
MASSACHUSETTS INSTITUTE OF TECHNOLOGY				
BY				
McPHAIL ASSOCIATES, INC.				
CONSULTING GEOTECHNICAL ENGINEERS				
Date:	MAY 2005	Dwn: I.J.M.	Chkd: A.B.J.	Scale: 1" = 30'
Project No:		3460		

FIGURE 3



REFERENCE: THIS PLAN WAS PREPARED FROM A 100-SCALE MAP NO. 765956.4, TILE NO. 48.4 OF THE CITY OF CAMBRIDGE SEWER AND DRAIN ATLAS COMPILED JUNE 7, 1999.

 McPHAIL ASSOCIATES, INC. Geotechnical Engineers 30 Norfolk Street Cambridge, MA 02139 617/868-1420 617/868-1423 (Fax)	MIT ARTS AND MEDIA TECHNOLOGY BUILDING		
	CAMBRIDGE MASSACHUSETTS		
	STORM DRAIN PLAN		
	FOR US EPA		
	BY McPHAIL ASSOCIATES, INC. CONSULTING GEOTECHNICAL ENGINEERS		
Date: JANUARY 2001	Dwn: I.J.M.	Chkd: A.B.J.	Scale: 1" = 100'
Project No: 3460			

FILE NAME: 3460.E07

Table 1
CHEMICAL TEST RESULTS-GROUNDWATER SAMPLES
71 Amherst Street, Cambridge, Massachusetts

Project Number 3460

Well designation	RGP Discharge	C-3 (OW)	B-99-5 (PZ)	A-4 (OW)	B-4 (7) (OW)	B-101 (OW)	B-102 (OW)	B-103 (OW)	B-101 (OW)
Date Sampled	Limits	12/28/2000	12/28/2000	12/28/2000	1/27/2004	5/27/2005	5/27/2005	5/27/2005	9/29/2006
pH Standard Units	6.5 - 8.3	7.3			7.2				7.1
Total Suspended Solids (mg/l)	30*	170			40				ND
VOC (ug/l)	Total < 100	All ND		All ND	All ND	All ND			All ND
Tetrachloroethene			ND				0.99	ND	
MTBE			5.2				ND	ND	
cis-1,2-Dichloroethene			ND				ND	0.73	
Extractable Petroleum Hydrocarbons (EPH) ug/l	5 mg/l	TPH = ND		TPH = ND					TPH = ND
C9 - C18 Aliphatics		ND	ND	ND	ND	ND	ND	ND	
C19 - C36 Aliphatics		ND	ND	ND	ND	ND	ND	ND	
C11 - C22 Aromatics		ND	ND	ND	ND	ND	ND	ND	
Volatile Petroleum Hydrocarbons (VPH) ug/l	5 mg/l								
C5 - C8 Aliphatics		ND							
C9 - C12 Aliphatics		ND							
C9 - C10 Aromatics		ND							
PCBs/Pesticides, ug/l		All ND							
Polynuclear Aromatic Hydrocarbons (PAHs) ug/l	PAH I < 10, PAH II < 100	All ND		All ND	All ND	All ND	All ND	All ND	All ND
PP-13 Metals, mg/l	Per Appendix IV MAG910000	Total metals	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Total Metals
Antimony	0.141	ND			ND				ND
Arsenic	0.54	0.014			ND				0.0015
Beryllium	N/S	ND			ND				ND
Cadmium	0.02	ND			ND				ND
Chromium	1.710 (Triv.), 1.140 (Hex)	0.02			ND				ND
Copper	0.52	0.02			ND				0.0007
Lead	0.132	0.01	ND	ND	ND	ND	ND	ND	ND
Mercury	0.023	ND			ND	ND	ND	ND	ND
Nickel	2.38	ND			ND				0.0019
Selenium	0.408	ND			ND				0.002
Silver	0.115	ND			ND				ND
Thallium	N/S	ND			ND				ND
Zinc	1.48	0.05			ND				0.0108

Note: VOC list limited to compounds detected

* - Monthly average

ND--not detected above laboratory detection limit
Blank--not analyzed
NS--No Standard



APPENDIX A

US EPA Notice of Intent
and
City of Cambridge Permit Application

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:

a) Name of facility/site: Media Lab Expansion		Facility/site address: Corner of Amherst and Ames Streets	
Location of facility/site: longitude: <u>32813</u> latitude: <u>46918</u>	Facility SIC code(s): N/A	Street: 71 Amherst Street	
b) Name of facility/site owner: Massachusetts Institute of Technology		Town: Cambridge	
Email address of owner:	State: MA	Zip: 02142	County: Middlesex
Telephone no. of facility/site owner: (617) 252-4962			
Fax no. of facility/site owner: (617) 452-2342		Owner is (check one): 1. Federal _____ 2. State/Tribal _____	
Address of owner (if different from site):		3. Private ☒ 4. other, if so, describe:	
Street: 77 Massachusetts Avenue, Department of Facilities NE49-2100			
Town: Cambridge	State: MA	Zip: 02139	County: Middlesex
c) Legal name of operator: Massachusetts Institute of Technology	Operator telephone no: (617) 252-4962		
	Operator fax no.: (617) 452-2342	Operator email:	
Operator contact name and title: Arne Abramson			

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

d) Check "yes" or "no" for the following:

- Has a prior NPDES permit exclusion been granted for the discharge? Yes ☒ No ☐, if "yes," number: N/A (granted under previous expired MAG)
- Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Yes ☐ No ☒, if "yes," date and tracking #:
- Is the discharge a "new discharge" as defined by 40 CFR 122.2? Yes ☒ No ☐
- 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: - site identification # assigned by the state of NH or MA: - permit or license # assigned: - state agency contact information: name, location, and telephone number:	f) Is the site/facility covered by any other EPA permit, including: - multi-sector storm water general permit? Y ☐ N ☒, if Y, number: - phase I or II construction storm water general permit? Y ☐ N ☒, if Y, number: - individual NPDES permit? Y ☐ N ☒, if Y, number: - 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: Temporary construction dewatering. Effluent will be treated (sediment filtration) prior to discharge (see text)		
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, ft³/s)? Max. flow <u>0.13</u> Average flow <u>0.09</u> 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.
3) Latitude and longitude of each discharge within 100 feet: pt.1:long. <u>32813</u> lat. <u>46918</u>; 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 <u>11/01/06</u> end <u>11/01/07</u>	
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 minimum)	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	5	170	0.037	10	0.0022
2. Total Residual Chlorine	☒		1	Grab	330.1	0.05	ND			
3. Total Petroleum Hydrocarbons	☒		4	grab	1664A	4	ND			
4. Cyanide	☒									
5. Benzene	☒		4	grab	624,	<10	ND			
6. Toluene	☒		4	grab	624,	<10	ND			
7. Ethylbenzene	☒		4	grab	624,	<10	ND			
8. (m,p,o) Xylenes	☒		4	grab	624,	<10	ND			
9. Total BTEX ⁴	☒		4	grab	624,	<10	ND			

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

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	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)	✓						ND			
11. Methyl-tert-Butyl Ether (MtBE)	✓		4	grab	8260	<10	5.2	0.0011	Neg.	
12. tert-Butyl Alcohol (TBA)	✓						ND			
13. tert-Amyl Methyl Ether (TAME)	✓		4	grab	8260		ND			
14. Naphthalene	✓		4	grab	8270	<10	ND			
15. Carbon Tetra-chloride	✓		4	grab	624	<10	ND			
16. 1,4 Dichlorobenzene	✓		4	grab	624	<10	ND			
17. 1,2 Dichlorobenzene	✓		4	grab	624	<10	ND			
18. 1,3 Dichlorobenzene	✓		4	grab	624	<10	ND			
19. 1,1 Dichloroethane	✓		4	grab	624	<10	ND			
20. 1,2 Dichloroethane	✓		4	grab	624,	<10	ND			
21. 1,1 Dichloroethylene	✓		4	grab	624	<10	ND			
22. cis-1,2 Dichloro-ethylene	✓		4	grab	624,	<10	ND			
23. Dichloromethane (Methylene Chloride)	✓		4	grab	624,	<10	ND			
24. Tetrachloroethylene		✓	4	grab	624,	<10	0.99	0.0002	Neg.	

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	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	<10	ND			
26. 1,1,2 Trichloroethane	✓				624	<10	ND			
27. Trichloroethylene	✓				624	<10	ND			
28. Vinyl Chloride	✓				624	<10	ND			
29. Acetone	✓		4	grab	624	<10	ND			
30. 1,4 Dioxane	✓				8260	250	ND			
31. Total Phenols	✓									
32. Pentachlorophenol	✓									
33. Total Phthalates ⁵ (Phthalate esters)	✓									
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	✓									
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)							ND			
a. Benzo(a) Anthracene	✓		4	grab	8270	0.5	ND			
b. Benzo(a) Pyrene	✓		4	grab	8270	0.5	ND			
c. Benzo(b) Fluoranthene	✓		4	grab	8270	0.5	ND			
d. Benzo(k) Fluoranthene	✓		4	grab	8270	0.5	ND			
e. Chrysene	✓		4	grab	8270	0.5	ND			

⁵The sum of individual phthalate compounds.

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	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	✓		4	grab	8270	0.05	ND			
g. Indeno(1,2,3-cd) Pyrene	✓	✓	4	grab	8270	0.05	ND			
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	✓						ND			
h. Acenaphthene	✓		4	grab	8270	5.5	ND			
i. Acenaphthylene	✓		4	grab	8270	5.5	ND			
j. Anthracene	✓		4	grab	8270	5.5	ND			
k. Benzo(ghi) Perylene	✓		4	grab	8270	5.5	ND			
l. Fluoranthene	✓		4	grab	8270	5.5	ND			
m. Fluorene	✓		4	grab	8270	5.5	ND			
n. Naphthalene-	✓		4	grab	8270	5.5	ND			
o. Phenanthrene	✓		4	grab	8270	5.5	ND			
p. Pyrene	✓		4	grab	8270	5.5	ND			
37. Total Polychlorinated Biphenyls (PCBs)	✓									
38. Antimony	✓		2	grab	6020	0.0005	ND			
39. Arsenic		✓	2	grab	6020	0.0005	1.4E-5	Neg.	Neg.	
40. Cadmium	✓		2	grab	6020	0.0005	ND			
41. Chromium III	✓		2	grab	6020	0.0005	2E-5	Neg.	Neg.	
42. Chromium VI	✓		2	grab	6020	0.0005	ND			

PARAMETER	Believe Absent	Believe Present	# of Samples (1 minimum)	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	6010	0.0005	2E-5	Neg.	Neg.	
44. Lead	✓		4	grab	6010	0.0005	1E-5	Neg.	Neg.	
45. Mercury	✓		4	grab	6010	0.0002	ND			
46. Nickel		✓	2	grab	6010	0.0005	2E-6	3.8E-10	Neg.	
47. Selenium	✓		2	grab	6010	0.001	ND			
48. Silver	✓		2	grab	6010	0.007	ND			
49. Zinc		✓	2	grab	6010	0.005	1.1E-	1.9E-8	Neg.	
50. Iron										
Other (describe):										

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

<i>Step 1:</i> 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 <u>✓</u>	If yes, which metals?
<i>Step 2:</i> 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: _____ DF: <u>116</u>	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 <u>✓</u> If "Yes," list which metals:

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

a) A description of the treatment system, including a schematic of the proposed or existing treatment system: Active carbon filtration and cyanide destruction systems - see text and Figure 4.						
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):			
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 <u>40</u> Maximum flow rate of treatment system <u>60</u> Design flow rate of treatment system <u>150</u>						
d) A description of chemical additives being used or planned to be used (attach MSDS sheets): Hypochlorine (bleach) and pH adjustment solutions (see text and Figure 4)						

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: Treated water discharge into storm drain which discharges into the Charles River.						

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 <u>B</u>
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water <u>15.5</u> 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 <u> </u> No <u>✓</u> If yes, for which pollutant(s)? Is there a TMDL? Yes <u> </u> No <u>✓</u> 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 <u> </u> No <u>✓</u> Has any consultation with the federal services been completed? No <u>✓</u> or is consultation underway? Yes <u> </u> No <u> </u> 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? <u> </u> or written concurrence <u> </u> 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 <u> </u> No <u>✓</u> Have any state or tribal historic preservation officer been consulted in this determination (Massachusetts only)? Yes <u> </u> No <u>✓</u>

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.
See enclosed text, figures, tables, laboratory data sheets

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: Media Lab Expansion - Massachusetts Institute of Technology

Operator signature:



Title:

Program Manager

Date:

10/17/06



PERMIT TO DEWATER

Location: 71 Amherst Street
Owner: Massachusetts Institute of Technology
Contractor: _____

Temporary ☒
Permanent ☐

The property owner, Massachusetts Institute of Technology agrees to hold harmless and indemnify the City of Cambridge for any liability on the part of the City directly or indirectly arising out of the dewatering operation.

The issuance of this permit is based in part in the submission packet of the applicant with documentation as follows:

Construction Site Dewatering Discharge Permit Application, 71 Amherst Street, Cambridge, MA

In addition, the application has been reviewed by the City under third party agreement as documented in the following reports:

All activities conducted in conjunction with the issuance of this permit must be in accordance with the provisions of the aforementioned reports. Any deviations in conditions must be reported to and approved by the Commissioner of Public Works.

This permit is in addition to any other street permit issued by the Department in connection with any street excavation or obstruction; and all conditions as specified in the Discharge Permit for Dewatering.

For the entire period of time the groundwater is being discharged to a storm drain, the property owner shall provide copies of each Discharge Monitoring Report Form submitted to the EPA, pursuant to the owner's discharge permit.

If in the future the EPA requires the City of Cambridge to bring existing stormwater drainage into compliance with EPA quality standards, as a condition to the continuation of discharge of that stormwater (also including groundwater) into an EPA regulated system into which the Massachusetts Inst. of Technology (property owner) drains, the owner will agree to maintain its water discharge with such EPA water quality standards.

The property owner and contractor shall at all times meet the conditions specified in the requisite legal agreement/affidavits.

All groundwater pumped from the work shall be disposed of without damage to pavements, other surfaces or property.

Where material or debris has washed or flowed into or has been placed in existing gutters, drains, pipes or structures, such material or debris shall be entirely removed and satisfactorily disposed of by the

Contractor during the progress of work as directed by the Public Works Department.

Any flooding or damage of property and possessions caused by siltation of existing gutters, pipes or structures shall be the responsibility of the Contractor.

Provisions shall be made to insure that no material, water or solid, will freeze on any pavement or in any location which will cause inconvenience or hazard to the general public.

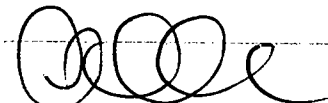
Upon completion of the work, existing gutters, drains, pipes and structures shall be (bucket) cleaned and material disposed of satisfactorily prior to release by the Public Works Department.

Any permit issued by the City of Cambridge shall be revoked upon transfer of any ownership interest unless and until subsequent owner(s) or parties of interest agree to the foregoing terms.

This permit shall remain in effect for one year and shall be renewable thereafter at the agreement of the parties.

The following special conditions as set forth below are part of the permit.

City Manager



Property Manager: Corporate Entity
President, General Partner or Trustee
Trustee with Instrument of Authority

Date

14/17/06

Date

City Solicitor

Contractor

Date

Date

Commissioner of Public

Contractor

Date

Date

CC: Engineering
Supervisor of Sewer Maintenance and Engineering
Superintendent of Streets
Commissioner of Inspectional Services



APPENDIX B

McPhail Associates Environmental Assessment Reports



APPENDIX C

Test Boring Logs

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: A-1

Project: MIT

Project #: 3460

Project Address:

City: CAMBRIDGE

State: MA Zip:

Date Start: 9/29/00

Date End: 9/29/00

Location: See Plan

Casing: H-S-A

Sampler:

Casing: 4-1/4" ID

Sampler:

Type

S/S

Size:

13/8 in. I.D.

Hammer:

140 lbs.

Fall:

30 in.

GROUNDWATER OBSERVATION

Date:
9/29

Depth: 12'

Casing: out

Stabilization Per.
Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	.5'-4'	48"	2.8'			0-.5' CONCRETE SLAB
-							S-1: Brown, sand, some gravel, some silt with ash. (FILL)
-	S-2	4'-8'	48"	0"			S-2: Stone in tip of spoon
5'							Could not move boring location due to asbestos tiles.
-	S-3	8'-9'	48"	.7'		9'	S-3: Brown, sand, some gravel, some silt.
-	S-3A	9'-12'	48"	1.2'			(FILL)
10'							S-3A: Gray, organic silt and sand with shells, (Organic Deposit)
-	S-4	12'-16'	48"	1'			S-4: Gray, fine to coarse sand, some organic silt with shells. (Organic Deposit)
-							
15'	S-5	16'-19.5'	48"	.5'			S-5: Gray, organic silt, trace sand with shells. (Organic Deposit)
-							
-	S-6	19.5'-20'	48"	.5'		19.5'	S-5A: 19.5'-20' Gray, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
20'							TERMINATED BORING AT 20'
-							
-							TERMINATED BORING AT 20'
-							
25'							
-							
-							
30'							

Driller: D.THOMPSON

Helper: R.FIELD

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.

Fax: (603) 437-0034

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: A-2

Project: MIT

Project #: 3460

Project Address:

City: CAMBRIDGE

State: MA Zip:

Date Start: 10/3/00

Date End: 10/3/00

Location: See Plan

Casing: H-S-A

Sampler:

Casing: 4-1/4" ID

Sampler:

Type

S/S

Size:

13/8 in. I.D.

Hammer:

140 lbs.

Fall:

30 in.

GROUNDWATER OBSERVATION

Date:
10/3

Depth: 12'

Casing: out

Stabilization Per.
Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	5'-4'	48"	2.9'			0-5' CONCRETE SLAB
-							S-1: Brown silt, gravel and sand with concrete brick. (FILL)
-	S-2	4'-6'	48"	1'			S-2: Brown, silt, gravel, sand, trace clay with concrete, brick and trace asphalt. (FILL)
5'	S-2A	6'-8'	48"	1.2'		6'	S-2A: Brown, stratified fine sand, trace silt. (Alluvium Deposit)
-	S-3	8'-12'	48"	2.3'		8'	S-3: Gray, organic silt and fine to coarse sand with shells. (Organic Deposits)
-							
10'	S-4	12'-16'	48"	3'			S-4: Gray, organic silt and fine to coarse sand with shells. (Organic Deposit)
-							
-	S-5	16'-20'	48"	1.3'			S-5: Gray, fine to coarse sand, some organic silt with shells. (Organic Deposit)
-							
-	S-6	20'-24'	48"	1.7'		20'	S-6: Brown, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
20'							TERMINATED BORING AT 24'
-							
-							
-							
-							
25'							
-							
-							
-							
-							
30'							

Driller: K.SMITH

Helper: J.LEFEBVRE

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: A-3

Project: MIT

Project #: 3460

Project Address:

City: CAMBRIDGE

State: MA Zip:

Date Start: 9/11/00

Date End: 9/11/00

Location: See Plan

Casing: H-S-A

Sampler:

Casing: 4-1/4" ID

Sampler:

Type

S/S

Size:

13/8 in. I.D.

Hammer:

140 lbs.

Fall:

30 in.

GROUNDWATER OBSERVATION

Date: 9/11	Depth: 9'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	2"-4'	48"	1.5'			0-2" BRICK
-							S-1: Brown, sand, some gravel, trace silt with brick and ash. (FILL)
-	S-2	4'-8'	48"	3.7'			S-2: Brown, sand, some gravel, some silt with brick, shells and trace ash. (FILL)
5'							
-							
-	S-3	8'-12'	48"	2'		8'	S-3: Gray, sand, trace to some gravel, trace to some organic silt with shells. (Organic Deposits)
10'							
-	S-4	12'-16'	48"	3'			S-4: Gray, organic silt, some sand, trace gravel with shells. (Organic Deposits)
-							
15'	S-5	16'-20'	48"	4'			S-5: Gray, organic silt, some sand with shells. (Organic Deposits)
-							
-	S-6	20'-22'	48"	1.5'			S-6: Gray/brown sand and organic silt with shells and peat fibers. (Organic Deposit)
20'							
-	S-6A	22'-24'	48"	.5'		22'	S-6A: Gray fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
-							TERMINATED BORING AT 24'
25'							
-							
-							
-							
30'							

Driller: K.SMITH

Helper: J.LEFEBVRE

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: A-4 (OW)		Project: MIT		Project #: 3460			
Project Address:		City: CAMBRIDGE		State: MA		Zip:	
Date Start: 9/11/00		Date End: 9/11/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUND WATER OBSERVATION							
Date: 9/11	Depth: 8.5'-9'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	8'-5'-2.5'	24"	8"	8-6 14-12		.5'-ASPHALT/CRUSHED STONE
-							S-1: Compact, brown, sand, some gravel, trace silt with ash and cinder. (FILL)
5'	S-2	5'-7'	24"	12"	8-5 10-13		S-2: Compact, gray, sand, trace gravel, trace silt with shells. (FILL)
-							
10'	S-3	10'-12'	24"	13"	5-5 6-4	10'	S-3: Compact, gray, sand, some gravel, some organic silt with shells.
-							
15'	S-4	15'-17'	24"	10"	3-4 3-2		S-4: Loose, gray, organic silt, some sand, trace gravel with shells. (Organic Deposit)
-							
20'	S-5	20'-22'	24"	24"	3-6 7-13	20'	S-5: Compact, brown, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
-							
-							TERMINATED BORING AT 22'
25'							Installed 2" PVC well at 15'
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

Fax: (603) 437-0034

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: A-5

Project: MIT

Project #: 3460

Project Address:

City: CAMBRIDGE

State: MA Zip:

Date Start: 9/11/00

Date End: 9/11/00

Location: See Plan

Casing: H-S-A

Sampler:

Casing: 4-1/4" ID

Sampler:

Type

S/S

Size:

13/8 in. I.D.

Hammer:

140 lbs.

Fall:

30 in.

GROUND WATER OBSERVATION

Date: 9/11	Depth: 9'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	16"	6-10 11-8		S-1: Compact, brown, sand, some gravel, some silt with roots and trace brick and ash. (FILL)
-							
5'	S-2	5'-7'	24"	16"	9-12 9-5		S-2: Compact, brown; gravelly sand, trace to some silt with shells. (FILL)
-							
-							
10'	S-3	10'-12'	24"	11"	1-2 3-3	10'	S-3: Loose, gray, sandy, organic silt, trace gravel with shells. (Organic Deposits)
-							
-							
15'	S-4	15'-17'	24"	12"	9-12 15-12		S-4: Compact, gray, sand and organic silt with shells. (Organic Deposits)
-							
-							
20'	S-5	20'-22'	24"	18"	6-10 16-12	20'	S-5: Compact, gray, fine to coarse sand, trace to some gravel, trace to some silt. (Glacial Outwash)
-							TERMINATED BORING AT 22'
-							
25'							
-							
-							
-							
30'							

Driller: K.SMITH

Helper: J.LEFEBVRE

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: A-6		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/12/00		Date End: 9/12/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/12	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	12"	3-25 23-23	9.5'	S-1: Dense, brown, gravelly sand, trace to some silt with roots and brick. (FILL)
-							
-							
5'	S-2	5'-7'	24"	10"	11-11 6-5		S-2: Compact, brown, gravelly sand, trace to some silt. (FILL)
-							
-							
-							
10'	S-3	10'-12'	24"	12"	4-1 2-5	S-3: Very loose, gray, stratified organic silt, trace gravel with shells. (Organic Deposits)	
-							
-							
15'	S-4	15'-17'	24"	7"	9-4 3-3		S-4: Loose, gray, sand, trace to some gravel, trace to some silt with shells. (Alluvium Deposits)
-							
-							
20'	S-5	20'-22'	24"	12"	5-5 5-10		S-5: Loose to compact, brown, fine to medium sand with peat fibers. (Alluvium Deposits)
-							
-							
25'	S-6	25'-27'	24"	7"	6-10 23-20		S-6: Dense, gray, fine to medium sand, trace gravel, trace silt. (Alluvium Deposits)
-							
-							
30'	S-7	30'-32'	24"	0"	TUBE		S-7: Tried shelby tube, No recovery. (sand in wash)
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks: PAGE 1 OF 4							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.
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Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: A-6		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/12/00		Date End: 9/12/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/12	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-						32.5'	
-	S-8	33'-35'	24"	24"	4-3		S-8: Firm, greyish yellow, silty
-					3-2		clay. (Marine Deposit)
35'	S-9	35'-37'	24"	19"	TUBE		S-9: Shelby tube sample
-							
-							
-							
40'	S-10	40'-42'	24"	24"	TUBE		S-10: Shelby tube sample
-							
-	S-11	42'-44'	24"	24"	4-3		S-11: Firm to stiff, gray, silty clay.
-					5-7		(Marine Deposit)
-							
45'							
-							
-							
-							
50'	S-12	50'-52'	24"	24"	TUBE		S-12: Shelby tube sample
-							
-	S-13	52'-54'	24"	24"	3-3		S-13: Firm, gray, silty clay.
-					4-6		(Marine Deposit)
-							
55'							
-							
-							
-							
60'	S-14	60'-62'	24"	24"	TUBE		S-14: Shelby tube sample
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks: PAGE 2 OF 4							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

Fax: (603) 437-0034

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: A-6		Project: MIT				Project #: 3460	
Project Address:				City: CAMBRIDGE		State: MA Zip:	
Date Start: 9/12/00		Date End: 9/12/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/12	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-15	62'-64'	24"	24"	4-5 6-8		S-15: Stiff, gray, silty clay. (Marine Deposit)
65'							
70'	S-16	70'-72'	24"	24"	WOR/12" 2-3		S-16: Very soft, gray, silty clay. (Marine Deposit)
75'	S-17	75'-77'	24"	24"	TUBE		S-17: Shelby tube sample
-	S-18	77'-79'	24"	24"	4-6 7-7		S-18: Stiff, gray, silty clay. (Marine Deposit)
80'							
85'	S-19	85'-87'	24"	24"	WOR/12" 4-4		S-19: Soft to firm, gray, silty clay. (Marine Deposit)
90'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks: PAGE 3 OF 4							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

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Derry, NH 03038
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Fax: (603) 437-0034

Boring #: A-6		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/12/00		Date End: 9/12/00		Location: See Plan			
Casing: H-S-A		Sampler: S/S		Casing: 4-1/4" ID		Sampler: 13/8 in. I.D.	
Type Hammer:		140 lbs.		Size: Fall:		30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/12	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
95'	S-20	95'-97'	24"		TUBE	95'	S-20: Shelby tube.
-							Not a full recovery due to gravel in sample.
-	S-21	97'-99'	24"	20"	13-23	97.5'	S-21: Very dense, gray, well graded mixture
-					30-30		of silt, sand and gravel. (Glacial Till)
-							
100'	S-22	100'-102'	24"	14"	26-70		S-22: Same as S-21. with pieces of weathered
-					35-31		rock. (Glacial Till)
-							TERMINATED BORING AT 102'
-							
105'							
-							
-							
-							
110'							
-							
-							
-							
115'							
-							
-							
-							
120'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks: PAGE 4 OF 4							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

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Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: A-7	Project: MIT	Project #: 3460
Project Address:	City: CAMBRIDGE	State: MA Zip:
Date Start: 9/7/00	Date End: 9/7/00	Location: See Plan

Casing: H-S-A Type Hammer:	Sampler: S/S 140 lbs.	Casing: 4-1/4" ID Size: Fall:	Sampler: 13/8 in. I.D. 30 in.
----------------------------------	-----------------------------	-------------------------------------	-------------------------------------

GROUNDWATER OBSERVATION

Date: 9/7	Depth:		Casing: out				Stabilization Per. Upon Completion
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	1'-3'	24"	14"	26-15 18-20		2" THICK CONCRETE PAVERS S-1: Dense, light brown, medium to fine sand, trace silt. (FILL)
-							
5'	S-2	5'-7'	24"	19"	4-7 7-5	5'	S-2: Compact, brown, stratified fine sand, trace silt. (Alluvium Deposits)
-						7'	
-							
10'	S-3	10'-12'	24"	18"	1-2 4-5		S-3: Loose, gray, sand, some organic silt, trace gravel with shells. (Organic Deposit)
-							
-							
15'	S-4	15'-17'	24"	18"	2-2 2-5		S-4: Very loose to loose, gray, sand, trace gravel, trace silt with shells with a 3" layer of organic silt with shells. (Organic Deposit)
-							
-							
20'	S-5	20'-22'	24"	14"	1-1 1-3		S-5: Very loose, dark gray, organic silt, trace sand, with shells. (Organic Deposit)
-						23'	
-							
25'	S-6	25'-27'	24"	18"	4-7 21-91		S-6: Compact, gray, fine to medium sand, trace gravel, trace silt. (Glacial Outwash)
-							TERMINATED BORING AT 27'
-							
-							
30'							

Driller: K.SMITH

Helper: J.VOIGHT

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
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Fax: (603) 437-0034

Boring #: A-8		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/6/00		Date End: 9/06/00		Location: See Plan			
Casing: H-S-A		Sampler: S/S		Casing: 4-1/4" ID		Sampler: 13/8 in. I.D.	
Type Hammer:		140 lbs.		Fall:		30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/6	Depth: 8'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	14"	7-14		GRASS
-					18-18		S-1: Dense, dark brown, sand and gravel, some silt, trace brick. (FILL)
-							
5'	S-2	5'-7'	24"	14"	5-5		S-2: Loose, brown, gravelly sand, some silt, trace brick. (FILL)
-					4-7		
-							
10'	S-3	10'-12'	24"	8"	1-1	10'	S-3: Loose, gray, coarse to fine sand, some silt and gravel, trace shells. (Marine Sand.)
-					3-1		
-							
15'	S-4	15'-17'	24"	24"	1-1	15'	S-4: Soft, gray/brown, organic silt. (Organics)
-					1-1		
-							
20'	S-5	20'-22'	24"	24"	1-1		S-5: Same as above
-					1-1		
-							
-							
25'							TERMINATED BORING AT 22'
-							
-							
30'							
Driller: G.Twombly			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

Fax: (603) 437-0034

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: B-1		Project: MIT				Project #: 3460	
Project Address:				City: CAMBRIDGE		State: MA Zip:	
Date Start: 9/29/00		Date End: 9/29/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUND WATER OBSERVATION							
Date: 9/29	Depth: 11.5'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	5'-4'	48"	2'			0-.5' - CONCRETE SLAB
-							S-1: Brown, silty gravelly sand with ash and brick. (FILL)
-	S-2	4'-7'	48"	1.5'			S-2: Brown, sand, some gravel, some silt with shells. (FILL)
5'						7'	
-	S-2A	7'-8'	48"	.8'			S-2A: Gray, organic silt, trace fine sand. (Organic Deposit)
-	S-3	8'-12'	48"	3.2'			S-3: Gray, fine to coarse sand, some organic silt with shells. (Organic Deposit)
10'							
-	S-4	12'-16'	48"	2.1'			S-4: Gray, fine to coarse sand, some organic silt with shells. (Organic Deposit)
-							
15'							
-	S-5	16'-20'	48"	1.9'			S-5: Gray, organic silt, trace to some sand with shells. (Organic Deposit)
-							
20'	S-6	20'-22'	48"	.4'		20'	S-6: Dense, to very dense, brown, fine to coarse sand, trace to some gravel, trace silt. (Glacial Outwash)
-							
-							
-							
25'							TERMINATED BORING AT 22'
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: B-2		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/20/00		Date End: 9/20/00		Location: See Plan			
Casing: H-S-A		Sampler: S/S		Casing: 4-1/4" ID		Sampler: 13/8 in. I.D.	
Type Hammer:		140 lbs.		Size: Fall:		30 in.	
GROUNDWATER OBSERVATION							
Date: 9/20	Depth: 11.5'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-4'	48"	1'			0-5' CONCRETE SLAB
-							S-1: Brown, silty gravelly sand and trace brick. (FILL)
-	S-2	4'-6'	48"	1.2'			S-2: Brown, silty gravelly sand. (FILL)
5'	S-2A	6'-8'	48"	1.2'		6'	S-2A: Brown, stratified fine to medium sand, trace gravel, trace silt. (ALLUVIUM DEPOSIT)
-							
-	S-3	8'-12'	48"	3.1'		8'	S-3: Gray, organic silt and sand with shells. (Organic Deposit)
-							
10'							
-	S-4	12'-16'	48"	2.8'			S-4: Gray, organic silt and sand with shells. (Organic Deposit)
-							
-							
15'							
-	S-5	16'-20'	48"	4'			S-5: Gray, fine to coarse sand, trace gravel with at 8" layer of organic silt with shells. (Organic Deposit)
-							
-							
20'	S-6	20'-24'	48"	3.5'		20'	S-6: Dense, brown, fine to coarse sand, trace to some gravel, trace silt. (Glacial Outwash)
-							TERMINATED BORING AT 24'
-							
-							
25'							
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

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P.O. Box 165

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E-Mail: nhb@nhboring

Boring #: B-3		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/8/00		Date End: 9/8/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUND WATER OBSERVATION							
Date: 9/8	Depth: 9'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	12"	9-10		3" Asphalt Pavement
-					7-9		S-1: Compact, gray/brown, silty sand, some gravel. (FILL)
5'	S-2	5'-5'4"	4"	4"	50/4"		S-2: Very dense, brown, sand and gravel, brick/mortar. (FILL)
-	S-2A	5'-7'	24"	14"	10-7		Steam pipe obstruction 5'4"
-					9-4		Moved hole 2'6" West
-							Steam pipe obstruction at 5'4"
10'	S-3	10'-12'	24"	8"	4-4	10'	Moved hole 3' West
-					2-3		S-2A: Compact, brown/gray, sand and silt, trace gravel.
-						14'	S-3: Loose, gray, coarse to medium sand, gravel, trace silt and shells. (Marine Sand)
15'	S-4	15'-17'	24"	20"	1-1		S-4: Soft, gray/brown, organic silt, trace fine sand, shells. (Organic)
-					1-1		
-						18'	
20'	S-5	20'-22'	24"	20"	7-12		S-5: Very dense, gray, coarse to medium sand, trace silt. (Marine Sand)
-					34-55		TERMINATED BORING AT 22'
-							
-							
-							
25'							
-							
-							
-							
30'							
Driller: G.Twombly			Helper: J.Lefebvre			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.
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Fax: (603) 437-0034

Boring #: B-4		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/8/00		Date End: 9/8/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUNDWATER OBSERVATION							
Date: 9/8	Depth: 9'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	8"	5-7 12-14		3" Asphalt Pavement
-							S-1: Compact, brown/black, silty sand, some gravel, trace brick, cinders, rubble. (FILL)
5'	S-2	5'-7'	24"	10"	6-9 3-2		S-2: Compact, brown, silty sand, trace gravel, shells. (FILL)
-							
-							
10'	S-3	10'-12'	24"	10"	4-4 5-7	10'	S-3: Loose, gray, coarse to fine sand, some gravel and silt, trace organic silt, shells. (Marine Sand)
-							
-							
15'	S-4	15'-17'	24"	12"	1-3 4-10	14'	S-4: Loose, gray, coarse to medium sand, some gravel and organic silt, trace shells. (Sand/organics)
-							
-							
20'	S-5	20'-22'	24"	20"	3-4 6-8	18'	S-5: Compact, brown, coarse to fine sand, some gravel, trace silt. (Marine Sand)
-							TERMINATED BORING AT 22'
-							
-							
25'							
-							
-							
-							
30'							
Driller: G.Twombly			Helper: J.Lefebvre			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

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E-Mail: nhb@nhboring

Boring #: B-5		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/11/00		Date End: 9/11/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/11	Depth: 8.5'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	.5'-2.5'	24"	4"	6-7 7-8		0-.5' ASPHALT and CRUSHED STONE S-1: Compact, gray, gravelly sand, trace to some silt with brick. (FILL)
5'	S-2	5'-7'	24"	6"	21-5 6-7	5' 7.5'	S-2: Compact, tan, stratified fine sand. (Alluvium Deposit)
10'	S-3	10'-12'	24"	12"	7-4 5-5		S-3: Loose, gray, sand and organic silt, trace gravel with shells. (Organic Deposit)
15'	S-4	15'-17'	24"	19"	3-1 1-3		S-4: Very loose, gray, sand and organic silt with shells. (Organic Deposits)
20'	S-5	20'-22'	24"	24"	8-10 14-10	20'	S-5: Compact, gray, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash) TERMINATED BORING AT 22'
25'							
30'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

Fax: (603) 437-0034

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: B-6

Project: MIT

Project #: 3460

Project Address:

City: CAMBRIDGE

State: MA Zip:

Date Start: 9/11/00

Date End: 9/11/00

Location: See Plan

Casing: H-S-A

Sampler:

Casing: 4-1/4" ID

Sampler:

Type

S/S

Size:

13/8 in. I.D.

Hammer:

140 lbs.

Fall:

30 in.

GROUNDWATER OBSERVATION

Date:	Depth: 9'	Casing: out	Stabilization Per.
9/11			Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0-4'	24"	3'			S-1: Brown, sand, some gravel, some silt with roots, brick, glass, ash and cinder. (FILL)
-							
-	S-2	4'-8'	24"	2.7'			S-2: Brown, sand, some gravel, some silt with brick shells and ash. (FILL)
5'							
-							
-	S-3	8'-12'	24"	3'		8'	S-3: Gray, organic silt, some sand with shells. (Organic Deposit)
-							
10'							
-	S-4	12'-16'	24"	2'			S-4: Gray, sand, some silt, trace gravel with shells. (Organic Deposit)
-							
15'							
-	S-5	16'-20'	24"	3.8'			S-5: Gray/brown, organic silt with peat fibers, some sand. (Organic Deposit)
-							
-							
20'	S-6	20'-24'	24"	4'		20'	S-6: Gray, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
-							
-							
-							
25'							TERMINATED BORING AT 24'
-							
-							
-							
30'							

Driller: K.SMITH

Helper: J.LEFEBVRE

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

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E-Mail: nhb@nhboring

Boring #: B-7		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/6/00		Date End: 9/06/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUNDWATER OBSERVATION							
Date: 9/6	Depth: 8'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	10"	7-10 12-12		GRASS
-							S-1: Compact, brown, gravelly sand, some silt, trace loam. (FILL)
5'	S-2	5'-7'	24"	12"	10-7 8-9		S-2: Compact, light brown, medium to fine sand, trace silt. (FILL)
-							
10'	S-3	10'-12'	24"	10"	5-5 2-5	9'	S-3: Loose, gray, coarse to medium sand and gravel, some silt, trace shells. (MARINE SAND)
-							
15'	S-4	15'-17'	24"	8"	2-2 2-4	14'	S-4: Loose, brown, silty sand, some gravel, trace organic silt, shells. (MARINE DEPOSITS)
-							
20'	S-5	20'-22'	24"	16"	3-4 13-16	19'	S-5: Compact, gray/brown, coarse to fine sand, some silt, trace gravel. (MARINE SAND)
-							
25'							TERMINATED BORING AT 22'
-							
30'							
Driller: G.Twombly			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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E-Mail: nhb@nhboring

Boring #: B-8		Project: MIT		Project #: 3460			
Project Address:				City: CAMBRIDGE		State: MA Zip:	
Date Start: 9/6/00		Date End: 9/06/00		Location: See Plan			
Casing: H-S-A		Sampler:		Casing: 4-1/4" ID		Sampler:	
Type		S/S		Size:		13/8 in. I.D.	
Hammer:		140 lbs.		Fall:		30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/6	Depth: 8'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	10"	2-2		GRASS
-					3-4		S-1: Loose, brown sand, some silt and gravel, trace loam. (FILL)
5'	S-2	5'-7'	24"	2"	15-5		S-2: Compact, brown, silty sand, trace gravel, loam. (FILL)
-					7-5		
10'	S-3	10'-12'	24"	20"	1-2	10'	S-3: Softy, gray, organic silt, trace sand, shells. (Organics)
-					1-2		
15'	S-4	15'-17'	24"	18"	2-4	15'	S-4: Loose, gray/brown, coarse to fine sand, some silt and gravel, trace shells. (Marine Sand)
-					3-4		
20'	S-5	20'-22'	24"	24"	1-1	19'	S-5: Softy, gray, organic silt. (Organics)
-					1-1		
-							TERMINATED BORING AT 22'
25'							
-							
-							
30'							
Driller: G.Twombly			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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E-Mail: nhb@nhboring

Boring #: C-1		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 10/3/00		Date End: 10/3/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUNDWATER OBSERVATION							
Date: 10/3	Depth: 12.2'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	5'-4'	48"	.8'			0-5' CONCRETE SLAB
-							S-1: Brown, sand, some gravel, some silt with brick, concrete and ash. (FILL)
-	S-2	4'-6'	48"	1'			S-2: Brown, sand, some gravel, some silt with brick and ash. (FILL)
5'	S-2A	6'-8'	48"	1.8'		6'	S-2A: Brown, stratified fine sand, trace silt. (ALLUVIUM DEPOSIT)
-	S-3	8'-12'	48"	3'		8'	S-3: Gray, fine to coarse sand, trace gravel, trace to some organic silt with shells. (Organic Deposit)
-							
10'	S-4	12'-16'	48"	1.1'			S-4: Gray, organic silt and fine to coarse sand with shells and fibers. (Organic Deposit)
-							
15'	S-5	16'-20'	48"	3.4'			S-5: Gray, organic silt, some fine to coarse sand with shells and fibers. (Organic Deposit)
-							
-	S-6	20'-24'	48"	2.9'		20'	S-6: Brown, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
20'							TERMINATED BORING AT 24'
-							
-							
-							
25'							
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.VOIGHT			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: C-2

Project: MIT

Project #: 3460

Project Address:

City: CAMBRIDGE

State: MA Zip:

Date Start: 10/3/00

Date End: 10/3/00

Location: See Plan

Casing: H-S-A

Sampler:

Casing: 4-1/4" ID

Sampler:

Type

S/S

Size:

13/8 in. I.D.

Hammer:

140 lbs.

Fall:

30 in.

GROUNDWATER OBSERVATION

Date: 10/3	Depth: 12'		Casing: out				Stabilization Per. Upon Completion
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	.5'-3'	48"	.9'			0-.5' CONCRETE SLAB
-	S-1A	3'-4'	48"	1.2'			S-1: Brown, silty gravelly sand. (FILL)
-						3'	S-1A: Brown, silt, trace sand, trace gravel, trace clay. (Alluvium Deposit)
-	S-2	4'-8'	48"	1.8'			S-2: Brown, stratified fine sand, trace gravel, trace silt. (Alluvium Deposit)
5'							
-							
-	S-3	8'-12'	48"	2.2'		8'	S-3: Gray, fine to coarse sand, some gravel with a 4" layer of organic silt with shells. (Organic Deposit)
10'							
-							
-	S-4	12'-16'	48"	1.9'			S-4: Gray, fine to coarse sand, some gravel, trace organic silt with shells. (Organic Deposit)
-							
15'							
-	S-5	16'-20'	48"	3.5'			S-5: Dark brown, organic silt, some fine to coarse sand with peat fibers. (Organic Deposit)
-							
-							
20'	S-6	20'-24'	48"	2'		20'	S-6: Gray, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
-							
-							
-							
-							
25'							TERMINATED BORING AT 24'
-							
-							
-							
-							
30'							

Driller: K.SMITH

Helper: J.VOIGHT

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

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E-Mail: nhb@nhboring

Boring #: C-3 (OW)		Project: MIT		Project #: 3460			
Project Address:				City: CAMBRIDGE		State: MA Zip:	
Date Start: 9/8/00		Date End: 9/8/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUNDWATER OBSERVATION							
Date: 9/8	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							3" Asphalt Pavement
5'	S-1	5'-7'	24"	8"	5-7 7-6		S-1: Compact, brown, silty sand, trace gravel. (FILL)
10'	S-2	10'-12'	24"	12"	9-10 7-9	10'	S-2: Compact, gray, gravelly sand, trace silt, shells. (Marine Sand)
15'	S-3	15'-17'	24"	22"	1-1 1-1	15'	S-3: Soft, brown/gray, organic silt, trace fine sand, shells. (Organics)
20'	S-4	20'-22'	24"	22"	10-9 14-36	18'	S-4: Compact, brown, coarse to medium sand, trace silt, gravel. (Marine Sand). TERMINATED BORING AT 22' Installed 2" PVC well at 15'
25'							
30'							
Driller: G.Twombly			Helper: J.Lefebvre			Inspector:	
Remarks: 2" PVC well installed at 15'. 10' schedule 80 pvc screen, 5' schedule 80 pvc riser pipe, 1 road box, bentonite, silica sand.							
S/#: Sample			PEN: Penetration		REC: Recovery		S/C: Strata Change

Phone: (603) 437-1610

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Boring #: C-4 Project: MIT Project #: 3460

Project Address: City: CAMBRIDGE State: MA Zip:

Date Start: 9/8/00 Date End: 9/8/00 Location: See Plan

Casing: H-S-A	Sampler:	Casing: 4-1/4" ID	Sampler:
Type	S/S	Size:	13/8 in. I.D.
Hammer:	140 lbs.	Fall:	30 in.

GROUNDWATER OBSERVATION

Date: 9/8	Depth: 9'		Casing: out				Stabilization Per. Upon Completion
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	10"	3-4		3" Asphalt Pavement
-					6-9		S-1: Compact, brown, silty sand, some gravel, trace shells.
-							
5'	S-2	5'-7'	24"	8"	20-11		S-2: Compact, brown,sand, some silt and gravel, trace shells. (FILL)
-					9-6		
-							
-							
10'	S-3	10'-12'	24"	18"	4-4	10'	S-3: Loose, gray, coarse to fine sand, some gravel, trace organic silt, shells. (Marine Sand)
-					4-5		
-							
-							
15'	S-4	15'-17'	24"	22"	1-1	14'	S-4: Firm, gray, organic silt, trace fine sand. (Organics)
-					4-4		
-							
-							
20'	S-5	20'-22'	24"	22"	5-9	18'	S-5: Compact, brown, coarse to fine sand, some silt, trace organic silt. (Marine Sand)
-					10-12		TERMINATED BORING AT 22'
-							
-							
-							
25'							
-							
-							
-							
-							
30'							
Driller: G.Twombly			Helper: J.Lefebvre			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration			REC: Recovery		S/C: Strata Change

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P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: C-5		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/6/00		Date End: 9/06/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:			
				Sampler: 13/8 in. I.D. 30 in.			
GROUNDWATER OBSERVATION							
Date: 9/6	Depth: 8'		Casing: out		Stabilization Per. Upon Completion		
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	8"	4-4		3" ASPHALT PAVEMENT
-					5-8		S-1: Loose, light brown, medium to fine sand, trace gravel, silt. (FILL)
5'	S-2	5'-7'	24"	14"	3-3		S-2: Loose, brown, silty fine sand. (FILL)
-					4-4		
10'	S-3	10'-12'	24"	10"	3-3	10'	S-3: Loose, gray, coarse to fine sand, some gravel and silt, trace shells. (MARINE SAND)
-					3-6		
15'	S-4	15'-17'	24"	22"	1-1	14'	S-4: Soft, dark brown, organic silt, some sand, trace gravel. (Organics)
-					2-4		
20'	S-5	20'-22'	24"	1"	3-3	19'	S-5: Loose, gray, coarse to medium sand, trace silt. (MARINE SAND)
-					6-8		
-							TERMINATED BORING AT 22'
25'							
-							
-							
-							
30'							
Driller: G.Twombly			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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Boring #: C-6		Project: MIT		Project #: 3460			
Project Address:		City: CAMBRIDGE		State: MA Zip:			
Date Start: 10/3/00		Date End: 10/3/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:			
				Sampler: 13/8 in. I.D. 30 in.			
G R O U N D W A T E R O B S E R V A T I O N							
Date: 10/3	Depth: 11.8'		Casing: out		Stabilization Per. Upon Completion		
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	.5'-4'	48"	3'			0-.5' CONCRETE SLAB
-							S-1: Brown, sand, some gravel, trace to some silt with ash and cinder. (FILL)
-	S-2	4'-8'	48"	1.2'			S-2: Brown, sand and gravel, trace silt with ash and cinder. (FILL)
5'							
-							
-	S-3	8'-12'	48"	1.3'		8'	S-3: Gray, organic silt and sand, trace gravel with shells. (Organic Deposit)
10'							
-							
-	S-4	12'-16'	48"	2'			S-4: Brown/dark gray organic silt with shells and fibers. (Organic Deposit)
-							
15'							
-	S-5	16'-19'	48"	2'			S-5: Gray, fine to coarse sand, trace organic silt with shells. (Organic Deposit)
-							
-	S-5A	19'-20'	48"	1'		19'	S-5A: Gray, fine to coarse sand, trace to some gravel, trace inorganic silt. (Glacial Outwash)
20'							TERMINATED BORING AT 20'
-							
-							
-							
25'							
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.VOIGHT			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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Boring #: C-7		Project: MIT				Project #: 3460	
Project Address:				City: CAMBRIDGE		State: MA Zip:	
Date Start: 9/6/00		Date End: 9/06/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUND WATER OBSERVATION							
Date: 9/6	Depth: 8'		Casing: out			Stabilization Per. Upon Completion	
DP	S.#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	8"	4-4		GRASS
-					4-6		S-1: Loose, dark brown, sand, some silt, trace gravel, loam. (FILL)
5'	S-2	5'-7'	24"	12"	5-6		S-2: Compact, brown, silty sand, some gravel. (FILL)
-					7-7		
10'	S-3	10'-12'	24"	16"	1-3	10'	S-3: Loose, gray, coarse to medium sand and soft organic silt. (sand/organics) trace shells.
-					4-1		
15'	S-4	15'-17'	24"	24"	1-1	15'	S-4: Soft, gray organic silt, some sand, trace shells. (Organics)
-					1-1		
20'	S-5	20'-22'	24"	14"	3-5	19'	S-5: Compact, brown, coarse to fine sand, some silt, trace gravel. (Organic Sand)
-					6-6		
-							TERMINATED BORING AT 22'
25'							
-							
-							
30'							
Driller: G.Twombly			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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Boring #: C-8		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/5/00		Date End: 9/5/00		Location: See Plan			
Casing: H-S-A		Sampler: S/S		Casing: 4-1/4" ID		Sampler: 13/8 in. I.D.	
Type Hammer:		140 lbs.		Size: Fall:		30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/5	Depth: 8'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'2"-2'	24"	20"	16-17	16'	Remove 2" thick Concrete Pavers
-					20-21		S-1: Dense, brown, gravelly sand, some silt. (FILL)
5'	S-2	5'-7'	24"	20"	10-19		S-2: Dense, gray/brown, silty sand, trace gravel. (FILL)
-					15-18		
-							
10'	S-3	10'-12'	24"	18"	6-1		S-3: Very loose, gray, fine sand and soft organic silt, trace shells. (FILL)
-					1-8		
-							
15'	S-4	15'-16'	12"	8"	5-1		S-4: Loose, brown, sand and gravel, some silt, trace creosote. (FILL)
-	S-4A	16'-17'	12"	20"	1-1		S-4A: Soft, gray, organic silt.
-							
-							
20'	S-5	20'-22'	24"	24"	1-1		S-5: Soft gray organic silt.
-					2-2		
-							TERMINATED BORING AT 22'
25'							
-							
-							
30'							
Driller: G.Twombly			Helper: J.Lefebvre			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

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E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: D-1		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 10/2/00		Date End: 10/2/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUNDWATER OBSERVATION							
Date: 10/2	Depth: 12'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	5'-4'	48"	2.3'			0-5' CONCRETE SLAB
-							S-1: Brown, sandy gravelly silt. (FILL)
-	S-2	4'-6'	48"	1'			S-2: Brown, sandy gravelly silt. (FILL)
5'							
-	S-2A	6'-8'	48"	1'		6'	S-2A: Brown, stratified fine sand, trace silt. (ALLUVIUM DEPOSIT)
-							
-	S-3	8'-12'	48"	2.9'		8'	S-3: Gray, fine to coarse sand and organic silt with shells. (Organic Deposits)
-							
10'							
-	S-4	12'-16'	48"	2.7'			S-4: Gray, fine to coarse sand, some organic silt with shells. (Organic Deposit)
-							
-							
15'							
-	S-5	16'-20'	48"	4'			S-5: Gray, organic silt and fine to coarse sand with shells and trace fibers. (Organic Deposit)
-							
-							
20'	S-6	20'-24'	48"	2.6'		20'	S-6: Gray, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
-							
-							
-							
-							
25'							TERMINATED BORING AT 24'
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: D-2

Project: MIT

Project #: 3460

Project Address:

City: CAMBRIDGE

State: MA Zip:

Date Start: 9/14/00

Date End: 9/14/00

Location: See Plan

Casing: H-S-A

Sampler:

Casing: 4-1/4" ID

Sampler:

Type

S/S

Size:

13/8 in. I.D.

Hammer:

140 lbs.

Fall:

30 in.

GROUNDWATER OBSERVATION

Date:
9/14

Depth: 10'

Casing: out

Stabilization Per.
Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	1'-3'	24"	16"	7-11		0'-7' CONCRETE SLAB
-					9-11		S-1: Compact, dark brown sand, some gravel, some silt with brick. (FILL)
-							
5'	S-2	5'-6'	12"	6"	11-9		S-2: Compact, brown, sand, some gravel, trace to some silt with brick and shells. (FILL)
-	S-2A	6'-7'	12"	4"	7-6	6'	S-2A: Compact, dark gray, organic silt and fine sand with shells. (Organic Deposit)
-							
10'	S-3	10'-12'	24"	14"	6-7		S-3: Compact, gray, sand, some gravel, some organic silt with shells. (Organic Deposit)
-					12-11		
-							
15'	S-4	15'-17'	24"	18"	5-5		S-4: Loose to compact, brown, organic silt and sand with fibers and shells. (Organic Deposit)
-					5-7		
-							
20'	S-5	20'-22'	24"	18"	15-15	20'	S-5: Dense, brown, sand, trace to some gravel, trace silt. (Glacial Outwash)
-					20-25		
-	S-6	22'-24'	24"	18"	15-18		S-6: Dense, brown, sand, trace gravel, trace silt. (Glacial Outwash)
-					24-30		
-							TERMINATED BORING AT 24'
25'							
-							
-							
-							
30'							

Driller: K.SMITH

Helper: J.VOIGHT

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.
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Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: D-3	Project: MIT	Project #: 3460
Project Address:	City: CAMBRIDGE	State: MA Zip:
Date Start: 9/21/00	Date End: 9/21/00	Location: See Plan

Casing: H-S-A Type Hammer:	Sampler: S/S 140 lbs.	Casing: 4-1/4" ID Size: Fall:	Sampler: 13/8 in. I.D. 30 in.
----------------------------------	-----------------------------	-------------------------------------	-------------------------------------

GROUNDWATER OBSERVATION

Date: 9/21	Depth:		Casing: out				Stabilization Per. Upon Completion
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	5'-4'	48"	25"			0-5' CONCRETE SLAB
-							S-1: Brown, gravelly sand, some silt.
-							(FILL)
-	S-2	4'-8'	48"	26"			S-2: Gray, gravelly sand, trace to some silt
5'							with shells. (FILL)
-							
-	S-3	8'-10'	48"	15"			S-3: Gray, gravelly sand, some silt with shells.
-							(FILL)
10'	S-3A	10'-12'	48"	15"		10'	S-3A: Brown, fine to coarse sand, trace gravel,
-							trace silt. (ALLUVIUM DEPOSIT)
-	S-4	12'-16'	48"	25"		12'	S-4: Gray, fine to medium sand, some silt, trace
-							to some gravel with shells. (Organic Deposit)
-							
15'							
-	S-5	16'-20'	48"	34"			S-5: Gray, organic silt and sand with shells.
-							(Organic Deposit)
-							
-							
20'	S-6	20'-22.3'	48"	29"			S-6: Gray, sand and organic silt with shells.
-							(Organic Deposit)
-	S-6A	22.3'-22.7'	48"	1.5"		22.3'	S-6A: Brown, sand, trace gravel, trace silt.
-							(Glacial Outwash)
-							TERMINATED BORING AT 22.7'
25'							
-							
-							
-							
-							
30'							

Driller: K.SMITH

Helper: J.LEFEBVRE

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

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E-Mail: nhb@nhboring

Boring #: D-4		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/27/00		Date End: 9/27/00		Location: See Plan			
Casing: H-S-A		Sampler:		Casing: 4-1/4" ID		Sampler:	
Type		S/S		Size:		13/8 in. I.D.	
Hammer:		140 lbs.		Fall:		30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/27	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	7'-4'	48"	2'			0-7' CONCRETE SLAB
-							S-1: Brown, sand, some gravel, some silt with shells and ash. (FILL)
-	S-2	4'-8'	48"	2'			S-2: Brown, silty sand, some gravel with shells. (FILL)
5'							
-							
-	S-3	8'-10'	48"	1.5'			S-3: Brown, silty sand, some gravel with shells. (FILL)
-							
10'	S-3A	10'-12'	48"	1.5'		10'	S-3A: Gray, fine to coarse sand, some organic silt with shells. (Organic Deposit)
-							
-	S-4	12'-16'	48"	2.5'			S-4: Gray, fine to coarse sand, trace to some organic silt with shells. (Organic Deposits)
-							
15'							
-	S-5	16'-19'	48"	1.8'			S-5: Dark brown, organic silt, some sand with shells. (Organic Deposits)
-							
-	S-5A	19.5'-20'	48"	0'		19'	S-5A: Lost sample when pulling rods.
20'	S-6	20'-23.5'	48"	3'			S-6: Gray, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
-							TERMINATED BORING AT 23.5'
-							
-							
25'							
-							
-							
-							
30'							
Driller: D.THOMPSON			Helper: J.VOIGHT			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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P.O. Box 165

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E-Mail: nhb@nhboring

Boring #: D-5

Project: MIT

Project #: 3460

Project Address:

City: CAMBRIDGE

State: MA Zip:

Date Start: 9/8/00

Date End: 9/8/00

Location: See Plan

Casing: H-S-A

Sampler:

Casing: 4-1/4" ID

Sampler:

Type

S/S

Size:

13/8 in. I.D.

Hammer:

140 lbs.

Fall:

30 in.

GROUNDWATER OBSERVATION

Date: 9/8	Depth: 9'		Casing: out				Stabilization Per. Upon Completion
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	20"	12-9		3" ASPHALT PAVEMENT
-					7-9		S-1: Compact, gray/black, silty sand, some gravel, trace cinders. (FILL)
5'	S-2	5'-7'	24"	4"	2-100/0"		S-2: Same as above. Except very dense augered through obstruction 5'6"-6'
-							
-							
10'	S-3	10'-12'	24"	14"	7-10	10'	S-3: Compact, sand and gravel, trace silt, shells. (MARINE SAND)
-					7-3		
-							
15'	S-4	15'-17'	24"	24"	1-1	15'	S-4: Soft, gray, organic silt, trace fine sand, gravel, shells. (Organics)
-					1-3	17'	
-							
20'	S-5	20'-22'	24"	20"	12-17		S-5: Dense, gray/brown, medium to fine sand, trace silt, gravel. (Marine Sand)
-					14-12		TERMINATED BORING AT 22'
-							
-							
25'							
-							
-							
-							
30'							

Driller: G.Twombly

Helper: J.Lefebvre

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

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Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: D-6		Project: MIT				Project #: 3460	
Project Address:				City: CAMBRIDGE		State: MA Zip:	
Date Start: 10/4/00		Date End: 10/4/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUNDWATER OBSERVATION							
Date: 10/4	Depth: 11.8'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	5'-4'	48"	.5'			0-5' CONCRETE SLAB
-							S-1: Brown, sand, some gravel, trace to some silt with concrete. (FILL)
-	S-2	4'-8'	48"	2.1'			S-2: Brown, silty gravelly sand with shells. (FILL)
5'							
-							
-	S-3	8'-12'	48"	1.2'		8'	S-3: Dark gray, organic silt and fine sand. (Organic Deposit)
-							
10'							
-	S-4	12'-16'	48"	.4'			S-4: Gray, organic silt. Organic silt on outside of spoon.
-							
15'							
-	S-5	16'-18'	48"	1.1'			S-5: Dark, gray, organic silt, some fine to medium sand with fibers. (Organic Deposit)
-							
-	S-5A	18'-20'	48"	1.4'		18'	S-5A: Brown, fine to coarse sand, trace to some gravel, trace silt. (GLACIAL OUTWASH)
-							
20'							TERMINATED BORING AT 20'
-							
-							
-							
25'							
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.VOIGHT			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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E-Mail: nhb@nhboring

Boring #: D-7		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/11/00		Date End: 9/11/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUND WATER OBSERVATION							
Date: 9/11	Depth: 11.7'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0-6'		1.4'			0-6' CONCRETE SLAB
-							S-1: Brown, sand, some gravel, some silt with brick, ash and shells. (FILL)
-	S-2	4'-8'		.6'			S-2: Brown, sand, some gravel, trace silt. (FILL)
5'							
-							
-	S-3	8'-12'		1.1'		8'	S-3: Gray, fine sand and organic silt. (Organic Deposit)
10'							
-	S-4	12'-16'		1.3'			S-4: Gray, fine to coarse sand, trace to some gravel, trace to some organic silt with shells. (Organic Deposit)
-							
15'							
-	S-5	16'-19'		2.3'			S-5: Dark gray, organic silt with a 2" layer of fine to coarse sand with shells. (Organic Deposit)
-							
-	S-5A	19'-20'		.9'		19'	S-5A: Dense, gray, fine to coarse sand, trace to some gravel, trace silt. (Glacial Outwash)
20'							TERMINATED BORING AT 20'
-							
-							
-							
25'							
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.VOIGHT			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.
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Derry, NH 03038
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Fax: (603) 437-0034

Boring #: E-1 Project: MIT Project #: 3460
Project Address: City: CAMBRIDGE State: MA Zip:
Date Start: 9/7/00 Date End: 9/7/00 Location: See Plan

Casing: H-S-A Sampler: Casing: 4-1/4" ID Sampler:
Type S/S Size: 13/8 in. I.D.
Hammer: 140 lbs. Fall: 30 in.

GROUNDWATER OBSERVATION

Date:	Depth: 9'		Casing: out			Stabilization Per.	
9/7						Upon Completion	
DP	SJ#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	0"	15-18		
-					15-7		
-							
5'	S-2	5'-7'	24"	18"	7-8		S-2: Compact, gray/brown, silty sand, some gravel, trace shells. (FILL)
-					8-14		Augered through concrete obstruction at 7'6"
-							
10'	S-3	10'-12'	24"	12"	15-13		S-3: Compact, gray, coarse to medium sand, some silt, trace gravel, organic silt, shells. (Marine Sand)
-					12-10		
-							
15'	S-4	15'-17'	24"	16"	2-3		S-4: Firm, gray, organic silt, trace fine sand. (Organics)
-					2-9		
-							
20'	S-5	20'-21.3'	12"	8"	12-70		S-5: Very dense, gray/brown, coarse to medium sand, some gravel, trace silt. (Marine Sand)
-					100/3"		
-							TERMINATED BORING AT 21.3'
-							
25'							
-							
-							
-							
30'							

Driller: J.Garside

Helper: J.LEFEBVRE

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.

Fax: (603) 437-0034

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: E-2		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/11/00		Date End: 9/11/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUNDWATER OBSERVATION							
Date: 9/11	Depth: 9'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-4'	48"	3.5'			S-1: Brown, sand and silt, some gravel with brick, ash and cinder. (FILL)
-							
-	S-2	4'-8'	48"	3'			S-2: Brown, sand, some gravel, some silt with shells. (FILL)
5'							
-							
-	S-3	8'-10	48"	2'			S-3: Brown, sand, some gravel, some organic and inorganic silt with shells. (FILL)
10'	S-3A	10'-12'	48"	2'		10'	S-3A: Gray, sand, trace gravel, trace to some organic silt with shells. (Organic Deposit)
-							
-	S-4	12'-16'	48"	3'			S-4: Gray, sand and organic silt, trace gravel with shells and fibers. (Organic Deposit)
-							
15'							
-	S-5	16'-19'	48"	3.0'			S-5: Gray, sand and organic silt with shells. (Organic Deposit)
-							
-	S-5A	19'-20'	48"	1'		19'	S-5A: Gray, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
20'							TERMINATED BORING AT 20'
-							
-							
-							
25'							
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.VOIGHT			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

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Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: E-3		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/27/00		Date End: 9/27/00		Location: See Plan			
Casing: H-S-A		Sampler: S/S		Casing: 4-1/4" ID		Sampler: 13/8 in. I.D.	
Type Hammer:		140 lbs.		Size: Fall:		30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/27	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	1'-4'		1.5'			0'-.9' CONCRETE SLAB
-							S-1: Brown, sand, some gravel, some silt. (FILL)
-	S-2	4'-7'		1.5'			S-2: Brown, sand, some gravel, some silt. (FILL)
5'							
-	S-2A	7'-8'		1'		7'	S-2A: Gray, organic silt and fine sand. (Organic Deposits)
-	S-3	8'-12'		2.5'			S-3: Gray, fine to coarse sand, some organic silt with shells. (Organic Deposits)
-							
10'							
-	S-4	12'-16'		3.5'			S-4: Gray, organic silt and sand with shells. (Organic Deposit)
-							
15'							
-	S-5	16'-19'		1.5'			S-5: Brown, organic silt, trace sand. (Organic Deposit)
-	S-5A	19'-20'		1'		19'	S-5A: Brown, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
-							TERMINATED BORING AT 20'
20'							
-							
-							
-							
25'							
-							
-							
-							
30'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

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Boring #: E-4		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/11/00		Date End: 9/11/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUNDWATER OBSERVATION							
Date: 9/11	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	5'-4'	48"	2.3'			0-5' CONCRETE SLAB
-							S-1: Brown, silty sand, some gravel. (FILL)
-	S-2	4'-8'	48"	3.2'			S-2: Brown, sand, some gravel, some silt. (FILL)
5'							
-							
-	S-3	8'-12'	48"	1.3'		8'	S-3: Gray, organic silt and sand with shells. (Organic Deposit)
10'							
-	S-4	12'-16'	48"	3.3'			S-4: Gray, organic silt, trace sand with a trace of shells. (Organic Deposit)
-							
15'							
-	S-5	16'-19'	48"	2.6'		19'	S-5: Brown, organic silt and sand with shells. (ORGANIC DEPOSIT)
-							Very dense at 19'
-	S-5A	19'-20'	48"	0"			S-5A: 19'-20'
20'	S-6	20'-23'	48"	2.9'			S-6: Gray, fine to coarse sand, trace gravel, trace silt. (Glacial Outwash)
-							
-							
-							
25'							TERMINATED BORING AT 23'
-							
-							
30'							
Driller: D.THOMPSON			Helper: R.FIELD			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

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Fax: (603) 437-0034

Boring #: E-5 Project: MIT Project #: 3460

Project Address: City: CAMBRIDGE State: MA Zip:

Date Start: 9/6/00 Date End: 9/06/00 Location: See Plan

Casing: H-S-A Sampler: Casing: 4-1/4" ID Sampler:
Type S/S Size: 13/8 in. I.D.
Hammer: 140 lbs. Fall: 30 in.

GROUNDWATER OBSERVATION

Date: 9/6	Depth: 8'		Casing: out				Stabilization Per. Upon Completion
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	10"	10-8		6"CONCRETE
-					9-10		S-1: Compact, black, sand, some gravel, cinders. (FILL)
-							Encountered pipe obstruction at 2'6". Moved hole 1.5' WEST
5'	S-2	5'-7'	24"	10"	4-3		S-2: Loose, brown, sand, some gravel and silt, trace cinders. (FILL)
-					5-3		
-							
-							
10'	S-3	10'-12'	24"	8"	5-7	10'	S-3: Compact, gray, coarse to fine sand, some gravel and silt, trace shells. (MARINE SAND)
-					10-8		
-							
-							
15'	S-4	15'-17'	24"	6"	1-1	15'	S-4: Soft, brown, organic silt, trace gravel, shells. (ORGANICS)
-					3-6		
-						18'	
-							
20'	S-5	20'-22'	24"	14"	8-75		S-5: Very dense, brown/gray, coarse to medium sand, some gravel, trace silt. (MARINE SAND)
-					50/2"		TERMINATED BORING AT 22'
-							
-							
25'							
-							
-							
-							
30'							

Driller: G.Twombly

Helper: J.LEFEBVRE

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.

Fax: (603) 437-0034

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: E-6		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/5/00		Date End: 9/5/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/5	Depth: 8'		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	10"	5-6 5-7		S-1: Compact, dense, brown gravelly sand, some silt, trace brick, loam.
5'	S-2	5'-7'	24"	10"	7-5 2-6		S-2: Compact, gray/brown, silty sand, some gravel. (FILL)
10'	S-3	10'-12'	24"	16"	2-4 4-4	9'	S-3: Firm, gray, organic silt and sand and gravel. (sand/organics)
15'	S-4	15'-17'	24"	24"	1-1 1-4		S-4: Soft, gray, organic silt and fine sand. (Organics)
20'	S-5	20'-22'	24"	14"	20-59 38-64	20'	S-5: Very dense, gray/brown, coarse to fine sand, some gravel, trace silt. (Marine Sand) TERMINATED BORING AT 22'
25'							
30'							
Driller: G.Twombly			Helper: J.Lefebvre			Inspector:	
Remarks:							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: E-7

Project: MIT

Project #: 3460

Project Address:

City: CAMBRIDGE

State: MA Zip:

Date Start: 9/5/00

Date End: 9/5/00

Location: See Plan

Casing: H-S-A

Sampler:

Casing: 4-1/4" ID

Sampler:

Type
Hammer:S/S
140 lbs.Size:
Fall:13/8 in. I.D.
30 in.

GROUNDWATER OBSERVATION

Date:
9/5

Depth: 8'

Casing: out

Stabilization Per.
Upon Completion

DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-2'	24"	14"	10-11 7-8		S-1: Compact, brown, sand, some silt, trace loam. (FILL)
5'	S-2	5'-7'	24"	8"	7-8 5-7		S-2: Compact, dark brown, sand, some gravel and silt, trace loam. (FILL)
10'	S-3	10'-12'	24"	16"	3-3 1-1		S-3: Soft, gray, organic silt. (Organics)
15'	S-4	15'-16'	24"	12"	1-1		S-4: Same as previous
-	S-4A	16'-17'	12"	12"	5-5		S-4A: Loose, to compact silty sand, some gravel, trace organic silt, shells. (Marine Sand)
20'	S-5	20'-21'	12"	8"	21-5		S-5: Compact, gray, brown, sand, some gravel and silt. (Marine Sand)
-	S-5A	21'-22'	12"	8"	10-24		S-5A: Hard, yellow, silty clay. (Marine Clay)
25'							TERMINATED BORING AT 22'
30'							

Driller: K.SMITH

Helper: J.LEFEBVRE

Inspector:

Remarks:

S/#: Sample

PEN: Penetration

REC: Recovery

S/C: Strata Change

Phone: (603) 437-1610

New Hampshire Boring, Inc.

Fax: (603) 437-0034

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: E-8		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/12/00		Date End: 9/12/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
GROUNDWATER OBSERVATION							
Date: 9/12	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-1	0'-3'					Hand dug to 3' for utility clearance
-							S-1: Compact, brown, sand, some gravel, some silt with roots, brick and ash. (FILL)
5'	S-2	5'-7'	24"	13"	8-9		S-2: Compact, brown, gravelly silty sand.
-					8-9		(FILL)
-							
10'	S-3	10'-12'	24"	14"	4-1	10'	S-3: Very loose, gray silty fine sand with shells. (Organic Deposits)
-					2-3		
-							
15'	S-4	15'-17'	24"	16"	4-2		S-4: Very loose, gray organic silt and fine sand with shells. (Organic Deposits)
-					1-2		
-							
20'	S-5	20'-22'	24"	10"	21-26	19.5'	S-5: Dense, grayish brown, fine to coarse sand, trace to some gravel and silt.
-					21-27		(Glacial Outwash)
-						22'	
-							
25'	S-6	25'-27'	24"	21"	7-9		S-6: Very stiff, yellowish gray, clay.
-					11-16		(Marine Deposit)
-							
-							
30'	S-7	30'-32'	24"	12"	SHELBY TUBE		S-7: Shelby tube sample.
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks: PAGE 1 OF 4							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

Fax: (603) 437-0034

Boring #: E-8		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE		State: MA Zip:		
Date Start: 9/12/00		Date End: 9/12/00		Location: See Plan			
Casing: H-S-A		Sampler: S/S		Casing: 4-1/4" ID		Sampler: 13/8 in. I.D.	
Type Hammer:		140 lbs.		Fall:		30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/12	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-	S-8	32'-34'	24"	22"	3-3 5-5		S-8: Firm to stiff, gray, silty clay. (Marine Deposit)
35'	S-9	35'-37'	24"		TUBE		S-9: Shelby tube sample
-							
40'	S-10	40'-42'	24"		TUBE		S-10: Shelby tube sample
-	S-11	42'-44'	24"	24"	4-3 4-5		S-11: Firm, gray, silty clay. (Marine Deposit)
45'							
-							
50'	S-12	50'-52'	24"		TUBE		S-12: Shelby tube sample
-	S-13	52'-54'	24"	24"	3-4 3-5		S-13: Firm, gray, silt and clay, trace sand. (Marine Deposit)
55'							
-							
60'	S-14	60'-62'	24"		TUBE		S-14: Shelby tube sample.
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks: PAGE 2 OF 4							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.

Fax: (603) 437-0034

P.O. Box 165

Derry, NH 03038

E-Mail: nhb@nhboring

Boring #: E-8		Project: MIT		Project #: 3460			
Project Address:			City: CAMBRIDGE			State: MA Zip:	
Date Start: 9/12/00		Date End: 9/12/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/12	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
65'							
-							
-							
-							
70'							
-							
-							
-							
75'	S-16	75'-77'	24"		TUBE		S-16: Shelby tube sample
-							
-	S-17	77'-79'	24"	24"	WOR/12"		S-17: Firm, gray, silty clay, trace sand and gravel. (Marine Deposit)
-					6-8		
-							
80'							
-							
-							
-							
85'	S-18	85'-87'	24"	24"	2-4		S-18: Stiff, gray, silty clay. (Marine Deposit)
-					6-5		
-							
-							
90'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks: PAGE 3 OF 4							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

Phone: (603) 437-1610

New Hampshire Boring, Inc.
P.O. Box 165
Derry, NH 03038
E-Mail: nhb@nhboring

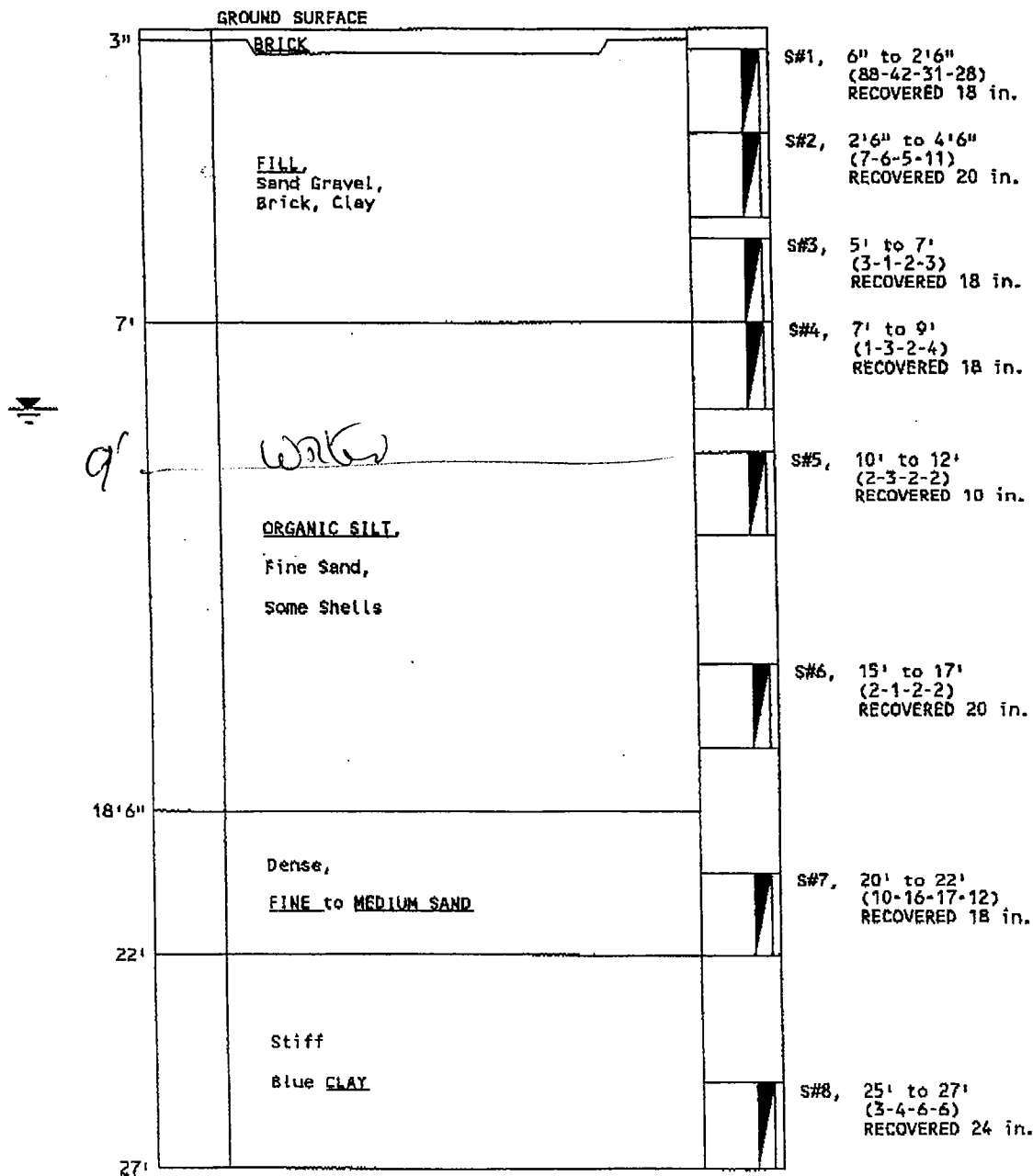
Fax: (603) 437-0034

Boring #: E-8		Project: MIT				Project #: 3460	
Project Address:				City: CAMBRIDGE		State: MA Zip:	
Date Start: 9/12/00		Date End: 9/12/00		Location: See Plan			
Casing: H-S-A Type Hammer:		Sampler: S/S 140 lbs.		Casing: 4-1/4" ID Size: Fall:		Sampler: 13/8 in. I.D. 30 in.	
G R O U N D W A T E R O B S E R V A T I O N							
Date: 9/12	Depth:		Casing: out			Stabilization Per. Upon Completion	
DP	S./#	DEPTH	PEN	REC	BLOWS/6"	S/C	SAMPLE DESCRIPTION
-							
-							
-							
95'	S-19	95'-97'	24"		Shelby tube		S-19: Shelby tube sample. Gravel in sample.
-							
-	S-20	97'-98'	12"	12"	3-4		S-20: Firm, gray, silty clay, trace sand and gravel.
-	S20A	98'-98'4"	5"	4"	100/4"	98;	S-20A: Very dense, gray, well graded mix, trace silt, sand and gravel. (Glacial Till)
-							Refusal at 98'4"
100'							Spoon and roller bit
-							TERMINATED BORING AT 98'4"
-							
-							
105'							
-							
-							
-							
110'							
-							
-							
-							
115'							
-							
-							
-							
120'							
Driller: K.SMITH			Helper: J.LEFEBVRE			Inspector:	
Remarks: PAGE 4 OF 4							
S/#: Sample		PEN: Penetration		REC: Recovery		S/C: Strata Change	

CARR-DEE CORP.

INDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500
 McPHAIL ASSOCIATES, INC. CAMBRIDGE, MA Date: 12-28-00 Job No.: 2000-231
 Location: 71 AMHERST STREET, CAMBRIDGE, MA Scale: 1 in. = 4 ft.

BORING E9



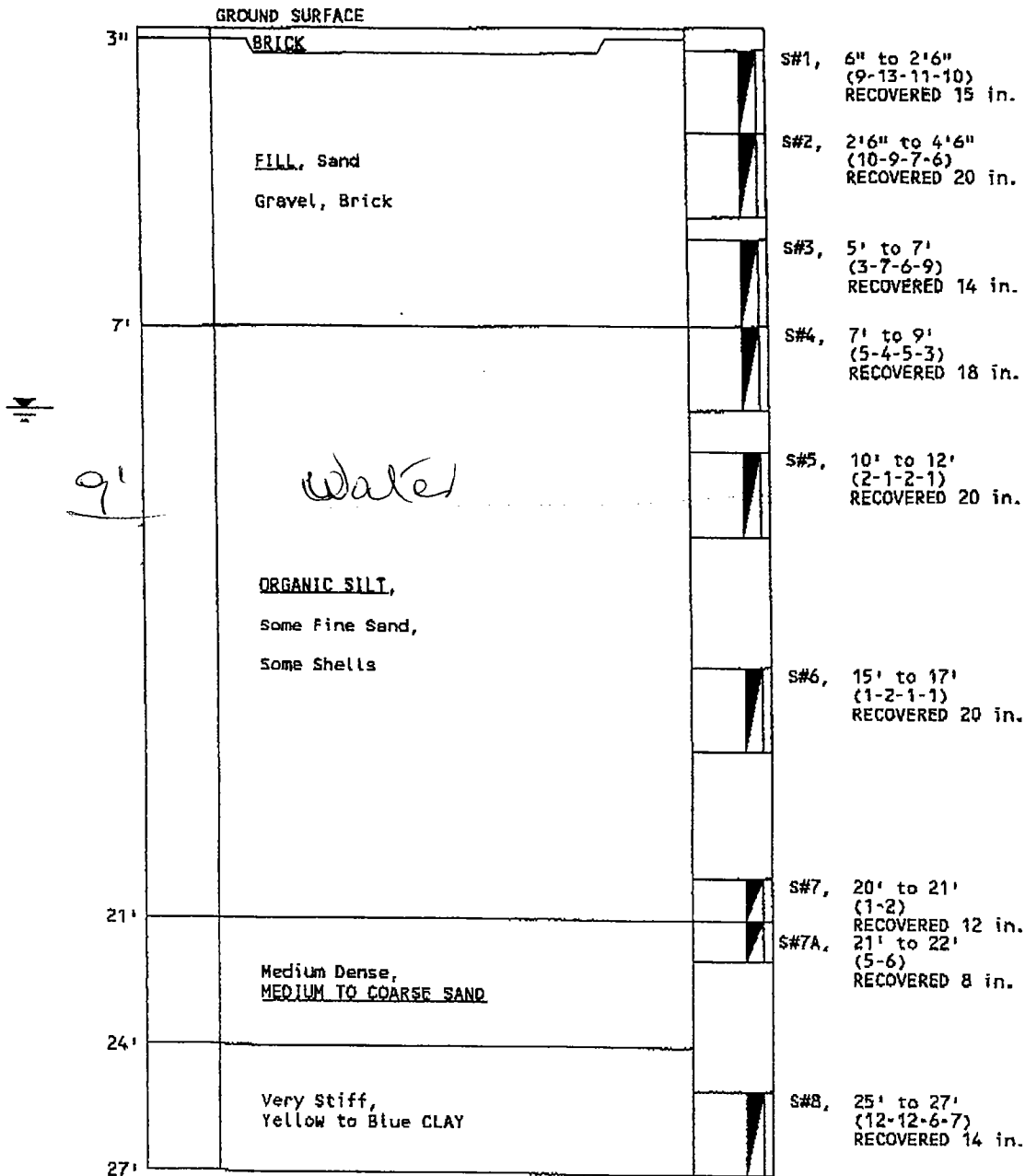
WATER LEVEL 9'
 SIZE OF AUGERS 3-3/4" I.D., LENGTH 25'0"
 DRILLER: J. DESIMONE, INSPECTOR: AMY KOCHAN
 DATE STARTED & COMPLETED: 12-28-00

1 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 (noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

LINDEN STREET P.O. BOX 67 MEDFORD, MA 02155-0001 Telephone (617) 391-4500
 : McPHAIL ASSOCIATES, INC. CAMBRIDGE, MA Date: 12-28-00 Job No.: 2000-231
 tion: 71 AMHERST STREET, CAMBRIDGE, MA Scale: 1 in. = 4 ft.

BORING D9



WATER LEVEL 9'
 SIZE OF AUGERS 3-3/4" I.D., LENGTH 25'0"
 DRILLER: J. DESIMONE, INSPECTOR: AMY KOCHAN
 DATE STARTED & COMPLETED: 12-28-00

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 of (noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).



APPENDIX D

Groundwater Chemical Test Data

ALPHA ANALYTICAL LABORATORIES

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

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

CERTIFICATE OF ANALYSIS

Client: McPhail Associates

Laboratory Job Number: L0614000

Address: 30 Norfolk Street

Cambridge, MA 02139

Date Received: 29-SEP-2006

Attn: Mr. Ambrose Donovan

Date Reported: 06-OCT-2006

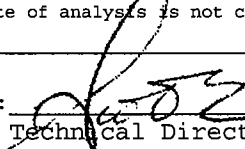
Project Number: 3460

Delivery Method: Alpha

Site: MIT MEDIA LAB

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0614000-01	B-101-OW	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: 
Technical Director

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0614000

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.

Metals

The WG255431-2 MS % recovery for Se is outside the acceptance criteria for the method. A post analytical spike was performed with an acceptable recovery of 92%.

Volatile Organics

The WG255538-5 LCS has a high % recovery for Acrolein.

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

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

Laboratory Sample Number: L0614000-01

B-101-OW

Date Collected: 29-SEP-2006 00:00

Date Received : 29-SEP-2006

Sample Matrix:

WATER

Date Reported : 06-OCT-2006

Condition of Sample:

Satisfactory

Field Prep:

None

Number & Type of Containers: 4-Amber,4-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Solids, Total Suspended	ND	mg/l	5.0	4 160.2		1002 11:10	DW
Chlorine, Total Residual	ND	mg/l	0.05	4 330.1		0929 00:05	DP
pH	7.1	SU	-	4 150.1		0929 20:30	DP
TPH	ND	mg/l	4.00	74 1664A	1002 10:00	1002 15:15	AT
Total Metals							
Antimony, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 08:00	BM
Arsenic, Total	1.5 - 0.0015	mg/l	0.0005	1 6020	1002 16:40	1004 08:00	BM
Beryllium, Total	ND	mg/l	0.005	1 6010B	1002 16:40	1005 21:47	MG
Cadmium, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 08:00	BM
Chromium, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 08:00	BM
Copper, Total	0.7 0.0007	mg/l	0.0005	1 6020	1002 16:40	1004 08:00	BM
Lead, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 08:00	BM
Mercury, Total	ND	mg/l	0.0002	4 245.2	1002 15:20	1003 12:00	DM
Nickel, Total	1.9 0.0019	mg/l	0.0005	1 6020	1002 16:40	1004 08:00	BM
Selenium, Total	2.0 0.002	mg/l	0.001	1 6020	1002 16:40	1004 08:00	BM
Silver, Total	ND	mg/l	0.007	1 6010B	1002 16:40	1005 21:47	MG
Thallium, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 08:00	BM
Zinc, Total	10.8 0.0108	mg/l	0.0050	1 6020	1002 16:40	1004 08:00	BM
Volatile Organics by GC/MS 624							
Methylene chloride	ND	ug/l	5.0	5 624		1003 11:00	MM
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				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0614000-01
B-101-OW

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE	ID
					PREP	ANAL
Volatile Organics by GC/MS 624 cont'd				5 624	1003 11:00 MM	
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.			
Surrogate(s)	Recovery		QC Criteria			
Pentafluorobenzene	84.0	%	80-120			
Fluorobenzene	89.0	%	80-120			
4-Bromofluorobenzene	110	%	80-120			
SVOC's by GC/MS 8270				1 8270C	1002 19:30 1003 19:23 RL	
Acenaphthene	ND	ug/l	4.8			
Benizidine	ND	ug/l	48.			
1,2,4-Trichlorobenzene	ND	ug/l	4.8			
Hexachlorobenzene	ND	ug/l	4.8			
Bis(2-chloroethyl) ether	ND	ug/l	4.8			
1-Chloronaphthalene	ND	ug/l	4.8			
2-Chloronaphthalene	ND	ug/l	5.8			
1,2-Dichlorobenzene	ND	ug/l	4.8			
1,3-Dichlorobenzene	ND	ug/l	4.8			
1,4-Dichlorobenzene	ND	ug/l	4.8			
3,3'-Dichlorobenzidine	ND	ug/l	48.			
2,4-Dinitrotoluene	ND	ug/l	5.8			

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0614000-01
B-101-OW

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
SVOC's by GC/MS 8270 cont'd				1	8270C	1002 19:30	1003 19:23 RL
2,6-Dinitrotoluene	ND	ug/l	4.8				
Azobenzene	ND	ug/l	4.8				
Fluoranthene	ND	ug/l	4.8				
4-Chlorophenyl phenyl ether	ND	ug/l	4.8				
4-Bromophenyl phenyl ether	ND	ug/l	4.8				
Bis(2-chloroisopropyl)ether	ND	ug/l	4.8				
Bis(2-chloroethoxy)methane	ND	ug/l	4.8				
Hexachlorobutadiene	ND	ug/l	9.6				
Hexachlorocyclopentadiene	ND	ug/l	9.6				
Hexachloroethane	ND	ug/l	4.8				
Isophorone	ND	ug/l	4.8				
Naphthalene	ND	ug/l	4.8				
Nitrobenzene	ND	ug/l	4.8				
NDPA/DPA	ND	ug/l	14.				
n-Nitrosodi-n-propylamine	ND	ug/l	4.8				
Bis(2-ethylhexyl)phthalate	ND	ug/l	9.6				
Butyl benzyl phthalate	ND	ug/l	4.8				
Di-n-butylphthalate	ND	ug/l	4.8				
Di-n-octylphthalate	ND	ug/l	4.8				
Diethyl phthalate	ND	ug/l	4.8				
Dimethyl phthalate	ND	ug/l	4.8				
Benzo(a)anthracene	ND	ug/l	4.8				
Benzo(a)pyrene	ND	ug/l	4.8				
Benzo(b)fluoranthene	ND	ug/l	4.8				
Benzo(k)fluoranthene	ND	ug/l	4.8				
Chrysene	ND	ug/l	4.8				
Acenaphthylene	ND	ug/l	4.8				
Anthracene	ND	ug/l	4.8				
Benzo(ghi)perylene	ND	ug/l	4.8				
Fluorene	ND	ug/l	4.8				
Phenanthrene	ND	ug/l	4.8				
Dibenzo(a,h)anthracene	ND	ug/l	4.8				
Indeno(1,2,3-cd)pyrene	ND	ug/l	6.7				
Pyrene	ND	ug/l	4.8				
Benzo(e)pyrene	ND	ug/l	4.8				
Biphenyl	ND	ug/l	4.8				
Perylene	ND	ug/l	4.8				
Aniline	ND	ug/l	9.6				
4-Chloroaniline	ND	ug/l	4.8				
1-Methylnaphthalene	ND	ug/l	4.8				
2-Nitroaniline	ND	ug/l	4.8				
3-Nitroaniline	ND	ug/l	4.8				
4-Nitroaniline	ND	ug/l	6.7				
Dibenzofuran	ND	ug/l	4.8				
a,a-Dimethylphenethylamine	ND	ug/l	48.				
Hexachloropropene	ND	ug/l	9.6				
Nitrosodi-n-butylamine	ND	ug/l	9.6				
2-Methylnaphthalene	ND	ug/l	4.8				
1,2,4,5-Tetrachlorobenzene	ND	ug/l	19.				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0614000-01
B-101-OW

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
SVOC's by GC/MS 8270 cont'd				1	8270C	1002 19:30	1003 19:23 RL
Pentachlorobenzene	ND	ug/l	19.				
a-Naphthylamine	ND	ug/l	19.				
b-Naphthylamine	ND	ug/l	19.				
Phenacetin	ND	ug/l	9.6				
Dimethoate	ND	ug/l	19.				
4-Aminobiphenyl	ND	ug/l	9.6				
Pentachloronitrobenzene	ND	ug/l	9.6				
Isodrin	ND	ug/l	9.6				
p-Dimethylaminoazobenzene	ND	ug/l	9.6				
Chlorobenzilate	ND	ug/l	19.				
3-Methylcholanthrene	ND	ug/l	19.				
Ethyl Methanesulfonate	ND	ug/l	14.				
Acetophenone	ND	ug/l	19.				
Nitrosodipiperidine	ND	ug/l	19.				
7,12-Dimethylbenz(a)anthracene	ND	ug/l	9.6				
n-Nitrosodimethylamine	ND	ug/l	48.				
2,4,6-Trichlorophenol	ND	ug/l	4.8				
p-Chloro-m-cresol	ND	ug/l	4.8				
2-Chlorophenol	ND	ug/l	5.8				
2,4-Dichlorophenol	ND	ug/l	9.6				
2,4-Dimethylphenol	ND	ug/l	9.6				
2-Nitrophenol	ND	ug/l	19.				
4-Nitrophenol	ND	ug/l	9.6				
2,4-Dinitrophenol	ND	ug/l	19.				
4,6-Dinitro-o-cresol	ND	ug/l	19.				
Pentachlorophenol	ND	ug/l	19.				
Phenol	ND	ug/l	6.7				
2-Methylphenol	ND	ug/l	5.8				
3-Methylphenol/4-Methylphenol	ND	ug/l	5.8				
2,4,5-Trichlorophenol	ND	ug/l	4.8				
2,6-Dichlorophenol	ND	ug/l	9.6				
Benzoic Acid	ND	ug/l	48.				
Benzyl Alcohol	ND	ug/l	9.6				
Carbazole	ND	ug/l	4.8				
Pyridine	ND	ug/l	48.				
2-Picoline	ND	ug/l	19.				
Pronamide	ND	ug/l	19.				
Methyl methanesulfonate	ND	ug/l	19.				
Surrogate(s)	Recovery		QC Criteria				
2-Fluorophenol	48.0	%	21-120				
Phenol-d6	42.0	%	10-120				
Nitrobenzene-d5	81.0	%	23-120				
2-Fluorobiphenyl	74.0	%	43-120				
2,4,6-Tribromophenol	82.0	%	10-120				
4-Terphenyl-d14	99.0	%	33-120				
PAH by GC/MS SIM 8270M				1	8270C-M	1002 19:30	1003 14:02 RL
Acenaphthene	ND	ug/l	0.19				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0614000-01
B-101-OW

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
PAH by GC/MS SIM 8270M cont'd				1	8270C-M	1002 19:30	1003 14:02 RL
2-Chloronaphthalene	ND	ug/l	0.19				
Fluoranthene	ND	ug/l	0.19				
Hexachlorobutadiene	ND	ug/l	0.48				
Naphthalene	ND	ug/l	0.19				
Benzo (a) anthracene	ND	ug/l	0.19				
Benzo (a) pyrene	ND	ug/l	0.19				
Benzo (b) fluoranthene	ND	ug/l	0.19				
Benzo (k) fluoranthene	ND	ug/l	0.19				
Chrysene	ND	ug/l	0.19				
Acenaphthylene	ND	ug/l	0.19				
Anthracene	ND	ug/l	0.19				
Benzo (ghi) perylene	ND	ug/l	0.19				
Fluorene	ND	ug/l	0.19				
Phenanthrene	ND	ug/l	0.19				
Dibenzo (a, h) anthracene	ND	ug/l	0.19				
Indeno (1, 2, 3-cd) Pyrene	ND	ug/l	0.19				
Pyrene	ND	ug/l	0.19				
1-Methylnaphthalene	ND	ug/l	0.19				
2-Methylnaphthalene	ND	ug/l	0.19				
Pentachlorophenol	ND	ug/l	0.77				
Hexachlorobenzene	ND	ug/l	0.77				
Perylene	ND	ug/l	0.19				
Biphenyl	ND	ug/l	0.19				
2, 6-Dimethylnaphthalene	ND	ug/l	0.19				
1-Methylphenanthrene	ND	ug/l	0.19				
Benzo (e) Pyrene	ND	ug/l	0.19				
Hexachloroethane	ND	ug/l	0.77				
Surrogate (s)	Recovery			QC Criteria			
2-Fluorophenol	38.0	%		21-120			
Phenol-d6	35.0	%		10-120			
Nitrobenzene-d5	53.0	%		23-120			
2-Fluorobiphenyl	51.0	%		43-120			
2, 4, 6-Tribromophenol	72.0	%		10-120			
4-Terphenyl-d14	66.0	%		33-120			

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0614000

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Solids, Total Suspended for sample(s) 01 (L0613995-01, WG255336-2)					
Solids, Total Suspended	7.1 7.100	7.0 7.000	mg/l	1	20
Chlorine, Total Residual for sample(s) 01 (L0614000-01, WG255316-3)					
Chlorine, Total Residual	ND	ND	mg/l	NC	
pH for sample(s) 01 (L0613963-01, WG255312-2)					
pH	7.4	7.2	SU	3	
TPH for sample(s) 01 (L0613864-04, WG255403-4)					
TPH	ND	ND	mg/l	NC	34
Total Metals for sample(s) 01 (L0614000-01, WG255431-1)					
Antimony, Total	ND	ND	mg/l	NC	20
Arsenic, Total	0.0015	0.0016	mg/l	5	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	ND	ND	mg/l	NC	20
Copper, Total	0.0007	0.0006	mg/l	10	20
Lead, Total	ND	ND	mg/l	NC	20
Nickel, Total	0.0019	0.0020	mg/l	3	20
Selenium, Total	0.002	0.001	mg/l	7	20
Thallium, Total	ND	ND	mg/l	NC	20
Zinc, Total	0.0108	0.0094	mg/l	14	20
Total Metals for sample(s) 01 (L0614000-01, WG255695-1)					
Beryllium, Total	ND	ND	mg/l	NC	20
Silver, Total	ND	ND	mg/l	NC	20
Total Metals for sample(s) 01 (L0613952-01, WG255412-3)					
Mercury, Total	0.0009	0.0012	mg/l	21	
Volatile Organics by GC/MS 624 for sample(s) 01 (L0613952-03, WG255538-2)					
Methylene chloride	ND	ND	ug/l	NC	30
1,1-Dichloroethane	ND	ND	ug/l	NC	30
Chloroform	ND	ND	ug/l	NC	30
Carbon tetrachloride	ND	ND	ug/l	NC	30
1,2-Dichloropropane	ND	ND	ug/l	NC	30
Dibromochloromethane	ND	ND	ug/l	NC	30
1,1,2-Trichloroethane	ND	ND	ug/l	NC	30
2-Chloroethylvinyl ether	ND	ND	ug/l	NC	30
Tetrachloroethene	ND	ND	ug/l	NC	30
Chlorobenzene	ND	ND	ug/l	NC	30
Trichlorofluoromethane	ND	ND	ug/l	NC	30
1,2-Dichloroethane	ND	ND	ug/l	NC	30
1,1,1-Trichloroethane	ND	ND	ug/l	NC	30
Bromodichloromethane	ND	ND	ug/l	NC	30
trans-1,3-Dichloropropene	ND	ND	ug/l	NC	30
cis-1,3-Dichloropropene	ND	ND	ug/l	NC	30
Bromoform	ND	ND	ug/l	NC	30

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0614000

Continued

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Volatile Organics by GC/MS 624 for sample(s) 01 (L0613952-03, WG255538-2)					
1,1,2,2-Tetrachloroethane	ND	ND	ug/l	NC	30
Benzene	ND	ND	ug/l	NC	30
Toluene	ND	ND	ug/l	NC	30
Ethylbenzene	ND	ND	ug/l	NC	30
Chloromethane	ND	ND	ug/l	NC	30
Bromomethane	ND	ND	ug/l	NC	30
Vinyl chloride	ND	ND	ug/l	NC	30
Chloroethane	ND	ND	ug/l	NC	30
1,1-Dichloroethene	ND	ND	ug/l	NC	30
trans-1,2-Dichloroethene	ND	ND	ug/l	NC	30
cis-1,2-Dichloroethene	ND	ND	ug/l	NC	30
Trichloroethene	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
p/m-Xylene	ND	ND	ug/l	NC	30
o-Xylene	ND	ND	ug/l	NC	30
XYLENE (TOTAL)	ND	ND	ug/l	NC	30
Styrene	ND	ND	ug/l	NC	30
Acetone	ND	ND	ug/l	NC	30
Carbon disulfide	ND	ND	ug/l	NC	30
2-Butanone	ND	ND	ug/l	NC	30
Vinyl acetate	ND	ND	ug/l	NC	30
4-Methyl-2-pentanone	ND	ND	ug/l	NC	30
2-Hexanone	ND	ND	ug/l	NC	30
Acrolein	ND	ND	ug/l	NC	30
Acrylonitrile	ND	ND	ug/l	NC	30
Surrogate(s)	Recovery				QC Criteria
Pentafluorobenzene	93.0	93.0	%		80-120
Fluorobenzene	98.0	96.0	%		80-120
4-Bromofluorobenzene	110	107	%		80-120

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0614000

Parameter	% Recovery	QC Criteria
Chlorine, Total Residual LCS for sample(s) 01 (WG255316-2)		
Chlorine, Total Residual	100	
pH LCS for sample(s) 01 (WG255312-1)		
pH	100	
TPH LCS for sample(s) 01 (WG255403-2)		
TPH	85	64-132
Total Metals LCS for sample(s) 01 (WG255431-4)		
Antimony, Total	98	80-120
Arsenic, Total	94	80-120
Cadmium, Total	107	80-120
Chromium, Total	98	80-120
Copper, Total	91	80-120
Lead, Total	97	80-120
Nickel, Total	97	80-120
Selenium, Total	93	80-120
Thallium, Total	90	80-120
Zinc, Total	98	80-120
Total Metals LCS for sample(s) 01 (WG255695-4)		
Beryllium, Total	98	75-125
Silver, Total	98	75-125
Total Metals LCS for sample(s) 01 (WG255412-1)		
Mercury, Total	106	
Volatile Organics by GC/MS 624 LCS for sample(s) 01 (WG255538-5)		
Methylene chloride	108	10-221
1,1-Dichloroethane	92	59-155
Chloroform	110	51-138
Carbon tetrachloride	138	70-140
1,2-Dichloropropane	106	10-210
Dibromochloromethane	102	53-149
1,1,2-Trichloroethane	99	52-150
2-Chloroethylvinyl ether	116	10-305
Tetrachloroethene	103	64-148
Chlorobenzene	103	37-160
Trichlorofluoromethane	112	17-181
1,2-Dichloroethane	114	49-155
1,1,1-Trichloroethane	125	52-162
Bromodichloromethane	106	35-155
trans-1,3-Dichloropropene	98	17-183
cis-1,3-Dichloropropene	101	10-227
Bromoform	94	45-169
1,1,2,2-Tetrachloroethane	91	46-157
Benzene	115	37-151
Toluene	106	47-150

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0614000

Continued

Parameter	% Recovery	QC Criteria
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Volatile Organics by GC/MS 624 LCS for sample(s) 01 (WG255538-5)

Ethylbenzene	109	37-162
Chloromethane	89	10-273
Bromomethane	66	10-242
Vinyl chloride	97	10-251
Chloroethane	84	14-230
1,1-Dichloroethene	109	10-234
trans-1,2-Dichloroethene	116	54-156
cis-1,2-Dichloroethene	112	60-140
Trichloroethene	118	71-157
1,2-Dichlorobenzene	102	18-190
1,3-Dichlorobenzene	104	59-156
1,4-Dichlorobenzene	103	18-190
p/m-Xylene	109	40-160
o-Xylene	110	40-160
XYLENE (TOTAL)	110	40-160
Styrene	100	40-160
Acetone	121	40-160
Carbon disulfide	98	40-160
2-Butanone	92	40-160
Vinyl acetate	93	40-160
4-Methyl-2-pentanone	81	40-160
2-Hexanone	78	40-160
Acrolein	217	40-160
Acrylonitrile	88	40-160
Surrogate(s)		
Pentafluorobenzene	95	80-120
Fluorobenzene	98	80-120
4-Bromofluorobenzene	106	80-120

SVOC's by GC/MS 8270 LCS for sample(s) 01 (WG255491-2)

Acenaphthene	68	46-118
1,2,4-Trichlorobenzene	61	39-98
2-Chloronaphthalene	71	40-140
1,2-Dichlorobenzene	55	40-140
1,4-Dichlorobenzene	54	36-97
2,4-Dinitrotoluene	79	24-96
2,6-Dinitrotoluene	82	40-140
Fluoranthene	88	40-140
4-Chlorophenyl phenyl ether	76	40-140
n-Nitrosodi-n-propylamine	54	41-116
Butyl benzyl phthalate	81	40-140
Anthracene	77	40-140
Pyrene	84	26-127
Hexachloropropene	57	40-140
P-Chloro-M-Cresol	72	23-97
2-Chlorophenol	54	27-123
2-Nitrophenol	60	30-130

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0614000

Continued

Parameter	% Recovery	QC Criteria
SVOC's by GC/MS 8270 LCS for sample(s) 01 (WG255491-2)		
4-Nitrophenol	37	10-80
2,4-Dinitrophenol	67	30-130
Pentachlorophenol	80	9-103
Phenol	25	12-110
Surrogate(s)		
2-Fluorophenol	40	21-120
Phenol-d6	38	10-120
Nitrobenzene-d5	67	23-120
2-Fluorobiphenyl	70	43-120
2,4,6-Tribromophenol	72	10-120
4-Terphenyl-d14	92	33-120
PAH by GC/MS SIM 8270M LCS for sample(s) 01 (WG255492-2)		
Acenaphthene	61	46-118
2-Chloronaphthalene	70	
Fluoranthene	88	
Anthracene	62	
Pyrene	94	26-127
Pentachlorophenol	75	9-103
Surrogate(s)		
2-Fluorophenol	44	21-120
Phenol-d6	39	10-120
Nitrobenzene-d5	60	23-120
2-Fluorobiphenyl	56	43-120
2,4,6-Tribromophenol	71	10-120
4-Terphenyl-d14	73	33-120
TPH SPIKE for sample(s) 01 (L0613864-02, WG255403-3)		
TPH	86	64-132
Total Metals SPIKE for sample(s) 01 (L0614000-01, WG255431-2)		
Antimony, Total	106	80-120
Arsenic, Total	104	80-120
Cadmium, Total	110	80-120
Chromium, Total	103	80-120
Copper, Total	95	80-120
Lead, Total	103	80-120
Nickel, Total	99	80-120
Selenium, Total	33	80-120
Thallium, Total	93	80-120
Zinc, Total	100	80-120
Total Metals SPIKE for sample(s) 01 (L0614000-01, WG255695-2)		
Beryllium, Total	94	75-125
Silver, Total	94	75-125

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0614000

Continued

Parameter	% Recovery	QC Criteria
Total Metals SPIKE for sample(s) 01 (L0613952-01, WG255412-2)		
Mercury, Total	127	
Volatile Organics by GC/MS 624 SPIKE for sample(s) 01 (L0613952-03, WG255538-1)		
Methylene chloride	111	10-221
1,1-Dichloroethane	85	59-155
Chloroform	111	51-138
Carbon tetrachloride	152	70-140
1,2-Dichloropropane	112	10-210
Dibromochloromethane	107	53-149
1,1,2-Trichloroethane	104	52-150
2-Chloroethylvinyl ether	106	10-305
Tetrachloroethene	108	64-148
Chlorobenzene	98	37-160
Trichlorofluoromethane	120	17-181
1,2-Dichloroethane	121	49-155
1,1,1-Trichloroethane	131	52-162
Bromodichloromethane	106	35-155
trans-1,3-Dichloropropene	99	17-183
cis-1,3-Dichloropropene	106	10-227
Bromoform	97	45-169
1,1,2,2-Tetrachloroethane	96	46-157
Benzene	121	35-151
Toluene	109	47-150
Ethylbenzene	108	37-162
Chloromethane	93	10-273
Bromomethane	70	10-242
Vinyl chloride	102	10-251
Chloroethane	92	14-230
1,1-Dichloroethene	115	10-234
trans-1,2-Dichloroethene	121	54-156
cis-1,2-Dichloroethene	118	60-140
Trichloroethene	122	71-157
1,2-Dichlorobenzene	98	18-190
1,3-Dichlorobenzene	98	59-156
1,4-Dichlorobenzene	97	18-190
p/m-Xylene	107	40-160
o-Xylene	107	40-160
XYLENE (TOTAL)	107	40-160
Styrene	95	40-160
Acetone	132	40-160
Carbon disulfide	103	40-160
2-Butanone	111	40-160
Vinyl acetate	100	40-160
4-Methyl-2-pentanone	98	40-160
2-Hexanone	99	40-160
Acrolein	259	40-160
Acrylonitrile	112	40-160

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0614000

Continued

Parameter	% Recovery	QC Criteria
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Volatile Organics by GC/MS 624 SPIKE for sample(s) 01 (L0613952-03, WG255538-1)

Surrogate(s)

Pentafluorobenzene

97

80-120

Fluorobenzene

100

80-120

4-Bromofluorobenzene

103

80-120

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L0614000

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
SVOC's by GC/MS 8270 for sample(s) 01 (L0614000-01, WG255491-4)					
Acenaphthene	71	76	7	30	46-118
1,2,4-Trichlorobenzene	67	67	0	30	39-98
2-Chloronaphthalene	76	76	0	30	40-140
1,2-Dichlorobenzene	62	62	0	30	40-140
1,4-Dichlorobenzene	62	57	8	30	36-97
2,4-Dinitrotoluene	81	86	6	30	24-96
2,6-Dinitrotoluene	86	95	10	30	40-140
Fluoranthene	90	95	5	30	40-140
4-Chlorophenyl phenyl ether	81	86	6	30	40-140
n-Nitrosodi-n-propylamine	52	52	0	30	41-116
Butyl benzyl phthalate	86	90	5	30	40-140
Anthracene	81	81	0	30	40-140
Pyrene	86	90	5	30	26-127
Hexachloropropene	67	67	0	30	40-140
P-Chloro-M-Cresol	78	83	6	30	23-97
2-Chlorophenol	59	59	0	30	27-123
2-Nitrophenol	64	67	5	30	30-130
4-Nitrophenol	57	62	8	30	10-80
2,4-Dinitrophenol	71	81	13	30	30-130
Pentachlorophenol	88	93	6	30	9-103
Phenol	40	43	7	30	12-110
Surrogate(s)					
2-Fluorophenol	56	56	0		21-120
Phenol-d6	62	63	2		10-120
Nitrobenzene-d5	71	75	5		23-120
2-Fluorobiphenyl	74	78	5		43-120
2,4,6-Tribromophenol	77	82	6		10-120
4-Terphenyl-d14	90	99	10		33-120
PAH by GC/MS SIM 8270M for sample(s) 01 (L0614000-01, WG255492-4)					
Acenaphthene	67	71	6	40	46-118
2-Chloronaphthalene	76	76	0	40	
Fluoranthene	90	95	5	40	
Anthracene	76	81	6	40	
Pyrene	100	100	0	40	26-127
Pentachlorophenol	83	83	0	40	9-103
Surrogate(s)					
2-Fluorophenol	69	69	0		21-120
Phenol-d6	75	76	1		10-120
Nitrobenzene-d5	76	79	4		23-120
2-Fluorobiphenyl	72	76	5		43-120
2,4,6-Tribromophenol	94	102	8		10-120
4-Terphenyl-d14	92	99	7		33-120

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0614000

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE	ID
					PREP	ANAL
Blank Analysis for sample(s) 01 (WG255336-1)						
Solids, Total Suspended	ND	mg/l	5.0	4 160.2		1002 11:10 DW
Blank Analysis for sample(s) 01 (WG255316-1)						
Chlorine, Total Residual	ND	mg/l	0.05	4 330.1		0929 00:05 DP
Blank Analysis for sample(s) 01 (WG255403-1)						
TPH	ND	mg/l	4.00	74 1664A	1002 10:00	1002 15:15 AT
Blank Analysis for sample(s) 01 (WG255431-3)						
Total Metals						
Antimony, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 07:49 BM
Arsenic, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 07:49 BM
Cadmium, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 07:49 BM
Chromium, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 07:49 BM
Copper, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 07:49 BM
Lead, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 07:49 BM
Nickel, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 07:49 BM
Selenium, Total	ND	mg/l	0.001	1 6020	1002 16:40	1004 07:49 BM
Thallium, Total	ND	mg/l	0.0005	1 6020	1002 16:40	1004 07:49 BM
Zinc, Total	ND	mg/l	0.0050	1 6020	1002 16:40	1004 07:49 BM
Blank Analysis for sample(s) 01 (WG255695-3)						
Total Metals				1 3015		
Beryllium, Total	ND	mg/l	0.005	1 6010B	1002 16:40	1005 21:40 MG
Silver, Total	ND	mg/l	0.007	1 6010B	1002 16:40	1005 21:40 MG
Blank Analysis for sample(s) 01 (WG255412-4)						
Total Metals						
Mercury, Total	ND	mg/l	0.0002	4 245.2	1002 15:20	1003 11:49 DM
Blank Analysis for sample(s) 01 (WG255538-6)						
Volatile Organics by GC/MS 624				5 624		1003 08:36 MM
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			

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0614000

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	

Blank Analysis for sample(s) 01 (WG255538-6)

Volatile Organics by GC/MS 624 cont'd

5 624

1003 08:36 MM

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.
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.

Surrogate(s)	Recovery	QC Criteria
Pentafluorobenzene	99.0 %	80-120
Fluorobenzene	105 %	80-120
4-Bromofluorobenzene	113 %	80-120

Blank Analysis for sample(s) 01 (WG255491-1)

SVOC's by GC/MS 8270

1 8270C

1002 19:30 1003 17:42 RL

Acenaphthene	ND	ug/l	5.0
Benzidine	ND	ug/l	50.
1,2,4-Trichlorobenzene	ND	ug/l	5.0

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0614000

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01 (WG255491-1)							
SVOC's by GC/MS 8270 cont'd				1 8270C	1002 19:30	1003 17:42	RL
Hexachlorobenzene	ND	ug/l	5.0				
Bis(2-chloroethyl) ether	ND	ug/l	5.0				
1-Chloronaphthalene	ND	ug/l	5.0				
2-Chloronaphthalene	ND	ug/l	6.0				
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				
Fluoranthene	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				
Hexachlorobutadiene	ND	ug/l	10.				
Hexachlorocyclopentadiene	ND	ug/l	10.				
Hexachloroethane	ND	ug/l	5.0				
Isophorone	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
Nitrobenzene	ND	ug/l	5.0				
NDPA/DPA	ND	ug/l	15.				
n-Nitrosodi-n-propylamine	ND	ug/l	5.0				
Bis(2-ethylhexyl) phthalate	ND	ug/l	10.				
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				
Benzo(a) anthracene	ND	ug/l	5.0				
Benzo(a) pyrene	ND	ug/l	5.0				
Benzo(b) fluoranthene	ND	ug/l	5.0				
Benzo(k) fluoranthene	ND	ug/l	5.0				
Chrysene	ND	ug/l	5.0				
Acenaphthylene	ND	ug/l	5.0				
Anthracene	ND	ug/l	5.0				
Benzo(ghi) perylene	ND	ug/l	5.0				
Fluorene	ND	ug/l	5.0				
Phenanthrene	ND	ug/l	5.0				
Dibenzo(a, h) anthracene	ND	ug/l	5.0				
Indeno(1,2,3-cd) pyrene	ND	ug/l	7.0				
Pyrene	ND	ug/l	5.0				
Benzo(e) pyrene	ND	ug/l	5.0				
Biphenyl	ND	ug/l	5.0				
Perylene	ND	ug/l	5.0				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0614000

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01 (WG255491-1)							
SVOC's by GC/MS 8270 cont'd				1 8270C	1002 19:30	1003 17:42	RL
Aniline	ND	ug/l	10.				
4-Chloroaniline	ND	ug/l	5.0				
1-Methylnaphthalene	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				
a,a-Dimethylphenethylamine	ND	ug/l	50.				
Hexachloropropene	ND	ug/l	10.				
Nitrosodi-n-butylamine	ND	ug/l	10.				
2-Methylnaphthalene	ND	ug/l	5.0				
1,2,4,5-Tetrachlorobenzene	ND	ug/l	20.				
Pentachlorobenzene	ND	ug/l	20.				
a-Naphthylamine	ND	ug/l	20.				
b-Naphthylamine	ND	ug/l	20.				
Phenacetin	ND	ug/l	10.				
Dimethoate	ND	ug/l	20.				
4-Aminobiphenyl	ND	ug/l	10.				
Pentachloronitrobenzene	ND	ug/l	10.				
Isodrin	ND	ug/l	10.				
p-Dimethylaminoazobenzene	ND	ug/l	10.				
Chlorobenzilate	ND	ug/l	20.				
3-Methylcholanthrene	ND	ug/l	20.				
Ethyl Methanesulfonate	ND	ug/l	15.				
Acetophenone	ND	ug/l	20.				
Nitrosodipiperidine	ND	ug/l	20.				
7,12-Dimethylbenz(a)anthracene	ND	ug/l	10.				
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	20.				
4,6-Dinitro-o-cresol	ND	ug/l	20.				
Pentachlorophenol	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				
2,6-Dichlorophenol	ND	ug/l	10.				
Benzoic Acid	ND	ug/l	50.				
Benzyl Alcohol	ND	ug/l	10.				
Carbazole	ND	ug/l	5.0				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0614000

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01 (WG255491-1)							
SVOC's by GC/MS 8270 cont'd				1 8270C	1002 19:30	1003 17:42	RL
Pyridine	ND	ug/l	50.				
2-Picoline	ND	ug/l	20.				
Pronamide	ND	ug/l	20.				
Methyl methanesulfonate	ND	ug/l	20.				
Surrogate(s)	Recovery		QC Criteria				
2-Fluorophenol	40.0	%	21-120				
Phenol-d6	36.0	%	10-120				
Nitrobenzene-d5	67.0	%	23-120				
2-Fluorobiphenyl	61.0	%	43-120				
2,4,6-Tribromophenol	57.0	%	10-120				
4-Terphenyl-d14	81.0	%	33-120				
Blank Analysis for sample(s) 01 (WG255492-1)							
PAH by GC/MS SIM 8270M				1 8270C-M	1002 19:30	1003 13:20	RL
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				
Perylene	ND	ug/l	0.20				
Biphenyl	ND	ug/l	0.20				
2,6-Dimethylnaphthalene	ND	ug/l	0.20				
1-Methylphenanthrene	ND	ug/l	0.20				
Benzo(e)Pyrene	ND	ug/l	0.20				
Hexachloroethane	ND	ug/l	0.80				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0614000

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01 (WG255492-1)							
PAH by GC/MS SIM 8270M cont'd				1	8270C-M	1002 19:30	1003 13:20 RL
Surrogate(s)	Recovery		QC Criteria				
2-Fluorophenol	39.0	%	21-120				
Phenol-d6	35.0	%	10-120				
Nitrobenzene-d5	56.0	%	23-120				
2-Fluorobiphenyl	50.0	%	43-120				
2,4,6-Tribromophenol	64.0	%	10-120				
4-Terphenyl-d14	63.0	%	33-120				

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

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

GLOSSARY OF TERMS AND SYMBOLS

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

LIMITATION OF LIABILITIES

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

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



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TEL: 508-822-9300
FAX: 508-822-3288

CHAIN OF CUSTODY

PAGE

OF

Date Rec'd in Lab:

9/29

ALPHA Job #: 20614000

Client Information

Client: *Yef Pearl Assoc.*

Address: *Cambridge*

Phone

Fax:

Email:

☐ These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

RCP Detection Limits

Project Information

Project Name: *MIT MEDIALAB*

Project Location: *CAMBRIDGE*

Project #: *3460*

Project Manager: *Arice*

ALPHA Quote #:

Turn-Around Time

☒ Standard

☐ RUSH (only confirmed if pre-arranged)

Date Due: *10/01/02*

Time: *am*

Report Information - Data Deliverables

☐ FAX

☐ EMAIL

☐ Same as Client info PO #:

☐ ADEx

☐ Add'l Deliverables

Regulatory Requirements/Report Limits

State/Fed Program

Criteria

MA MCPPRESUMPTIVE CERTAINTY -- CT REASONABLE CONFIDENCE PROTOCOLS

☒ Yes ☐ No

Are MCP Analytical Methods Required?

☐ Yes ☐ No

Are CT RCP (Reasonable Confidence Protocols) Required?

SAMPLE HANDLING

Filtration

☐ Done

☐ Not needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID
(Lab Use Only)

Sample ID

Collection
Date Time

Sample
Matrix

Sampler's
Initials

4000.1

B-101 OW

9/29/02

H₂O me

ANALYSIS
*AVOC 8270
VOC 624
Total PP-13
LPH 64/10/13
PH 155
Total Res. Ch. (150)
2 2 1 2 1 1 1*

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT
MA MCP or CT RCP?

Container Type

Preservative

*AVP APP P
AHC B P P P*

Relinquished By:

Date/Time

Received By:

Date/Time

[Signature] 9/29/02 2:10
[Signature] 9/29/02 2:10

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

ALPHA ANALYTICAL LABORATORIES

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

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

CERTIFICATE OF ANALYSIS

Client:	McPhail Associates	Laboratory Job Number:	L0505824
Address:	30 Norfolk Street		
	Cambridge, MA 02139	Date Received:	27-MAY-2005
Attn:	Mr. Ambrose Donovan	Date Reported:	06-JUN-2005
Project Number:	3460.9.01	Delivery Method:	Alpha
Site:	MIT MEDIA CENTER		

The following questions pertain only to MCP Analytical Methods

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

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

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

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

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

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

Authorized by: Kathleen M. O'Brien

This document electronically signed

ALPHA ANALYTICAL LABORATORIES

Laboratory Job Number: L0505824

Date Reported: 06-JUN-2005

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0505824-01	B-101 (OW)	CAMBRIDGE, MA
L0505824-02	B-102 (OW)	CAMBRIDGE, MA
L0505824-03	B-103 (OW)	CAMBRIDGE, MA

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0505824

MCP Related Narratives

Report Submission

In reference to question F, the samples were analyzed only for the compounds specified on the chain of custody.

Extraction methods

Extraction method 3510C was used for the analysis of EPH by method EPH-04-1.

Volatile Organics

In reference to question E, the LCS/LCSD % recoveries for Dichlorodifluoromethane, a difficult analyte, are above the acceptance criteria for the method.

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

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

Laboratory Sample Number: L0505824-01

Date Collected: 27-MAY-2005 12:00

B-101 (OW)

Date Received : 27-MAY-2005

Sample Matrix: WATER

Date Reported : 06-JUN-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber,2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Dissolved Metals by MCP 6000/7000 series				60 6010B			
Lead, Dissolved	ND	mg/l	0.010	60 6010B	0601 09:40	0602 14:04	MG
Mercury, Dissolved	ND	mg/l	0.0002	64 7470A	0531 16:15	0601 10:09	DM
Volatile Organics by MCP 8260B				60 8260B	0601 11:26 RY		
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	1.0				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0505824-01
B-101 (OW)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0601 11:26 RY		
o-Xylene	ND	ug/l	1.0				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Isopropyl Ether	ND	ug/l	2.0				
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0				
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0				
1,4-Dioxane	ND	ug/l	250				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	106.	%	70-130				
Toluene-d8	99.0	%	70-130				
4-Bromofluorobenzene	106.	%	70-130				
Dibromofluoromethane	101.	%	70-130				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0505824-01
B-101 (OW)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	

Extractable Petroleum Hydrocarbons				61 EPH-04-1	0531 14:30	0601 19:03	LT
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Quality Control Information

Condition of sample received:	Satisfactory	
Aqueous preservative:	Laboratory Provided Preserved Container	
Sample temperature upon receipt:	Received on Ice	
Sample extraction method:	Extracted Per the Method	
Were all QA/QC procedures REQUIRED by the method followed?		YES
Were all performance/acceptance standards for the required procedures achieved?		YES
Were significant modifications made to the method as specified in Sect 11.3?		NO
The normal acceptance range for the extraction surrogates, Chloro-octadecane and o-Terphenyl, is 40-140%.		
The normal acceptance range for the fractionation surrogates, 2-Fluorobiphenyl and 2-Bromonaphthalene, is 40-140%.		

C9-C18 Aliphatics	ND	ug/l	102.
C19-C36 Aliphatics	ND	ug/l	102.
C11-C22 Aromatics	ND	ug/l	102.
C11-C22 Aromatics, Adjusted	ND	ug/l	102.
Naphthalene	ND	ug/l	10.2
2-Methylnaphthalene	ND	ug/l	10.2
Acenaphthylene	ND	ug/l	10.2
Acenaphthene	ND	ug/l	10.2
Fluorene	ND	ug/l	10.2
Phenanthrene	ND	ug/l	10.2
Anthracene	ND	ug/l	10.2
Fluoranthene	ND	ug/l	10.2
Pyrene	ND	ug/l	10.2
Benzo(a)anthracene	ND	ug/l	10.2
Chrysene	ND	ug/l	10.2
Benzo(b)fluoranthene	ND	ug/l	10.2
Benzo(k)fluoranthene	ND	ug/l	10.2
Benzo(a)pyrene	ND	ug/l	10.2
Indeno(1,2,3-cd)Pyrene	ND	ug/l	10.2
Dibenzo(a,h)anthracene	ND	ug/l	10.2
Benzo(ghi)perylene	ND	ug/l	10.2

Surrogate(s)	Recovery		QC Criteria
Chloro-Octadecane	56.0	%	40-140
o-Terphenyl	79.0	%	40-140
2-Fluorobiphenyl	77.0	%	40-140
2-Bromonaphthalene	78.0	%	40-140

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

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

Laboratory Sample Number: L0505824-02 Date Collected: 27-MAY-2005 12:30
B-102 (OW) Date Received : 27-MAY-2005
Sample Matrix: WATER Date Reported : 06-JUN-2005
Condition of Sample: Satisfactory Field Prep: None
Number & Type of Containers: 2-Amber,2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Dissolved Metals by MCP 6000/7000 series				60 6010B			
Lead, Dissolved	ND	mg/l	0.010	60 6010B	0601 09:40	0602 14:08	MG
Mercury, Dissolved	ND	mg/l	0.0002	64 7470A	0531 16:15	0601 10:10	DM
Volatile Organics by MCP 8260B				60 8260B		0601 12:02	RY
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	0.99	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	1.0				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0505824-02
B-102 (OW)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B		0601 12:02 RY	
o-Xylene	ND	ug/l	1.0				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Isopropyl Ether	ND	ug/l	2.0				
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0				
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0				
1,4-Dioxane	ND	ug/l	250				
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	106.	%		70-130			
Toluene-d8	98.0	%		70-130			
4-Bromofluorobenzene	108.	%		70-130			
Dibromofluoromethane	100.	%		70-130			

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0505824-02
B-102 (OW)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
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Extractable Petroleum Hydrocarbons	61 EPH-04-1				0531 14:30 0601 19:36 LT	
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Quality Control Information

Condition of sample received:	Satisfactory	
Aqueous preservative:	Laboratory Provided Preserved Container	
Sample temperature upon receipt:	Received on Ice	
Sample extraction method:	Extracted Per the Method	
Were all QA/QC procedures REQUIRED by the method followed?		YES
Were all performance/acceptance standards for the required procedures achieved?		YES
Were significant modifications made to the method as specified in Sect 11.3?		NO
The normal acceptance range for the extraction surrogates, Chloro-octadecane and o-Terphenyl, is 40-140%.		
The normal acceptance range for the fractionation surrogates, 2-Fluorobiphenyl and 2-Bromonaphthalene, is 40-140%.		

C9-C18 Aliphatics	ND	ug/l	101.
C19-C36 Aliphatics	ND	ug/l	101.
C11-C22 Aromatics	ND	ug/l	101.
C11-C22 Aromatics, Adjusted	ND	ug/l	101.
Naphthalene	ND	ug/l	10.1
2-Methylnaphthalene	ND	ug/l	10.1
Acenaphthylene	ND	ug/l	10.1
Acenaphthene	ND	ug/l	10.1
Fluorene	ND	ug/l	10.1
Phenanthrene	ND	ug/l	10.1
Anthracene	ND	ug/l	10.1
Fluoranthene	ND	ug/l	10.1
Pyrene	ND	ug/l	10.1
Benzo(a)anthracene	ND	ug/l	10.1
Chrysene	ND	ug/l	10.1
Benzo(b)fluoranthene	ND	ug/l	10.1
Benzo(k)fluoranthene	ND	ug/l	10.1
Benzo(a)pyrene	ND	ug/l	10.1
Indeno(1,2,3-cd)Pyrene	ND	ug/l	10.1
Dibenzo(a,h)anthracene	ND	ug/l	10.1
Benzo(ghi)perylene	ND	ug/l	10.1
Surrogate(s)	Recovery		QC Criteria
Chloro-Octadecane	64.0	%	40-140
o-Terphenyl	81.0	%	40-140
2-Fluorobiphenyl	79.0	%	40-140
2-Bromonaphthalene	80.0	%	40-140

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

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

Laboratory Sample Number: L0505824-03

Date Collected: 27-MAY-2005 13:00

B-103 (OW)

Date Received : 27-MAY-2005

Sample Matrix: WATER

Date Reported : 06-JUN-2005

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber,2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Dissolved Metals by MCP 6000/7000 series				60 6010B			
Lead, Dissolved	ND	mg/l	0.010	60 6010B	0601 09:40	0602 14:12	MG
Mercury, Dissolved	ND	mg/l	0.0002	64 7470A	0531 16:15	0601 10:12	DM
Volatile Organics by MCP 8260B				60 8260B	0601 12:38 RY		
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	1.0				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0505824-03
B-103 (OW)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by MCP 8260B continued				60 8260B	0601 12:38 RY		
o-Xylene	ND	ug/l	1.0				
cis-1,2-Dichloroethene	0.73	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Isopropyl Ether	ND	ug/l	2.0				
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0				
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0				
1,4-Dioxane	ND	ug/l	250				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	109.	%	70-130				
Toluene-d8	99.0	%	70-130				
4-Bromofluorobenzene	103.	%	70-130				
Dibromofluoromethane	103.	%	70-130				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0505824-03
B-103 (OW)

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
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Extractable Petroleum Hydrocarbons	61 EPH-04-1	0531 14:30	0601 20:09	LT	
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Quality Control Information

Condition of sample received:	Satisfactory
Aqueous preservative:	Laboratory Provided Preserved Container
Sample temperature upon receipt:	Received on Ice
Sample extraction method:	Extracted Per the Method
Were all QA/QC procedures REQUIRED by the method followed?	YES
Were all performance/acceptance standards for the required procedures achieved?	YES
Were significant modifications made to the method as specified in Sect 11.3?	NO
The normal acceptance range for the extraction surrogates, Chloro-octadecane and o-Terphenyl, is 40-140%.	
The normal acceptance range for the fractionation surrogates, 2-Fluorobiphenyl and 2-Bromonaphthalene, is 40-140%.	

C9-C18 Aliphatics	ND	ug/l	102.
C19-C36 Aliphatics	ND	ug/l	102.
C11-C22 Aromatics	ND	ug/l	102.
C11-C22 Aromatics, Adjusted	ND	ug/l	102.
Naphthalene	ND	ug/l	10.2
2-Methylnaphthalene	ND	ug/l	10.2
Acenaphthylene	ND	ug/l	10.2
Acenaphthene	ND	ug/l	10.2
Fluorene	ND	ug/l	10.2
Phenanthrene	ND	ug/l	10.2
Anthracene	ND	ug/l	10.2
Fluoranthene	ND	ug/l	10.2
Pyrene	ND	ug/l	10.2
Benzo(a)anthracene	ND	ug/l	10.2
Chrysene	ND	ug/l	10.2
Benzo(b)fluoranthene	ND	ug/l	10.2
Benzo(k)fluoranthene	ND	ug/l	10.2
Benzo(a)pyrene	ND	ug/l	10.2
Indeno(1,2,3-cd)Pyrene	ND	ug/l	10.2
Dibenzo(a,h)anthracene	ND	ug/l	10.2
Benzo(ghi)perylene	ND	ug/l	10.2

Surrogate(s)	Recovery		QC Criteria
Chloro-Octadecane	59.0	%	40-140
o-Terphenyl	78.0	%	40-140
2-Fluorobiphenyl	78.0	%	40-140
2-Bromonaphthalene	78.0	%	40-140

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0505824

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Dissolved Metals by MCP 6000/7000 series for sample(s) 01-03 (WG203311-2, WG203311-3)					
Lead, Dissolved	105	107	2	20	80-120
Dissolved Metals by MCP 6000/7000 series for sample(s) 01-03 (WG203220-2, WG203220-3)					
Mercury, Dissolved	90	87	3	20	80-120
Volatile Organics by MCP 8260B for sample(s) 01-03 (WG203209-4, WG203209-5)					
Methylene chloride	110	109	1	25	70-130
1,1-Dichloroethane	101	102	1	25	70-130
Chloroform	98	99	1	25	70-130
Carbon tetrachloride	97	99	2	25	70-130
1,2-Dichloropropane	99	103	4	25	70-130
Dibromochloromethane	101	99	2	25	70-130
1,1,2-Trichloroethane	104	106	2	25	70-130
Tetrachloroethene	108	102	6	25	70-130
Chlorobenzene	103	101	2	25	70-130
Trichlorofluoromethane	106	110	4	25	70-130
1,2-Dichloroethane	99	102	3	25	70-130
1,1,1-Trichloroethane	99	102	3	25	70-130
Bromodichloromethane	102	106	4	25	70-130
trans-1,3-Dichloropropene	91	90	1	25	70-130
cis-1,3-Dichloropropene	96	97	1	25	70-130
1,1-Dichloropropene	103	104	1	25	70-130
Bromoform	106	106	0	50	70-130
1,1,2,2-Tetrachloroethane	99	101	2	25	70-130
Benzene	102	99	3	25	70-130
Toluene	103	99	4	25	70-130
Ethylbenzene	107	103	4	25	70-130
Chloromethane	122	122	0	50	70-130
Bromomethane	108	116	7	50	70-130
Vinyl chloride	114	111	3	25	70-130
Chloroethane	108	102	6	25	70-130
1,1-Dichloroethene	111	106	5	25	70-130
trans-1,2-Dichloroethene	102	100	2	25	70-130
Trichloroethene	103	99	4	25	70-130
1,2-Dichlorobenzene	103	103	0	25	70-130
1,3-Dichlorobenzene	103	105	2	25	70-130
1,4-Dichlorobenzene	103	102	1	25	70-130
Methyl tert butyl ether	100	108	8	25	70-130
p/m-Xylene	110	106	4	25	70-130
o-Xylene	111	108	3	25	70-130
cis-1,2-Dichloroethene	113	108	5	25	70-130
Dibromomethane	99	105	6	25	70-130
1,2,3-Trichloropropane	97	101	4	25	70-130
Styrene	112	111	1	25	70-130
Dichlorodifluoromethane	140	137	2	50	70-130
Acetone	102	106	4	50	70-130
Carbon disulfide	107	100	7	25	70-130
2-Butanone	119	125	5	50	70-130

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0505824

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Volatile Organics by MCP 8260B for sample(s) 01-03 (WG203209-4, WG203209-5)					
4-Methyl-2-pentanone	120	126	5	50	70-130
2-Hexanone	106	108	2	50	70-130
Bromochloromethane	104	107	3	25	70-130
Tetrahydrofuran	87	95	9	25	70-130
2,2-Dichloropropane	94	97	3	25	70-130
1,2-Dibromoethane	98	98	0	25	70-130
1,3-Dichloropropane	102	102	0	25	70-130
1,1,1,2-Tetrachloroethane	99	101	2	25	70-130
Bromobenzene	104	102	2	25	70-130
n-Butylbenzene	94	91	3	25	70-130
sec-Butylbenzene	103	101	2	25	70-130
tert-Butylbenzene	106	104	2	25	70-130
o-Chlorotoluene	103	102	1	25	70-130
p-Chlorotoluene	103	102	1	25	70-130
1,2-Dibromo-3-chloropropane	100	103	3	50	70-130
Hexachlorobutadiene	102	99	3	25	70-130
Isopropylbenzene	103	100	3	25	70-130
p-Isopropyltoluene	105	104	1	25	70-130
Naphthalene	94	95	1	25	70-130
n-Propylbenzene	106	104	2	25	70-130
1,2,3-Trichlorobenzene	92	94	2	25	70-130
1,2,4-Trichlorobenzene	88	88	0	25	70-130
1,3,5-Trimethylbenzene	106	104	2	25	70-130
1,2,4-Trimethylbenzene	106	104	2	25	70-130
Ethyl ether	103	108	5	25	70-130
Isopropyl Ether	90	95	5	25	70-130
Ethyl-Tert-Butyl-Ether	100	105	5	25	70-130
Tertiary-Amyl Methyl Ether	100	103	3	25	70-130
1,4-Dioxane	100	108	8	50	70-130
Surrogate(s)					
1,2-Dichloroethane-d4	102	104	2		70-130
Toluene-d8	101	100	1		70-130
4-Bromofluorobenzene	98	98	0		70-130
Dibromofluoromethane	101	104	3		70-130
Extractable Petroleum Hydrocarbons for sample(s) 01-03 (WG203217-2, WG203217-3)					
C9-C18 Aliphatics	69	70	1	25	40-140
C19-C36 Aliphatics	67	69	3	25	40-140
C11-C22 Aromatics	90	90	0	25	40-140
Naphthalene	74	70	6	25	40-140
Acenaphthene	79	76	4	25	40-140
Anthracene	97	98	1	25	40-140
Pyrene	92	90	2	25	40-140
Chrysene	98	96	2	25	40-140
Nonane (C9)	56	56	0	25	30-140
Tetradecane (C14)	73	73	0	25	40-140

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH LCS/LCSD ANALYSIS

Laboratory Job Number: L0505824

Continued

Parameter	LCS %	LCSD %	RPD	RPD Limit	QC Limits
Extractable Petroleum Hydrocarbons for sample(s) 01-03 (WG203217-2, WG203217-3)					
Nonadecane (C19)	75	77	3	25	40-140
Eicosane (C20)	76	79	4	25	40-140
Octacosane (C28)	72	74	3	25	40-140
Surrogate(s)					
Chloro-Octadecane	62	51	19		40-140
o-Terphenyl	105	113	7		40-140
2-Fluorobiphenyl	82	82	0		40-140
2-Bromonaphthalene	82	83	1		40-140

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0505824

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG203311-1)							
Dissolved Metals by MCP 6000/7000 series				60 6010B			
Lead, Dissolved	ND	mg/l	0.010	60 6010B	0601 09:40	0602 13:24	MG
Blank Analysis for sample(s) 01-03 (WG203220-1)							
Dissolved Metals by MCP 6000/7000 series							
Mercury, Dissolved	ND	mg/l	0.0002	64 7470A	0531 16:15	0601 09:58	DM
Blank Analysis for sample(s) 01-03 (WG203209-6)							
Volatile Organics by MCP 8260B				60 8260B		0601 10:14 RY	
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	1.0				
o-Xylene	ND	ug/l	1.0				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0505824

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG203209-6)							
Volatile Organics by MCP 8260B continued				60 8260B		0601 10:14 RY	
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.0				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Isopropyl Ether	ND	ug/l	2.0				
Ethyl-Tert-Butyl-Ether	ND	ug/l	2.0				
Tertiary-Amyl Methyl Ether	ND	ug/l	2.0				
1,4-Dioxane	ND	ug/l	250				
Surrogate(s)	Recovery			QC Criteria			
1,2-Dichloroethane-d4	106.	%		70-130			
Toluene-d8	100.	%		70-130			
4-Bromofluorobenzene	108.	%		70-130			
Dibromofluoromethane	100.	%		70-130			
Blank Analysis for sample(s) 01-03 (WG203217-1)							
Extractable Petroleum Hydrocarbons				61 EPH-04-1		0531 14:30 0601 18:31 LT	
C9-C18 Aliphatics	ND	ug/l	100.				
C19-C36 Aliphatics	ND	ug/l	100.				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0505824

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01-03 (WG203217-1)							
Extractable Petroleum Hydrocarbons continued				61 EPH-04-1	0531 14:30	0601 18:31	LT
C11-C22 Aromatics	ND	ug/l	100.				
C11-C22 Aromatics, Adjusted	ND	ug/l	100.				
Naphthalene	ND	ug/l	10.0				
2-Methylnaphthalene	ND	ug/l	10.0				
Acenaphthylene	ND	ug/l	10.0				
Acenaphthene	ND	ug/l	10.0				
Fluorene	ND	ug/l	10.0				
Phenanthrene	ND	ug/l	10.0				
Anthracene	ND	ug/l	10.0				
Fluoranthene	ND	ug/l	10.0				
Pyrene	ND	ug/l	10.0				
Benzo(a)anthracene	ND	ug/l	10.0				
Chrysene	ND	ug/l	10.0				
Benzo(b)fluoranthene	ND	ug/l	10.0				
Benzo(k)fluoranthene	ND	ug/l	10.0				
Benzo(a)pyrene	ND	ug/l	10.0				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	10.0				
Dibenzo(a,h)anthracene	ND	ug/l	10.0				
Benzo(ghi)perylene	ND	ug/l	10.0				
Surrogate(s)	Recovery		QC Criteria				
Chloro-Octadecane	71.0	%	40-140				
o-Terphenyl	78.0	%	40-140				
2-Fluorobiphenyl	80.0	%	40-140				
2-Bromonaphthalene	80.0	%	40-140				

**ALPHA ANALYTICAL LABORATORIES
ADDENDUM I**

REFERENCES

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

GLOSSARY OF TERMS AND SYMBOLS

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

LIMITATION OF LIABILITIES

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

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

**ALPHA ANALYTICAL LABORATORIES
LOGIN SPECIFIC INFORMATION**

Laboratory Job Number: L0505824

Were project specific reporting limits specified?

YES

Cooler Information

Cooler Custody Seal

A	Absent
B	Absent
C	Absent
D	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp	Pres	Seal	Analysis
L0505824-01A	Vial HCl preserved	D	N/A	0.5 C	Y	Absent	MCP-8260-04
L0505824-01B	Vial HCl preserved	D	N/A	0.5 C	Y	Absent	MCP-8260-04
L0505824-01C	Amber 1000ml HCl preserved	B	<2	0.9 C	Y	Absent	EPH-DELUX-04
L0505824-01D	Amber 1000ml HCl preserved	B	<2	0.9 C	Y	Absent	EPH-DELUX-04
L0505824-01E	Plastic 500ml unpreserved	A	=7	2.2 C	Y	Absent	PREPS
L0505824-01F	Plastic 500ml unpreserved	A	=7	2.2 C	Y	Absent	PREPS
L0505824-01G	Plastic 250ml HNO3 preserved spl	A	<2	2.2 C	Y	Absent	MCP-7470S, MCP-PB-6010S
L0505824-02A	Vial HCl preserved	D	N/A	0.5 C	Y	Absent	MCP-8260-04
L0505824-02B	Vial HCl preserved	D	N/A	0.5 C	Y	Absent	MCP-8260-04
L0505824-02C	Amber 1000ml HCl preserved	B	<2	0.9 C	Y	Absent	EPH-DELUX-04
L0505824-02D	Amber 1000ml HCl preserved	B	<2	0.9 C	Y	Absent	EPH-DELUX-04
L0505824-02E	Plastic 500ml unpreserved	A	=7	2.2 C	Y	Absent	PREPS
L0505824-02F	Plastic 500ml unpreserved	A	=7	2.2 C	Y	Absent	PREPS
L0505824-02G	Plastic 250ml HNO3 preserved spl	A	<2	2.2 C	Y	Absent	MCP-7470S, MCP-PB-6010S
L0505824-03A	Vial HCl preserved	D	N/A	0.5 C	Y	Absent	MCP-8260-04
L0505824-03B	Vial HCl preserved	D	N/A	0.5 C	Y	Absent	MCP-8260-04
L0505824-03C	Amber 1000ml HCl preserved	B	<2	0.9 C	Y	Absent	EPH-DELUX-04
L0505824-03D	Amber 1000ml HCl preserved	B	<2	0.9 C	Y	Absent	EPH-DELUX-04
L0505824-03E	Plastic 500ml unpreserved	A	=7	2.2 C	Y	Absent	PREPS
L0505824-03F	Plastic 500ml unpreserved	A	=7	2.2 C	Y	Absent	PREPS
L0505824-03G	Plastic 250ml HNO3 preserved spl	A	<2	2.2 C	Y	Absent	MCP-7470S, MCP-PB-6010S

Container Comments

Container ID Comments

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65 NY:11148

CERTIFICATE OF ANALYSIS

Client: McPhail Associates

Laboratory Job Number: L0012061

Address: 30 Norfolk Street

Invoice Number: 45662

Cambridge, MA 02139

Date Received: 28-DEC-00

Attn: Ambrose Donovan

Date Reported: 05-JAN-01

Project Number: 3460

Delivery Method: Alpha

Site: MIT MEDIA

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0012061-01	A-4 (OW) S-1	
L0012061-02	B-99-5 (PZ) S-1	
L0012061-03	C-3 (OW) S-1	
L0012061-04	E-9 S-1 TO S-8	
L0012061-05	D-9 S-1 TO S-8	
L0012061-06	TRIP BLANK	
L0012061-07	TRIP BLANK	

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately 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: Scott McLean

Scott McLean - Laboratory Director
This document electronically signed

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0012061

Alpha Report L0012061:

PCB/Pesticides Analysis

Please note that the surrogate percent recovery for Decachlorobiphenyl for the analysis of PCB/Pesticides by EPA Method 8081/8082 on Alpha Sample(s) L0012061-03 as well as the method blank associated with the analytical batch, is outside the in-house acceptance criteria for the method. There is insufficient sample for re-extraction.

8260B Analysis

It should be noted that Methylene chloride via EPA Method 8260B was reported for Alpha Sample(s) L0012061-04, -05, and -07 as well as some of the method blanks associated with the analytical batches. In our opinion, the Methylene chloride is likely to be a result of lab contamination.

Total Metals

It should be noted that the matrix spike percent recovery for the analysis of Total Mercury associated with Alpha Sample(s) L0012061-03 is outside the in-house acceptance criteria for the method. A post analytical spike was performed with an acceptable recovery of 109%.

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L0012061-01
A-4 (OW) S-1
Sample Matrix: WATER

Date Collected: 28-DEC-2000 00:00
Date Received : 28-DEC-2000
Date Reported : 05-JAN-2001

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Amber,2-Plastic,3-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Dissolved Metals						
Lead, Dissolved	ND	mg/l	0.01	1 6010B	1228 12:00 0102 22:41	RW
Volatile Organics by GC/MS 8260				1 8260B	0104 12:00	BT
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			
Tetrachloroethene	ND	ug/l	1.0			
Chlorobenzene	ND	ug/l	3.5			
Trichlorofluoromethane	ND	ug/l	5.0			
1,2-Dichloroethane	ND	ug/l	1.0			
1,1,1-Trichloroethane	ND	ug/l	1.0			
Bromodichloromethane	ND	ug/l	1.0			
trans-1,3-Dichloropropene	ND	ug/l	1.0			
cis-1,3-Dichloropropene	ND	ug/l	1.0			
1,1-Dichloropropene	ND	ug/l	5.0			
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	1.5			
Ethylbenzene	ND	ug/l	1.0			
Chloromethane	ND	ug/l	10.			
Bromomethane	ND	ug/l	2.0			
Vinyl chloride	ND	ug/l	2.0			
Chloroethane	ND	ug/l	2.0			
1,1-Dichloroethene	ND	ug/l	1.5			
trans-1,2-Dichloroethene	ND	ug/l	1.5			
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			
Methyl tert butyl ether	ND	ug/l	4.0			
p/m-Xylene	ND	ug/l	1.0			
o-Xylene	ND	ug/l	1.0			

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-01
A-4 (OW) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics by GC/MS 8260 continued				1 8260B	0104 12:00 BT		
cis-1,2-Dichloroethene	ND	ug/l	1.0				
Dibromomethane	ND	ug/l	10.				
1,4-Dichlorobutane	ND	ug/l	10.				
Iodomethane	ND	ug/l	10.				
1,2,3-Trichloropropane	ND	ug/l	10.				
Styrene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	10.				
Acetone	ND	ug/l	10.				
Carbon disulfide	ND	ug/l	10.				
2-Butanone	ND	ug/l	10.				
Vinyl acetate	ND	ug/l	10.				
4-Methyl-2-pentanone	ND	ug/l	10.				
2-Hexanone	ND	ug/l	10.				
Ethyl methacrylate	ND	ug/l	10.				
Acrolein	ND	ug/l	25.				
Acrylonitrile	ND	ug/l	10.				
Bromochloromethane	ND	ug/l	5.0				
Tetrahydrofuran	ND	ug/l	20.				
2,2-Dichloropropane	ND	ug/l	5.0				
1,2-Dibromoethane	ND	ug/l	5.0				
1,3-Dichloropropane	ND	ug/l	5.0				
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0				
Bromobenzene	ND	ug/l	5.0				
n-Butylbenzene	ND	ug/l	5.0				
sec-Butylbenzene	ND	ug/l	5.0				
tert-Butylbenzene	ND	ug/l	5.0				
o-Chlorotoluene	ND	ug/l	5.0				
p-Chlorotoluene	ND	ug/l	5.0				
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0				
Hexachlorobutadiene	ND	ug/l	5.0				
Isopropylbenzene	ND	ug/l	5.0				
p-Isopropyltoluene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
n-Propylbenzene	ND	ug/l	5.0				
1,2,3-Trichlorobenzene	ND	ug/l	5.0				
1,2,4-Trichlorobenzene	ND	ug/l	5.0				
1,3,5-Trimethylbenzene	ND	ug/l	5.0				
1,2,4-Trimethylbenzene	ND	ug/l	5.0				
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0				
Ethyl ether	ND	ug/l	25.				
Surrogate Recovery							
1,2-Dichloroethane-d4	119.	%					
Toluene-d8	107.	%					
4-Bromofluorobenzene	105.	%					
Dibromofluoromethane	114.	%					

Hydrocarbon Scan by GC 8100M 1 8100M 0102 10:00 0103 22:40 JW

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-01
A-4 (OW) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ID ANAL
Hydrocarbon Scan by GC 8100M continued				1 8100M	0102 10:00	0103 22:40 JW
Mineral Spirits	ND	mg/l	1.1			
Gasoline	ND	mg/l	1.1			
Fuel Oil #2/Diesel	ND	mg/l	1.1			
Fuel Oil #4	ND	mg/l	1.1			
Fuel Oil #6	ND	mg/l	1.1			
Motor Oil	ND	mg/l	1.1			
Kerosene	ND	mg/l	1.1			
Transformer Oil	ND	mg/l	1.1			
Surrogate Recovery						
o-Terphenyl	64.0	%				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L0012061-02
B-99-5 (PZ) S-1

Date Collected: 28-DEC-2000 00:00

Date Received : 28-DEC-2000

Sample Matrix: WATER

Date Reported : 05-JAN-2001

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Amber,2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Dissolved Metals							
Lead, Dissolved	ND	mg/l	0.01	1 6010B	1228 12:00	0102 22:48	RW
Volatile Organics by GC/MS 8260				1 8260B		0105 13:45	BT
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				
Tetrachloroethene	ND	ug/l	1.0				
Chlorobenzene	ND	ug/l	3.5				
Trichlorofluoromethane	ND	ug/l	5.0				
1,2-Dichloroethane	ND	ug/l	1.0				
1,1,1-Trichloroethane	ND	ug/l	1.0				
Bromodichloromethane	ND	ug/l	1.0				
trans-1,3-Dichloropropene	ND	ug/l	1.0				
cis-1,3-Dichloropropene	ND	ug/l	1.0				
1,1-Dichloropropene	ND	ug/l	5.0				
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	1.5				
Ethylbenzene	ND	ug/l	1.0				
Chloromethane	ND	ug/l	10.				
Bromomethane	ND	ug/l	2.0				
Vinyl chloride	ND	ug/l	2.0				
Chloroethane	ND	ug/l	2.0				
1,1-Dichloroethene	ND	ug/l	1.5				
trans-1,2-Dichloroethene	ND	ug/l	1.5				
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				
Methyl tert butyl ether	5.2	ug/l	4.0				
p/m-Xylene	ND	ug/l	1.0				
o-Xylene	ND	ug/l	1.0				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-02
B-99-5 (PZ) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B	0105 13:45 BT	
cis-1,2-Dichloroethene	ND	ug/l	1.0			
Dibromomethane	ND	ug/l	10.			
1,4-Dichlorobutane	ND	ug/l	10.			
Iodomethane	ND	ug/l	10.			
1,2,3-Trichloropropane	ND	ug/l	10.			
Styrene	ND	ug/l	1.0			
Dichlorodifluoromethane	ND	ug/l	10.			
Acetone	ND	ug/l	10.			
Carbon disulfide	ND	ug/l	10.			
2-Butanone	ND	ug/l	10.			
Vinyl acetate	ND	ug/l	10.			
4-Methyl-2-pentanone	ND	ug/l	10.			
2-Hexanone	ND	ug/l	10.			
Ethyl methacrylate	ND	ug/l	10.			
Acrolein	ND	ug/l	25.			
Acrylonitrile	ND	ug/l	10.			
Bromochloromethane	ND	ug/l	5.0			
Tetrahydrofuran	ND	ug/l	20.			
2,2-Dichloropropane	ND	ug/l	5.0			
1,2-Dibromoethane	ND	ug/l	5.0			
1,3-Dichloropropane	ND	ug/l	5.0			
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0			
Bromobenzene	ND	ug/l	5.0			
n-Butylbenzene	ND	ug/l	5.0			
sec-Butylbenzene	ND	ug/l	5.0			
tert-Butylbenzene	ND	ug/l	5.0			
o-Chlorotoluene	ND	ug/l	5.0			
p-Chlorotoluene	ND	ug/l	5.0			
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0			
Hexachlorobutadiene	ND	ug/l	5.0			
Isopropylbenzene	ND	ug/l	5.0			
p-Isopropyltoluene	ND	ug/l	5.0			
Naphthalene	ND	ug/l	5.0			
n-Propylbenzene	ND	ug/l	5.0			
1,2,3-Trichlorobenzene	ND	ug/l	5.0			
1,2,4-Trichlorobenzene	ND	ug/l	5.0			
1,3,5-Trimethylbenzene	ND	ug/l	5.0			
1,2,4-Trimethylbenzene	ND	ug/l	5.0			
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0			
Ethyl ether	ND	ug/l	25.			
Surrogate Recovery						
1,2-Dichloroethane-d4	118.	%				
Toluene-d8	109.	%				
4-Bromofluorobenzene	108.	%				
Dibromofluoromethane	116.	%				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-02
B-99-5 (PZ) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
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Extractable Petroleum Hydrocarbons				46 98-1	0103 09:00 0105 14:20 RL	
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Quality Control Information

Condition of sample received:	Satisfactory
Aqueous preservative:	Laboratory Provided Preserved Container
Sample temperature upon receipt:	Received on Ice
Sample extraction method:	Extracted Per the Method
Were all QA/QC procedures REQUIRED by the method followed?	YES
Were all performance/acceptance standards for the required procedures achieved?	YES
Were significant modifications made to the method as specified in Sect 11.3?	NO
Please note to subtract the method blank from the stated result.	
The normal acceptance range for the extraction surrogates, Chloro-octadecane and o-Terphenyl, is 40-140%.	
The normal acceptance range for the fractionation surrogates, 2-Fluorobiphenyl and 2-Bromonaphthalene, is 40-140%.	

C9-C18 Aliphatics	ND	ug/l	106.
C19-C36 Aliphatics	ND	ug/l	106.
C11-C22 Aromatics	ND	ug/l	106.

Surrogate Recovery

Chloro-Octadecane	76.0	%
o-Terphenyl	86.0	%
2-Fluorobiphenyl	83.0	%
2-Bromonaphthalene	88.0	%

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L0012061-03
C-3 (OW) S-1
Sample Matrix: WATER

Date Collected: 28-DEC-2000 00:00
Date Received : 28-DEC-2000
Date Reported : 05-JAN-2001

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 5-Amber,2-Plastic,4-Vial

PARAMETER	RESULT	UNITS	RDL	REF	METHOD	DATE PREP ANAL	ID
Solids, Total Suspended	170	mg/l	25.	30	2540D	0104 11:30	DT
pH	7.3	SU	-	1	9040B	1228 19:10	AN
Total Metals				1	3015		
Antimony, Total	ND	mg/l	0.00	1	6010B	0102 10:30 0103 14:49	MG
Arsenic, Total	0.014	mg/l	0.005	1	6010B	0102 10:30 0103 14:49	MG
Beryllium, Total	ND	mg/l	0.004	1	6010B	0102 10:30 0103 14:49	MG
Cadmium, Total	ND	mg/l	0.005	1	6010B	0102 10:30 0103 14:49	MG
Chromium, Total	0.02	mg/l	0.01	1	6010B	0102 10:30 0103 14:49	MG
Copper, Total	0.02	mg/l	0.01	1	6010B	0102 10:30 0103 14:49	MG
Lead, Total	0.01	mg/l	0.01	1	6010B	0102 10:30 0103 14:49	MG
Mercury, Total	ND	mg/l	0.0005	1	7470A	1229 12:50 0102 11:36	DM
Nickel, Total	ND	mg/l	0.025	1	6010B	0102 10:30 0103 14:49	MG
Selenium, Total	ND	mg/l	0.005	1	6010B	0102 10:30 0103 14:49	MG
Silver, Total	ND	mg/l	0.007	1	6010B	0102 10:30 0103 14:49	MG
Thallium, Total	ND	mg/l	0.005	1	6010B	0102 10:30 0103 14:49	MG
Zinc, Total	0.05	mg/l	0.05	1	6010B	0102 10:30 0103 14:49	MG
Dissolved Metals							
Antimony, Dissolved	ND	mg/l	0.00	1	6010B	1228 12:00 0102 22:55	RW
Arsenic, Dissolved	ND	mg/l	0.005	1	6010B	1228 12:00 0102 22:55	RW
Beryllium, Dissolved	ND	mg/l	0.004	1	6010B	1228 12:00 0102 22:55	RW
Cadmium, Dissolved	ND	mg/l	0.005	1	6010B	1228 12:00 0102 22:55	RW
Chromium, Dissolved	ND	mg/l	0.01	1	6010B	1228 12:00 0102 22:55	RW
Copper, Dissolved	ND	mg/l	0.01	1	6010B	1228 12:00 0102 22:55	RW
Lead, Dissolved	ND	mg/l	0.01	1	6010B	1228 12:00 0102 22:55	RW
Mercury, Dissolved	ND	mg/l	0.0005	1	7470A	1229 12:50 0102 11:36	DM
Nickel, Dissolved	ND	mg/l	0.025	1	6010B	1228 12:00 0102 22:55	RW
Selenium, Dissolved	ND	mg/l	0.005	1	6010B	1228 12:00 0102 22:55	RW
Silver, Dissolved	ND	mg/l	0.00	1	6010B	1228 12:00 0102 22:55	RW
Thallium, Dissolved	ND	mg/l	0.005	1	6010B	1228 12:00 0102 22:55	RW
Zinc, Dissolved	ND	mg/l	0.05	1	6010B	1228 12:00 0102 22:55	RW
Volatile Organics by GC/MS 8260				1	8260B	0104 13:23	BT

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-03
C-3 (OW) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ID ANAL
Volatile Organics by GC/MS 8260 continued				1 8260B	0104 13:23 BT	
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			
Tetrachloroethene	ND	ug/l	1.0			
Chlorobenzene	ND	ug/l	3.5			
Trichlorofluoromethane	ND	ug/l	5.0			
1,2-Dichloroethane	ND	ug/l	1.0			
1,1,1-Trichloroethane	ND	ug/l	1.0			
Bromodichloromethane	ND	ug/l	1.0			
trans-1,3-Dichloropropene	ND	ug/l	1.0			
cis-1,3-Dichloropropene	ND	ug/l	1.0			
1,1-Dichloropropene	ND	ug/l	5.0			
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	1.5			
Ethylbenzene	ND	ug/l	1.0			
Chloromethane	ND	ug/l	10.			
Bromomethane	ND	ug/l	2.0			
Vinyl chloride	ND	ug/l	2.0			
Chloroethane	ND	ug/l	2.0			
1,1-Dichloroethene	ND	ug/l	1.5			
trans-1,2-Dichloroethene	ND	ug/l	1.5			
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			
Methyl tert butyl ether	ND	ug/l	4.0			
p/m-Xylene	ND	ug/l	1.0			
o-Xylene	ND	ug/l	1.0			
cis-1,2-Dichloroethene	ND	ug/l	1.0			
Dibromomethane	ND	ug/l	10.			
1,4-Dichlorobutane	ND	ug/l	10.			
Iodomethane	ND	ug/l	10.			
1,2,3-Trichloropropane	ND	ug/l	10.			
Styrene	ND	ug/l	1.0			
Dichlorodifluoromethane	ND	ug/l	10.			
Acetone	ND	ug/l	10.			
Carbon disulfide	ND	ug/l	10.			
2-Butanone	ND	ug/l	10.			
Vinyl acetate	ND	ug/l	10.			
4-Methyl-2-pentanone	ND	ug/l	10.			
2-Hexanone	ND	ug/l	10.			
Ethyl methacrylate	ND	ug/l	10.			
Acrolein	ND	ug/l	25.			

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-03
C-3 (OW) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B	0104 13:23 BT	
Acrylonitrile	ND	ug/l	10.			
Bromochloromethane	ND	ug/l	5.0			
Tetrahydrofuran	ND	ug/l	20.			
2,2-Dichloropropane	ND	ug/l	5.0			
1,2-Dibromoethane	ND	ug/l	5.0			
1,3-Dichloropropane	ND	ug/l	5.0			
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0			
Bromobenzene	ND	ug/l	5.0			
n-Butylbenzene	ND	ug/l	5.0			
sec-Butylbenzene	ND	ug/l	5.0			
tert-Butylbenzene	ND	ug/l	5.0			
o-Chlorotoluene	ND	ug/l	5.0			
p-Chlorotoluene	ND	ug/l	5.0			
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0			
Hexachlorobutadiene	ND	ug/l	5.0			
Isopropylbenzene	ND	ug/l	5.0			
p-Isopropyltoluene	ND	ug/l	5.0			
Naphthalene	ND	ug/l	5.0			
n-Propylbenzene	ND	ug/l	5.0			
1,2,3-Trichlorobenzene	ND	ug/l	5.0			
1,2,4-Trichlorobenzene	ND	ug/l	5.0			
1,3,5-Trimethylbenzene	ND	ug/l	5.0			
1,2,4-Trimethylbenzene	ND	ug/l	5.0			
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0			
Ethyl ether	ND	ug/l	25.			
Surrogate Recovery						
1,2-Dichloroethane-d4	111.	%				
Toluene-d8	109.	%				
4-Bromofluorobenzene	109.	%				
Dibromofluoromethane	111.	%				
PAH by GC/MS SIM 8270M				1 8270C-M	0102 15:30 0104 18:37 MK	
Acenaphthene	ND	ug/l	0.20			
2-Chloronaphthalene	ND	ug/l	0.20			
Fluoranthene	ND	ug/l	0.20			
Naphthalene	ND	ug/l	0.20			
Benzo(a)anthracene	ND	ug/l	0.20			
Benzo(a)pyrene	ND	ug/l	0.20			
Benzo(b)fluoranthene	ND	ug/l	0.20			
Benzo(k)fluoranthene	ND	ug/l	0.20			
Chrysene	ND	ug/l	0.20			
Acenaphthylene	ND	ug/l	0.20			
Anthracene	ND	ug/l	0.20			
Benzo(ghi)perylene	ND	ug/l	0.20			
Fluorene	ND	ug/l	0.20			
Phenanthrene	ND	ug/l	0.20			
Dibenzo(a,h)anthracene	ND	ug/l	0.20			

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-03
C-3 (OW) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
PAH by GC/MS SIM 8270M continued				1 8270C-M	0102 15:30 0104 18:37	MK
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			
Perylene	ND	ug/l	0.20			
Benzo(e)Pyrene	ND	ug/l	0.20			
Surrogate Recovery						
Nitrobenzene-d5	82.0	%				
2-Fluorobiphenyl	76.0	%				
4-Terphenyl-d14	50.0	%				
PCB/Pesticides				1 8082/8081	1229 10:40 0104 16:43	PB
Delta-BHC	ND	ug/l	0.011			
Lindane	ND	ug/l	0.011			
Alpha-BHC	ND	ug/l	0.011			
Beta-BHC	ND	ug/l	0.011			
Heptachlor	ND	ug/l	0.011			
Aldrin	ND	ug/l	0.011			
Heptachlor epoxide	ND	ug/l	0.011			
Endrin	ND	ug/l	0.022			
Endrin aldehyde	ND	ug/l	0.022			
Endrin ketone	ND	ug/l	0.022			
Dieldrin	ND	ug/l	0.022			
4,4'-DDE	ND	ug/l	0.022			
4,4'-DDD	ND	ug/l	0.022			
4,4'-DDT	ND	ug/l	0.022			
Endosulfan I	ND	ug/l	0.011			
Endosulfan II	ND	ug/l	0.022			
Endosulfan sulfate	ND	ug/l	0.022			
Methoxychlor	ND	ug/l	0.115			
Toxaphene	ND	ug/l	0.115			
Chlordane	ND	ug/l	0.115			
cis-Chlordane	ND	ug/l	0.011			
trans-Chlordane	ND	ug/l	0.011			
Aroclor 1221	ND	ug/l	0.287			
Aroclor 1232	ND	ug/l	0.287			
Aroclor 1242/1016	ND	ug/l	0.287			
Aroclor 1248	ND	ug/l	0.287			
Aroclor 1254	ND	ug/l	0.287			
Aroclor 1260	ND	ug/l	0.287			
Surrogate Recovery						
2,4,5,6-Tetrachloro-m-xylene	43.0	%				
Decachlorobiphenyl	24.0	%				
Hydrocarbon Scan by GC 8100M				1 8100M	0102 10:00 0103 23:44	JW

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-03
C-3 (OW) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ID ANAL
Hydrocarbon Scan by GC 8100M continued				1 8100M	0102 10:00	0103 23:44 JW
Mineral Spirits	ND	mg/l	1.1			
Gasoline	ND	mg/l	1.1			
Fuel Oil #2/Diesel	ND	mg/l	1.1			
Fuel Oil #4	ND	mg/l	1.1			
Fuel Oil #6	ND	mg/l	1.1			
Motor Oil	ND	mg/l	1.1			
Kerosene	ND	mg/l	1.1			
Transformer Oil	ND	mg/l	1.1			
Surrogate Recovery						
o-Terphenyl	63.0	%				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-03
C-3 (OW) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
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Volatile Petroleum Hydrocarbons

47 98-1

0103 16:16 RY

Quality Control Information

Condition of sample received: Satisfactory
Aqueous preservative: Laboratory Provided Preserved Container
Sample temperature upon receipt: Received on Ice
Were all QA/QC procedures REQUIRED by the method followed? YES
Were all performance/acceptance standards for the required procedures achieved? YES
Were significant modifications made to the method as specified in Sect 11.3? NO
Please note to subtract the method blank from the stated result.
VPH Standard analysis reports only range data with no adjustments.
The normal acceptance range for the surrogate, 2,5-Dibromotoluene, is 70-130%.

C5-C8 Aliphatics	ND	ug/l	40.0
C9-C12 Aliphatics	ND	ug/l	40.0
C9-C10 Aromatics	ND	ug/l	40.0

Surrogate Recovery

2,5-Dibromotoluene-PID	82.0	%
2,5-Dibromotoluene-FID	97.0	%

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-03
C-3 (OW) S-1

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	

Extractable Petroleum Hydrocarbons	46 98-1	0103 09:00 0105 15:58 RL
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Quality Control Information

Condition of sample received:	Satisfactory	
Aqueous preservative:	Laboratory Provided Preserved Container	
Sample temperature upon receipt:	Received on Ice	
Sample extraction method:	Extracted Per the Method	
Were all QA/QC procedures REQUIRED by the method followed?		YES
Were all performance/acceptance standards for the required procedures achieved?		YES
Were significant modifications made to the method as specified in Sect 11.3?		NO
Please note to subtract the method blank from the stated result.		
The normal acceptance range for the extraction surrogates, Chloro-octadecane and o-Terphenyl, is 40-140%.		
The normal acceptance range for the fractionation surrogates, 2-Fluorobiphenyl and 2-Bromonaphthalene, is 40-140%.		

C9-C18 Aliphatics	ND	ug/l	109.
C19-C36 Aliphatics	ND	ug/l	109.
C11-C22 Aromatics	ND	ug/l	109.

Surrogate Recovery

Chloro-Octadecane	82.0	%
o-Terphenyl	99.0	%
2-Fluorobiphenyl	105.	%
2-Bromonaphthalene	109.	%

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L0012061-04
E-9 S-1 TO S-8
Sample Matrix: SOIL

Date Collected: 28-DEC-2000 00:00
Date Received : 28-DEC-2000
Date Reported : 05-JAN-2001

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Amber,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Solids, Total	84.	%	0.10	30 2540G	1229 08:15	AC
pH	8.4	SU	-	1 9045C	1228 19:30	AN
Flash Point	>150	deg F	70	1 1010	1229 08:00	DY
Cyanide, Reactive	ND	mg/kg	0.22	1 7.3	0102 15:30	AN
Sulfide, Reactive	ND	mg/kg	0.45	1 7.3	0102 15:30	AN
Total Metals				1 3051		
Arsenic, Total	5.5	mg/kg	0.47	1 6010B	1229 14:10 1229 23:51	RW
Barium, Total	19.	mg/kg	0.47	1 6010B	1229 14:10 1229 23:51	RW
Cadmium, Total	ND	mg/kg	0.47	1 6010B	1229 14:10 1229 23:51	RW
Chromium, Total	17.	mg/kg	0.47	1 6010B	1229 14:10 1229 23:51	RW
Lead, Total	5.3	mg/kg	2.4	1 6010B	1229 14:10 1229 23:51	RW
Mercury, Total	ND	mg/kg	0.28	1 7470A	0102 11:45 0103 11:39	DM
Selenium, Total	ND	mg/kg	0.95	1 6010B	1229 14:10 1229 23:51	RW
Silver, Total	ND	mg/kg	0.47	1 6010B	1229 14:10 1229 23:51	RW
Volatile Organics 8260 via High 5035				1 8260B	0104 00:01	BT
Methylene chloride	660	ug/kg	280			
1,1-Dichloroethane	ND	ug/kg	84.			
Chloroform	ND	ug/kg	84.			
Carbon tetrachloride	ND	ug/kg	56.			
1,2-Dichloropropane	ND	ug/kg	200			
Dibromochloromethane	ND	ug/kg	56.			
1,1,2-Trichloroethane	ND	ug/kg	84.			
Tetrachloroethene	ND	ug/kg	56.			
Chlorobenzene	ND	ug/kg	200			
Trichlorofluoromethane	ND	ug/kg	280			
1,2-Dichloroethane	ND	ug/kg	56.			
1,1,1-Trichloroethane	ND	ug/kg	56.			

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-04
E-9 S-1 TO S-8

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics 8260 via High 5035 continued				1	8260B	0104 00:01 BT	
Bromodichloromethane	ND	ug/kg	56.				
trans-1,3-Dichloropropene	ND	ug/kg	56.				
cis-1,3-Dichloropropene	ND	ug/kg	56.				
1,1-Dichloropropene	ND	ug/kg	280				
Bromoform	ND	ug/kg	56.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	56.				
Benzene	ND	ug/kg	56.				
Toluene	ND	ug/kg	84.				
Ethylbenzene	ND	ug/kg	56.				
Chloromethane	ND	ug/kg	560				
Bromomethane	ND	ug/kg	110				
Vinyl chloride	ND	ug/kg	110				
Chloroethane	ND	ug/kg	110				
1,1-Dichloroethene	ND	ug/kg	84.				
trans-1,2-Dichloroethene	ND	ug/kg	84.				
Trichloroethene	ND	ug/kg	56.				
1,2-Dichlorobenzene	ND	ug/kg	280				
1,3-Dichlorobenzene	ND	ug/kg	280				
1,4-Dichlorobenzene	ND	ug/kg	280				
Methyl tert butyl ether	ND	ug/kg	220				
p/m-Xylene	ND	ug/kg	56.				
o-Xylene	ND	ug/kg	56.				
cis-1,2-Dichloroethene	ND	ug/kg	56.				
Dibromomethane	ND	ug/kg	560				
1,4-Dichlorobutane	ND	ug/kg	560				
Iodomethane	ND	ug/kg	560				
1,2,3-Trichloropropane	ND	ug/kg	560				
Styrene	ND	ug/kg	56.				
Dichlorodifluoromethane	ND	ug/kg	560				
Acetone	ND	ug/kg	1100				
Carbon disulfide	ND	ug/kg	560				
2-Butanone	ND	ug/kg	560				
Vinyl acetate	ND	ug/kg	560				
4-Methyl-2-pentanone	ND	ug/kg	560				
2-Hexanone	ND	ug/kg	560				
Ethyl methacrylate	ND	ug/kg	560				
Acrolein	ND	ug/kg	1400				
Acrylonitrile	ND	ug/kg	560				
Bromochloromethane	ND	ug/kg	280				
Tetrahydrofuran	ND	ug/kg	1100				
2,2-Dichloropropane	ND	ug/kg	280				
1,2-Dibromoethane	ND	ug/kg	280				
1,3-Dichloropropane	ND	ug/kg	280				
1,1,1,2-Tetrachloroethane	ND	ug/kg	280				
Bromobenzene	ND	ug/kg	280				
n-Butylbenzene	ND	ug/kg	280				
sec-Butylbenzene	ND	ug/kg	280				
tert-Butylbenzene	ND	ug/kg	280				
o-Chlorotoluene	ND	ug/kg	280				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-04
E-9 S-1 TO S-8

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics 8260 via High 5035 continued				1 8260B	0104 00:01 BT	
p-Chlorotoluene	ND	ug/kg	280			
1,2-Dibromo-3-chloropropane	ND	ug/kg	280			
Hexachlorobutadiene	ND	ug/kg	280			
Isopropylbenzene	ND	ug/kg	280			
p-Isopropyltoluene	ND	ug/kg	280			
Naphthalene	ND	ug/kg	280			
n-Propylbenzene	ND	ug/kg	280			
1,2,3-Trichlorobenzene	ND	ug/kg	280			
1,2,4-Trichlorobenzene	ND	ug/kg	280			
1,3,5-Trimethylbenzene	ND	ug/kg	280			
1,2,4-Trimethylbenzene	ND	ug/kg	280			
trans-1,4-Dichloro-2-butene	ND	ug/kg	280			
Ethyl ether	ND	ug/kg	1400			
Surrogate Recovery						
1,2-Dichloroethane-d4	104.	%				
Toluene-d8	87.0	%				
4-Bromofluorobenzene	95.0	%				
Dibromofluoromethane	81.0	%				
PAH by GC/MS SIM 8270M				1 8270C-M	0102 18:30 0104 23:19 MK	
Acenaphthene	ND	ug/kg	48.			
2-Chloronaphthalene	ND	ug/kg	48.			
Fluoranthene	69.	ug/kg	48.			
Naphthalene	ND	ug/kg	48.			
Benzo(a)anthracene	ND	ug/kg	48.			
Benzo(a)pyrene	ND	ug/kg	48.			
Benzo(b)fluoranthene	ND	ug/kg	48.			
Benzo(k)fluoranthene	ND	ug/kg	48.			
Chrysene	ND	ug/kg	48.			
Acenaphthylene	ND	ug/kg	48.			
Anthracene	ND	ug/kg	48.			
Benzo(ghi)perylene	ND	ug/kg	48.			
Fluorene	ND	ug/kg	48.			
Phenanthrene	ND	ug/kg	48.			
Dibenzo(a,h)anthracene	ND	ug/kg	48.			
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	48.			
Pyrene	68.	ug/kg	48.			
1-Methylnaphthalene	ND	ug/kg	48.			
2-Methylnaphthalene	ND	ug/kg	48.			
Perylene	ND	ug/kg	48.			
Benzo(e)Pyrene	ND	ug/kg	48.			
Surrogate Recovery						
Nitrobenzene-d5	71.0	%				
2-Fluorobiphenyl	75.0	%				
4-Terphenyl-d14	83.0	%				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-04
E-9 S-1 TO S-8

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
PCB/Pesticides				1	8082/8081	0103 14:00	0105 02:14 PB
Delta-BHC	ND	ug/kg	23.8				
Lindane	ND	ug/kg	23.8				
Alpha-BHC	ND	ug/kg	23.8				
Beta-BHC	ND	ug/kg	23.8				
Heptachlor	ND	ug/kg	23.8				
Aldrin	ND	ug/kg	23.8				
Heptachlor epoxide	ND	ug/kg	23.8				
Endrin	ND	ug/kg	23.8				
Endrin aldehyde	ND	ug/kg	23.8				
Endrin ketone	ND	ug/kg	23.8				
Dieldrin	ND	ug/kg	23.8				
4,4'-DDE	ND	ug/kg	23.8				
4,4'-DDD	ND	ug/kg	23.8				
4,4'-DDT	ND	ug/kg	23.8				
Endosulfan I	ND	ug/kg	23.8				
Endosulfan II	ND	ug/kg	23.8				
Endosulfan sulfate	ND	ug/kg	23.8				
Methoxychlor	ND	ug/kg	23.8				
Toxaphene	ND	ug/kg	95.2				
Chlordane	ND	ug/kg	95.2				
cis-Chlordane	ND	ug/kg	23.8				
trans-Chlordane	ND	ug/kg	23.8				
Aroclor 1221	ND	ug/kg	238.				
Aroclor 1232	ND	ug/kg	238.				
Aroclor 1242/1016	ND	ug/kg	238.				
Aroclor 1248	ND	ug/kg	238.				
Aroclor 1254	ND	ug/kg	238.				
Aroclor 1260	ND	ug/kg	238.				
Surrogate Recovery							
2,4,5,6-Tetrachloro-m-xylene	65.0	%					
Decachlorobiphenyl	64.0	%					
Hydrocarbon Scan by GC 8100M				1	8100M	0103 15:15	0105 02:44 RL
Mineral Spirits	ND	mg/kg	120				
Gasoline	ND	mg/kg	120				
Fuel Oil #2/Diesel	ND	mg/kg	120				
Fuel Oil #4	ND	mg/kg	120				
Fuel Oil #6	ND	mg/kg	120				
Motor Oil	ND	mg/kg	120				
Kerosene	ND	mg/kg	120				
Transformer Oil	ND	mg/kg	120				
Unknown Hydrocarbon	140	mg/kg	120				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-04
E-9 S-1 TO S-8

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID	
					PREP	ANAL		
Hydrocarbon Scan by GC 8100M continued				1	8100M	0103 15:15	0105 02:44	RL
Surrogate Recovery								
o-Terphenyl	89.0	%						

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L0012061-05
D-9 S-1 TO S-8
Sample Matrix: SOIL

Date Collected: 28-DEC-2000 00:00
Date Received : 28-DEC-2000
Date Reported : 05-JAN-2001

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Amber,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Solids, Total	84.	%	0.10	30 2540G	1229 08:15	AC
pH	7.1	SU	-	1 9045C	1228 19:30	AN
Flash Point	>150	deg F	70	1 1010	1229 08:00	DY
Cyanide, Reactive	ND	mg/kg	0.22	1 7.3	0102 15:30	AN
Sulfide, Reactive	ND	mg/kg	0.45	1 7.3	0102 15:30	AN
Total Metals				1 3051		
Arsenic, Total	12.	mg/kg	0.48	1 6010B	1229 14:10	1229 23:58 RW
Barium, Total	17.	mg/kg	0.48	1 6010B	1229 14:10	1229 23:58 RW
Cadmium, Total	ND	mg/kg	0.48	1 6010B	1229 14:10	1229 23:58 RW
Chromium, Total	8.9	mg/kg	0.48	1 6010B	1229 14:10	1229 23:58 RW
Lead, Total	69.	mg/kg	2.4	1 6010B	1229 14:10	1229 23:58 RW
Mercury, Total	0.28	mg/kg	0.28	1 7470A	0102 11:45	0103 11:39 DM
Selenium, Total	ND	mg/kg	0.95	1 6010B	1229 14:10	1229 23:58 RW
Silver, Total	ND	mg/kg	0.48	1 6010B	1229 14:10	1229 23:58 RW
Volatile Organics 8260 via High 5035				1 8260B	0104 13:18	BT
Methylene chloride	18000	ug/kg	8300			
1,1-Dichloroethane	ND	ug/kg	2500			
Chloroform	ND	ug/kg	2500			
Carbon tetrachloride	ND	ug/kg	1700			
1,2-Dichloropropane	ND	ug/kg	5800			
Dibromochloromethane	ND	ug/kg	1700			
1,1,2-Trichloroethane	ND	ug/kg	2500			
Tetrachloroethene	ND	ug/kg	1700			
Chlorobenzene	ND	ug/kg	5800			
Trichlorofluoromethane	ND	ug/kg	8300			
1,2-Dichloroethane	ND	ug/kg	1700			
1,1,1-Trichloroethane	ND	ug/kg	1700			

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-05
D-9 S-1 TO S-8

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Volatile Organics 8260 via High 5035 continued				1	8260B	0104 13:18 BT	
Bromodichloromethane	ND	ug/kg	1700				
trans-1,3-Dichloropropene	ND	ug/kg	1700				
cis-1,3-Dichloropropene	ND	ug/kg	1700				
1,1-Dichloropropene	ND	ug/kg	8300				
Bromoform	ND	ug/kg	1700				
1,1,2,2-Tetrachloroethane	ND	ug/kg	1700				
Benzene	ND	ug/kg	1700				
Toluene	ND	ug/kg	2500				
Ethylbenzene	ND	ug/kg	1700				
Chloromethane	ND	ug/kg	17000				
Bromomethane	ND	ug/kg	3300				
Vinyl chloride	ND	ug/kg	3300				
Chloroethane	ND	ug/kg	3300				
1,1-Dichloroethene	ND	ug/kg	2500				
trans-1,2-Dichloroethene	ND	ug/kg	2500				
Trichloroethene	ND	ug/kg	1700				
1,2-Dichlorobenzene	ND	ug/kg	8300				
1,3-Dichlorobenzene	ND	ug/kg	8300				
1,4-Dichlorobenzene	ND	ug/kg	8300				
Methyl tert butyl ether	8900	ug/kg	6700				
p/m-Xylene	ND	ug/kg	1700				
o-Xylene	ND	ug/kg	1700				
cis-1,2-Dichloroethene	ND	ug/kg	1700				
Dibromomethane	ND	ug/kg	17000				
1,4-Dichlorobutane	ND	ug/kg	17000				
Iodomethane	ND	ug/kg	17000				
1,2,3-Trichloropropane	ND	ug/kg	17000				
Styrene	ND	ug/kg	1700				
Dichlorodifluoromethane	ND	ug/kg	17000				
Acetone	ND	ug/kg	34000				
Carbon disulfide	ND	ug/kg	17000				
2-Butanone	ND	ug/kg	17000				
Vinyl acetate	ND	ug/kg	17000				
4-Methyl-2-pentanone	ND	ug/kg	17000				
2-Hexanone	ND	ug/kg	17000				
Ethyl methacrylate	ND	ug/kg	17000				
Acrolein	ND	ug/kg	42000				
Acrylonitrile	ND	ug/kg	17000				
Bromochloromethane	ND	ug/kg	8300				
Tetrahydrofuran	ND	ug/kg	33000				
2,2-Dichloropropane	ND	ug/kg	8300				
1,2-Dibromoethane	ND	ug/kg	8300				
1,3-Dichloropropane	ND	ug/kg	8300				
1,1,1,2-Tetrachloroethane	ND	ug/kg	8300				
Bromobenzene	ND	ug/kg	8300				
n-Butylbenzene	ND	ug/kg	8300				
sec-Butylbenzene	ND	ug/kg	8300				
tert-Butylbenzene	ND	ug/kg	8300				
o-Chlorotoluene	ND	ug/kg	8300				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-05
D-9 S-1 TO S-8

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics 8260 via High 5035 continued				1 8260B	0104 13:18 BT	
p-Chlorotoluene	ND	ug/kg	8300			
1,2-Dibromo-3-chloropropane	ND	ug/kg	8300			
Hexachlorobutadiene	ND	ug/kg	8300			
Isopropylbenzene	ND	ug/kg	8300			
p-Isopropyltoluene	ND	ug/kg	8300			
Naphthalene	160000	ug/kg	8300			
n-Propylbenzene	ND	ug/kg	8300			
1,2,3-Trichlorobenzene	ND	ug/kg	8300			
1,2,4-Trichlorobenzene	ND	ug/kg	8300			
1,3,5-Trimethylbenzene	ND	ug/kg	8300			
1,2,4-Trimethylbenzene	ND	ug/kg	8300			
trans-1,4-Dichloro-2-butene	ND	ug/kg	8300			
Ethyl ether	ND	ug/kg	42000			
Surrogate Recovery						
1,2-Dichloroethane-d4	98.0	%				
Toluene-d8	90.0	%				
4-Bromofluorobenzene	96.0	%				
Dibromofluoromethane	87.0	%				
PAH by GC/MS SIM 8270M						
Acenaphthene	400	ug/kg	48.	1 8270C-M	0102 18:30 0105 00:06 MK	
2-Chloronaphthalene	ND	ug/kg	48.			
Fluoranthene	10000	ug/kg	48.			
Naphthalene	1300	ug/kg	48.			
Benzo(a)anthracene	4400	ug/kg	48.			
Benzo(a)pyrene	4200	ug/kg	48.			
Benzo(b)fluoranthene	2800	ug/kg	48.			
Benzo(k)fluoranthene	3200	ug/kg	48.			
Chrysene	3800	ug/kg	48.			
Acenaphthylene	240	ug/kg	48.			
Anthracene	2200	ug/kg	48.			
Benzo(ghi)perylene	2500	ug/kg	48.			
Fluorene	830	ug/kg	48.			
Phenanthrene	8400	ug/kg	48.			
Dibenzo(a,h)anthracene	480	ug/kg	48.			
Indeno(1,2,3-cd)Pyrene	2900	ug/kg	48.			
Pyrene	9100	ug/kg	48.			
1-Methylnaphthalene	320	ug/kg	48.			
2-Methylnaphthalene	500	ug/kg	48.			
Perylene	950	ug/kg	48.			
Benzo(e)Pyrene	2400	ug/kg	48.			
Surrogate Recovery						
Nitrobenzene-d5	74.0	%				
2-Fluorobiphenyl	75.0	%				
4-Terphenyl-d14	82.0	%				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-05
D-9 S-1 TO S-8

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
PCB/Pesticides				1 8082/8081	0103 14:00	0105 02:53	PB
Delta-BHC	ND	ug/kg	23.8				
Lindane	ND	ug/kg	23.8				
Alpha-BHC	ND	ug/kg	23.8				
Beta-BHC	ND	ug/kg	23.8				
Heptachlor	ND	ug/kg	23.8				
Aldrin	ND	ug/kg	23.8				
Heptachlor epoxide	ND	ug/kg	23.8				
Endrin	ND	ug/kg	23.8				
Endrin aldehyde	ND	ug/kg	23.8				
Endrin ketone	ND	ug/kg	23.8				
Dieldrin	ND	ug/kg	23.8				
4,4'-DDE	ND	ug/kg	23.8				
4,4'-DDD	ND	ug/kg	23.8				
4,4'-DDT	ND	ug/kg	23.8				
Endosulfan I	ND	ug/kg	23.8				
Endosulfan II	ND	ug/kg	23.8				
Endosulfan sulfate	ND	ug/kg	23.8				
Methoxychlor	ND	ug/kg	23.8				
Toxaphene	ND	ug/kg	95.2				
Chlordane	ND	ug/kg	95.2				
cis-Chlordane	ND	ug/kg	23.8				
trans-Chlordane	ND	ug/kg	23.8				
Aroclor 1221	ND	ug/kg	238.				
Aroclor 1232	ND	ug/kg	238.				
Aroclor 1242/1016	ND	ug/kg	238.				
Aroclor 1248	ND	ug/kg	238.				
Aroclor 1254	ND	ug/kg	238.				
Aroclor 1260	ND	ug/kg	238.				
Surrogate Recovery							
2,4,5,6-Tetrachloro-m-xylene	55.0	%					
Decachlorobiphenyl	48.0	%					
Hydrocarbon Scan by GC 8100M				1 8100M	0103 15:15	0105 03:48	RL
Mineral Spirits	ND	mg/kg	120				
Gasoline	ND	mg/kg	120				
Fuel Oil #2/Diesel	ND	mg/kg	120				
Fuel Oil #4	ND	mg/kg	120				
Fuel Oil #6	ND	mg/kg	120				
Motor Oil	ND	mg/kg	120				
Kerosene	ND	mg/kg	120				
Transformer Oil	ND	mg/kg	120				
Unknown Hydrocarbon	420	mg/kg	120				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-05
D-9 S-1 TO S-8

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Hydrocarbon Scan by GC 8100M continued Surrogate Recovery				1 8100M	0103 15:15	0105 03:48	RL
o-Terphenyl	90.0	%					

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L0012061-06

Date Collected: 26-DEC-2000 17:30

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Date Received : 28-DEC-2000

Sample Matrix: WATER

Date Reported : 05-JAN-2001

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by GC/MS 8260				1 8260B	0103 22:49 AK	
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			
Tetrachloroethene	ND	ug/l	1.0			
Chlorobenzene	ND	ug/l	3.5			
Trichlorofluoromethane	ND	ug/l	5.0			
1,2-Dichloroethane	ND	ug/l	1.0			
1,1,1-Trichloroethane	ND	ug/l	1.0			
Bromodichloromethane	ND	ug/l	1.0			
trans-1,3-Dichloropropene	ND	ug/l	1.0			
cis-1,3-Dichloropropene	ND	ug/l	1.0			
1,1-Dichloropropene	ND	ug/l	5.0			
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	1.5			
Ethylbenzene	ND	ug/l	1.0			
Chloromethane	ND	ug/l	10.			
Bromomethane	ND	ug/l	2.0			
Vinyl chloride	ND	ug/l	2.0			
Chloroethane	ND	ug/l	2.0			
1,1-Dichloroethene	ND	ug/l	1.5			
trans-1,2-Dichloroethene	ND	ug/l	1.5			
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			
Methyl tert butyl ether	ND	ug/l	4.0			
p/m-Xylene	ND	ug/l	1.0			
o-Xylene	ND	ug/l	1.0			
cis-1,2-Dichloroethene	ND	ug/l	1.0			
Dibromomethane	ND	ug/l	10.			
1,4-Dichlorobutane	ND	ug/l	10.			
Iodomethane	ND	ug/l	10.			

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-06
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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B	0103 22:49 AK	
1,2,3-Trichloropropane	ND	ug/l	10.			
Styrene	ND	ug/l	1.0			
Dichlorodifluoromethane	ND	ug/l	10.			
Acetone	ND	ug/l	10.			
Carbon disulfide	ND	ug/l	10.			
2-Butanone	ND	ug/l	10.			
Vinyl acetate	ND	ug/l	10.			
4-Methyl-2-pentanone	ND	ug/l	10.			
2-Hexanone	ND	ug/l	10.			
Ethyl methacrylate	ND	ug/l	10.			
Acrolein	ND	ug/l	25.			
Acrylonitrile	ND	ug/l	10.			
Bromochloromethane	ND	ug/l	5.0			
Tetrahydrofuran	ND	ug/l	20.			
2,2-Dichloropropane	ND	ug/l	5.0			
1,2-Dibromoethane	ND	ug/l	5.0			
1,3-Dichloropropane	ND	ug/l	5.0			
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0			
Bromobenzene	ND	ug/l	5.0			
n-Butylbenzene	ND	ug/l	5.0			
sec-Butylbenzene	ND	ug/l	5.0			
tert-Butylbenzene	ND	ug/l	5.0			
o-Chlorotoluene	ND	ug/l	5.0			
p-Chlorotoluene	ND	ug/l	5.0			
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0			
Hexachlorobutadiene	ND	ug/l	5.0			
Isopropylbenzene	ND	ug/l	5.0			
p-Isopropyltoluene	ND	ug/l	5.0			
Naphthalene	ND	ug/l	5.0			
n-Propylbenzene	ND	ug/l	5.0			
1,2,3-Trichlorobenzene	ND	ug/l	5.0			
1,2,4-Trichlorobenzene	ND	ug/l	5.0			
1,3,5-Trimethylbenzene	ND	ug/l	5.0			
1,2,4-Trimethylbenzene	ND	ug/l	5.0			
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0			
Ethyl ether	ND	ug/l	25.			
Surrogate Recovery						
1,2-Dichloroethane-d4	82.0	%				
Toluene-d8	97.0	%				
4-Bromofluorobenzene	97.0	%				
Dibromofluoromethane	85.0	%				

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA-086 NH:200395-B/C CT:PH-0574 ME:MA086 RI:65

Laboratory Sample Number: L0012061-07

Date Collected: 11-SEP-2000 14:00

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Date Received : 28-DEC-2000

Sample Matrix: SOIL

Date Reported : 05-JAN-2001

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Vial

Comments:

Results are reported on an 'AS RECEIVED' basis.

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics 8260 via High 5035				1 8260B	0104 12:36 BT	
Methylene chloride	650	ug/kg	250			
1,1-Dichloroethane	ND	ug/kg	75.			
Chloroform	ND	ug/kg	75.			
Carbon tetrachloride	ND	ug/kg	50.			
1,2-Dichloropropane	ND	ug/kg	180			
Dibromochloromethane	ND	ug/kg	50.			
1,1,2-Trichloroethane	ND	ug/kg	75.			
Tetrachloroethene	ND	ug/kg	50.			
Chlorobenzene	ND	ug/kg	180			
Trichlorofluoromethane	ND	ug/kg	250			
1,2-Dichloroethane	ND	ug/kg	50.			
1,1,1-Trichloroethane	ND	ug/kg	50.			
Bromodichloromethane	ND	ug/kg	50.			
trans-1,3-Dichloropropene	ND	ug/kg	50.			
cis-1,3-Dichloropropene	ND	ug/kg	50.			
1,1-Dichloropropene	ND	ug/kg	250			
Bromoform	ND	ug/kg	50.			
1,1,2,2-Tetrachloroethane	ND	ug/kg	50.			
Benzene	ND	ug/kg	50.			
Toluene	ND	ug/kg	75.			
Ethylbenzene	ND	ug/kg	50.			
Chloromethane	ND	ug/kg	500			
Bromomethane	ND	ug/kg	100			
Vinyl chloride	ND	ug/kg	100			
Chloroethane	ND	ug/kg	100			
1,1-Dichloroethene	ND	ug/kg	75.			
trans-1,2-Dichloroethene	ND	ug/kg	75.			
Trichloroethene	ND	ug/kg	50.			
1,2-Dichlorobenzene	ND	ug/kg	250			
1,3-Dichlorobenzene	ND	ug/kg	250			
1,4-Dichlorobenzene	ND	ug/kg	250			
Methyl tert butyl ether	ND	ug/kg	200			
p/m-Xylene	ND	ug/kg	50.			
o-Xylene	ND	ug/kg	50.			
cis-1,2-Dichloroethene	ND	ug/kg	50.			

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

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0012061-07
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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Volatile Organics 8260 via High 5035 continued				1 8260B	0104 12:36 BT	
Dibromomethane	ND	ug/kg	500			
1,4-Dichlorobutane	ND	ug/kg	500			
Iodomethane	ND	ug/kg	500			
1,2,3-Trichloropropane	ND	ug/kg	500			
Styrene	ND	ug/kg	50.			
Dichlorodifluoromethane	ND	ug/kg	500			
Acetone	ND	ug/kg	1000			
Carbon disulfide	ND	ug/kg	500			
2-Butanone	ND	ug/kg	500			
Vinyl acetate	ND	ug/kg	500			
4-Methyl-2-pentanone	ND	ug/kg	500			
2-Hexanone	ND	ug/kg	500			
Ethyl methacrylate	ND	ug/kg	500			
Acrolein	ND	ug/kg	1200			
Acrylonitrile	ND	ug/kg	500			
Bromochloromethane	ND	ug/kg	250			
Tetrahydrofuran	ND	ug/kg	1000			
2,2-Dichloropropane	ND	ug/kg	250			
1,2-Dibromoethane	ND	ug/kg	250			
1,3-Dichloropropane	ND	ug/kg	250			
1,1,1,2-Tetrachloroethane	ND	ug/kg	250			
Bromobenzene	ND	ug/kg	250			
n-Butylbenzene	ND	ug/kg	250			
sec-Butylbenzene	ND	ug/kg	250			
tert-Butylbenzene	ND	ug/kg	250			
o-Chlorotoluene	ND	ug/kg	250			
p-Chlorotoluene	ND	ug/kg	250			
1,2-Dibromo-3-chloropropane	ND	ug/kg	250			
Hexachlorobutadiene	ND	ug/kg	250			
Isopropylbenzene	ND	ug/kg	250			
p-Isopropyltoluene	ND	ug/kg	250			
Naphthalene	ND	ug/kg	250			
n-Propylbenzene	ND	ug/kg	250			
1,2,3-Trichlorobenzene	ND	ug/kg	250			
1,2,4-Trichlorobenzene	ND	ug/kg	250			
1,3,5-Trimethylbenzene	ND	ug/kg	250			
1,2,4-Trimethylbenzene	ND	ug/kg	250			
trans-1,4-Dichloro-2-butene	ND	ug/kg	250			
Ethyl ether	ND	ug/kg	1200			
Surrogate Recovery						
1,2-Dichloroethane-d4	99.0	%				
Toluene-d8	87.0	%				
4-Bromofluorobenzene	94.0	%				
Dibromofluoromethane	83.0	%				

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

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0012061

Parameter	Value 1	Value 2	RPD	Units
Solids, Total for sample(s) 04-05 (L0012022-01, WG73132)				
Solids, Total	86.	86.	0	%
Solids, Total Suspended for sample(s) 03 (L0012061-03, WG73314)				
Solids, Total Suspended	170	160	6	mg/l
pH for sample(s) 04-05 (L0012061-05, WG73123)				
pH	7.1	7.2	1	SU
Cyanide, Reactive for sample(s) 04-05 (L0012022-01, WG73268)				
Cyanide, Reactive	ND	ND	NC	mg/kg
Sulfide, Reactive for sample(s) 04-05 (L0012022-01, WG73267)				
Sulfide, Reactive	ND	ND	NC	mg/kg
Total Metals for sample(s) 03 (L0012012-01, WG73279)				
Arsenic, Total	0.050	0.051	1	mg/l
Lead, Total	ND	ND	NC	mg/l
Nickel, Total	ND	ND	NC	mg/l
Total Metals for sample(s) 04-05 (L0012059-02, WG73185)				
Arsenic, Total	8.9	8.3	7	mg/kg
Barium, Total	39.	37.	5	mg/kg
Cadmium, Total	ND	ND	NC	mg/kg
Chromium, Total	28.	27.	4	mg/kg
Lead, Total	28.	24.	15	mg/kg
Selenium, Total	ND	ND	NC	mg/kg
Silver, Total	ND	ND	NC	mg/kg
Total Metals for sample(s) 03 (L0012061-03, WG73170)				
Mercury, Total	ND	ND	NC	mg/l
Total Metals for sample(s) 04-05 (L0012059-02, WG73212)				
Mercury, Total	ND	ND	NC	mg/kg
Dissolved Metals for sample(s) 01-03 (L0012036-01, WG73208)				
Arsenic, Dissolved	ND	ND	NC	mg/l
Cadmium, Dissolved	ND	ND	NC	mg/l
Chromium, Dissolved	ND	ND	NC	mg/l
Lead, Dissolved	ND	ND	NC	mg/l
Selenium, Dissolved	ND	ND	NC	mg/l
Silver, Dissolved	ND	ND	NC	mg/l
Hydrocarbon Scan by GC 8100M for sample(s) 04-05 (L0100003-01, WG73355)				
Mineral Spirits	ND	ND	NC	mg/kg
Gasoline	ND	ND	NC	mg/kg
Fuel Oil #2/Diesel	ND	ND	NC	mg/kg
Fuel Oil #4	ND	ND	NC	mg/kg
Fuel Oil #6	ND	ND	NC	mg/kg

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0012061

Continued

Parameter	Value 1	Value 2	RPD	Units
Hydrocarbon Scan by GC 8100M for sample(s) 04-05 (L0100003-01, WG73355)				
Motor Oil	ND	ND	NC	mg/kg
Kerosene	ND	ND	NC	mg/kg
Transformer Oil	ND	ND	NC	mg/kg
Unknown Hydrocarbon	26000	24000	8	mg/kg
Surrogate Recovery				
o-Terphenyl	78.0	72.0	8	%
Volatile Petroleum Hydrocarbons for sample(s) 03 (L0012009-02, WG73431)				
C5-C8 Aliphatics	ND	ND	NC	ug/l
C9-C12 Aliphatics	ND	ND	NC	ug/l
C9-C10 Aromatics	ND	ND	NC	ug/l
C5-C8 Aliphatics, Adjusted	ND	ND	NC	ug/l
C9-C12 Aliphatics, Adjusted	ND	ND	NC	ug/l
Benzene	ND	ND	NC	ug/l
Toluene	ND	ND	NC	ug/l
Ethylbenzene	ND	ND	NC	ug/l
p/m-Xylene	ND	ND	NC	ug/l
o-Xylene	ND	ND	NC	ug/l
Methyl tert butyl ether	ND	ND	NC	ug/l
Naphthalene	ND	ND	NC	ug/l
Surrogate Recovery				
2,5-Dibromotoluene-PID	80.0	81.0	1	%
2,5-Dibromotoluene-FID	114.	103.	10	%
Extractable Petroleum Hydrocarbons for sample(s) 02-03 (L0012060-01, WG73316)				
C9-C18 Aliphatics	ND	ND	NC	ug/l
C19-C36 Aliphatics	1080	ND	NC	ug/l
C11-C22 Aromatics	216.	ND	NC	ug/l
Surrogate Recovery				
Chloro-Octadecane	92.0	72.0	24	%
o-Terphenyl	100.	84.0	17	%
2-Fluorobiphenyl	94.0	93.0	1	%
2-Bromonaphthalene	95.0	97.0	2	%

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0012061

Parameter	% Recovery
pH LCS for sample(s) 03 (WG73122)	
pH	100
pH LCS for sample(s) 04-05 (WG73123)	
pH	99
Sulfide, Reactive LCS for sample(s) 04-05 (WG73267)	
Sulfide, Reactive	85
Total Metals LCS for sample(s) 03 (WG73279)	
Antimony, Total	100
Arsenic, Total	101
Beryllium, Total	102
Cadmium, Total	107
Chromium, Total	110
Copper, Total	100
Lead, Total	110
Nickel, Total	101
Selenium, Total	105
Silver, Total	96
Thallium, Total	103
Zinc, Total	100
Total Metals LCS for sample(s) 04-05 (WG73185)	
Arsenic, Total	100
Barium, Total	100
Cadmium, Total	100
Chromium, Total	110
Lead, Total	110
Selenium, Total	110
Silver, Total	96
Total Metals LCS for sample(s) 03 (WG73170)	
Mercury, Total	103
Total Metals LCS for sample(s) 04-05 (WG73212)	
Mercury, Total	103
Dissolved Metals LCS for sample(s) 03 (WG73168)	
Mercury, Dissolved	103
PAH by GC/MS SIM 8270M LCS for sample(s) 04-05 (WG73300)	
Acenaphthene	87
Benzo(b)fluoranthene	110
Benzo(k)fluoranthene	92
Pyrene	100
Surrogate Recovery	
Nitrobenzene-d5	94

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0012061

Continued

Parameter	% Recovery
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PAH by GC/MS SIM 8270M LCS for sample(s) 04-05 (WG73300)

2-Fluorobiphenyl	80
4-Terphenyl-d14	93

PAH by GC/MS SIM 8270M LCS for sample(s) 03 (WG73301)

Acenaphthene	84
Benzo(b)fluoranthene	100
Benzo(k)fluoranthene	88
Pyrene	100

Surrogate Recovery

Nitrobenzene-d5	99
2-Fluorobiphenyl	79
4-Terphenyl-d14	95

PCB/Pesticides LCS for sample(s) 04-05 (WG73350)

Delta-BHC	118
Lindane	104
Alpha-BHC	102
Beta-BHC	128
Heptachlor	108
Aldrin	108
Heptachlor epoxide	98
Endrin	118
Dieldrin	96
4,4'-DDE	103
4,4'-DDD	78
4,4'-DDT	122
Endosulfan I	88
Endosulfan II	80
Endosulfan sulfate	79
cis-Chlordane	100
trans-Chlordane	98

Surrogate Recovery

2,4,5,6-Tetrachloro-m-xylene	70
Decachlorobiphenyl	73

PCB/Pesticides LCS for sample(s) 03 (WG73154)

Delta-BHC	122
Lindane	90
Alpha-BHC	88
Beta-BHC	94
Heptachlor	55
Aldrin	83
Heptachlor epoxide	93
Endrin	119
Dieldrin	98
4,4'-DDE	107

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0012061

Continued

Parameter	% Recovery
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PCB/Pesticides LCS for sample(s) 03 (WG73154)

4,4'-DDD	101
4,4'-DDT	87
Endosulfan I	87
Endosulfan II	99
Endosulfan sulfate	79
cis-Chlordane	82
trans-Chlordane	98

Surrogate Recovery

2,4,5,6-Tetrachloro-m-xylene	69
Decachlorobiphenyl	77

Volatile Petroleum Hydrocarbons LCS for sample(s) 03 (WG73431)

Benzene	85
Toluene	86
Ethylbenzene	83
p/m-Xylene	82
o-Xylene	82
Methyl tert butyl ether	84
Naphthalene	88

Surrogate Recovery

2,5-Dibromotoluene-PID	87
2,5-Dibromotoluene-FID	101

Extractable Petroleum Hydrocarbons LCS for sample(s) 02-03 (WG73316)

Naphthalene	61
Acenaphthene	77
Anthracene	89
Pyrene	77
Chrysene	65
Nonane (C9)	54
Tetradecane (C14)	85
Nonadecane (C19)	90
Eicosane (C20)	94
Octacosane (C28)	73

Surrogate Recovery

Chloro-Octadecane	83
o-Terphenyl	98
2-Fluorobiphenyl	100
2-Bromonaphthalene	101

Total Metals SPIKE for sample(s) 03 (L0012012-01, WG73279)

Antimony, Total	100
Arsenic, Total	104
Beryllium, Total	104
Cadmium, Total	108

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0012061

Continued

Parameter	% Recovery
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Total Metals SPIKE for sample(s) 03 (L0012012-01, WG73279)

Chromium, Total	110
Copper, Total	110
Lead, Total	110
Nickel, Total	103
Selenium, Total	105
Silver, Total	101
Thallium, Total	105
Zinc, Total	110

Total Metals SPIKE for sample(s) 04-05 (L0012059-03, WG73185)

Arsenic, Total	96
Barium, Total	96
Cadmium, Total	81
Chromium, Total	91
Lead, Total	91
Selenium, Total	93
Silver, Total	99

Total Metals SPIKE for sample(s) 03 (L0012061-03, WG73170)

Mercury, Total	148
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Total Metals SPIKE for sample(s) 04-05 (L0012059-03, WG73212)

Mercury, Total	130
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Dissolved Metals SPIKE for sample(s) 01-03 (L0012036-02, WG73208)

Antimony, Dissolved	100
Arsenic, Dissolved	105
Beryllium, Dissolved	104
Cadmium, Dissolved	108
Chromium, Dissolved	100
Copper, Dissolved	100
Lead, Dissolved	110
Nickel, Dissolved	98
Selenium, Dissolved	108
Silver, Dissolved	86
Thallium, Dissolved	108
Zinc, Dissolved	110

Dissolved Metals SPIKE for sample(s) 03 (L0012036-02, WG73168)

Mercury, Dissolved	127
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ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L0012061

Parameter	MS %	MSD %	RPD
Volatile Organics by GC/MS 8260 for sample(s) 01,03 (L0012049-05, WG73318)			
Chlorobenzene	120	118	2
Benzene	121	117	3
Toluene	124	122	2
1,1-Dichloroethene	124	127	2
Trichloroethene	109	109	0
Volatile Organics by GC/MS 8260 for sample(s) 06 (L0012052-02, WG73419)			
Chlorobenzene	103	99	4
Benzene	100	93	7
Toluene	112	103	8
1,1-Dichloroethene	103	93	10
Trichloroethene	98	92	7
Volatile Organics by GC/MS 8260 for sample(s) 02 (L0012061-02, WG73552)			
Chlorobenzene	120	115	4
Benzene	118	113	4
Toluene	128	122	5
1,1-Dichloroethene	131	129	2
Trichloroethene	107	106	1
Volatile Organics 8260 via High 5035 for sample(s) 04-05,07 (L0012059-01, WG73427)			
Chlorobenzene	93	89	4
Benzene	96	94	2
Toluene	95	92	3
1,1-Dichloroethene	91	88	3
Trichloroethene	92	87	6
PAH by GC/MS SIM 8270M for sample(s) 04-05 (L0012061-04, WG73300)			
Acenaphthene	92	84	9
Benzo(b)fluoranthene	100	92	8
Benzo(k)fluoranthene	92	84	9
Pyrene	110	100	10
PAH by GC/MS SIM 8270M for sample(s) 03 (L0012075-01, WG73301)			
Acenaphthene	78	73	7
Benzo(b)fluoranthene	11	8	34
Benzo(k)fluoranthene	14	9	47
Pyrene	82	82	0
PCB/Pesticides for sample(s) 04-05 (L0012061-04, WG73350)			
Delta-BHC	103	104	1
Lindane	91	91	1
Alpha-BHC	89	83	6
Beta-BHC	110	120	9
Heptachlor	82	89	8
Aldrin	83	93	11
Heptachlor epoxide	78	82	5
Endrin	93	101	8

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L0012061

Continued

Parameter	MS %	MSD %	RPD
PCB/Pesticides for sample(s) 04-05 (L0012061-04, WG73350)			
Dieldrin	74	79	6
4,4'-DDE	77	83	7
4,4'-DDD	62	68	9
4,4'-DDT	95	100	5
Endosulfan I	67	73	8
Endosulfan II	68	74	8
Endosulfan sulfate	67	74	10
cis-Chlordane	75	79	5
trans-Chlordane	74	79	6
PCB/Pesticides for sample(s) 03 (L0012061-03, WG73154)			
Delta-BHC	112	122	9
Lindane	85	94	10
Alpha-BHC	86	89	4
Beta-BHC	84	91	7
Heptachlor	60	61	1
Aldrin	73	78	7
Heptachlor epoxide	86	91	6
Endrin	120	120	0
Dieldrin	92	101	9
4,4'-DDE	84	94	11
4,4'-DDD	95	105	10
4,4'-DDT	87	96	10
Endosulfan I	80	86	8
Endosulfan II	91	100	9
Endosulfan sulfate	73	80	8
cis-Chlordane	75	81	7
trans-Chlordane	88	103	15

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0012061

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 03							
Solids, Total Suspended	ND	mg/l	5.0	30 2540D		0104 11:30	DT
Blank Analysis for sample(s) 04-05							
Cyanide, Reactive	ND	mg/kg	1.2	1 7.3		0102 15:30	AN
Blank Analysis for sample(s) 04-05							
Sulfide, Reactive	ND	mg/kg	2.5	1 7.3		0102 15:30	AN
Blank Analysis for sample(s) 03							
Total Metals				1 3015			
Antimony, Total	ND	mg/l	0.05	1 6010B	0102 10:30	0103 14:16	MG
Arsenic, Total	ND	mg/l	0.005	1 6010B	0102 10:30	0103 14:16	MG
Beryllium, Total	ND	mg/l	0.005	1 6010B	0102 10:30	0103 14:16	MG
Cadmium, Total	ND	mg/l	0.005	1 6010B	0102 10:30	0103 14:16	MG
Chromium, Total	ND	mg/l	0.01	1 6010B	0102 10:30	0103 14:16	MG
Copper, Total	ND	mg/l	0.01	1 6010B	0102 10:30	0103 14:16	MG
Lead, Total	ND	mg/l	0.05	1 6010B	0102 10:30	0103 14:16	MG
Nickel, Total	ND	mg/l	0.025	1 6010B	0102 10:30	0103 14:16	MG
Selenium, Total	ND	mg/l	0.005	1 6010B	0102 10:30	0103 14:16	MG
Silver, Total	ND	mg/l	0.010	1 6010B	0102 10:30	0103 14:16	MG
Thallium, Total	ND	mg/l	0.005	1 6010B	0102 10:30	0103 14:16	MG
Zinc, Total	ND	mg/l	0.05	1 6010B	0102 10:30	0103 14:16	MG
Blank Analysis for sample(s) 04-05							
Total Metals				1 3051			
Arsenic, Total	ND	mg/kg	0.40	1 6010B	1229 14:10	1229 22:21	RW
Barium, Total	ND	mg/kg	0.40	1 6010B	1229 14:10	1229 22:21	RW
Cadmium, Total	ND	mg/kg	0.40	1 6010B	1229 14:10	1229 22:21	RW
Chromium, Total	ND	mg/kg	0.40	1 6010B	1229 14:10	1229 22:21	RW
Lead, Total	ND	mg/kg	2.0	1 6010B	1229 14:10	1229 22:21	RW
Selenium, Total	ND	mg/kg	0.80	1 6010B	1229 14:10	1229 22:21	RW
Silver, Total	ND	mg/kg	0.40	1 6010B	1229 14:10	1229 22:21	RW
Blank Analysis for sample(s) 03							
Total Metals							
Mercury, Total	ND	mg/l	0.0005	1 7470A	1229 12:50	0102 11:36	DM

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0012061

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 04-05							
Total Metals							
Mercury, Total	ND	mg/kg	0.25	1	7470A	0102 11:45 0103 11:39	DM
Blank Analysis for sample(s) 01-03							
Dissolved Metals							
Antimony, Dissolved	ND	mg/l	0.05	1	6010B	1228 12:00 0102 22:08	RW
Arsenic, Dissolved	ND	mg/l	0.005	1	6010B	1228 12:00 0102 22:08	RW
Beryllium, Dissolved	ND	mg/l	0.005	1	6010B	1228 12:00 0102 22:08	RW
Cadmium, Dissolved	ND	mg/l	0.005	1	6010B	1228 12:00 0102 22:08	RW
Chromium, Dissolved	ND	mg/l	0.01	1	6010B	1228 12:00 0102 22:08	RW
Copper, Dissolved	ND	mg/l	0.01	1	6010B	1228 12:00 0102 22:08	RW
Lead, Dissolved	ND	mg/l	0.01	1	6010B	1228 12:00 0102 22:08	RW
Nickel, Dissolved	ND	mg/l	0.025	1	6010B	1228 12:00 0102 22:08	RW
Selenium, Dissolved	ND	mg/l	0.005	1	6010B	1228 12:00 0102 22:08	RW
Silver, Dissolved	ND	mg/l	0.01	1	6010B	1228 12:00 0102 22:08	RW
Thallium, Dissolved	ND	mg/l	0.005	1	6010B	1228 12:00 0102 22:08	RW
Zinc, Dissolved	ND	mg/l	0.05	1	6010B	1228 12:00 0102 22:08	RW
Blank Analysis for sample(s) 03							
Dissolved Metals							
Mercury, Dissolved	ND	mg/l	0.0005	1	7470A	1229 12:50 0102 11:36	DM
Blank Analysis for sample(s) 01,03							
Volatile Organics by GC/MS 8260				1	8260B	0104 11:09	BT
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				
Tetrachloroethene	ND	ug/l	1.0				
Chlorobenzene	ND	ug/l	3.5				
Trichlorofluoromethane	ND	ug/l	5.0				
1,2-Dichloroethane	ND	ug/l	1.0				
1,1,1-Trichloroethane	ND	ug/l	1.0				
Bromodichloromethane	ND	ug/l	1.0				
trans-1,3-Dichloropropene	ND	ug/l	1.0				
cis-1,3-Dichloropropene	ND	ug/l	1.0				
1,1-Dichloropropene	ND	ug/l	5.0				
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	1.5				
Ethylbenzene	ND	ug/l	1.0				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0012061

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 01,03							
Volatile Organics by GC/MS 8260 continued				1	8260B	0104 11:09 BT	
Chloromethane	ND	ug/l	10.				
Bromomethane	ND	ug/l	2.0				
Vinyl chloride	ND	ug/l	2.0				
Chloroethane	ND	ug/l	2.0				
1,1-Dichloroethene	ND	ug/l	1.5				
trans-1,2-Dichloroethene	ND	ug/l	1.5				
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				
Methyl tert butyl ether	ND	ug/l	4.0				
p/m-Xylene	ND	ug/l	1.0				
o-Xylene	ND	ug/l	1.0				
cis-1,2-Dichloroethene	ND	ug/l	1.0				
Dibromomethane	ND	ug/l	10.				
1,4-Dichlorobutane	ND	ug/l	10.				
Iodomethane	ND	ug/l	10.				
1,2,3-Trichloropropane	ND	ug/l	10.				
Styrene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	10.				
Acetone	ND	ug/l	10.				
Carbon disulfide	ND	ug/l	10.				
2-Butanone	ND	ug/l	10.				
Vinyl acetate	ND	ug/l	10.				
4-Methyl-2-pentanone	ND	ug/l	10.				
2-Hexanone	ND	ug/l	10.				
Ethyl methacrylate	ND	ug/l	10.				
Acrolein	ND	ug/l	25.				
Acrylonitrile	ND	ug/l	10.				
Bromochloromethane	ND	ug/l	5.0				
Tetrahydrofuran	ND	ug/l	20.				
2,2-Dichloropropane	ND	ug/l	5.0				
1,2-Dibromoethane	ND	ug/l	5.0				
1,3-Dichloropropane	ND	ug/l	5.0				
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0				
Bromobenzene	ND	ug/l	5.0				
n-Butylbenzene	ND	ug/l	5.0				
sec-Butylbenzene	ND	ug/l	5.0				
tert-Butylbenzene	ND	ug/l	5.0				
o-Chlorotoluene	ND	ug/l	5.0				
p-Chlorotoluene	ND	ug/l	5.0				
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0				
Hexachlorobutadiene	ND	ug/l	5.0				
Isopropylbenzene	ND	ug/l	5.0				
p-Isopropyltoluene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
n-Propylbenzene	ND	ug/l	5.0				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0012061

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	

Blank Analysis for sample(s) 01,03

Volatile Organics by GC/MS 8260 continued

1 8260B

0104 11:09 BT

1,2,3-Trichlorobenzene	ND	ug/l	5.0
1,2,4-Trichlorobenzene	ND	ug/l	5.0
1,3,5-Trimethylbenzene	ND	ug/l	5.0
1,2,4-Trimethylbenzene	ND	ug/l	5.0
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0
Ethyl ether	ND	ug/l	25.

Surrogate Recovery

1,2-Dichloroethane-d4	118.	%
Toluene-d8	108.	%
4-Bromofluorobenzene	108.	%
Dibromofluoromethane	113.	%

Blank Analysis for sample(s) 06

Volatile Organics by GC/MS 8260

1 8260B

0103 16:32 AK

Methylene chloride	ND	ug/l	2.5
1,1-Dichloroethane	ND	ug/l	0.75
Chloroform	ND	ug/l	0.75
Carbon tetrachloride	ND	ug/l	0.50
1,2-Dichloropropane	ND	ug/l	1.8
Dibromochloromethane	ND	ug/l	0.50
1,1,2-Trichloroethane	ND	ug/l	0.75
Tetrachloroethene	ND	ug/l	0.50
Chlorobenzene	ND	ug/l	1.8
Trichlorofluoromethane	ND	ug/l	2.5
1,2-Dichloroethane	ND	ug/l	0.50
1,1,1-Trichloroethane	ND	ug/l	0.50
Bromodichloromethane	ND	ug/l	0.50
trans-1,3-Dichloropropene	ND	ug/l	0.50
cis-1,3-Dichloropropene	ND	ug/l	0.50
1,1-Dichloropropene	ND	ug/l	2.5
Bromoform	ND	ug/l	0.50
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50
Benzene	ND	ug/l	0.50
Toluene	ND	ug/l	0.75
Ethylbenzene	ND	ug/l	0.50
Chloromethane	ND	ug/l	5.0
Bromomethane	ND	ug/l	1.0
Vinyl chloride	ND	ug/l	1.0
Chloroethane	ND	ug/l	1.0
1,1-Dichloroethene	ND	ug/l	0.75
trans-1,2-Dichloroethene	ND	ug/l	0.75
Trichloroethene	ND	ug/l	0.50
1,2-Dichlorobenzene	ND	ug/l	2.5
1,3-Dichlorobenzene	ND	ug/l	2.5
1,4-Dichlorobenzene	ND	ug/l	2.5

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0012061

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 06							
Volatile Organics by GC/MS 8260 continued				1 8260B	0103 16:32 AK		
Methyl tert butyl ether	ND	ug/l	2.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	2.5				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	2.5				
sec-Butylbenzene	ND	ug/l	2.5				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	2.5				
Isopropylbenzene	ND	ug/l	2.5				
p-Isopropyltoluene	ND	ug/l	2.5				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	2.5				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	12.				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
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Blank Analysis for sample(s) 06

Volatile Organics by GC/MS 8260 continued

1 8260B

0103 16:32 AK

Surrogate Recovery

1,2-Dichloroethane-d4	90.0	%
Toluene-d8	98.0	%
4-Bromofluorobenzene	93.0	%
Dibromofluoromethane	90.0	%

Blank Analysis for sample(s) 02

Volatile Organics by GC/MS 8260

1 8260B

0105 13:04 BT

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
Tetrachloroethene	ND	ug/l	1.0
Chlorobenzene	ND	ug/l	3.5
Trichlorofluoromethane	ND	ug/l	5.0
1,2-Dichloroethane	ND	ug/l	1.0
1,1,1-Trichloroethane	ND	ug/l	1.0
Bromodichloromethane	ND	ug/l	1.0
trans-1,3-Dichloropropene	ND	ug/l	1.0
cis-1,3-Dichloropropene	ND	ug/l	1.0
1,1-Dichloropropene	ND	ug/l	5.0
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	1.5
Ethylbenzene	ND	ug/l	1.0
Chloromethane	ND	ug/l	10.
Bromomethane	ND	ug/l	2.0
Vinyl chloride	ND	ug/l	2.0
Chloroethane	ND	ug/l	2.0
1,1-Dichloroethene	ND	ug/l	1.5
trans-1,2-Dichloroethene	ND	ug/l	1.5
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
Methyl tert butyl ether	ND	ug/l	4.0
p/m-Xylene	ND	ug/l	1.0
o-Xylene	ND	ug/l	1.0
cis-1,2-Dichloroethene	ND	ug/l	1.0
Dibromomethane	ND	ug/l	10.
1,4-Dichlorobutane	ND	ug/l	10.
Iodomethane	ND	ug/l	10.

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

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Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 02							
Volatile Organics by GC/MS 8260 continued				1 8260B	0105 13:04 BT		
1,2,3-Trichloropropane	ND	ug/l	10.				
Styrene	ND	ug/l	1.0				
Dichlorodifluoromethane	ND	ug/l	10.				
Acetone	ND	ug/l	10.				
Carbon disulfide	ND	ug/l	10.				
2-Butanone	ND	ug/l	10.				
Vinyl acetate	ND	ug/l	10.				
4-Methyl-2-pentanone	ND	ug/l	10.				
2-Hexanone	ND	ug/l	10.				
Ethyl methacrylate	ND	ug/l	10.				
Acrolein	ND	ug/l	25.				
Acrylonitrile	ND	ug/l	10.				
Bromochloromethane	ND	ug/l	5.0				
Tetrahydrofuran	ND	ug/l	20.				
2,2-Dichloropropane	ND	ug/l	5.0				
1,2-Dibromoethane	ND	ug/l	5.0				
1,3-Dichloropropane	ND	ug/l	5.0				
1,1,1,2-Tetrachloroethane	ND	ug/l	5.0				
Bromobenzene	ND	ug/l	5.0				
n-Butylbenzene	ND	ug/l	5.0				
sec-Butylbenzene	ND	ug/l	5.0				
tert-Butylbenzene	ND	ug/l	5.0				
o-Chlorotoluene	ND	ug/l	5.0				
p-Chlorotoluene	ND	ug/l	5.0				
1,2-Dibromo-3-chloropropane	ND	ug/l	5.0				
Hexachlorobutadiene	ND	ug/l	5.0				
Isopropylbenzene	ND	ug/l	5.0				
p-Isopropyltoluene	ND	ug/l	5.0				
Naphthalene	ND	ug/l	5.0				
n-Propylbenzene	ND	ug/l	5.0				
1,2,3-Trichlorobenzene	ND	ug/l	5.0				
1,2,4-Trichlorobenzene	ND	ug/l	5.0				
1,3,5-Trimethylbenzene	ND	ug/l	5.0				
1,2,4-Trimethylbenzene	ND	ug/l	5.0				
trans-1,4-Dichloro-2-butene	ND	ug/l	5.0				
Ethyl ether	ND	ug/l	25.				

Surrogate Recovery

1,2-Dichloroethane-d4	99.0	%
Toluene-d8	110.	%
4-Bromofluorobenzene	106.	%
Dibromofluoromethane	101.	%

Blank Analysis for sample(s) 04							
Volatile Organics 8260 via High 5035				1 8260B		0103 16:13 BT	
Methylene chloride	520	ug/kg	250				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

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Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ID ANAL
Blank Analysis for sample(s) 04						
Volatile Organics 8260 via High 5035 continued				1 8260B		0103 16:13 BT
1,1-Dichloroethane	ND	ug/kg	75.			
Chloroform	ND	ug/kg	75.			
Carbon tetrachloride	ND	ug/kg	50.			
1,2-Dichloropropane	ND	ug/kg	180			
Dibromochloromethane	ND	ug/kg	50.			
1,1,2-Trichloroethane	ND	ug/kg	75.			
Tetrachloroethene	ND	ug/kg	50.			
Chlorobenzene	ND	ug/kg	180			
Trichlorofluoromethane	ND	ug/kg	250			
1,2-Dichloroethane	ND	ug/kg	50.			
1,1,1-Trichloroethane	ND	ug/kg	50.			
Bromodichloromethane	ND	ug/kg	50.			
trans-1,3-Dichloropropene	ND	ug/kg	50.			
cis-1,3-Dichloropropene	ND	ug/kg	50.			
1,1-Dichloropropene	ND	ug/kg	250			
Bromoform	ND	ug/kg	50.			
1,1,2,2-Tetrachloroethane	ND	ug/kg	50.			
Benzene	ND	ug/kg	50.			
Toluene	ND	ug/kg	75.			
Ethylbenzene	ND	ug/kg	50.			
Chloromethane	ND	ug/kg	500			
Bromomethane	ND	ug/kg	100			
Vinyl chloride	ND	ug/kg	100			
Chloroethane	ND	ug/kg	100			
1,1-Dichloroethene	ND	ug/kg	75.			
trans-1,2-Dichloroethene	ND	ug/kg	75.			
Trichloroethene	ND	ug/kg	50.			
1,2-Dichlorobenzene	ND	ug/kg	250			
1,3-Dichlorobenzene	ND	ug/kg	250			
1,4-Dichlorobenzene	ND	ug/kg	250			
Methyl tert butyl ether	ND	ug/kg	200			
p/m-Xylene	ND	ug/kg	50.			
o-Xylene	ND	ug/kg	50.			
cis-1,2-Dichloroethene	ND	ug/kg	50.			
Dibromomethane	ND	ug/kg	500			
1,4-Dichlorobutane	ND	ug/kg	500			
Iodomethane	ND	ug/kg	500			
1,2,3-Trichloropropane	ND	ug/kg	500			
Styrene	ND	ug/kg	50.			
Dichlorodifluoromethane	ND	ug/kg	500			
Acetone	ND	ug/kg	1500			
Carbon disulfide	ND	ug/kg	500			
2-Butanone	ND	ug/kg	500			
Vinyl acetate	ND	ug/kg	500			
4-Methyl-2-pentanone	ND	ug/kg	500			
2-Hexanone	ND	ug/kg	500			
Ethyl methacrylate	ND	ug/kg	500			

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

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Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	ID ANAL
Blank Analysis for sample(s) 04						
Volatile Organics 8260 via High 5035 continued				1 8260B		0103 16:13 BT
Acrolein	ND	ug/kg	1200			
Acrylonitrile	ND	ug/kg	500			
Bromochloromethane	ND	ug/kg	250			
Tetrahydrofuran	ND	ug/kg	1000			
2,2-Dichloropropane	ND	ug/kg	250			
1,2-Dibromoethane	ND	ug/kg	250			
1,3-Dichloropropane	ND	ug/kg	250			
1,1,1,2-Tetrachloroethane	ND	ug/kg	250			
Bromobenzene	ND	ug/kg	250			
n-Butylbenzene	ND	ug/kg	250			
sec-Butylbenzene	ND	ug/kg	250			
tert-Butylbenzene	ND	ug/kg	250			
o-Chlorotoluene	ND	ug/kg	250			
p-Chlorotoluene	ND	ug/kg	250			
1,2-Dibromo-3-chloropropane	ND	ug/kg	250			
Hexachlorobutadiene	ND	ug/kg	250			
Isopropylbenzene	ND	ug/kg	250			
p-Isopropyltoluene	ND	ug/kg	250			
Naphthalene	ND	ug/kg	250			
n-Propylbenzene	ND	ug/kg	250			
1,2,3-Trichlorobenzene	ND	ug/kg	250			
1,2,4-Trichlorobenzene	ND	ug/kg	250			
1,3,5-Trimethylbenzene	ND	ug/kg	250			
1,2,4-Trimethylbenzene	ND	ug/kg	250			
trans-1,4-Dichloro-2-butene	ND	ug/kg	250			
Ethyl ether	ND	ug/kg	1200			
Surrogate Recovery						
1,2-Dichloroethane-d4	111.	%				
Toluene-d8	85.0	%				
4-Bromofluorobenzene	93.0	%				
Dibromofluoromethane	88.0	%				
Blank Analysis for sample(s) 05,07						
Volatile Organics 8260 via High 5035				1 8260B		0104 11:11 BT
Methylene chloride	540	ug/kg	250			
1,1-Dichloroethane	ND	ug/kg	75.			
Chloroform	ND	ug/kg	75.			
Carbon tetrachloride	ND	ug/kg	50.			
1,2-Dichloropropane	ND	ug/kg	180			
Dibromochloromethane	ND	ug/kg	50.			
1,1,2-Trichloroethane	ND	ug/kg	75.			
Tetrachloroethene	ND	ug/kg	50.			
Chlorobenzene	ND	ug/kg	180			
Trichlorofluoromethane	ND	ug/kg	250			
1,2-Dichloroethane	ND	ug/kg	50.			

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0012061

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 05,07							
Volatile Organics 8260 via High 5035 continued				1 8260B		0104 11:11 BT	
1,1,1-Trichloroethane	ND	ug/kg	50.				
Bromodichloromethane	ND	ug/kg	50.				
trans-1,3-Dichloropropene	ND	ug/kg	50.				
cis-1,3-Dichloropropene	ND	ug/kg	50.				
1,1-Dichloropropene	ND	ug/kg	250				
Bromoform	ND	ug/kg	50.				
1,1,2,2-Tetrachloroethane	ND	ug/kg	50.				
Benzene	ND	ug/kg	50.				
Toluene	ND	ug/kg	75.				
Ethylbenzene	ND	ug/kg	50.				
Chloromethane	ND	ug/kg	500				
Bromomethane	ND	ug/kg	100				
Vinyl chloride	ND	ug/kg	100				
Chloroethane	ND	ug/kg	100				
1,1-Dichloroethene	ND	ug/kg	75.				
trans-1,2-Dichloroethene	ND	ug/kg	75.				
Trichloroethene	ND	ug/kg	50.				
1,2-Dichlorobenzene	ND	ug/kg	250				
1,3-Dichlorobenzene	ND	ug/kg	250				
1,4-Dichlorobenzene	ND	ug/kg	250				
Methyl tert butyl ether	ND	ug/kg	200				
p/m-Xylene	ND	ug/kg	50.				
o-Xylene	ND	ug/kg	50.				
cis-1,2-Dichloroethene	ND	ug/kg	50.				
Dibromomethane	ND	ug/kg	500				
1,4-Dichlorobutane	ND	ug/kg	500				
Iodomethane	ND	ug/kg	500				
1,2,3-Trichloropropane	ND	ug/kg	500				
Styrene	ND	ug/kg	50.				
Dichlorodifluoromethane	ND	ug/kg	500				
Acetone	ND	ug/kg	1000				
Carbon disulfide	ND	ug/kg	500				
2-Butanone	ND	ug/kg	500				
Vinyl acetate	ND	ug/kg	500				
4-Methyl-2-pentanone	ND	ug/kg	500				
2-Hexanone	ND	ug/kg	500				
Ethyl methacrylate	ND	ug/kg	500				
Acrolein	ND	ug/kg	1200				
Acrylonitrile	ND	ug/kg	500				
Bromochloromethane	ND	ug/kg	250				
Tetrahydrofuran	ND	ug/kg	1000				
2,2-Dichloropropane	ND	ug/kg	250				
1,2-Dibromoethane	ND	ug/kg	250				
1,3-Dichloropropane	ND	ug/kg	250				
1,1,1,2-Tetrachloroethane	ND	ug/kg	250				
Bromobenzene	ND	ug/kg	250				
n-Butylbenzene	ND	ug/kg	250				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
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Blank Analysis for sample(s) 05,07

Volatile Organics 8260 via High 5035 continued				1 8260B	0104 11:11 BT	
sec-Butylbenzene	ND	ug/kg	250			
tert-Butylbenzene	ND	ug/kg	250			
o-Chlorotoluene	ND	ug/kg	250			
p-Chlorotoluene	ND	ug/kg	250			
1,2-Dibromo-3-chloropropane	ND	ug/kg	250			
Hexachlorobutadiene	ND	ug/kg	250			
Isopropylbenzene	ND	ug/kg	250			
p-Isopropyltoluene	ND	ug/kg	250			
Naphthalene	ND	ug/kg	250			
n-Propylbenzene	ND	ug/kg	250			
1,2,3-Trichlorobenzene	ND	ug/kg	250			
1,2,4-Trichlorobenzene	ND	ug/kg	250			
1,3,5-Trimethylbenzene	ND	ug/kg	250			
1,2,4-Trimethylbenzene	ND	ug/kg	250			
trans-1,4-Dichloro-2-butene	ND	ug/kg	250			
Ethyl ether	ND	ug/kg	1200			

Surrogate Recovery

1,2-Dichloroethane-d4	109.	%
Toluene-d8	86.0	%
4-Bromofluorobenzene	90.0	%
Dibromofluoromethane	87.0	%

Blank Analysis for sample(s) 04-05

PAH by GC/MS SIM 8270M				1 8270C-M	0102 18:30 0104 22:32 MK
Acenaphthene	ND	ug/kg	20.		
2-Chloronaphthalene	ND	ug/kg	20.		
Fluoranthene	ND	ug/kg	20.		
Naphthalene	ND	ug/kg	20.		
Benzo(a)anthracene	ND	ug/kg	20.		
Benzo(a)pyrene	ND	ug/kg	20.		
Benzo(b)fluoranthene	ND	ug/kg	20.		
Benzo(k)fluoranthene	ND	ug/kg	20.		
Chrysene	ND	ug/kg	20.		
Acenaphthylene	ND	ug/kg	20.		
Anthracene	ND	ug/kg	20.		
Benzo(ghi)perylene	ND	ug/kg	20.		
Fluorene	ND	ug/kg	20.		
Phenanthrene	ND	ug/kg	20.		
Dibenzo(a,h)anthracene	ND	ug/kg	20.		
Indeno(1,2,3-cd)Pyrene	ND	ug/kg	20.		
Pyrene	ND	ug/kg	20.		
1-Methylnaphthalene	ND	ug/kg	20.		
2-Methylnaphthalene	ND	ug/kg	20.		
Perylene	ND	ug/kg	20.		
Benzo(e)Pyrene	ND	ug/kg	20.		

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	

Blank Analysis for sample(s) 04-05

PAH by GC/MS SIM 8270M continued

1 8270C-M 0102 18:30 0104 22:32 MK

Surrogate Recovery

Nitrobenzene-d5	85.0	%
2-Fluorobiphenyl	81.0	%
4-Terphenyl-d14	95.0	%

Blank Analysis for sample(s) 03

PAH by GC/MS SIM 8270M

1 8270C-M 0102 15:30 0104 17:48 MK

Acenaphthene	ND	ug/l	0.20
2-Chloronaphthalene	ND	ug/l	0.20
Fluoranthene	ND	ug/l	0.20
Naphthalene	ND	ug/l	0.20
Benzo(a)anthracene	ND	ug/l	0.20
Benzo(a)pyrene	ND	ug/l	0.20
Benzo(b)fluoranthene	ND	ug/l	0.20
Benzo(k)fluoranthene	ND	ug/l	0.20
Chrysene	ND	ug/l	0.20
Acenaphthylene	ND	ug/l	0.20
Anthracene	ND	ug/l	0.20
Benzo(ghi)perylene	ND	ug/l	0.20
Fluorene	ND	ug/l	0.20
Phenanthrene	ND	ug/l	0.20
Dibenzo(a,h)anthracene	ND	ug/l	0.20
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20
Pyrene	ND	ug/l	0.20
1-Methylnaphthalene	ND	ug/l	0.20
2-Methylnaphthalene	ND	ug/l	0.20
Perylene	ND	ug/l	0.20
Benzo(e)Pyrene	ND	ug/l	0.20

Surrogate Recovery

Nitrobenzene-d5	74.0	%
2-Fluorobiphenyl	72.0	%
4-Terphenyl-d14	83.0	%

Blank Analysis for sample(s) 04-05

PCB/Pesticides

1 8082/8081 0103 14:00 0104 23:37 PB

Delta-BHC	ND	ug/kg	20.0
Lindane	ND	ug/kg	20.0
Alpha-BHC	ND	ug/kg	20.0
Beta-BHC	ND	ug/kg	20.0
Heptachlor	ND	ug/kg	20.0
Aldrin	ND	ug/kg	20.0
Heptachlor epoxide	ND	ug/kg	20.0
Endrin	ND	ug/kg	20.0
Endrin aldehyde	ND	ug/kg	20.0

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

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PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	
Blank Analysis for sample(s) 04-05							
PCB/Pesticides continued				1	8082/8081	0103 14:00	0104 23:37 PB
Endrin ketone	ND	ug/kg	20.0				
Dieldrin	ND	ug/kg	20.0				
4,4'-DDE	ND	ug/kg	20.0				
4,4'-DDD	ND	ug/kg	20.0				
4,4'-DDT	ND	ug/kg	20.0				
Endosulfan I	ND	ug/kg	20.0				
Endosulfan II	ND	ug/kg	20.0				
Endosulfan sulfate	ND	ug/kg	20.0				
Methoxychlor	ND	ug/kg	20.0				
Toxaphene	ND	ug/kg	80.0				
Chlordane	ND	ug/kg	80.0				
cis-Chlordane	ND	ug/kg	20.0				
trans-Chlordane	ND	ug/kg	20.0				
Aroclor 1221	ND	ug/kg	200.				
Aroclor 1232	ND	ug/kg	200.				
Aroclor 1242/1016	ND	ug/kg	200.				
Aroclor 1248	ND	ug/kg	200.				
Aroclor 1254	ND	ug/kg	200.				
Aroclor 1260	ND	ug/kg	200.				

Surrogate Recovery

2,4,5,6-Tetrachloro-m-xylene	51.0	%
Decachlorobiphenyl	54.0	%

Blank Analysis for sample(s) 03							
PCB/Pesticides				1 8082/8081	1229 10:40	0103 18:16	PB
Delta-BHC	ND	ug/l	1.00				
Lindane	ND	ug/l	1.00				
Alpha-BHC	ND	ug/l	1.00				
Beta-BHC	ND	ug/l	1.00				
Heptachlor	ND	ug/l	1.00				
Aldrin	ND	ug/l	1.00				
Heptachlor epoxide	ND	ug/l	1.00				
Endrin	ND	ug/l	1.00				
Endrin aldehyde	ND	ug/l	1.00				
Endrin ketone	ND	ug/l	1.00				
Dieldrin	ND	ug/l	1.00				
4,4'-DDE	ND	ug/l	1.00				
4,4'-DDD	ND	ug/l	1.00				
4,4'-DDT	ND	ug/l	1.00				
Endosulfan I	ND	ug/l	1.00				
Endosulfan II	ND	ug/l	1.00				
Endosulfan sulfate	ND	ug/l	1.00				
Methoxychlor	ND	ug/l	1.00				
Toxaphene	ND	ug/l	1.00				
Chlordane	ND	ug/l	1.00				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0012061

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE		ID
					PREP	ANAL	

Blank Analysis for sample(s) 03

PCB/Pesticides continued

1 8082/8081 1229 10:40 0103 18:16 PB

cis-Chlordane	ND	ug/l	1.00
trans-Chlordane	ND	ug/l	1.00
Aroclor 1221	ND	ug/l	1.00
Aroclor 1232	ND	ug/l	1.00
Aroclor 1242/1016	ND	ug/l	1.00
Aroclor 1248	ND	ug/l	1.00
Aroclor 1254	ND	ug/l	1.00
Aroclor 1260	ND	ug/l	1.00

Surrogate Recovery

2,4,5,6-Tetrachloro-m-xylene	42.0	%
Decachlorobiphenyl	26.0	%

Blank Analysis for sample(s) 01,03

Hydrocarbon Scan by GC 8100M

1 8100M 0102 10:00 0103 19:31 JW

Mineral Spirits	ND	mg/l	1.0
Gasoline	ND	mg/l	1.0
Fuel Oil #2/Diesel	ND	mg/l	1.0
Fuel Oil #4	ND	mg/l	1.0
Fuel Oil #6	ND	mg/l	1.0
Motor Oil	ND	mg/l	1.0
Kerosene	ND	mg/l	1.0
Transformer Oil	ND	mg/l	1.0

Surrogate Recovery

o-Terphenyl	66.0	%
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Blank Analysis for sample(s) 04-05

Hydrocarbon Scan by GC 8100M

1 8100M 0103 15:15 0105 00:38 RL

Mineral Spirits	ND	mg/kg	100
Gasoline	ND	mg/kg	100
Fuel Oil #2/Diesel	ND	mg/kg	100
Fuel Oil #4	ND	mg/kg	100
Fuel Oil #6	ND	mg/kg	100
Motor Oil	ND	mg/kg	100
Kerosene	ND	mg/kg	100
Transformer Oil	ND	mg/kg	100

Surrogate Recovery

o-Terphenyl	80.0	%
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Blank Analysis for sample(s) 03

Volatile Petroleum Hydrocarbons

47 98-1 0103 10:43 RY

C5-C8 Aliphatics	ND	ug/l	40.0
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ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0012061

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP ANAL	ID
Blank Analysis for sample(s) 03						
Volatile Petroleum Hydrocarbons continued				47 98-1	0103 10:43 RY	
C9-C12 Aliphatics	ND	ug/l	40.0			
C9-C10 Aromatics	ND	ug/l	40.0			
C5-C8 Aliphatics, Adjusted	ND	ug/l	40.0			
C9-C12 Aliphatics, Adjusted	ND	ug/l	40.0			
Benzene	ND	ug/l	2.00			
Toluene	ND	ug/l	2.00			
Ethylbenzene	ND	ug/l	2.00			
p/m-Xylene	ND	ug/l	2.00			
o-Xylene	ND	ug/l	2.00			
Methyl tert butyl ether	ND	ug/l	4.00			
Naphthalene	ND	ug/l	20.0			
Surrogate Recovery						
2,5-Dibromotoluene-PID	80.0	%				
2,5-Dibromotoluene-FID	113.	%				
Blank Analysis for sample(s) 02-03						
Extractable Petroleum Hydrocarbons				46 98-1	0103 09:00 0104 11:49 RL	
C9-C18 Aliphatics	ND	ug/l	100.			
C19-C36 Aliphatics	ND	ug/l	100.			
C11-C22 Aromatics	ND	ug/l	100.			
C11-C22 Aromatics, Adjusted	ND	ug/l	100.			
Naphthalene	ND	ug/l	20.0			
2-Methylnaphthalene	ND	ug/l	20.0			
Acenaphthylene	ND	ug/l	20.0			
Acenaphthene	ND	ug/l	20.0			
Fluorene	ND	ug/l	20.0			
Phenanthrene	ND	ug/l	20.0			
Anthracene	ND	ug/l	20.0			
Fluoranthene	ND	ug/l	20.0			
Pyrene	ND	ug/l	20.0			
Benzo(a)anthracene	ND	ug/l	20.0			
Chrysene	ND	ug/l	20.0			
Benzo(b)fluoranthene	ND	ug/l	20.0			
Benzo(k)fluoranthene	ND	ug/l	20.0			
Benzo(a)pyrene	ND	ug/l	20.0			
Indeno(1,2,3-cd)Pyrene	ND	ug/l	20.0			
Dibenzo(a,h)anthracene	ND	ug/l	20.0			
Benzo(ghi)perylene	ND	ug/l	20.0			
Surrogate Recovery						
Chloro-Octadecane	90.0	%				
o-Terphenyl	108.	%				
2-Fluorobiphenyl	110.	%				
2-Bromonaphthalene	115.	%				

ALPHA ANALYTICAL LABORATORIES
ADDENDUM I

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Update III, 1997.
30. Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
46. Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), Massachusetts Department of Environmental Protection, (MADEP-EPH-98-1), January 1998.
47. Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), Massachusetts Department of Environmental Protection, (MADEP-VPH-98-1), January 1998.

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.

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