City of Newton

PUBLIC BUILDINGS DEPARTMENT

Joshua R. Morse, Commissioner
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52 ELLIOT STREET
NEWTON HIGHLANDS, MA 02461-1605

Setti D. Warren
Mayor

October 14, 2016

Community Preservation Committee
c/o Alice E. Ingerson, Community Preservation Program Manager
Planning & Development Department
Newton City Hall
1000 Commonwealth Ave.,
Newton, MA 02459

Re: Crescent Street Housing Site Assessment Update

Dear Ms. Ingerson,

The Public Buildings Department has completed the initial site assessment consisting of environmental and geo-technical reviews.

A copy of the Geo-Technical findings as completed by McPhail Associates is on file with the CPC. The final environmental study findings prepared by Lord Associates are contained within the required RAM Plan (Release Abatement Measures) that is made a part of this letter and will be forwarded to Tuesday, October 18th.

During the course of the site assessment various borings were conducted to determine soil suitability for the construction of housing as well as any contaminates that may be in the soil.

The site soil evaluation has determined that the current site can support housing as presented in our proposal. The environmental evaluation has determined that there is soil contaminated with petroleum based products. The contamination will be remediated through the use of bio-remediation injections into the soil. This process will take 12-18 months to remediate the contamination. The cost of this remediation is being covered by a City Appropriation in the amount of $100,000. No CPC funds will used for this purpose.

The initial appropriation from the CPC for $100,000 has been expended as below:

Geo-Technical Evaluation, by McPhail Associates, through our Architect KBA	**$ 10,839.21**
Site Survey & TOPO Plan, by Feldman Land Surveyors, through our Architect KBA	**$ 8,050.42**
Environmental Evaluation, by Lord Associates	**$ 22,863.32**
Total Expended to date	**$ 41,752.95**
Current Balance of Appropriation	**$ 58,247.05**

The City is currently preparing to commence the bio-remediation treatments to the contaminated soils with separate funding from the City of Newton in the amount of $100,000.00. This work is scheduled to commence the week of November 7, 2016.

Should you have any additional questions, please feel free to contact our department.

Thank you,

Art Cabral
Project Specialist
City of Newton
Public Buildings Department

From: Alice Ingerson
Sent: Monday, October 17, 2016 7:03 PM
To: Arthur F. Cabral
Cc: Barney Heath; Joshua R. Morse; Alejandro M. Valcarce; Stephanie Tocci
Subject: RE: Crescent Street Site Assessment Update

Thanks, Art.

In that case, just let me know when you anticipate being able to submit the final report to the CPC.

Alice

From: Arthur F. Cabral
Sent: Monday, October 17, 2016 5:39 PM
To: Alice Ingerson
Cc: Barney Heath; Joshua R. Morse; Alejandro M. Valcarce; Stephanie Tocci
Subject: Re: Crescent Street Site Assessment Update

I did not complete the final costs, as I noted, the costs are expended to date. We have not been billed for all tasks totally. Once we have final costs we will submit the required information.

The complete environmental report is the RAM Plan that was submitted.

Art

Release Abatement Measure Plan

for the Site:

Parks & Recreation Facility
70 Crescent Street
Newton, MA

RTN 3-33700

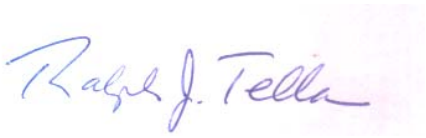
prepared for:

Arthur Cabral, Project Specialist
City of Newton Public Buildings
52 Elliot Street
Newton, MA 02464

_____

prepared by:

Oliver P. Leek
Project Manager



Ralph J. Tella, L.S.P.
President

Lord Associates, Inc.
1506 Providence Highway, Suite 30
Norwood, MA 02062

Project No. 2378

October 17, 2016

Table of Contents

Attachments

Figures

Tables

Appendices

1.0 Introduction

1.1 Purpose & Background

Pursuant to 310 CMR 40.0445 of the Massachusetts Contingency Plan (MCP), Lord Associates, Inc. (LAI) is submitting this Release Abatement Measure (RAM) Plan for the Site located at 70 Crescent Street in Newton, Massachusetts (the Site). This submission should be applied to Release Tracking Number ((RTN) 3-33700

The Site is the location of the City of Newton Parks & Recreation facility. This RAM Plan documents existing conditions at the Site and proposes a program of In-Situ Chemical Oxidation (ISCO) to address petroleum-impacted soil and groundwater.

1.2 Contact Information

Pursuant to 310 CMR 40.0444(1)(a), the following information pertinent to the person assuming responsibility for conducting the RAM (i.e., the Potentially Responsible Party, PRP) is provided as follows:

PRP Contact Information:

Name:	City of Newton Public Buildings Arthur F. Cabral, Project Specialist
Address:	52 Elliot Street, Newton, MA 02461
Telephone:	(617) 796-1602

Licensed Site Professional Information:

Name:	Ralph J. Tella, Lord Associates, Inc.
LSP#:	7473
Address:	1506 Providence Highway, Suite 30, Norwood, MA 02062
Telephone:	(781) 255-5554 x1004

1.3 Site Boundaries

Current Site boundaries are defined by the extent of soil and ground water impacts above detectable concentrations for petroleum related compounds. The area that is subject to this RAM is shown in **Figure 2** and coincides with petroleum impacts likely originating from former USTs.

2.0 Site Description

2.1 Release Description & History

A likely historic release of petroleum to soil and groundwater was identified in April and May 2016 as a result of subsurface investigations performed as a baseline assessment prior to Site re-development. A total of twenty (20) soil borings were advanced at the Site with select locations completed as groundwater monitoring wells. Soil samples from selected boring locations had concentrations of volatile and extractable petroleum hydrocarbons (VPH/EPH) above applicable Reportable Concentrations for soil (RCS-1). The likely source of the petroleum was the former use of underground storage tanks (USTs) in the area where the contamination was found. The USTs were removed from the property in 1990.

A Release Notification Form (RNF) was submitted to DEP on July 18, 2016.
DEP subsequently assigned Release Tracking Number (RTN) 3-33700 to the release.

2.2 Site Conditions

In April and May 2016, LAI directed subsurface investigations at the Site consisting of the advancement of soil borings with select borings completed as groundwater monitoring wells. Laboratory analysis of soil samples indicated the presence of VPH and EPH in soil above applicable RSC-1 standards. RCS-1 standards applies as the Site is within 500 feet of a residentially-zoned property.

LAI collected groundwater samples from the newly-installed groundwater monitoring wells in April and May 2016. Laboratory analytical results indicated that the VPH fraction C9-C10 Aliphatics were detected in LB-18/MW above RCGW-2 standards. No other concentrations of VPH or EPH in groundwater were detected by the laboratory above applicable RCGW-2 standards. Reportable concentration category RCGW-2 applies as groundwater is less than 15 feet deep within 30 feet of an occupied structure.

The adjacent building is only occupied partially during the day by the Parks & Recreation employees.

2.3 Surrounding Receptors

According to the USGS Newton Quadrangle Topographical Map, the elevation of the Site is approximately 74 feet above mean sea level. Topography of the Site vicinity is relatively flat, sloping slightly higher to the south. The direction of groundwater flow in the vicinity is estimated to the north towards the Massachusetts Turnpike (Interstate-90).

Review of the Flood Insurance Rate Map, published by the Federal Emergency Management Agency (FEMA) indicated the Site is located in Zone C, areas of minimal flood hazard.

Review of the MassGIS Bureau of Waste Site Cleanup Priority Resources Maps published by the MADEP, indicated the Site is not located within any DEP specified groundwater or wildlife protection areas.

3.0 Subsurface Investigation Activities

On April 5, 2016, LAI directed New England Geotech in the advancement of seven soil borings (designated LB-1 through LB-7) across the Site with a truck-mounted direct push rig. Continuous soil samples were collected in acetate sleeves during the advancement of the soil borings. Soil samples were field-screened with a PID for TOV. No elevated TOV readings were observed above 0.0 ppmv in any of the soil samples collected from borings LB-1 through LB-3. No soil was collected during the advancement and installation of LB-7/MW as this well was installed after driving casing to the desired depth. Samples collected from 10-15 feet from borings LB-4 through LB-6 had TOV readings over 100 ppmv and had petroleum odors. See **Appendix C** for copies of the boring logs.

Soil samples were logged in a field book and the samples collected from 0-5 feet bsg from LB-1, LB-2, and LB-3 were placed in laboratory-provided glassware for analysis of extractable petroleum hydrocarbons (EPH) and volatile organic compounds (VOCs). Samples collected from 10-15 feet from LB-4 and LB-6 were placed in laboratory-provided glassware for analysis of EPH and volatile petroleum hydrocarbons (VPH). Samples were placed in a cooler and transported to Alpha Analytical, Inc. (Alpha) of Westborough, Massachusetts under chain-of-custody documentation. Laboratory

analysis did not indicate the presence of EPH or VOCs above laboratory method detection limits in the samples collected from LB-1 through LB-3. Laboratory analysis of the sample collected from LB-4 indicated detections of EPH above the laboratory method detection limit but below applicable RCS-1 standards and had detections of VPH constituents above laboratory method detection limits and one fraction range (C_5-C_8 Aliphatics) above applicable RCS-1 standards. Laboratory analysis indicated several EPH and VPH concentrations above laboratory method detection limits with the concentration of 2-methylnaphthalene, C_9-C_{10} Aromatics, C_5-C_8 Aliphatics, and naphthalene above applicable RCS-1 standards. Laboratory data tables with comparisons to RCS-1 standards are included in **Table 1**. Laboratory certificates of analysis and chain-of-custody documentation are included in **Appendix B**.

LB-1, LB-2, LB-3, LB-4, and LB-7 were completed as one-inch poly-vinyl chloride (PVC) groundwater monitoring wells and cemented at grade with road boxes.

On April 8, 2016, LAI conducted a groundwater elevation survey. Relative elevations of the well casings and depths to groundwater were used in order to determine the direction of groundwater flow. Based on the survey, groundwater is inferred to flow to the north across the Site.

Wellhead Elevation Survey

Monitoring Well ID	*Relative Well Case Elevation (ft)*	*Depth to Groundwater (ft)*	*Relative Elevation (ft)*
LB-1/MW	100	5.87	94.13
LB-2/MW	101.44	6.18	95.26
LB-3/MW	99.44	5.92	93.52
LB-4/MW	99.54	4.90	94.64
LB-7/MW	99.45	5.27	94.18

Relative elevations based on datum of 100 feet at LB-1MW

Also on April 8, 2016, LAI gauged the wells, developed the newly-installed wells, and collected groundwater samples from LB-1/MW through LB-4/MW, and from LB-7/MW,. After development, consisting in the removal of approximately three gallons of water, samples were collected with a peristaltic pump and polyethylene tubing. The samples were collected in laboratory-provided glassware and placed in a cooler pending transport

to Alpha for analysis under chain-of-custody documentation. The samples collected from LB-1/MW through LB-3/MW were analyzed for EPH and VOCs. The samples collected from LB-4/MW and LB-7/MW were analyzed for EPH and VPH.

Laboratory analytical data did not indicate any concentrations of EPH or VOCs in groundwater samples collected from LB-1/MW through LB-3/MW that exceed laboratory method detection limits or applicable RCGW-2 standards. Laboratory analysis indicates that groundwater collected from LB-4/MW had concentrations of EPH and VPH constituents above laboratory method detection limits, but below applicable RCGW-2 standards. Laboratory analysis indicates that groundwater collected from LB-7/MW did not have concentrations of EPH above laboratory method detection limits, but had concentrations of VPH constituents above laboratory method detection limits. All detected EPH and VPH constituents in groundwater collected from LB-7/MW were below applicable RCGW-2 standards. Laboratory data tables with comparisons to RCGW-2 standards are included in **Table 2**. Laboratory certificates of analysis and chain-of-custody documentation are included in **Appendix B**.

In order to further delineate the extent of contamination at the Site, LAI directed New England Geotech in another subsurface investigation on May 24, 2016 with a direct push rig. Thirteen soil borings were advanced (designated LB-8 through LB-20) to a maximum depth of 15 feet bsg. Continuous soil samples were collected in acetate sleeves during the advancement of the soil borings. Soil samples were field-screened with a PID for TOV.

Laboratory analytical data did not indicate any EPH concentrations above laboratory method detection limits in the sample collected from LB-20. EPH concentrations are present in soil samples collected from LB-9, LB-10, and LB-19 above laboratory method detection limits but below applicable RCS-1 standards. EPH constituents and VPH constituents (where analyzed) were above laboratory method detection limits and applicable RCS-1 standards in samples collected from LB-11, LB-12, LB-17, and LB-18.

On May 25, 2016, LAI gauged and sampled the newly-installed groundwater monitoring wells at the Site (LB-10/MW, LB-11/MW, LB-18/MW, LB-19/MW, and LB-20/MW). Groundwater depths ranged from 5.63 feet bsg in LB-11/MW to 9.08 feet bsg in LB-20/MW. Additionally, a heavy sheen of petroleum was observed on the water in LB-18/MW. After purging at least three well volumes, samples were collected with a peristaltic pump and polyethylene tubing. The samples were collected in laboratory-provided glassware and placed in a cooler pending transport to Alpha Analytical for analysis under chain-of-custody documentation. These samples were sent for laboratory analysis of VPH.

Laboratory analysis indicated some detections of VPH constituents in groundwater samples collected from all of the wells above laboratory method detection limits. However, only the groundwater sample collected from LB-18/MW had a VPH constituent (C_9-C_{10} Aromatics at 4.75 mg/l) above the RCGW-2 standard.

On July 26, 2016, LAI personnel conducted a single well steady state pumping test for radial flow using the 2008 Gary Robbins technique. This test was performed on groundwater monitoring well LB-4/MW. The well was pumped at a known rate until the draw down level in the well became stable. This test was repeated using three different pumping rates in order to calculate the conductivity at the Site. The conductivity was determined to be 3.52 feet/day.

4.0 Planned Release Abatement Measure Activities

A remedial program of In-Situ Chemical Oxidation (ISCO) is planned to address petroleum hydrocarbons in soil and groundwater at the Site. The objectives of the plan are to reach applicable MCP Method 1 cleanup standards at a minimum, and reduce concentrations to background where feasible. Applicable standards are:

- Groundwater: GW-2, and GW-3 applies.
- Soil: S-2/GW-2/3. However, in order to avoid the need for an Activity and Use Limitation for the Site, this remedial program will attempt to achieve soil concentrations below Method 1 S-1 standards.

4.2.1 Selection of Technology

In order to gain the most favorable remedial results with minimal Site disruption, LAI will conduct ISCO in order to achieve the desired effect.

4.2.2 Work Plan

Remedial Additive

All work will be done in accordance with 310 CMR 40.0046 – Application of Remedial Additives. Pursuant to 310 CMR 40.0046(3), no chemical injection will be made within 100’ of any private water supply well, within 800’ of a public water supply well or well field, within 800’ of any surface water supply used in a public water system or tributary thereto, or within 50’ of any other surface water body or tributary thereto.

Peroxychem brand Klozur™ powder will be mixed with water and applied into injection wells to promote chemical remediation of petroleum in groundwater above GW-1 standards. This product is sodium persulfate and will be catalyzed with FeEDTA. See the Material Safety Data Sheet (MSDS) and product information sheet for this product in

Appendix D. Application methods and volumes were derived after analyzing Site-specific data and through consultation with Ravi Srirangam, Ph.D., PE, Technical Manager for PeroxyChem, LLC of Philadelphia, PA.

Mode of Application
This material will be mixed with water and pressure injected into ten temporary injection points that will be evenly spread throughout the area to be treated. See **Figure 3** for a depiction of the approximate injection location. FeEDTA will be mixed with water and applied to each injection point prior to injection of the persulfate mixture. It is anticipated that 2-3 applications will be conducted. It is anticipated that 683 pounds of Klozur will be mixed with 465 gallons of water and applied to each injection point per injection round (500 gallons total). The injection points will be approximately 22 feet apart on center, based on an anticipated radius of influence of 12 feet per injection point.

Monitoring
Monitoring will be done in accordance with the requirements at 310 CMR 40.0046(4). Prior to applying the chemical oxidant, LAI will collect samples of groundwater from select upgradient and downgradient wells. These samples will serve as a baseline monitoring point for constituents of concern (EPH and VPH). Additionally, the recently obtained soil data will serve as a baseline monitoring point. After the application of the remedial additive, groundwater samples will be collected from newly-installed groundwater monitoring wells for physical chemistry parameters (i.e., pH, temperature, dissolved oxygen, and oxidation-reduction potential) and sulfate residuals.

DEP policy requires close monitoring of the reaction rate and conditions in adjacent monitoring wells before they can be used for subsequent monitoring. Samples will be collected from upgradient and downgradient wells in order to evaluate the effectiveness of the ISCO treatment once baseline parameters have returned to within 10% of initial conditions.

Often conditions are observed to “re-bound” once groundwater levels rise and the oil that has absorbed onto the soil re-dissolved into groundwater. DEP requires at least three sampling events spaced out over approximately a years-time covering the hydrologic cycle to document that conditions do not re-bound to qualify for closure.

Lab analyses will be for EPH and VPH via the DEP Method. Ferrous iron and sulfate will be analyzed using a colorimetric field spectrometer. As noted, at least three sampling events are required to demonstrate compliance.

Health and Safety
All work will be done in compliance with OSHA and DEP Health and Safety regulations. As previously described, the disposal site is located beneath paved areas of a municipal garage. No residents are present on the property. Air quality will be monitored with a PID. Work will be performed in level D (Boots and coveralls) when the chemical oxidants are being used. The oxidants will be mixed with water in polyethylene containers before being gravity fed into select injection wells/monitoring wells. No personnel will leave the Site until it is demonstrated that no visible reactions are observed (e.g. steam or temperature rise). A Site-Specific Health & Safety Plan is included in **Appendix E**.

5.0 Remedial Waste Management & Permitting

It is not anticipated that any remedial waste will be generated during RAM activities

5.1 Permitting

Remedial work will be conducted according to this RAM plan. No other permits are necessary in order to conduct this work.

FIGURES

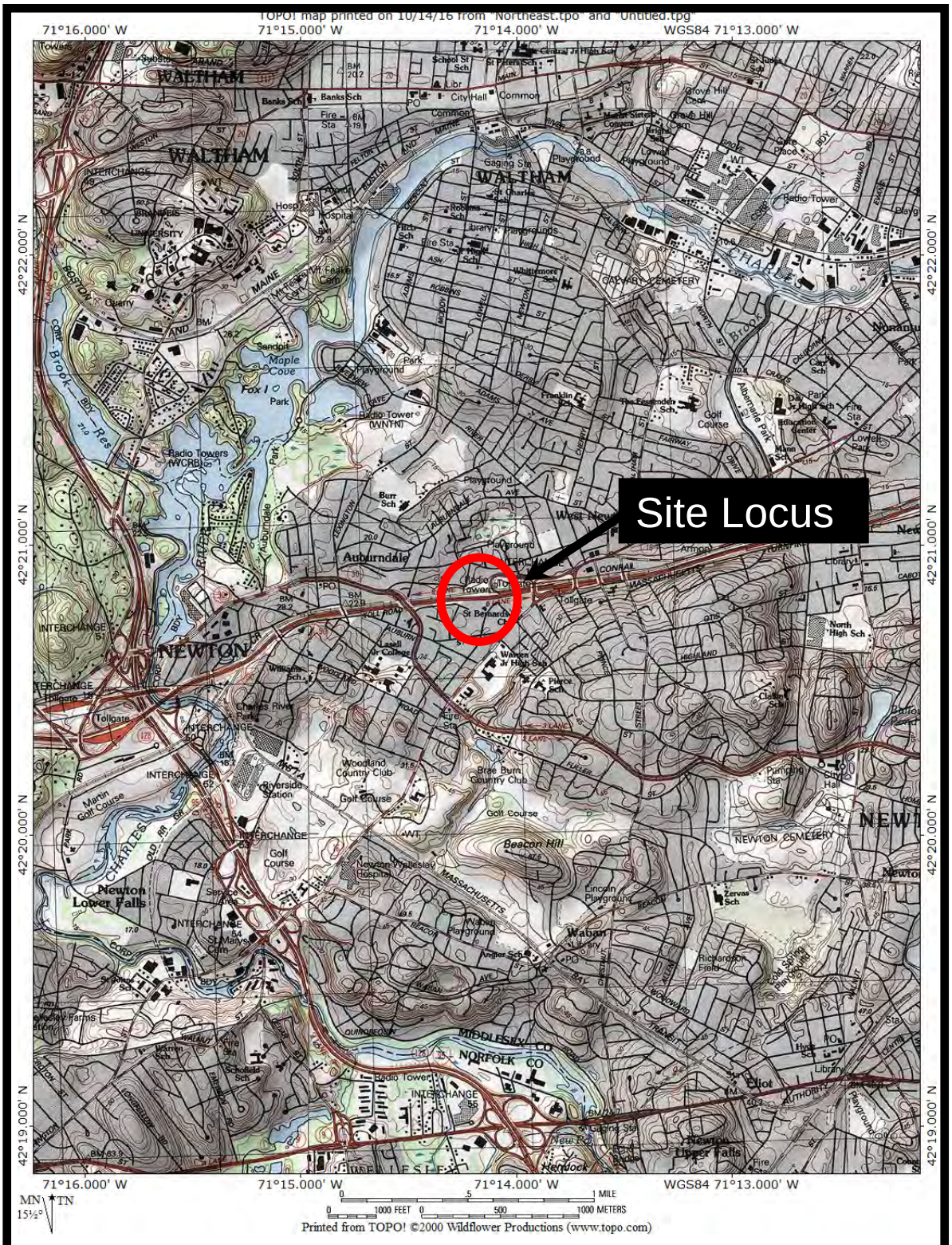
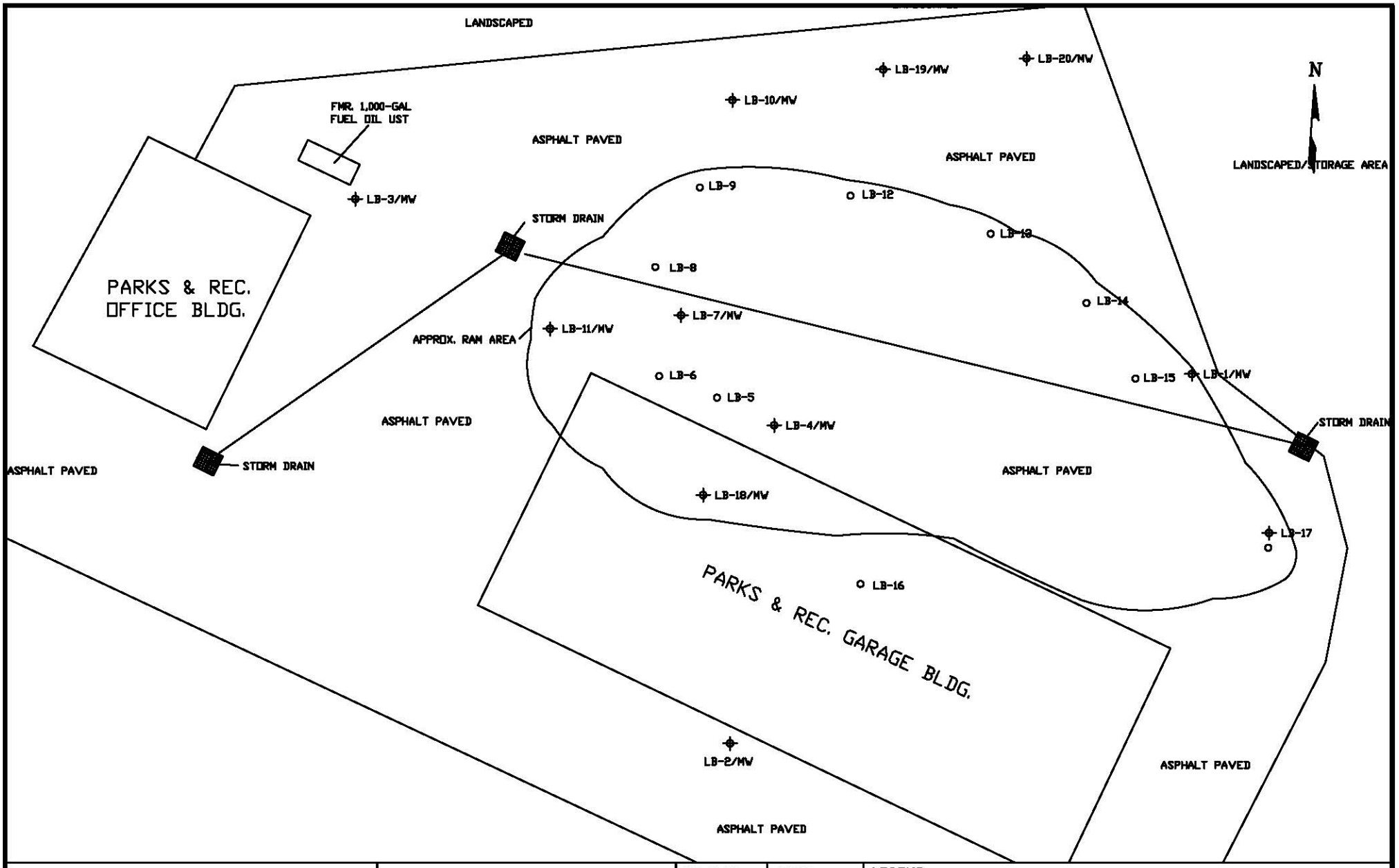


Figure 1. Site Locus
Newton Parks & Recreation
70 Crescent Street
Newton, MA

prepared by:
Lord Associates, Inc.
1506 Providence Hwy #30
Norwood, MA 02062
Voice: 781.255.5554
Fax: 781.255.5535



LORD ASSOCIATES, INC.
1506 PROVIDENCE HWY #30 (781) 255-5554
NORWOOD, MA FAX (781) 255-5535

SITE:
NEWTON PARKS & REC OFFICE
70 CRESCENT STREET
NEWTON, MA

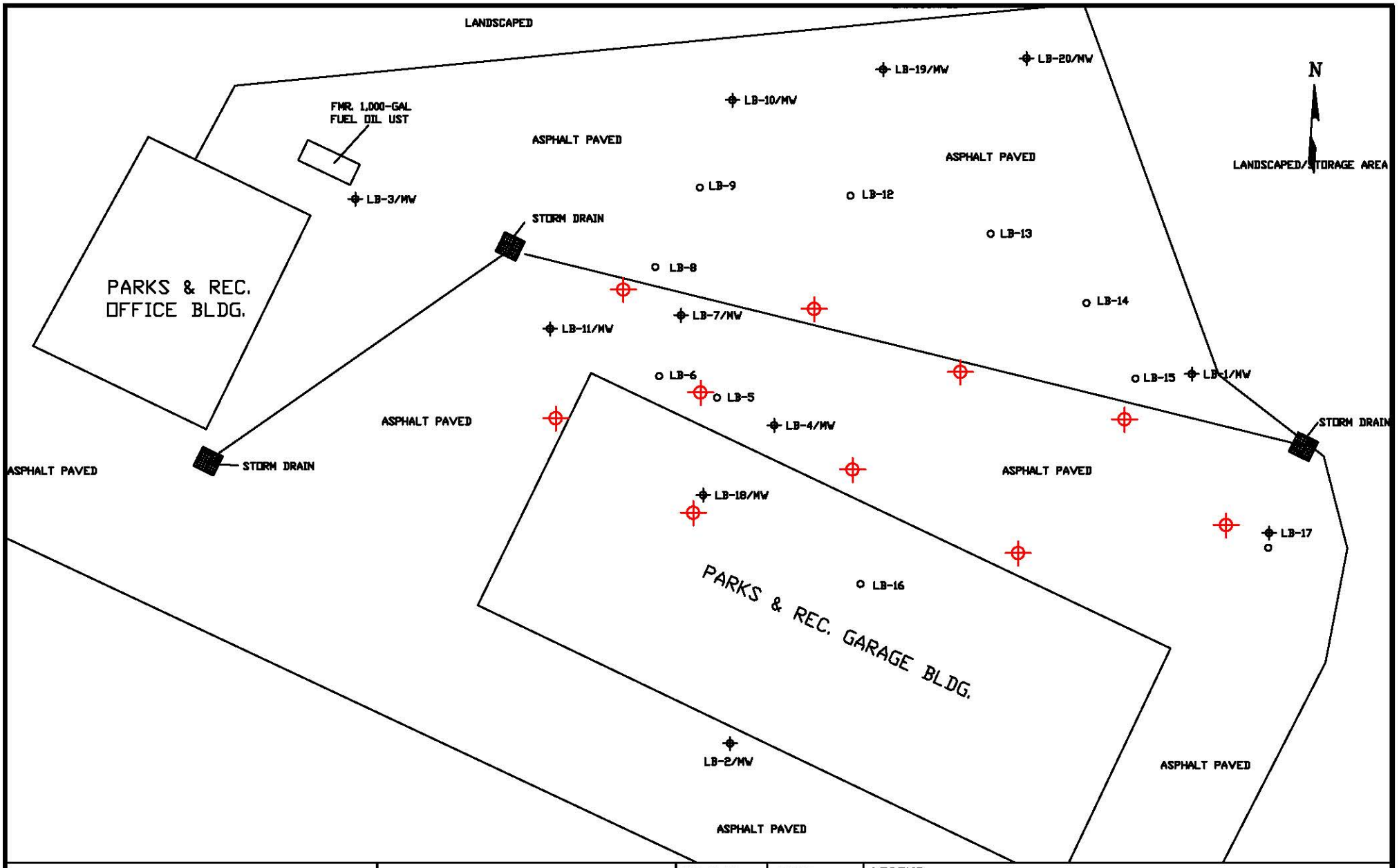
TITLE: SITE PLAN

FILE: FIGURE 2 2378

DRAWN BY:	FIGURE:
DPL	2
SHEET:	DATE/REV:
1 of 1	7/18/2016

LEGEND:
- ○ SOIL SAMPLING LOCATION
- ⊕ GW MONITORING WELL LOCATION

NOTES:
1. FIGURE TO APPROX. SCALE BASED ON AERIAL PHOTO



LORD ASSOCIATES, INC.
1506 PROVIDENCE HWY #30 (781) 255-5554
NORWOOD, MA FAX (781) 255-5535

SITE:
NEWTON PARKS & REC OFFICE
70 CRESCENT STREET
NEWTON, MA

TITLE: SITE PLAN

FILE: FIGURE 3 2378

DRAWN BY:	FIGURE:
DPL	3
SHEET:	DATE/REV:
1 of 1	10/14/2016

LEGEND:

- SOIL SAMPLING LOCATION
- GW MONITORING WELL LOCATION
- PROPOSED INJECTION LOCATION

NOTES:

1. FIGURE TO APPROX. SCALE BASED ON AERIAL PHOTO

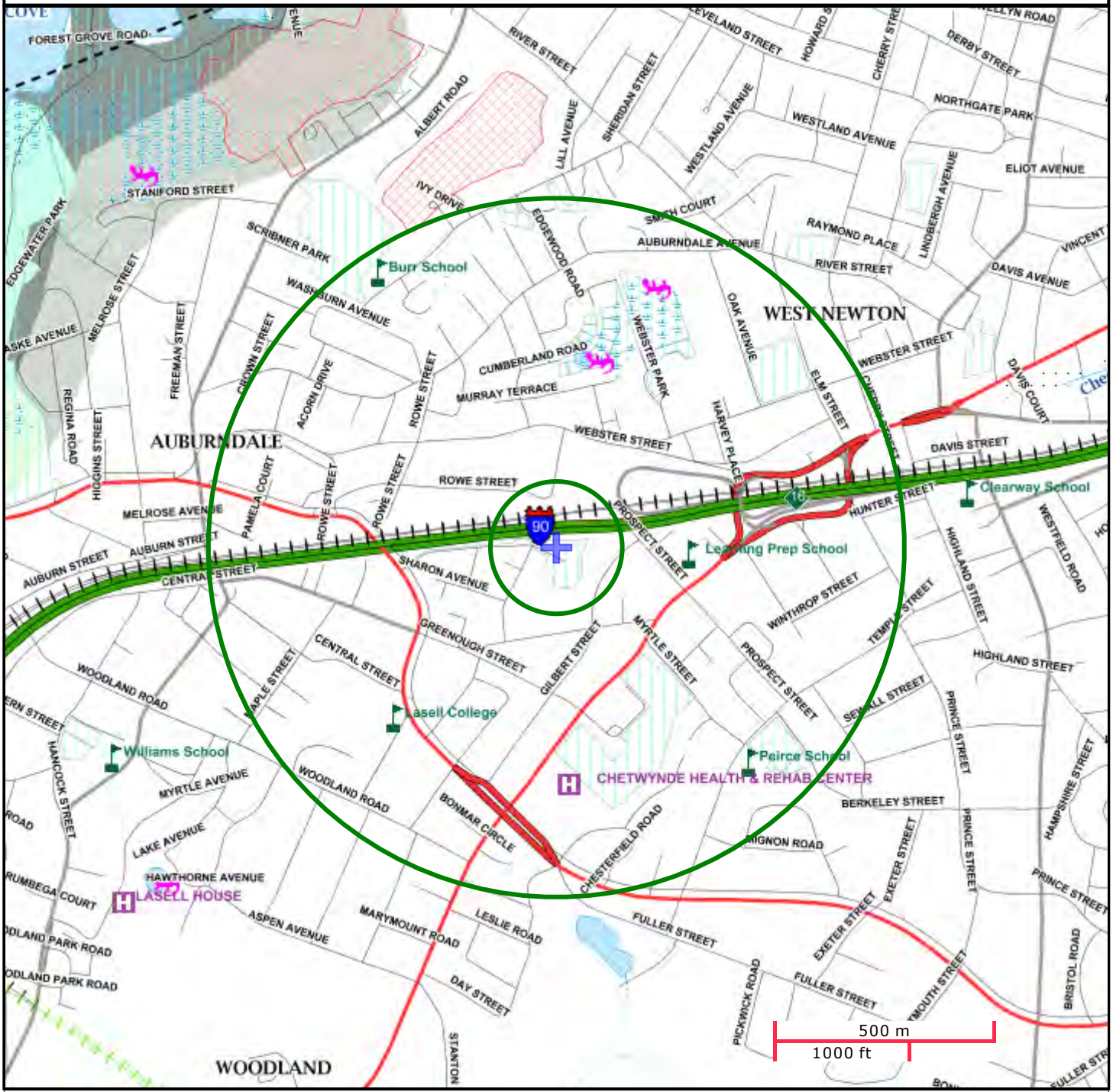
MassDEP - Bureau of Waste Site Cleanup

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

Site Information:
FIGURE 4
70 CRESCENT STREET NEWTON, MA
3-000033700
NAD83 UTM Meters:
4690681mN , 315730mE (Zone: 19)
October 14, 2016

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential

Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

TABLES

TABLE 1
Soil Test Results

LOCATION				B-1/S1		B-2/S1		B-3/S1		B-4/S3		B-6/S3	
SAMPLING DATE				4/5/2016		4/5/2016		4/5/2016		4/5/2016		4/5/2016	
LAB SAMPLE ID				L1610415-01		L1610415-02		L1610415-03		L1610415-04		L1610415-05	
SAMPLE DEPTH (ft.)				0-5'		0-5'		0-5'		10-15'		10-15'	
	RCS-1-14	RCS-2-14	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
Extractable Petroleum Hydrocarbons - Westborough Lab													
C9-C18 Aliphatics	1000	3000	mg/kg	6.99	U	7.05	U	7.34	U	13		680	
C19-C36 Aliphatics	3000	5000	mg/kg	6.99	U	7.05	U	7.34	U	7.17	U	129	
C11-C22 Aromatics			mg/kg	6.99	U	7.05	U	7.34	U	10.2		340	
C11-C22 Aromatics, Adjusted	1000	3000	mg/kg	6.99	U	7.05	U	7.34	U	10.2		329	
Naphthalene	4	20	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
2-Methylnaphthalene	0.7	80	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	7.9	
Acenaphthylene	1	10	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Acenaphthene	4	3000	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	1.24	
Fluorene	1000	3000	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Phenanthrene	10	1000	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	1.73	
Anthracene	1000	3000	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Fluoranthene	1000	3000	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Pyrene	1000	3000	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Benzo(a)anthracene	7	40	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Chrysene	70	400	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Benzo(b)fluoranthene	7	40	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Benzo(k)fluoranthene	70	400	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Benzo(a)pyrene	2	7	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Indeno(1,2,3-cd)Pyrene	7	40	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Dibenzo(a,h)anthracene	0.7	4	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
Benzo(ghi)perylene	1000	3000	mg/kg	0.349	U	0.352	U	0.367	U	0.359	U	0.727	U
General Chemistry - Westborough Lab													
Solids, Total			%	95.2		91.9		87.7		90.8		90.2	
MCP Total Metals - Westborough Lab													
Lead, Total	200	600	mg/kg	10	U	2.1	U	2.2	U	2.1	U	11	U
MCP Volatile Organics by 8260/5035 - Westborough Lab													
Methylene chloride	0.1	4	mg/kg	0.02	U	0.023	U	0.015	U	-	-	-	-
1,1-Dichloroethane	0.4	9	mg/kg	0.003	U	0.0034	U	0.0022	U	-	-	-	-
Chloroform	0.2	0.2	mg/kg	0.003	U	0.0034	U	0.0022	U	-	-	-	-
Carbon tetrachloride	5	5	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
1,2-Dichloropropane	0.1	0.1	mg/kg	0.0071	U	0.0079	U	0.0051	U	-	-	-	-
Dibromochloromethane	0.005	0.03	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
1,1,2-Trichloroethane	0.1	2	mg/kg	0.003	U	0.0034	U	0.0022	U	-	-	-	-
Tetrachloroethene	1	10	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
Chlorobenzene	1	3	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
Trichlorofluoromethane	1000	10000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,2-Dichloroethane	0.1	0.1	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
1,1,1-Trichloroethane	30	600	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
Bromodichloromethane	0.1	0.1	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
trans-1,3-Dichloropropene	0.01	0.4	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
cis-1,3-Dichloropropene	0.01	0.4	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
1,3-Dichloropropene, Total	0.01	0.4	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
1,1-Dichloropropene			mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Bromoform	0.1	1	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,1,2,2-Tetrachloroethane	0.005	0.02	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
Benzene	2	200	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
Toluene	30	1000	mg/kg	0.003	U	0.0036		0.0022	U	-	-	-	-
Ethylbenzene	40	1000	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
Chloromethane	100	1000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Bromomethane	0.5	0.5	mg/kg	0.004	U	0.0045	U	0.0029	U	-	-	-	-
Vinyl chloride	0.7	0.7	mg/kg	0.004	U	0.0045	U	0.0029	U	-	-	-	-
Chloroethane	100	1000	mg/kg	0.004	U	0.0045	U	0.0029	U	-	-	-	-
1,1-Dichloroethene	3	40	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
trans-1,2-Dichloroethene	1	1	mg/kg	0.003	U	0.0034	U	0.0022	U	-	-	-	-
Trichloroethene	0.3	0.3	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
1,2-Dichlorobenzene	9	100	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,3-Dichlorobenzene	3	200	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,4-Dichlorobenzene	0.7	1	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Methyl tert butyl ether	0.1	100	mg/kg	0.004	U	0.0045	U	0.0029	U	-	-	-	-
p/m-Xylene	100	100	mg/kg	0.004	U	0.0045	U	0.0029	U	-	-	-	-
o-Xylene	100	100	mg/kg	0.004	U	0.0045	U	0.0029	U	-	-	-	-
Xylenes, Total	100	100	mg/kg	0.004	U	0.0045	U	0.0029	U	-	-	-	-
cis-1,2-Dichloroethene	0.1	0.1	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
1,2-Dichloroethene, Total			mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
Dibromomethane	500	5000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,2,3-Trichloropropane	100	1000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Styrene	3	4	mg/kg	0.004	U	0.0045	U	0.0029	U	-	-	-	-
Dichlorodifluoromethane	1000	10000	mg/kg	0.02	U	0.023	U	0.015	U	-	-	-	-
Acetone	6	50	mg/kg	0.073	U	0.082	U	0.053	U	-	-	-	-
Carbon disulfide	100	1000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Methyl ethyl ketone	4	50	mg/kg	0.02	U	0.023	U	0.015	U	-	-	-	-
Methyl isobutyl ketone	0.4	50	mg/kg	0.02	U	0.023	U	0.015	U	-	-	-	-
2-Hexanone	100	1000	mg/kg	0.02	U	0.023	U	0.015	U	-	-	-	-
Bromochloromethane			mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Tetrahydrofuran	500	5000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
2,2-Dichloropropane			mg/kg	0.01	U	0.011	U	0.0073	U	-	-	-	-
1,2-Dibromoethane	0.1	0.1	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,3-Dichloropropane	500	5000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,1,1,2-Tetrachloroethane	0.1	0.1	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
Bromobenzene	100	1000	mg/kg	0.01	U	0.011	U	0.0073	U	-	-	-	-
n-Butylbenzene			mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
sec-Butylbenzene			mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
tert-Butylbenzene	100	1000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
o-Chlorotoluene	100	1000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
p-Chlorotoluene			mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,2-Dibromo-3-chloropropane	10	100	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Hexachlorobutadiene	30	100	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Isopropylbenzene	1000	10000	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
p-Isopropyltoluene	100	1000	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
Naphthalene	4	20	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
n-Propylbenzene	100	1000	mg/kg	0.002	U	0.0023	U	0.0015	U	-	-	-	-
1,2,3-Trichlorobenzene			mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,2,4-Trichlorobenzene	2	6	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,3,5-Trimethylbenzene	10	100	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,2,4-Trimethylbenzene	1000	10000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Diethyl ether	100	1000	mg/kg	0.01	U	0.011	U	0.0073	U	-	-	-	-
Diisopropyl Ether	100	1000	mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Ethyl-Tert-Butyl-Ether			mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
Tertiary-Amyl Methyl Ether			mg/kg	0.0081	U	0.0091	U	0.0058	U	-	-	-	-
1,4-Dioxane	0.2	6	mg/kg	0.081	U	0.091	U	0.058	U	-	-	-	-
Volatile Petroleum Hydrocarbons - Westborough Lab													
C5-C8 Aliphatics			mg/kg	-	-	-	-	-	-	272		139	
C9-C12 Aliphatics			mg/kg	-	-	-	-	-	-	87.1		301	
C9-C10 Aromatics	100	500	mg/kg	-	-	-	-	-	-	45.1		207	
C5-C8 Aliphatics, Adjusted	100	500	mg/kg	-	-	-	-	-	-	272		139	
C9-C12 Aliphatics, Adjusted	1000	3000	mg/kg	-	-	-	-	-	-	42		82.1	
Benzene	2	200	mg/kg	-	-	-	-	-	-	0.906	U	1.83	U
Toluene	30	1000	mg/kg	-	-	-	-	-	-	0.906	U	1.83	U
Ethylbenzene	40	1000	mg/kg	-	-	-	-	-	-	0.906	U	2.96	
p/m-Xylene	100	100	mg/kg	-	-	-	-	-	-	0.906	U	9.07	
o-Xylene	100	100	mg/kg	-	-	-	-	-	-	0.906	U	1.83	U
Methyl tert butyl ether	0.1	100	mg/kg	-	-	-	-	-	-	0.453	U	0.915	U
Naphthalene	4	20	mg/kg	-	-	-	-	-	-	1.81	U	5.91	

Notes:

*RCS-1-14: MCP 2014 RCS-1 Reportable Concentrations Criteria effective April 25, 2014.
*RCS-2-14: MCP 2014 RCS-2 Reportable Concentrations Criteria effective April 25, 2014.
Gray shading indicated lab detection limit exceeds MADEP RCS
Blank spaces (-) indicate testing not performed for specific parameter

TABLE 1

Soil Test Results

LOCATION			LB-9, 10'-15'		LB-10, 10'-15'		LB-11, 5'-10'		LB-13, 10'-15'		LB-17, 10'-15'		LB-18, 10'-15'		LB-19, 10'-15'		LB-20, 10'-15'	
SAMPLING DATE			24-MAY-16		24-MAY-16		24-MAY-16		24-MAY-16		24-MAY-16		24-MAY-16		24-MAY-16		24-MAY-16	
LAB SAMPLE ID			L1616050-01		L1616050-02		L1616050-03		L1616050-04		L1616050-06		L1616050-07		L1616050-08		L1616050-09	
	RCS-1-14	Units		Qual		Qual		Qual		Qual		Qual		Qual		Qual		Qual
Volatile Petroleum Hydrocarbons																		
Benzene	2	mg/kg	0.116	U	0.121	U	1.3	U	0.702	U	1.13	U	9.42	U	0.119	U	0.219	U
C5-C8 Aliphatics		mg/kg	44		81.6		192		439		240		1320		38.4		5.48	U
C5-C8 Aliphatics, Adjusted	100	mg/kg	44		81.6		192		439		240		1320		38.4		5.48	U
C9-C10 Aromatics	100	mg/kg	10.4		10.8		288		103		49		1550		6.06		5.48	U
C9-C12 Aliphatics		mg/kg	18.9		31.9		468		191		108		2600		17.3		5.48	U
C9-C12 Aliphatics, Adjusted	1000	mg/kg	8.44		21		171		81.7		58.6		761		11.2		5.48	U
Ethylbenzene	40	mg/kg	0.116	U	0.121	U	1.3	U	2.64		1.13	U	52.1		0.119	U	0.219	U
Methyl tert butyl ether	0.1	mg/kg	0.058	U	0.06	U	0.652	U	0.351	U	0.566	U	4.71	U	0.059	U	0.11	U
Naphthalene	4	mg/kg	0.231	U	0.241	U	6.18		1.4	U	2.26	U	39.1		0.237	U	0.439	U
o-Xylene	100	mg/kg	0.116	U	0.121	U	1.3	U	0.702	U	1.13	U	31.4		0.119	U	0.219	U
p/m-Xylene	100	mg/kg	0.116	U	0.124		8.82		3.64		1.13	U	203		0.119	U	0.219	U
Toluene	30	mg/kg	0.116	U	0.121	U	1.3	U	0.702	U	1.13	U	9.42	U	0.119	U	0.219	U
Extractable Petroleum Hydrocarbons																		
2-Methylnaphthalene	0.7	mg/kg					1.77						27					
Acenaphthene	4	mg/kg					0.366	U					4.93					
Acenaphthylene	1	mg/kg					0.366	U					0.814	U				
Anthracene	1000	mg/kg					0.366	U					0.995					
Benzo(a)anthracene	7	mg/kg					0.366	U					0.814	U				
Benzo(a)pyrene	2	mg/kg					0.366	U					0.814	U				
Benzo(b)fluoranthene	7	mg/kg					0.366	U					0.814	U				
Benzo(ghi)perylene	1000	mg/kg					0.366	U					0.814	U				
Benzo(k)fluoranthene	70	mg/kg					0.366	U					0.814	U				
C11-C22 Aromatics		mg/kg					206						1370					
C11-C22 Aromatics, Adjusted	1000	mg/kg					202						1320					
C19-C36 Aliphatics	3000	mg/kg					71.8						288					
C9-C18 Aliphatics	1000	mg/kg					357						1520					
Chrysene	70	mg/kg					0.366	U					0.814	U				
Dibenzo(a,h)anthracene	0.7	mg/kg					0.366	U					0.814	U				
Fluoranthene	1000	mg/kg					0.366	U					0.814	U				
Fluorene	1000	mg/kg					1.06						5.16					
Indeno(1,2,3-cd)Pyrene	7	mg/kg					0.366	U					0.814	U				
Naphthalene	4	mg/kg					0.37						6.98					
Phenanthrene	10	mg/kg					1.02						6.38					
Pyrene	1000	mg/kg					0.366	U					0.814	U				

TABLE 2
Groundwater Test Results

LOCATION			B-1/MW		B-2/MW		B-3/MW		B-4/MW		B-7/MW	
SAMPLING DATE			4/8/2016		4/8/2016		4/8/2016		4/8/2016		4/8/2016	
LAB SAMPLE ID			L1610415-06		L1610415-07		L1610415-08		L1610415-09		L1610415-10	
	RCGW-2-	Units	Results	Qual	Results	Qual	Results	Qual	Results	Qual	Results	Qual
EPH w/MS Targets - Westborough Lab												
C9-C18 Aliphatics	5	mg/l	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
C19-C36 Aliphatics	50	mg/l	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
C11-C22 Aromatics		mg/l	0.1	U	0.1	U	0.1	U	0.154		0.1	U
C11-C22 Aromatics, Adjusted	5	mg/l	0.1	U	0.1	U	0.1	U	0.139		0.1	U
Naphthalene	0.7	mg/l	0.0004	U	0.0004	U	0.0004	U	0.000704		0.0004	U
2-Methylnaphthalene	2	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0126		0.0004	U
Acenaphthylene	0.04	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Acenaphthene	10	mg/l	0.0004	U	0.0004	U	0.0004	U	0.000446		0.0004	U
Fluorene	0.04	mg/l	0.0004	U	0.0004	U	0.0004	U	0.000528		0.0004	U
Phenanthrene	10	mg/l	0.0004	U	0.0004	U	0.0004	U	0.000764		0.0004	U
Anthracene	0.03	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Fluoranthene	0.2	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Pyrene	0.02	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Benzo(a)anthracene	1	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Chrysene	0.07	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Benzo(b)fluoranthene	0.4	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Benzo(k)fluoranthene	0.1	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Benzo(a)pyrene	0.5	mg/l	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U
Indeno(1,2,3-cd)Pyrene	0.1	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Dibenzo(a,h)anthracene	0.04	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
Benzo(ghi)perylene	0.02	mg/l	0.0004	U	0.0004	U	0.0004	U	0.0004	U	0.0004	U
MCP Volatile Organics - Westborough Lab												
Methylene chloride	2	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,1-Dichloroethane	2	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Chloroform	0.05	mg/l	0.0013		0.0012		0.001	U	-	-	-	-
Carbon tetrachloride	0.002	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
1,2-Dichloropropane	0.003	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Dibromochloromethane	0.02	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
1,1,2-Trichloroethane	0.9	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Tetrachloroethene	0.05	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Chlorobenzene	0.2	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Trichlorofluoromethane	100	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,2-Dichloroethane	0.005	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
1,1,1-Trichloroethane	4	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Bromodichloromethane	0.006	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
trans-1,3-Dichloropropene	0.01	mg/l	0.0005	U	0.0005	U	0.0005	U	-	-	-	-
cis-1,3-Dichloropropene	0.01	mg/l	0.0005	U	0.0005	U	0.0005	U	-	-	-	-
1,3-Dichloropropene, Total	0.01	mg/l	0.0005	U	0.0005	U	0.0005	U	-	-	-	-
1,1-Dichloropropene		mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Bromoform	0.7	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,1,2,2-Tetrachloroethane	0.009	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Benzene	1	mg/l	0.0005	U	0.0005	U	0.0005	U	-	-	-	-
Toluene	40	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Ethylbenzene	5	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Chloromethane	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Bromomethane	0.007	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Vinyl chloride	0.002	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Chloroethane	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,1-Dichloroethene	0.08	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
trans-1,2-Dichloroethene	0.08	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Trichloroethene	0.005	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
1,2-Dichlorobenzene	2	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
1,3-Dichlorobenzene	6	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
1,4-Dichlorobenzene	0.06	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Methyl tert butyl ether	5	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
p/m-Xylene	3	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
o-Xylene	3	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Xylene (Total)	3	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
cis-1,2-Dichloroethene	0.02	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
1,2-Dichloroethene (total)		mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Dibromomethane	50	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,2,3-Trichloropropane	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Styrene	0.1	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Dichlorodifluoromethane	100	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Acetone	50	mg/l	0.005	U	0.005	U	0.005	U	-	-	-	-
Carbon disulfide	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
2-Butanone	50	mg/l	0.005	U	0.005	U	0.005	U	-	-	-	-
4-Methyl-2-pentanone	50	mg/l	0.005	U	0.005	U	0.005	U	-	-	-	-
2-Hexanone	10	mg/l	0.005	U	0.005	U	0.005	U	-	-	-	-
Bromochloromethane		mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Tetrahydrofuran	50	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
2,2-Dichloropropane		mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,2-Dibromoethane	0.002	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,3-Dichloropropane	50	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,1,1,2-Tetrachloroethane	0.01	mg/l	0.001	U	0.001	U	0.001	U	-	-	-	-
Bromobenzene	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
n-Butylbenzene		mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
sec-Butylbenzene		mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
tert-Butylbenzene	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
o-Chlorotoluene	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
p-Chlorotoluene		mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,2-Dibromo-3-chloropropane	1	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Hexachlorobutadiene	0.05	mg/l	0.0006	U	0.0006	U	0.0006	U	-	-	-	-
Isopropylbenzene	100	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
p-Isopropyltoluene	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Naphthalene	0.7	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
n-Propylbenzene	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,2,3-Trichlorobenzene		mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,2,4-Trichlorobenzene	0.2	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,3,5-Trimethylbenzene	1	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,2,4-Trimethylbenzene	100	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Ethyl ether	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Isopropyl Ether	10	mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Ethyl-Tert-Butyl-Ether		mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
Tertiary-Amyl Methyl Ether		mg/l	0.002	U	0.002	U	0.002	U	-	-	-	-
1,4-Dioxane	6	mg/l	0.25	U	0.25	U	0.25	U	-	-	-	-
Volatile Petroleum Hydrocarbons - Westborough Lab												
C5-C8 Aliphatics		mg/l	-	-	-	-	-	-	1.54		0.134	
C9-C12 Aliphatics		mg/l	-	-	-	-	-	-	1.41		0.126	
C9-C10 Aromatics	4	mg/l	-	-	-	-	-	-	0.616		0.05	U
C5-C8 Aliphatics, Adjusted	3	mg/l	-	-	-	-	-	-	1.54		0.134	
C9-C12 Aliphatics, Adjusted	5	mg/l	-	-	-	-	-	-	0.795		0.118	
Benzene	1	mg/l	-	-	-	-	-	-	0.01	U	0.002	U
Toluene	40	mg/l	-	-	-	-	-	-	0.01	U	0.002	U
Ethylbenzene	5	mg/l	-	-	-	-	-	-	0.01	U	0.00804	
p/m-Xylene	3	mg/l	-	-	-	-	-	-	0.01	U	0.002	U
o-Xylene	3	mg/l	-	-	-	-	-	-	0.01	U	0.002	U
Methyl tert butyl ether	5	mg/l	-	-	-	-	-	-	0.015	U	0.003	U
Naphthalene	0.7	mg/l	-	-	-	-	-	-	0.02	U	0.004	U

Notes:

*RCGW-2-14: MCP 2014 RCGW-2 Reportable Concentrations Criteria effective April 25, 2014.
Shading indicates lab detection limit exceeds RCGW standard

TABLE 2													
Groundwater Test Results													
LOCATION			**LB-10/MW**		**LB-11/MW**		**LB-18/MW**		**LB-19/MW**		**LB-20/MW**		
SAMPLING DATE			**25-MAY-16**		**25-MAY-16**		**25-MAY-16**		**25-MAY-16**		**25-MAY-16**		
LAB SAMPLE ID			**L1616049-01**		**L1616049-02**		**L1616049-03**		**L1616049-04**		**L1616049-05**		
	RCGW-2-14	**Units**		**Qual**		**Qual**		**Qual**		**Qual**		**Qual**	
Volatile Petroleum Hydrocarbons													
Benzene	**1**	**mg/l**	**0.002**	**U**	**0.002**	**U**	**0.04**	**U**	**0.002**	**U**	**0.002**	**U**	
C5-C8 Aliphatics		**mg/l**	**0.198**		**0.05**	**U**	**2.07**		**0.67**		**0.0938**		
C5-C8 Aliphatics, Adjusted	**3**	**mg/l**	**0.198**		**0.05**	**U**	**2.07**		**0.67**		**0.0938**		
C9-C10 Aromatics	**4**	**mg/l**	**0.05**	**U**	**0.503**		**4.75**		**0.171**		**0.05**	**U**	
C9-C12 Aliphatics		**mg/l**	**0.05**	**U**	**0.784**		**9.51**		**0.307**		**0.05**	**U**	
C9-C12 Aliphatics, Adjusted	**5**	**mg/l**	**0.05**	**U**	**0.274**		**3.31**		**0.137**		**0.05**	**U**	
Ethylbenzene	**5**	**mg/l**	**0.002**	**U**	**0.002**	**U**	**0.265**		**0.002**	**U**	**0.002**	**U**	
Methyl tert butyl ether	**5**	**mg/l**	**0.003**	**U**	**0.003**	**U**	**0.06**	**U**	**0.003**	**U**	**0.003**	**U**	
Naphthalene	**0.7**	**mg/l**	**0.004**	**U**	**0.0194**		**0.117**		**0.004**	**U**	**0.004**	**U**	
o-Xylene	**3**	**mg/l**	**0.002**	**U**	**0.002**	**U**	**0.173**		**0.002**	**U**	**0.002**	**U**	
p/m-Xylene	**3**	**mg/l**	**0.002**	**U**	**0.00693**		**1.02**		**0.002**	**U**	**0.002**	**U**	
Toluene	**40**	**mg/l**	**0.002**	**U**	**0.002**	**U**	**0.04**	**U**	**0.002**	**U**	**0.002**	**U**	

APPENDIX A

Lord Associates, Inc.
Environmental Consulting & Licensed Site Professional Services

1506 Providence Highway, Suite 30
Norwood, MA 02062-4647

Voice: 781.255.5554
Fax: 781.255.5535
www.lordenv.com

October 17, 2016

Deborah Youngblood, PhD, Commissioner
City Hall Room 107
1000 Commonwealth Avenue
Newton, MA 02459

Mayor Setti D. Warren
City Hall
1000 Commonwealth Avenue
Newton, MA 02459

Re: Availability of Release Abatement Measure Plan
Parks & Recreation Facility
70 Crescent Street
Newton, MA
DEP RTN 3-33700

Dear Public Official:

Lord Associates, Inc. has prepared a Release Abatement Measure (RAM) Plan for the property at 70 Crescent Street, Newton (Parks & Recreation Facility). The purpose of this Plan is to cleanup residual petroleum concentrations in soil and groundwater.

Our Plan calls for the treatment of petroleum-contaminated groundwater via in-situ-chemical oxidation (ISCO). ISCO field activities will likely begin in November and will be completed in one to two days. An additional injection will likely occur several months later and will be completed in one to two days.

Pursuant to section 310 CMR 40.1403(3) of the Massachusetts Contingency Plan, at any time after the MADEP has been notified of a release or threat of release pursuant to 310 CMR 40.0300, the Chief Municipal Officer and Board of Health in the community(ies) in which the site is located shall be notified of the availability of the completion of these submittals. The intention of this letter is to fulfill this legal obligation.

In addition, 310 CMR 40.1403(3) stipulates that this notification shall include information about how local officials may obtain a copy of the report. A copy of the report may be obtained by contacting Lord Associates, Inc. at the letterhead address or by conducting a file review of RTN 3-33700 online at http://public.dep.state.ma.us/SearchableSites2/Search.aspx. Additionally, the DEP Northeast Regional Office in Wilmington by calling (978) 694-3200.

Please do not hesitate to contact us if you have any questions or concerns.

Very truly yours,
LORD ASSOCIATES, INC.

Oliver P. Leek
Project Manager

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 106

Release Tracking Number
3 - 33700

RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM

Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

A. SITE LOCATION:

1. Site Name/Location Aid: MUNICIPAL GARAGE
2. Street Address: 70 CRESCENT STREET
3. City/Town: NEWTON 4. Zip Code: 021660000

☐ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.

☐ a. Tier I ☐ b. Tier ID ☐ c. Tier II

B. THIS FORM IS BEING USED TO: (check all that apply)

1. List Submittal Date of Initial RAM Plan (if previously submitted): _____ (mm/dd/yyyy)

☑ 2. Submit an **Initial Release Abatement Measure (RAM) Plan**.

☐ a. Check here if the RAM is being conducted as part of the construction of a permanent structure. If checked, you must specify what type of permanent structure is to be erected in or in the immediate vicinity of the area where the RAM is to be conducted.

b. Specify type of permanent structure: (check all that apply) ☐ i. School ☐ ii. Residential ☐ iii. Commercial

☐ iv. Industrial ☐ v. Other Specify: _____

☐ 3. Submit a **Modified RAM Plan** of a previously submitted RAM Plan.

☐ 4. Submit a **RAM Status Report**.

☐ 5. Submit a **Remedial Monitoring Report**. (This report can only be submitted through eDEP, concurrent with a RAM Status Report.)

a. Type of Report: (check one) ☐ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report

b. Frequency of Submittal:

☐ i. A Remedial Monitoring Report(s) submitted every six months, concurrent with a RAM Status Report.
☐ ii. A Remedial Monitoring Report(s) submitted annually, concurrent with a RAM Status Report.

c. Number of Remedial Systems and/or Monitoring Programs: _____

A separate BWSC106A, RAM Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

☐ 6. Submit a **RAM Completion Statement**.

☐ 7. Submit a **Revised RAM Completion Statement**.

8. Provide Additional RTNs:

☐ a. Check here if this RAM Submittal covers additional Release Tracking Numbers (RTNs). RTNs that have been previously linked to a Primary Tier Classified RTN do not need to be listed here. This section is intended to allow a RAM to cover more than one unclassified RTN and not show permanent linkage to a Primary Tier Classified RTN.

b. Provide the additional Release Tracking Number(s) covered by this RAM Submittal. ☐ - ☐ ☐ - ☐

☐ 9. Include in the **RAM Plan** or **Modified RAM Plan** a **Plan for the Application of Remedial Additives** near a sensitive receptor, pursuant to 310 CMR 40.0046(3).

(All sections of this transmittal form must be filled out unless otherwise noted above)

C. RELEASE OR THREAT OF RELEASE CONDITIONS THAT WARRANT RAM:

1. Media Impacted and Receptors Affected: (check all that apply)

☐ a. Paved Surface ☐ b. Basement ☐ c. School
☐ d. Public Water Supply ☐ e. Surface Water ☐ f. Zone 2 ☐ g. Private Well ☐ h. Residence ☑ i. Soil
☑ j. Ground Water ☐ k. Sediments ☐ l. Wetland ☐ m. Storm Drain ☐ n. Indoor Air ☐ o. Air
☐ p. Soil Gas ☐ q. Sub-Slab Soil Gas ☐ r. Critical Exposure Pathway ☐ s. NAPL ☐ t. Unknown
☐ u. Others Specify:

2. Sources of the Release or TOR: (check all that apply)

☐ a. Transformer ☐ b. Fuel Tank ☐ c. Pipe
☐ d. OHM Delivery ☐ e. AST ☐ f. Drums ☐ g. Tanker Truck ☐ h. Hose ☐ i. Line
☑ j. UST Describe: UST Other ☐ k. Vehicle ☐ l. Boat/Vessel
☐ m. Unknown ☐ n. Other:

3. Type of Release or TOR: (check all that apply)

☐ a. Dumping ☐ b. Fire ☐ c. AST Removal ☐ d. Overfill
☐ e. Rupture ☐ f. Vehicle Accident ☐ g. Leak ☐ h. Spill ☐ i. Test Failure ☐ j. TOR Only
☐ k. UST Removal Describe:
☐ l. Unknown ☑ m. Other: RESIDUAL IMPACTS FROM FORMER USTS

4. Identify Oils and Hazardous Materials Released: (check all that apply)

☑ a. Oils ☐ b. Chlorinated Solvents
☐ c. Heavy Metals ☐ d. Others Specify:

D. DESCRIPTION OF RESPONSE ACTIONS: (check all that apply, for volumes list cumulative amounts)

☐ 1. Assessment and/or Monitoring Only
☐ 2. Temporary Covers or Caps
☐ 3. Deployment of Absorbent or Containment Materials
☐ 4. Temporary Water Supplies
☐ 5. Structure Venting System/HVAC Modification System
☐ 6. Temporary Evacuation or Relocation of Residents
☐ 7. Product or NAPL Recovery
☐ 8. Fencing and Sign Posting
☐ 9. Groundwater Treatment Systems
☐ 10. Soil Vapor Extraction
☐ 11. Remedial Additives
☐ 12. Air Sparging
☐ 13. Active Exposure Pathway Mitigation System
☐ 14. Passive Exposure Pathway Mitigation System
☐ 15. Monitored Natural Attenuation
☑ 16. In-Situ Chemical Oxidation

D. DESCRIPTION OF RESPONSE ACTIONS (cont.): (check all that apply, for volumes list cumulative amounts)

☐ 17. Excavation of Contaminated Soils

☐ a. Re-use, Recycling or Treatment ☐ i. On Site Estimated volume in cubic yards _____

☐ ii. Off Site Estimated volume in cubic yards _____

iia. Receiving Facility: _____ Town: _____ State: ____

iib. Receiving Facility: _____ Town: _____ State: ____

iii. Describe:

☐ b. Store ☐ i. On Site Estimated volume in cubic yards _____

☐ ii. Off Site Estimated volume in cubic yards _____

iia. Receiving Facility: _____ Town: _____ State: ____

iib. Receiving Facility: _____ Town: _____ State: ____

☐ c. Landfill ☐ i. Cover Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: ____

☐ ii. Disposal Estimated volume in cubic yards _____

Receiving Facility: _____ Town: _____ State: ____

☐ 18. Removal of Drums, Tanks or Containers:

a. Describe Quantity and Amount:

b. Receiving Facility: _____ Town: _____ State: ____

c. Receiving Facility: _____ Town: _____ State: ____

☐ 19. Removal of Other Contaminated Media:

a. Specify Type and Volume:

b. Receiving Facility: _____ Town: _____ State: ____

c. Receiving Facility: _____ Town: _____ State: ____

☐ 20. Other Response Actions:

Describe:

☐ 21. Use of Innovative Technologies:

Describe:

E. LSP SIGNATURE AND STAMP :

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B of this form indicates that a **Release Abatement Measure Plan** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Status Report** and/or **Remedial Monitoring Report** is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply (ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B of this form indicates that a **Release Abatement Measure Completion Statement** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000 and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal:

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:	7473				
2. First Name:	RALPH J	3. Last Name:	TELLA		
4. Telephone:	7812555554	5. Ext.:		6. Email:	
7. Signature:	RALPH J TELLA				
8. Date:	10/17/2016 (mm/dd/yyyy)	9. LSP Stamp:			

RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM
Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

F. PERSON UNDERTAKING RAM:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: CITY OF NEWTON

3. Contact First Name: ARTHUR 4. Last Name: CABRAL

5. Street: 52 ELLIOT ST 6. Title:

7. City/Town: NEWTON 8. State: MA 9. ZIP Code: 024610000

10. Telephone: 6177961600 11. Ext.: 12. Email:

G. RELATIONSHIP TO RELEASE OR THREAT OF RELEASE OF PERSON UNDERTAKING RAM:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: OTHER PRPS

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking RAM Specify Relationship:

H. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if any Remediation Waste, generated as a result of this RAM, will be stored, treated, managed, recycled or reused at the site following submission of the RAM Completion Statement. You must submit a Phase IV Remedy Implementation Plan along with the appropriate transmittal form (BWSC108).

☐ 2. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

☑ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the implementation of a Release Abatement Measure.

☐ 4. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to bwsc.edep@state.ma.us.

☑ 5. If a RAM Compliance Fee is required for this RAM, check here to certify that a RAM Compliance Fee was submitted to DEP, P. O. Box 4062, Boston, MA 02211.

☑ 6. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC 106

Release Tracking Number
3 - 33700

RELEASE ABATEMENT MEASURE (RAM) TRANSMITTAL FORM
Pursuant to 310 CMR 40.0444 - 0446 (Subpart D)

I. CERTIFICATION OF PERSON UNDERTAKING RAM:

1. I, ARTHUR CABRAL , attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ARTHUR CABRAL (Signature) 3. Title:

4. For: CITY OF NEWTON (Name of person or entity recorded in Section F) 5. Date: 10/17/2016 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section F.

7. Street:

8. City/Town: 9. State: 10. ZIP Code:

11. Telephone: 12. Ext.: 13. Email:

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE

Date Stamp (DEP USE ONLY:)

Received by DEP on
10/17/2016 1:57:21 PM

APPENDIX B

ANALYTICAL REPORT

Lab Number:	L1610415
Client:	Lord Associates, Inc. 206 Palmer Street Somerset, MA 02726
ATTN:	Nat Finsness
Phone:	(508) 679-2002
Project Name:	NEWTON GARAGE
Project Number:	2378
Report Date:	04/18/16

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1610415-01	B-1/S1	SOIL	Not Specified	04/05/16 14:00	04/08/16
L1610415-02	B-2/S1	SOIL	Not Specified	04/05/16 14:00	04/08/16
L1610415-03	B-3/S1	SOIL	Not Specified	04/05/16 14:00	04/08/16
L1610415-04	B-4/S3	SOIL	Not Specified	04/05/16 14:00	04/08/16
L1610415-05	B-6/S3	SOIL	Not Specified	04/05/16 14:00	04/08/16
L1610415-06	B-1/MW	WATER	Not Specified	04/08/16 10:00	04/08/16
L1610415-07	B-2/MW	WATER	Not Specified	04/08/16 10:10	04/08/16
L1610415-08	B-3/MW	WATER	Not Specified	04/08/16 10:20	04/08/16
L1610415-09	B-4/MW	WATER	Not Specified	04/08/16 10:30	04/08/16
L1610415-10	B-7/MW	WATER	Not Specified	04/08/16 10:25	04/08/16

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

MADEP MCP Response Action Analytical Report Certification

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

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

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

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

Project Name: NEWTON GARAGE **Lab Number:** L1610415
Project Number: 2378 **Report Date:** 04/18/16

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name: NEWTON GARAGE **Lab Number:** L1610415
Project Number: 2378 **Report Date:** 04/18/16

Case Narrative (continued)

MCP Related Narratives

Sample Receipt

In reference to question H:

A Matrix Spike was not submitted for the analysis of Metals.

Volatile Organics

In reference to question H:

The initial calibration, associated with L1610415-01 through -03, did not meet the method required minimum response factor on the lowest calibration standard for acetone (0.08770), 4-methyl-2-pentanone (0.9312), and 1,4-dioxane (0.00239), as well as the average response factor for acetone and 1,4-dioxane. The initial calibration verification is outside acceptance criteria for carbon disulfide (68%), but within overall method criteria.

The initial calibration, associated with L1610415-06 through -08, did not meet the method required minimum response factor on the lowest calibration standard for trichloroethene (0.19135) and 1,4-dioxane (0.00027), as well as the average response factor for 1,4-dioxane.

The continuing calibration standards, associated with L1610415-01, -02, -03, -06, -07, and -08, are outside the acceptance criteria for several compounds; however, they are within overall method allowances. Copies of the continuing calibration standards are included as an addendum to this report.

VPH

L1610415-05: The sample has elevated detection limits due to the dilution required by the sample matrix.

In reference to question G:

L1610415-04, -05, and -09: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

L1610415-05: The surrogate recovery is outside the acceptance criteria for 2,5-dibromotoluene-fid (47%); however, the sample was not re-analyzed due to coelution with obvious interferences. A copy of the chromatogram is included as an attachment to this report. The results are not considered to be biased.

Project Name: NEWTON GARAGE **Lab Number:** L1610415
Project Number: 2378 **Report Date:** 04/18/16

Case Narrative (continued)

EPH

In reference to question G:

L1610415-05: One or more of the target analytes did not achieve the requested CAM reporting limits.

Metals

L1610415-01 and -05: The sample has an elevated detection limit due to the dilution required by matrix interferences encountered during analysis.

In reference to question G:

L1610415-01 and -05: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question I:

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

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

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 04/18/16

ORGANICS

VOLATILES

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-01
Client ID: B-1/S1
Sample Location: Not Specified
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 04/14/16 22:39
Analyst: BS
Percent Solids: 95%

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	20	--	1
1,1-Dichloroethane	ND		ug/kg	3.0	--	1
Chloroform	ND		ug/kg	3.0	--	1
Carbon tetrachloride	ND		ug/kg	2.0	--	1
1,2-Dichloropropane	ND		ug/kg	7.1	--	1
Dibromochloromethane	ND		ug/kg	2.0	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.0	--	1
Tetrachloroethene	ND		ug/kg	2.0	--	1
Chlorobenzene	ND		ug/kg	2.0	--	1
Trichlorofluoromethane	ND		ug/kg	8.1	--	1
1,2-Dichloroethane	ND		ug/kg	2.0	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.0	--	1
Bromodichloromethane	ND		ug/kg	2.0	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.0	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.0	--	1
1,1-Dichloropropene	ND		ug/kg	8.1	--	1
Bromoform	ND		ug/kg	8.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Benzene	ND		ug/kg	2.0	--	1
Toluene	ND		ug/kg	3.0	--	1
Ethylbenzene	ND		ug/kg	2.0	--	1
Chloromethane	ND		ug/kg	8.1	--	1
Bromomethane	ND		ug/kg	4.0	--	1
Vinyl chloride	ND		ug/kg	4.0	--	1
Chloroethane	ND		ug/kg	4.0	--	1
1,1-Dichloroethene	ND		ug/kg	2.0	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.0	--	1
Trichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichlorobenzene	ND		ug/kg	8.1	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-01 Date Collected: 04/05/16 14:00

Client ID: B-1/S1 Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	8.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	8.1	--	1
Methyl tert butyl ether	ND		ug/kg	4.0	--	1
p/m-Xylene	ND		ug/kg	4.0	--	1
o-Xylene	ND		ug/kg	4.0	--	1
Xylenes, Total	ND		ug/kg	4.0	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.0	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.0	--	1
Dibromomethane	ND		ug/kg	8.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	8.1	--	1
Styrene	ND		ug/kg	4.0	--	1
Dichlorodifluoromethane	ND		ug/kg	20	--	1
Acetone	ND		ug/kg	73	--	1
Carbon disulfide	ND		ug/kg	8.1	--	1
Methyl ethyl ketone	ND		ug/kg	20	--	1
Methyl isobutyl ketone	ND		ug/kg	20	--	1
2-Hexanone	ND		ug/kg	20	--	1
Bromochloromethane	ND		ug/kg	8.1	--	1
Tetrahydrofuran	ND		ug/kg	8.1	--	1
2,2-Dichloropropane	ND		ug/kg	10	--	1
1,2-Dibromoethane	ND		ug/kg	8.1	--	1
1,3-Dichloropropane	ND		ug/kg	8.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.0	--	1
Bromobenzene	ND		ug/kg	10	--	1
n-Butylbenzene	ND		ug/kg	2.0	--	1
sec-Butylbenzene	ND		ug/kg	2.0	--	1
tert-Butylbenzene	ND		ug/kg	8.1	--	1
o-Chlorotoluene	ND		ug/kg	8.1	--	1
p-Chlorotoluene	ND		ug/kg	8.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	8.1	--	1
Hexachlorobutadiene	ND		ug/kg	8.1	--	1
Isopropylbenzene	ND		ug/kg	2.0	--	1
p-Isopropyltoluene	ND		ug/kg	2.0	--	1
Naphthalene	ND		ug/kg	8.1	--	1
n-Propylbenzene	ND		ug/kg	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	8.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	8.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	8.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	8.1	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-01 Date Collected: 04/05/16 14:00

Client ID: B-1/S1 Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	10	--	1
Diisopropyl Ether	ND		ug/kg	8.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	8.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	8.1	--	1
1,4-Dioxane	ND		ug/kg	81	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	89		70-130
Dibromofluoromethane	99		70-130

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-02
Client ID: B-2/S1
Sample Location: Not Specified
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 04/14/16 23:05
Analyst: BS
Percent Solids: 92%

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	23	--	1
1,1-Dichloroethane	ND		ug/kg	3.4	--	1
Chloroform	ND		ug/kg	3.4	--	1
Carbon tetrachloride	ND		ug/kg	2.3	--	1
1,2-Dichloropropane	ND		ug/kg	7.9	--	1
Dibromochloromethane	ND		ug/kg	2.3	--	1
1,1,2-Trichloroethane	ND		ug/kg	3.4	--	1
Tetrachloroethene	ND		ug/kg	2.3	--	1
Chlorobenzene	ND		ug/kg	2.3	--	1
Trichlorofluoromethane	ND		ug/kg	9.1	--	1
1,2-Dichloroethane	ND		ug/kg	2.3	--	1
1,1,1-Trichloroethane	ND		ug/kg	2.3	--	1
Bromodichloromethane	ND		ug/kg	2.3	--	1
trans-1,3-Dichloropropene	ND		ug/kg	2.3	--	1
cis-1,3-Dichloropropene	ND		ug/kg	2.3	--	1
1,3-Dichloropropene, Total	ND		ug/kg	2.3	--	1
1,1-Dichloropropene	ND		ug/kg	9.1	--	1
Bromoform	ND		ug/kg	9.1	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	2.3	--	1
Benzene	ND		ug/kg	2.3	--	1
Toluene	3.6		ug/kg	3.4	--	1
Ethylbenzene	ND		ug/kg	2.3	--	1
Chloromethane	ND		ug/kg	9.1	--	1
Bromomethane	ND		ug/kg	4.5	--	1
Vinyl chloride	ND		ug/kg	4.5	--	1
Chloroethane	ND		ug/kg	4.5	--	1
1,1-Dichloroethene	ND		ug/kg	2.3	--	1
trans-1,2-Dichloroethene	ND		ug/kg	3.4	--	1
Trichloroethene	ND		ug/kg	2.3	--	1
1,2-Dichlorobenzene	ND		ug/kg	9.1	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-02 Date Collected: 04/05/16 14:00

Client ID: B-2/S1 Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	9.1	--	1
1,4-Dichlorobenzene	ND		ug/kg	9.1	--	1
Methyl tert butyl ether	ND		ug/kg	4.5	--	1
p/m-Xylene	ND		ug/kg	4.5	--	1
o-Xylene	ND		ug/kg	4.5	--	1
Xylenes, Total	ND		ug/kg	4.5	--	1
cis-1,2-Dichloroethene	ND		ug/kg	2.3	--	1
1,2-Dichloroethene, Total	ND		ug/kg	2.3	--	1
Dibromomethane	ND		ug/kg	9.1	--	1
1,2,3-Trichloropropane	ND		ug/kg	9.1	--	1
Styrene	ND		ug/kg	4.5	--	1
Dichlorodifluoromethane	ND		ug/kg	23	--	1
Acetone	ND		ug/kg	82	--	1
Carbon disulfide	ND		ug/kg	9.1	--	1
Methyl ethyl ketone	ND		ug/kg	23	--	1
Methyl isobutyl ketone	ND		ug/kg	23	--	1
2-Hexanone	ND		ug/kg	23	--	1
Bromochloromethane	ND		ug/kg	9.1	--	1
Tetrahydrofuran	ND		ug/kg	9.1	--	1
2,2-Dichloropropane	ND		ug/kg	11	--	1
1,2-Dibromoethane	ND		ug/kg	9.1	--	1
1,3-Dichloropropane	ND		ug/kg	9.1	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	2.3	--	1
Bromobenzene	ND		ug/kg	11	--	1
n-Butylbenzene	ND		ug/kg	2.3	--	1
sec-Butylbenzene	ND		ug/kg	2.3	--	1
tert-Butylbenzene	ND		ug/kg	9.1	--	1
o-Chlorotoluene	ND		ug/kg	9.1	--	1
p-Chlorotoluene	ND		ug/kg	9.1	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	9.1	--	1
Hexachlorobutadiene	ND		ug/kg	9.1	--	1
Isopropylbenzene	ND		ug/kg	2.3	--	1
p-Isopropyltoluene	ND		ug/kg	2.3	--	1
Naphthalene	ND		ug/kg	9.1	--	1
n-Propylbenzene	ND		ug/kg	2.3	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	9.1	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	9.1	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	9.1	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	9.1	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-02 Date Collected: 04/05/16 14:00

Client ID: B-2/S1 Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	11	--	1
Diisopropyl Ether	ND		ug/kg	9.1	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	9.1	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	9.1	--	1
1,4-Dioxane	ND		ug/kg	91	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	99		70-130

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-03
Client ID: B-3/S1
Sample Location: Not Specified
Matrix: Soil
Analytical Method: 97,8260C
Analytical Date: 04/14/16 23:31
Analyst: BS
Percent Solids: 88%

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Methylene chloride	ND		ug/kg	15	--	1
1,1-Dichloroethane	ND		ug/kg	2.2	--	1
Chloroform	ND		ug/kg	2.2	--	1
Carbon tetrachloride	ND		ug/kg	1.5	--	1
1,2-Dichloropropane	ND		ug/kg	5.1	--	1
Dibromochloromethane	ND		ug/kg	1.5	--	1
1,1,2-Trichloroethane	ND		ug/kg	2.2	--	1
Tetrachloroethene	ND		ug/kg	1.5	--	1
Chlorobenzene	ND		ug/kg	1.5	--	1
Trichlorofluoromethane	ND		ug/kg	5.8	--	1
1,2-Dichloroethane	ND		ug/kg	1.5	--	1
1,1,1-Trichloroethane	ND		ug/kg	1.5	--	1
Bromodichloromethane	ND		ug/kg	1.5	--	1
trans-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
cis-1,3-Dichloropropene	ND		ug/kg	1.5	--	1
1,3-Dichloropropene, Total	ND		ug/kg	1.5	--	1
1,1-Dichloropropene	ND		ug/kg	5.8	--	1
Bromoform	ND		ug/kg	5.8	--	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Benzene	ND		ug/kg	1.5	--	1
Toluene	ND		ug/kg	2.2	--	1
Ethylbenzene	ND		ug/kg	1.5	--	1
Chloromethane	ND		ug/kg	5.8	--	1
Bromomethane	ND		ug/kg	2.9	--	1
Vinyl chloride	ND		ug/kg	2.9	--	1
Chloroethane	ND		ug/kg	2.9	--	1
1,1-Dichloroethene	ND		ug/kg	1.5	--	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	--	1
Trichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichlorobenzene	ND		ug/kg	5.8	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-03 Date Collected: 04/05/16 14:00

Client ID: B-3/S1 Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/kg	5.8	--	1
1,4-Dichlorobenzene	ND		ug/kg	5.8	--	1
Methyl tert butyl ether	ND		ug/kg	2.9	--	1
p/m-Xylene	ND		ug/kg	2.9	--	1
o-Xylene	ND		ug/kg	2.9	--	1
Xylenes, Total	ND		ug/kg	2.9	--	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	--	1
1,2-Dichloroethene, Total	ND		ug/kg	1.5	--	1
Dibromomethane	ND		ug/kg	5.8	--	1
1,2,3-Trichloropropane	ND		ug/kg	5.8	--	1
Styrene	ND		ug/kg	2.9	--	1
Dichlorodifluoromethane	ND		ug/kg	15	--	1
Acetone	ND		ug/kg	53	--	1
Carbon disulfide	ND		ug/kg	5.8	--	1
Methyl ethyl ketone	ND		ug/kg	15	--	1
Methyl isobutyl ketone	ND		ug/kg	15	--	1
2-Hexanone	ND		ug/kg	15	--	1
Bromochloromethane	ND		ug/kg	5.8	--	1
Tetrahydrofuran	ND		ug/kg	5.8	--	1
2,2-Dichloropropane	ND		ug/kg	7.3	--	1
1,2-Dibromoethane	ND		ug/kg	5.8	--	1
1,3-Dichloropropane	ND		ug/kg	5.8	--	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.5	--	1
Bromobenzene	ND		ug/kg	7.3	--	1
n-Butylbenzene	ND		ug/kg	1.5	--	1
sec-Butylbenzene	ND		ug/kg	1.5	--	1
tert-Butylbenzene	ND		ug/kg	5.8	--	1
o-Chlorotoluene	ND		ug/kg	5.8	--	1
p-Chlorotoluene	ND		ug/kg	5.8	--	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	5.8	--	1
Hexachlorobutadiene	ND		ug/kg	5.8	--	1
Isopropylbenzene	ND		ug/kg	1.5	--	1
p-Isopropyltoluene	ND		ug/kg	1.5	--	1
Naphthalene	ND		ug/kg	5.8	--	1
n-Propylbenzene	ND		ug/kg	1.5	--	1
1,2,3-Trichlorobenzene	ND		ug/kg	5.8	--	1
1,2,4-Trichlorobenzene	ND		ug/kg	5.8	--	1
1,3,5-Trimethylbenzene	ND		ug/kg	5.8	--	1
1,2,4-Trimethylbenzene	ND		ug/kg	5.8	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-03 Date Collected: 04/05/16 14:00

Client ID: B-3/S1 Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics by 8260/5035 - Westborough Lab						
Diethyl ether	ND		ug/kg	7.3	--	1
Diisopropyl Ether	ND		ug/kg	5.8	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/kg	5.8	--	1
Tertiary-Amyl Methyl Ether	ND		ug/kg	5.8	--	1
1,4-Dioxane	ND		ug/kg	58	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	100		70-130

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-06
Client ID: B-1/MW
Sample Location: Not Specified
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 04/13/16 18:06
Analyst: MM

Date Collected: 04/08/16 10:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	1.3		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-06 Date Collected: 04/08/16 10:00

Client ID: B-1/MW Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-06 Date Collected: 04/08/16 10:00

Client ID: B-1/MW Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	107		70-130

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-07
Client ID: B-2/MW
Sample Location: Not Specified
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 04/13/16 18:31
Analyst: MM

Date Collected: 04/08/16 10:10
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	2.0	--	1
1,1-Dichloroethane	ND		ug/l	1.0	--	1
Chloroform	1.2		ug/l	1.0	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,2-Dichloropropane	ND		ug/l	1.0	--	1
Dibromochloromethane	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.0	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
Chlorobenzene	ND		ug/l	1.0	--	1
Trichlorofluoromethane	ND		ug/l	2.0	--	1
1,2-Dichloroethane	ND		ug/l	1.0	--	1
1,1,1-Trichloroethane	ND		ug/l	1.0	--	1
Bromodichloromethane	ND		ug/l	1.0	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.0	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Chloromethane	ND		ug/l	2.0	--	1
Bromomethane	ND		ug/l	2.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	2.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
trans-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	1.0	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-07 Date Collected: 04/08/16 10:10

Client ID: B-2/MW Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-07 Date Collected: 04/08/16 10:10

Client ID: B-2/MW Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	109		70-130

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-08
Client ID: B-3/MW
Sample Location: Not Specified
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 04/13/16 18:56
Analyst: MM

Date Collected: 04/08/16 10:20
Date Received: 04/08/16
Field Prep: Not Specified

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

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-08 Date Collected: 04/08/16 10:20

Client ID: B-3/MW Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,3-Dichlorobenzene	ND		ug/l	1.0	--	1
1,4-Dichlorobenzene	ND		ug/l	1.0	--	1
Methyl tert butyl ether	ND		ug/l	2.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylene (Total)	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethene (total)	ND		ug/l	1.0	--	1
Dibromomethane	ND		ug/l	2.0	--	1
1,2,3-Trichloropropane	ND		ug/l	2.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	2.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	2.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.0	--	1
Tetrahydrofuran	ND		ug/l	2.0	--	1
2,2-Dichloropropane	ND		ug/l	2.0	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.0	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--	1
Bromobenzene	ND		ug/l	2.0	--	1
n-Butylbenzene	ND		ug/l	2.0	--	1
sec-Butylbenzene	ND		ug/l	2.0	--	1
tert-Butylbenzene	ND		ug/l	2.0	--	1
o-Chlorotoluene	ND		ug/l	2.0	--	1
p-Chlorotoluene	ND		ug/l	2.0	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--	1
Hexachlorobutadiene	ND		ug/l	0.60	--	1
Isopropylbenzene	ND		ug/l	2.0	--	1
p-Isopropyltoluene	ND		ug/l	2.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
n-Propylbenzene	ND		ug/l	2.0	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-08 Date Collected: 04/08/16 10:20

Client ID: B-3/MW Date Received: 04/08/16

Sample Location: Not Specified Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Ethyl ether	ND		ug/l	2.0	--	1
Isopropyl Ether	ND		ug/l	2.0	--	1
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--	1
1,4-Dioxane	ND		ug/l	250	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	109		70-130

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/13/16 11:47
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 06-08 Batch: WG883427-3					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
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	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/13/16 11:47
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 06-08 Batch: WG883427-3					
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylene (Total)	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene (total)	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
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	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/13/16 11:47
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 06-08 Batch: WG883427-3					
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Ethyl ether	ND		ug/l	2.0	--
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	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	104		70-130

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/14/16 22:12
Analyst: BS

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01-03 Batch: WG884038-3					
Methylene chloride	ND		ug/kg	10	--
1,1-Dichloroethane	ND		ug/kg	1.5	--
Chloroform	ND		ug/kg	1.5	--
Carbon tetrachloride	ND		ug/kg	1.0	--
1,2-Dichloropropane	ND		ug/kg	3.5	--
Dibromochloromethane	ND		ug/kg	1.0	--
1,1,2-Trichloroethane	ND		ug/kg	1.5	--
Tetrachloroethene	ND		ug/kg	1.0	--
Chlorobenzene	ND		ug/kg	1.0	--
Trichlorofluoromethane	ND		ug/kg	4.0	--
1,2-Dichloroethane	ND		ug/kg	1.0	--
1,1,1-Trichloroethane	ND		ug/kg	1.0	--
Bromodichloromethane	ND		ug/kg	1.0	--
trans-1,3-Dichloropropene	ND		ug/kg	1.0	--
cis-1,3-Dichloropropene	ND		ug/kg	1.0	--
1,3-Dichloropropene, Total	ND		ug/kg	1.0	--
1,1-Dichloropropene	ND		ug/kg	4.0	--
Bromoform	ND		ug/kg	4.0	--
1,1,2,2-Tetrachloroethane	ND		ug/kg	1.0	--
Benzene	ND		ug/kg	1.0	--
Toluene	ND		ug/kg	1.5	--
Ethylbenzene	ND		ug/kg	1.0	--
Chloromethane	ND		ug/kg	4.0	--
Bromomethane	ND		ug/kg	2.0	--
Vinyl chloride	ND		ug/kg	2.0	--
Chloroethane	ND		ug/kg	2.0	--
1,1-Dichloroethene	ND		ug/kg	1.0	--
trans-1,2-Dichloroethene	ND		ug/kg	1.5	--
Trichloroethene	ND		ug/kg	1.0	--

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/14/16 22:12
Analyst: BS

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01-03 Batch: WG884038-3					
1,2-Dichlorobenzene	ND		ug/kg	4.0	--
1,3-Dichlorobenzene	ND		ug/kg	4.0	--
1,4-Dichlorobenzene	ND		ug/kg	4.0	--
Methyl tert butyl ether	ND		ug/kg	2.0	--
p/m-Xylene	ND		ug/kg	2.0	--
o-Xylene	ND		ug/kg	2.0	--
Xylenes, Total	ND		ug/kg	2.0	--
cis-1,2-Dichloroethene	ND		ug/kg	1.0	--
1,2-Dichloroethene, Total	ND		ug/kg	1.0	--
Dibromomethane	ND		ug/kg	4.0	--
1,2,3-Trichloropropane	ND		ug/kg	4.0	--
Styrene	ND		ug/kg	2.0	--
Dichlorodifluoromethane	ND		ug/kg	10	--
Acetone	ND		ug/kg	36	--
Carbon disulfide	ND		ug/kg	4.0	--
Methyl ethyl ketone	ND		ug/kg	10	--
Methyl isobutyl ketone	ND		ug/kg	10	--
2-Hexanone	ND		ug/kg	10	--
Bromochloromethane	ND		ug/kg	4.0	--
Tetrahydrofuran	ND		ug/kg	4.0	--
2,2-Dichloropropane	ND		ug/kg	5.0	--
1,2-Dibromoethane	ND		ug/kg	4.0	--
1,3-Dichloropropane	ND		ug/kg	4.0	--
1,1,1,2-Tetrachloroethane	ND		ug/kg	1.0	--
Bromobenzene	ND		ug/kg	5.0	--
n-Butylbenzene	ND		ug/kg	1.0	--
sec-Butylbenzene	ND		ug/kg	1.0	--
tert-Butylbenzene	ND		ug/kg	4.0	--
o-Chlorotoluene	ND		ug/kg	4.0	--

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/14/16 22:12
Analyst: BS

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics by 8260/5035 - Westborough Lab for sample(s): 01-03 Batch: WG884038-3					
p-Chlorotoluene	ND		ug/kg	4.0	--
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.0	--
Hexachlorobutadiene	ND		ug/kg	4.0	--
Isopropylbenzene	ND		ug/kg	1.0	--
p-Isopropyltoluene	ND		ug/kg	1.0	--
Naphthalene	ND		ug/kg	4.0	--
n-Propylbenzene	ND		ug/kg	1.0	--
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	--
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	--
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	--
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	--
Diethyl ether	ND		ug/kg	5.0	--
Diisopropyl Ether	ND		ug/kg	4.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/kg	4.0	--
Tertiary-Amyl Methyl Ether	ND		ug/kg	4.0	--
1,4-Dioxane	ND		ug/kg	40	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	90		70-130
Dibromofluoromethane	93		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 06-08 Batch: WG883427-1 WG883427-2								
Methylene chloride	90		97		70-130	7		20
1,1-Dichloroethane	97		101		70-130	4		20
Chloroform	102		108		70-130	6		20
Carbon tetrachloride	124		128		70-130	3		20
1,2-Dichloropropane	92		99		70-130	7		20
Dibromochloromethane	102		105		70-130	3		20
1,1,2-Trichloroethane	90		95		70-130	5		20
Tetrachloroethene	118		112		70-130	5		20
Chlorobenzene	105		103		70-130	2		20
Trichlorofluoromethane	115		119		70-130	3		20
1,2-Dichloroethane	94		105		70-130	11		20
1,1,1-Trichloroethane	119		122		70-130	2		20
Bromodichloromethane	97		103		70-130	6		20
trans-1,3-Dichloropropene	98		101		70-130	3		20
cis-1,3-Dichloropropene	85		93		70-130	9		20
1,1-Dichloropropene	104		111		70-130	7		20
Bromoform	98		104		70-130	6		20
1,1,2,2-Tetrachloroethane	84		92		70-130	9		20
Benzene	95		100		70-130	5		20
Toluene	101		97		70-130	4		20
Ethylbenzene	110		104		70-130	6		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 06-08 Batch: WG883427-1 WG883427-2								
Chloromethane	98		102		70-130	4		20
Bromomethane	88		90		70-130	2		20
Vinyl chloride	95		99		70-130	4		20
Chloroethane	82		91		70-130	10		20
1,1-Dichloroethene	102		105		70-130	3		20
trans-1,2-Dichloroethene	96		102		70-130	6		20
Trichloroethene	102		105		70-130	3		20
1,2-Dichlorobenzene	104		105		70-130	1		20
1,3-Dichlorobenzene	109		106		70-130	3		20
1,4-Dichlorobenzene	106		104		70-130	2		20
Methyl tert butyl ether	82		94		70-130	14		20
p/m-Xylene	109		104		70-130	5		20
o-Xylene	107		102		70-130	5		20
cis-1,2-Dichloroethene	94		100		70-130	6		20
Dibromomethane	88		100		70-130	13		20
1,2,3-Trichloropropane	89		96		70-130	8		20
Styrene	108		104		70-130	4		20
Dichlorodifluoromethane	116		122		70-130	5		20
Acetone	**56**	Q	76		70-130	**30**	Q	20
Carbon disulfide	96		100		70-130	4		20
2-Butanone	**56**	Q	75		70-130	**29**	Q	20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 06-08 Batch: WG883427-1 WG883427-2								
4-Methyl-2-pentanone	**63**	Q	78		70-130	**21**	Q	20
2-Hexanone	**66**	Q	73		70-130	10		20
Bromochloromethane	99		109		70-130	10		20
Tetrahydrofuran	**63**	Q	81		70-130	**25**	Q	20
2,2-Dichloropropane	115		117		70-130	2		20
1,2-Dibromoethane	90		95		70-130	5		20
1,3-Dichloropropane	93		99		70-130	6		20
1,1,1,2-Tetrachloroethane	111		108		70-130	3		20
Bromobenzene	104		103		70-130	1		20
n-Butylbenzene	111		106		70-130	5		20
sec-Butylbenzene	110		105		70-130	5		20
tert-Butylbenzene	106		103		70-130	3		20
o-Chlorotoluene	110		106		70-130	4		20
p-Chlorotoluene	107		105		70-130	2		20
1,2-Dibromo-3-chloropropane	72		82		70-130	13		20
Hexachlorobutadiene	123		121		70-130	2		20
Isopropylbenzene	113		107		70-130	5		20
p-Isopropyltoluene	108		103		70-130	5		20
Naphthalene	**65**	Q	75		70-130	14		20
n-Propylbenzene	112		108		70-130	4		20
1,2,3-Trichlorobenzene	78		88		70-130	12		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 06-08 Batch: WG883427-1 WG883427-2								
1,2,4-Trichlorobenzene	91		94		70-130	3		20
1,3,5-Trimethylbenzene	110		104		70-130	6		20
1,2,4-Trimethylbenzene	108		103		70-130	5		20
Ethyl ether	79		94		70-130	17		20
Isopropyl Ether	86		93		70-130	8		20
Ethyl-Tert-Butyl-Ether	85		94		70-130	10		20
Tertiary-Amyl Methyl Ether	82		92		70-130	11		20
1,4-Dioxane	77		94		70-130	20		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		109		70-130
Toluene-d8	100		99		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	98		106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG884038-1 WG884038-2								
Methylene chloride	115		113		70-130	2		20
1,1-Dichloroethane	109		106		70-130	3		20
Chloroform	111		110		70-130	1		20
Carbon tetrachloride	116		117		70-130	1		20
1,2-Dichloropropane	109		108		70-130	1		20
Dibromochloromethane	98		98		70-130	0		20
1,1,2-Trichloroethane	101		99		70-130	2		20
Tetrachloroethene	109		108		70-130	1		20
Chlorobenzene	102		100		70-130	2		20
Trichlorofluoromethane	**136**	Q	**132**	Q	70-130	3		20
1,2-Dichloroethane	110		108		70-130	2		20
1,1,1-Trichloroethane	114		112		70-130	2		20
Bromodichloromethane	106		108		70-130	2		20
trans-1,3-Dichloropropene	95		95		70-130	0		20
cis-1,3-Dichloropropene	110		110		70-130	0		20
1,1-Dichloropropene	116		114		70-130	2		20
Bromoform	93		94		70-130	1		20
1,1,2,2-Tetrachloroethane	90		89		70-130	1		20
Benzene	111		109		70-130	2		20
Toluene	98		97		70-130	1		20
Ethylbenzene	99		98		70-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG884038-1 WG884038-2								
Chloromethane	110		108		70-130	2		20
Bromomethane	110		108		70-130	2		20
Vinyl chloride	108		105		70-130	3		20
Chloroethane	129		122		70-130	6		20
1,1-Dichloroethene	118		116		70-130	2		20
trans-1,2-Dichloroethene	115		112		70-130	3		20
Trichloroethene	114		112		70-130	2		20
1,2-Dichlorobenzene	97		97		70-130	0		20
1,3-Dichlorobenzene	97		96		70-130	1		20
1,4-Dichlorobenzene	97		96		70-130	1		20
Methyl tert butyl ether	108		106		70-130	2		20
p/m-Xylene	104		103		70-130	1		20
o-Xylene	103		102		70-130	1		20
cis-1,2-Dichloroethene	113		114		70-130	1		20
Dibromomethane	115		113		70-130	2		20
1,2,3-Trichloropropane	93		92		70-130	1		20
Styrene	104		104		70-130	0		20
Dichlorodifluoromethane	126		123		70-130	2		20
Acetone	112		113		70-130	1		20
Carbon disulfide	96		95		70-130	1		20
Methyl ethyl ketone	112		110		70-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG884038-1 WG884038-2								
Methyl isobutyl ketone	98		99		70-130	1		20
2-Hexanone	93		93		70-130	0		20
Bromochloromethane	125		122		70-130	2		20
Tetrahydrofuran	107		107		70-130	0		20
2,2-Dichloropropane	107		106		70-130	1		20
1,2-Dibromoethane	101		101		70-130	0		20
1,3-Dichloropropane	100		98		70-130	2		20
1,1,1,2-Tetrachloroethane	102		101		70-130	1		20
Bromobenzene	100		97		70-130	3		20
n-Butylbenzene	94		92		70-130	2		20
sec-Butylbenzene	97		96		70-130	1		20
tert-Butylbenzene	98		96		70-130	2		20
o-Chlorotoluene	93		90		70-130	3		20
p-Chlorotoluene	94		91		70-130	3		20
1,2-Dibromo-3-chloropropane	90		93		70-130	3		20
Hexachlorobutadiene	101		103		70-130	2		20
Isopropylbenzene	96		94		70-130	2		20
p-Isopropyltoluene	99		98		70-130	1		20
Naphthalene	96		98		70-130	2		20
n-Propylbenzene	97		94		70-130	3		20
1,2,3-Trichlorobenzene	102		103		70-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics by 8260/5035 - Westborough Lab Associated sample(s): 01-03 Batch: WG884038-1 WG884038-2								
1,2,4-Trichlorobenzene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	96		94		70-130	2		20
1,2,4-Trimethylbenzene	96		94		70-130	2		20
Diethyl ether	88		84		70-130	5		20
Diisopropyl Ether	104		104		70-130	0		20
Ethyl-Tert-Butyl-Ether	104		102		70-130	2		20
Tertiary-Amyl Methyl Ether	104		103		70-130	1		20
1,4-Dioxane	113		114		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	93		93		70-130
Toluene-d8	91		90		70-130
4-Bromofluorobenzene	93		92		70-130
Dibromofluoromethane	103		103		70-130

PETROLEUM HYDROCARBONS

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-01	Date Collected:	04/05/16 14:00
Client ID:	B-1/S1	Date Received:	04/08/16
Sample Location:		Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	04/13/16 16:50
Analytical Date:	04/15/16 15:40	Cleanup Method1:	EPH-04-1
Analyst:	DV	Cleanup Date1:	04/14/16
Percent Solids:	95%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	6.99	--	1
C19-C36 Aliphatics	ND		mg/kg	6.99	--	1
C11-C22 Aromatics	ND		mg/kg	6.99	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.99	--	1
Naphthalene	ND		mg/kg	0.349	--	1
2-Methylnaphthalene	ND		mg/kg	0.349	--	1
Acenaphthylene	ND		mg/kg	0.349	--	1
Acenaphthene	ND		mg/kg	0.349	--	1
Fluorene	ND		mg/kg	0.349	--	1
Phenanthrene	ND		mg/kg	0.349	--	1
Anthracene	ND		mg/kg	0.349	--	1
Fluoranthene	ND		mg/kg	0.349	--	1
Pyrene	ND		mg/kg	0.349	--	1
Benzo(a)anthracene	ND		mg/kg	0.349	--	1
Chrysene	ND		mg/kg	0.349	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.349	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.349	--	1
Benzo(a)pyrene	ND		mg/kg	0.349	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.349	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.349	--	1
Benzo(ghi)perylene	ND		mg/kg	0.349	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-01 Date Collected: 04/05/16 14:00

Client ID: B-1/S1 Date Received: 04/08/16

Sample Location: Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Extractable Petroleum Hydrocarbons - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	63		40-140
o-Terphenyl	66		40-140
2-Fluorobiphenyl	70		40-140
2-Bromonaphthalene	71		40-140

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-02	Date Collected:	04/05/16 14:00
Client ID:	B-2/S1	Date Received:	04/08/16
Sample Location:		Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	04/13/16 16:50
Analytical Date:	04/15/16 16:12	Cleanup Method1:	EPH-04-1
Analyst:	DV	Cleanup Date1:	04/14/16
Percent Solids:	92%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.05	--	1
C19-C36 Aliphatics	ND		mg/kg	7.05	--	1
C11-C22 Aromatics	ND		mg/kg	7.05	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.05	--	1
Naphthalene	ND		mg/kg	0.352	--	1
2-Methylnaphthalene	ND		mg/kg	0.352	--	1
Acenaphthylene	ND		mg/kg	0.352	--	1
Acenaphthene	ND		mg/kg	0.352	--	1
Fluorene	ND		mg/kg	0.352	--	1
Phenanthrene	ND		mg/kg	0.352	--	1
Anthracene	ND		mg/kg	0.352	--	1
Fluoranthene	ND		mg/kg	0.352	--	1
Pyrene	ND		mg/kg	0.352	--	1
Benzo(a)anthracene	ND		mg/kg	0.352	--	1
Chrysene	ND		mg/kg	0.352	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.352	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.352	--	1
Benzo(a)pyrene	ND		mg/kg	0.352	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.352	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.352	--	1
Benzo(ghi)perylene	ND		mg/kg	0.352	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-02 Date Collected: 04/05/16 14:00

Client ID: B-2/S1 Date Received: 04/08/16

Sample Location: Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Extractable Petroleum Hydrocarbons - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	71		40-140
2-Fluorobiphenyl	70		40-140
2-Bromonaphthalene	71		40-140

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-03	Date Collected:	04/05/16 14:00
Client ID:	B-3/S1	Date Received:	04/08/16
Sample Location:		Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	04/13/16 16:50
Analytical Date:	04/15/16 16:43	Cleanup Method1:	EPH-04-1
Analyst:	DV	Cleanup Date1:	04/14/16
Percent Solids:	88%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		mg/kg	7.34	--	1
C19-C36 Aliphatics	ND		mg/kg	7.34	--	1
C11-C22 Aromatics	ND		mg/kg	7.34	--	1
C11-C22 Aromatics, Adjusted	ND		mg/kg	7.34	--	1
Naphthalene	ND		mg/kg	0.367	--	1
2-Methylnaphthalene	ND		mg/kg	0.367	--	1
Acenaphthylene	ND		mg/kg	0.367	--	1
Acenaphthene	ND		mg/kg	0.367	--	1
Fluorene	ND		mg/kg	0.367	--	1
Phenanthrene	ND		mg/kg	0.367	--	1
Anthracene	ND		mg/kg	0.367	--	1
Fluoranthene	ND		mg/kg	0.367	--	1
Pyrene	ND		mg/kg	0.367	--	1
Benzo(a)anthracene	ND		mg/kg	0.367	--	1
Chrysene	ND		mg/kg	0.367	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.367	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.367	--	1
Benzo(a)pyrene	ND		mg/kg	0.367	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.367	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.367	--	1
Benzo(ghi)perylene	ND		mg/kg	0.367	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-03 Date Collected: 04/05/16 14:00

Client ID: B-3/S1 Date Received: 04/08/16

Sample Location: Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Extractable Petroleum Hydrocarbons - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	65		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	77		40-140

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-04	Date Collected:	04/05/16 14:00
Client ID:	B-4/S3	Date Received:	04/08/16
Sample Location:		Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	04/13/16 13:10		
Analyst:	KD		
Percent Solids:	91%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1.5:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	272		mg/kg	22.6	--	5
C9-C12 Aliphatics	87.1		mg/kg	22.6	--	5
C9-C10 Aromatics	45.1		mg/kg	22.6	--	5
C5-C8 Aliphatics, Adjusted	272		mg/kg	22.6	--	5
C9-C12 Aliphatics, Adjusted	42.0		mg/kg	22.6	--	5
Benzene	ND		mg/kg	0.906	--	5
Toluene	ND		mg/kg	0.906	--	5
Ethylbenzene	ND		mg/kg	0.906	--	5
p/m-Xylene	ND		mg/kg	0.906	--	5
o-Xylene	ND		mg/kg	0.906	--	5
Methyl tert butyl ether	ND		mg/kg	0.453	--	5
Naphthalene	ND		mg/kg	1.81	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	106		70-130
2,5-Dibromotoluene-FID	106		70-130

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-04	Date Collected:	04/05/16 14:00
Client ID:	B-4/S3	Date Received:	04/08/16
Sample Location:		Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	04/13/16 16:50
Analytical Date:	04/15/16 17:15	Cleanup Method1:	EPH-04-1
Analyst:	DV	Cleanup Date1:	04/14/16
Percent Solids:	91%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	13.0		mg/kg	7.17	--	1
C19-C36 Aliphatics	ND		mg/kg	7.17	--	1
C11-C22 Aromatics	10.2		mg/kg	7.17	--	1
C11-C22 Aromatics, Adjusted	10.2		mg/kg	7.17	--	1
Naphthalene	ND		mg/kg	0.359	--	1
2-Methylnaphthalene	ND		mg/kg	0.359	--	1
Acenaphthylene	ND		mg/kg	0.359	--	1
Acenaphthene	ND		mg/kg	0.359	--	1
Fluorene	ND		mg/kg	0.359	--	1
Phenanthrene	ND		mg/kg	0.359	--	1
Anthracene	ND		mg/kg	0.359	--	1
Fluoranthene	ND		mg/kg	0.359	--	1
Pyrene	ND		mg/kg	0.359	--	1
Benzo(a)anthracene	ND		mg/kg	0.359	--	1
Chrysene	ND		mg/kg	0.359	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.359	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.359	--	1
Benzo(a)pyrene	ND		mg/kg	0.359	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.359	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.359	--	1
Benzo(ghi)perylene	ND		mg/kg	0.359	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-04 Date Collected: 04/05/16 14:00

Client ID: B-4/S3 Date Received: 04/08/16

Sample Location: Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Extractable Petroleum Hydrocarbons - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	68		40-140
o-Terphenyl	77		40-140
2-Fluorobiphenyl	72		40-140
2-Bromonaphthalene	73		40-140

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-05	D	Date Collected:	04/05/16 14:00
Client ID:	B-6/S3		Date Received:	04/08/16
Sample Location:			Field Prep:	Not Specified
Matrix:	Soil			
Analytical Method:	100,VPH-04-1.1			
Analytical Date:	04/12/16 15:03			
Analyst:	KD			
Percent Solids:	90%			

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1.5:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	139		mg/kg	45.8	--	10
C9-C12 Aliphatics	301		mg/kg	45.8	--	10
C9-C10 Aromatics	207		mg/kg	45.8	--	10
C5-C8 Aliphatics, Adjusted	139		mg/kg	45.8	--	10
C9-C12 Aliphatics, Adjusted	82.1		mg/kg	45.8	--	10
Benzene	ND		mg/kg	1.83	--	10
Toluene	ND		mg/kg	1.83	--	10
Ethylbenzene	2.96		mg/kg	1.83	--	10
p/m-Xylene	9.07		mg/kg	1.83	--	10
o-Xylene	ND		mg/kg	1.83	--	10
Methyl tert butyl ether	ND		mg/kg	0.915	--	10
Naphthalene	5.91		mg/kg	3.66	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	106		70-130
2,5-Dibromotoluene-FID	47	Q	70-130

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-05	D	Date Collected:	04/05/16 14:00
Client ID:	B-6/S3		Date Received:	04/08/16
Sample Location:			Field Prep:	Not Specified
Matrix:	Soil		Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1		Extraction Date:	04/13/16 16:50
Analytical Date:	04/16/16 15:29		Cleanup Method1:	EPH-04-1
Analyst:	DV		Cleanup Date1:	04/14/16
Percent Solids:	90%			

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	680		mg/kg	14.5	--	2
C19-C36 Aliphatics	129		mg/kg	14.5	--	2
C11-C22 Aromatics	340		mg/kg	14.5	--	2
C11-C22 Aromatics, Adjusted	329		mg/kg	14.5	--	2
Naphthalene	ND		mg/kg	0.727	--	2
2-Methylnaphthalene	7.90		mg/kg	0.727	--	2
Acenaphthylene	ND		mg/kg	0.727	--	2
Acenaphthene	1.24		mg/kg	0.727	--	2
Fluorene	ND		mg/kg	0.727	--	2
Phenanthrene	1.73		mg/kg	0.727	--	2
Anthracene	ND		mg/kg	0.727	--	2
Fluoranthene	ND		mg/kg	0.727	--	2
Pyrene	ND		mg/kg	0.727	--	2
Benzo(a)anthracene	ND		mg/kg	0.727	--	2
Chrysene	ND		mg/kg	0.727	--	2
Benzo(b)fluoranthene	ND		mg/kg	0.727	--	2
Benzo(k)fluoranthene	ND		mg/kg	0.727	--	2
Benzo(a)pyrene	ND		mg/kg	0.727	--	2
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.727	--	2
Dibenzo(a,h)anthracene	ND		mg/kg	0.727	--	2
Benzo(ghi)perylene	ND		mg/kg	0.727	--	2

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-05 D Date Collected: 04/05/16 14:00

Client ID: B-6/S3 Date Received: 04/08/16

Sample Location: Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Extractable Petroleum Hydrocarbons - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	84		40-140
o-Terphenyl	138		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	82		40-140

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-06			Date Collected:	04/08/16 10:00
Client ID:	B-1/MW			Date Received:	04/08/16
Sample Location:				Field Prep:	Not Specified
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	04/15/16 04:14
Analytical Date:	04/16/16 10:40	M.S. Analytical Date:	04/17/16 10:02	Cleanup Method1:	EPH-04-1
Analyst:	DV	M.S. Analyst:	KV	Cleanup Date1:	04/15/16

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

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-06 Date Collected: 04/08/16 10:00

Client ID: B-1/MW Date Received: 04/08/16

Sample Location: Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	60		40-140
o-Terphenyl	68		40-140
2-Fluorobiphenyl	82		40-140
2-Bromonaphthalene	83		40-140
O-Terphenyl-MS	80		40-140

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-07			Date Collected:	04/08/16 10:10
Client ID:	B-2/MW			Date Received:	04/08/16
Sample Location:				Field Prep:	Not Specified
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	04/15/16 04:14
Analytical Date:	04/16/16 11:18	M.S. Analytical Date:	04/17/16 10:27	Cleanup Method1:	EPH-04-1
Analyst:	DV	M.S. Analyst:	KV	Cleanup Date1:	04/15/16

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

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-07
Client ID: B-2/MW
Sample Location:
Date Collected: 04/08/16 10:10
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	60		40-140
o-Terphenyl	66		40-140
2-Fluorobiphenyl	82		40-140
2-Bromonaphthalene	87		40-140
O-Terphenyl-MS	76		40-140

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-08			Date Collected:	04/08/16 10:20
Client ID:	B-3/MW			Date Received:	04/08/16
Sample Location:				Field Prep:	Not Specified
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	04/15/16 04:14
Analytical Date:	04/16/16 11:56	M.S. Analytical Date:	04/17/16 11:17	Cleanup Method1:	EPH-04-1
Analyst:	DV	M.S. Analyst:	KV	Cleanup Date1:	04/15/16

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

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-08 Date Collected: 04/08/16 10:20

Client ID: B-3/MW Date Received: 04/08/16

Sample Location: Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	61		40-140
o-Terphenyl	69		40-140
2-Fluorobiphenyl	69		40-140
2-Bromonaphthalene	67		40-140
O-Terphenyl-MS	92		40-140

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-09			Date Collected:	04/08/16 10:30
Client ID:	B-4/MW			Date Received:	04/08/16
Sample Location:				Field Prep:	Not Specified
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	04/15/16 04:14
Analytical Date:	04/16/16 12:33	M.S. Analytical Date:	04/17/16 11:41	Cleanup Method1:	EPH-04-1
Analyst:	DV	M.S. Analyst:	KV	Cleanup Date1:	04/15/16

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

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	154		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	139		ug/l	100	--	1
Naphthalene	0.704		ug/l	0.400	--	1
2-Methylnaphthalene	12.6		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	0.446		ug/l	0.400	--	1
Fluorene	0.528		ug/l	0.400	--	1
Phenanthrene	0.764		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-09
Client ID: B-4/MW
Sample Location:
Date Collected: 04/08/16 10:30
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	62		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	73		40-140
2-Bromonaphthalene	72		40-140
O-Terphenyl-MS	80		40-140

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-09	D	Date Collected:	04/08/16 10:30
Client ID:	B-4/MW		Date Received:	04/08/16
Sample Location:			Field Prep:	Not Specified
Matrix:	Water			
Analytical Method:	100,VPH-04-1.1			
Analytical Date:	04/14/16 18:26			
Analyst:	KD			

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Volatile Petroleum Hydrocarbons - Westborough Lab

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
C5-C8 Aliphatics	1540		ug/l	250	--	5
C9-C12 Aliphatics	1410		ug/l	250	--	5
C9-C10 Aromatics	616		ug/l	250	--	5
C5-C8 Aliphatics, Adjusted	1540		ug/l	250	--	5
C9-C12 Aliphatics, Adjusted	795		ug/l	250	--	5
Benzene	ND		ug/l	10.0	--	5
Toluene	ND		ug/l	10.0	--	5
Ethylbenzene	ND		ug/l	10.0	--	5
p/m-Xylene	ND		ug/l	10.0	--	5
o-Xylene	ND		ug/l	10.0	--	5
Methyl tert butyl ether	ND		ug/l	15.0	--	5
Naphthalene	ND		ug/l	20.0	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	99		70-130
2,5-Dibromotoluene-FID	113		70-130

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-10	Date Collected:	04/08/16 10:25
Client ID:	B-7/MW	Date Received:	04/08/16
Sample Location:		Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	04/13/16 20:15		
Analyst:	KD		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	134		ug/l	50.0	--	1
C9-C12 Aliphatics	126		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	134		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	118		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	8.04		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	94		70-130
2,5-Dibromotoluene-FID	108		70-130

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID:	L1610415-10			Date Collected:	04/08/16 10:25
Client ID:	B-7/MW			Date Received:	04/08/16
Sample Location:				Field Prep:	Not Specified
Matrix:	Water			Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1			Extraction Date:	04/15/16 04:14
Analytical Date:	04/18/16 09:12	M.S. Analytical Date:	04/17/16 12:06	Cleanup Method1:	EPH-04-1
Analyst:	DV	M.S. Analyst:	KV	Cleanup Date1:	04/15/16

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

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
EPH w/MS Targets - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1
Naphthalene	ND		ug/l	0.400	--	1
2-Methylnaphthalene	ND		ug/l	0.400	--	1
Acenaphthylene	ND		ug/l	0.400	--	1
Acenaphthene	ND		ug/l	0.400	--	1
Fluorene	ND		ug/l	0.400	--	1
Phenanthrene	ND		ug/l	0.400	--	1
Anthracene	ND		ug/l	0.400	--	1
Fluoranthene	ND		ug/l	0.400	--	1
Pyrene	ND		ug/l	0.400	--	1
Benzo(a)anthracene	ND		ug/l	0.400	--	1
Chrysene	ND		ug/l	0.400	--	1
Benzo(b)fluoranthene	ND		ug/l	0.400	--	1
Benzo(k)fluoranthene	ND		ug/l	0.400	--	1
Benzo(a)pyrene	ND		ug/l	0.200	--	1
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--	1
Benzo(ghi)perylene	ND		ug/l	0.400	--	1

Project Name: NEWTON GARAGE **Lab Number:** L1610415

Project Number: 2378 **Report Date:** 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-10 Date Collected: 04/08/16 10:25

Client ID: B-7/MW Date Received: 04/08/16

Sample Location: Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

EPH w/MS Targets - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	73		40-140
o-Terphenyl	87		40-140
2-Fluorobiphenyl	86		40-140
2-Bromonaphthalene	85		40-140
O-Terphenyl-MS	96		40-140

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 04/12/16 09:57
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 05 Batch: WG882797-3					
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--
Benzene	ND		mg/kg	0.107	--
Toluene	ND		mg/kg	0.107	--
Ethylbenzene	ND		mg/kg	0.107	--
p/m-Xylene	ND		mg/kg	0.107	--
o-Xylene	ND		mg/kg	0.107	--
Methyl tert butyl ether	ND		mg/kg	0.053	--
Naphthalene	ND		mg/kg	0.213	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	102		70-130
2,5-Dibromotoluene-FID	106		70-130

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 04/13/16 11:11
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 10 Batch: WG883244-3					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--
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	3.00	--
Naphthalene	ND		ug/l	4.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	95		70-130
2,5-Dibromotoluene-FID	110		70-130

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 04/15/16 11:27
Analyst: DV

Extraction Method: EPA 3546
Extraction Date: 04/13/16 16:50
Cleanup Method: EPH-04-1
Cleanup Date: 04/13/16

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-05 Batch: WG883351-1					
C9-C18 Aliphatics	ND		mg/kg	6.30	--
C19-C36 Aliphatics	ND		mg/kg	6.30	--
C11-C22 Aromatics	ND		mg/kg	6.30	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.30	--
Naphthalene	ND		mg/kg	0.315	--
2-Methylnaphthalene	ND		mg/kg	0.315	--
Acenaphthylene	ND		mg/kg	0.315	--
Acenaphthene	ND		mg/kg	0.315	--
Fluorene	ND		mg/kg	0.315	--
Phenanthrene	ND		mg/kg	0.315	--
Anthracene	ND		mg/kg	0.315	--
Fluoranthene	ND		mg/kg	0.315	--
Pyrene	ND		mg/kg	0.315	--
Benzo(a)anthracene	ND		mg/kg	0.315	--
Chrysene	ND		mg/kg	0.315	--
Benzo(b)fluoranthene	ND		mg/kg	0.315	--
Benzo(k)fluoranthene	ND		mg/kg	0.315	--
Benzo(a)pyrene	ND		mg/kg	0.315	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.315	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.315	--
Benzo(ghi)perylene	ND		mg/kg	0.315	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	81		40-140
o-Terphenyl	68		40-140
2-Fluorobiphenyl	64		40-140
2-Bromonaphthalene	65		40-140

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 04/13/16 09:49
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 04 Batch: WG883538-3					
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--
Benzene	ND		mg/kg	0.107	--
Toluene	ND		mg/kg	0.107	--
Ethylbenzene	ND		mg/kg	0.107	--
p/m-Xylene	ND		mg/kg	0.107	--
o-Xylene	ND		mg/kg	0.107	--
Methyl tert butyl ether	ND		mg/kg	0.053	--
Naphthalene	ND		mg/kg	0.213	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	107		70-130
2,5-Dibromotoluene-FID	110		70-130

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 04/15/16 22:18
Analyst: DV
M.S. Analytical Date: 04/15/16 20:55

Extraction Method: EPA 3510C
Extraction Date: 04/14/16 23:53
Cleanup Method: EPH-04-1
Cleanup Date: 04/15/16

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 06-10 Batch: WG883875-1					
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	0.400	--
2-Methylnaphthalene	ND		ug/l	0.400	--
Acenaphthylene	ND		ug/l	0.400	--
Acenaphthene	ND		ug/l	0.400	--
Fluorene	ND		ug/l	0.400	--
Phenanthrene	ND		ug/l	0.400	--
Anthracene	ND		ug/l	0.400	--
Fluoranthene	ND		ug/l	0.400	--
Pyrene	ND		ug/l	0.400	--
Benzo(a)anthracene	ND		ug/l	0.400	--
Chrysene	ND		ug/l	0.400	--
Benzo(b)fluoranthene	ND		ug/l	0.400	--
Benzo(k)fluoranthene	ND		ug/l	0.400	--
Benzo(a)pyrene	ND		ug/l	0.200	--
Indeno(1,2,3-cd)Pyrene	ND		ug/l	0.400	--
Dibenzo(a,h)anthracene	ND		ug/l	0.400	--
Benzo(ghi)perylene	ND		ug/l	0.400	--

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 04/15/16 22:18
Analyst: DV

04/15/16 20:55

Extraction Method: EPA 3510C
Extraction Date: 04/14/16 23:53
Cleanup Method: EPH-04-1
Cleanup Date: 04/15/16

Parameter	Result	Qualifier	Units	RL	MDL
EPH w/MS Targets - Westborough Lab for sample(s): 06-10 Batch: WG883875-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	56		40-140
o-Terphenyl	84		40-140
2-Fluorobiphenyl	86		40-140
2-Bromonaphthalene	85		40-140
O-Terphenyl-MS	87		40-140

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 04/14/16 16:17
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 09 Batch: WG883984-3					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--
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	3.00	--
Naphthalene	ND		ug/l	4.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	96		70-130
2,5-Dibromotoluene-FID	111		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 05 Batch: WG882797-1 WG882797-2								
C5-C8 Aliphatics	96		96		70-130	0		25
C9-C12 Aliphatics	109		108		70-130	1		25
C9-C10 Aromatics	108		107		70-130	1		25
Benzene	107		107		70-130	0		25
Toluene	109		109		70-130	0		25
Ethylbenzene	111		111		70-130	0		25
p/m-Xylene	109		109		70-130	0		25
o-Xylene	110		110		70-130	0		25
Methyl tert butyl ether	117		118		70-130	1		25
Naphthalene	111		112		70-130	1		25
1,2,4-Trimethylbenzene	108		107		70-130	1		25
Pentane	88		86		70-130	1		25
2-Methylpentane	99		99		70-130	1		25
2,2,4-Trimethylpentane	103		102		70-130	1		25
n-Nonane	107		106		30-130	1		25
n-Decane	108		106		70-130	2		25
n-Butylcyclohexane	113		112		70-130	1		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 05 Batch: WG882797-1 WG882797-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	104		104		70-130
2,5-Dibromotoluene-FID	106		108		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 10 Batch: WG883244-1 WG883244-2								
C5-C8 Aliphatics	90		86		70-130	5		25
C9-C12 Aliphatics	98		93		70-130	5		25
C9-C10 Aromatics	92		94		70-130	2		25
Benzene	85		85		70-130	0		25
Toluene	86		86		70-130	1		25
Ethylbenzene	91		92		70-130	1		25
p/m-Xylene	90		91		70-130	1		25
o-Xylene	88		89		70-130	1		25
Methyl tert butyl ether	88		90		70-130	2		25
Naphthalene	96		100		70-130	4		25
1,2,4-Trimethylbenzene	92		94		70-130	2		25
Pentane	86		84		70-130	2		25
2-Methylpentane	95		90		70-130	6		25
2,2,4-Trimethylpentane	90		87		70-130	3		25
n-Nonane	92		87		30-130	5		25
n-Decane	95		89		70-130	7		25
n-Butylcyclohexane	96		92		70-130	4		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 10 Batch: WG883244-1 WG883244-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	93		100		70-130
2,5-Dibromotoluene-FID	106		109		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG883351-2 WG883351-3								
C9-C18 Aliphatics	71		68		40-140	4		25
C19-C36 Aliphatics	80		79		40-140	1		25
C11-C22 Aromatics	59		56		40-140	5		25
Naphthalene	61		53		40-140	14		25
2-Methylnaphthalene	64		57		40-140	12		25
Acenaphthylene	61		56		40-140	9		25
Acenaphthene	63		59		40-140	7		25
Fluorene	65		62		40-140	5		25
Phenanthrene	68		65		40-140	5		25
Anthracene	69		67		40-140	3		25
Fluoranthene	71		69		40-140	3		25
Pyrene	72		70		40-140	3		25
Benzo(a)anthracene	70		69		40-140	1		25
Chrysene	72		72		40-140	0		25
Benzo(b)fluoranthene	74		73		40-140	1		25
Benzo(k)fluoranthene	74		74		40-140	0		25
Benzo(a)pyrene	65		65		40-140	0		25
Indeno(1,2,3-cd)Pyrene	74		73		40-140	1		25
Dibenzo(a,h)anthracene	68		67		40-140	1		25
Benzo(ghi)perylene	73		72		40-140	1		25
Nonane (C9)	56		54		30-140	4		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-05 Batch: WG883351-2 WG883351-3								
Decane (C10)	64		61		40-140	5		25
Dodecane (C12)	67		65		40-140	3		25
Tetradecane (C14)	69		67		40-140	3		25
Hexadecane (C16)	72		71		40-140	1		25
Octadecane (C18)	77		76		40-140	1		25
Nonadecane (C19)	78		77		40-140	1		25
Eicosane (C20)	78		78		40-140	0		25
Docosane (C22)	79		78		40-140	1		25
Tetracosane (C24)	78		78		40-140	0		25
Hexacosane (C26)	78		78		40-140	0		25
Octacosane (C28)	78		77		40-140	1		25
Triacontane (C30)	77		76		40-140	1		25
Hexatriacontane (C36)	78		77		40-140	1		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	70		70		40-140
o-Terphenyl	75		74		40-140
2-Fluorobiphenyl	74		66		40-140
2-Bromonaphthalene	74		68		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 04 Batch: WG883538-1 WG883538-2								
C5-C8 Aliphatics	97		97		70-130	0		25
C9-C12 Aliphatics	110		110		70-130	0		25
C9-C10 Aromatics	111		110		70-130	1		25
Benzene	110		109		70-130	1		25
Toluene	112		111		70-130	1		25
Ethylbenzene	114		113		70-130	1		25
p/m-Xylene	112		112		70-130	0		25
o-Xylene	114		113		70-130	1		25
Methyl tert butyl ether	116		117		70-130	1		25
Naphthalene	108		109		70-130	1		25
1,2,4-Trimethylbenzene	111		110		70-130	1		25
Pentane	89		89		70-130	0		25
2-Methylpentane	101		100		70-130	1		25
2,2,4-Trimethylpentane	103		103		70-130	0		25
n-Nonane	108		107		30-130	1		25
n-Decane	109		108		70-130	1		25
n-Butylcyclohexane	114		113		70-130	1		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 04 Batch: WG883538-1 WG883538-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	106		105		70-130
2,5-Dibromotoluene-FID	108		107		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 06-10 Batch: WG883875-2 WG883875-3								
C9-C18 Aliphatics	52		59		40-140	13		25
C19-C36 Aliphatics	67		77		40-140	14		25
C11-C22 Aromatics	105		91		40-140	14		25
Naphthalene	88		73		40-140	19		25
2-Methylnaphthalene	98		80		40-140	20		25
Acenaphthylene	97		75		40-140	**26**	Q	25
Acenaphthene	101		81		40-140	22		25
Fluorene	111		86		40-140	25		25
Phenanthrene	107		86		40-140	22		25
Anthracene	112		91		40-140	21		25
Fluoranthene	122		99		40-140	21		25
Pyrene	114		94		40-140	19		25
Benzo(a)anthracene	108		85		40-140	24		25
Chrysene	112		90		40-140	22		25
Benzo(b)fluoranthene	118		94		40-140	23		25
Benzo(k)fluoranthene	116		92		40-140	23		25
Benzo(a)pyrene	101		80		40-140	23		25
Indeno(1,2,3-cd)Pyrene	87		72		40-140	19		25
Dibenzo(a,h)anthracene	88		72		40-140	20		25
Benzo(ghi)perylene	77		64		40-140	18		25
Nonane (C9)	42		49		30-140	15		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 06-10 Batch: WG883875-2 WG883875-3								
Decane (C10)	52		60		40-140	14		25
Dodecane (C12)	58		66		40-140	13		25
Tetradecane (C14)	62		69		40-140	11		25
Hexadecane (C16)	65		73		40-140	12		25
Octadecane (C18)	67		76		40-140	13		25
Nonadecane (C19)	66		76		40-140	14		25
Eicosane (C20)	66		76		40-140	14		25
Docosane (C22)	63		72		40-140	13		25
Tetracosane (C24)	62		70		40-140	12		25
Hexacosane (C26)	60		68		40-140	13		25
Octacosane (C28)	60		68		40-140	13		25
Triacontane (C30)	60		68		40-140	13		25
Hexatriacontane (C36)	67		76		40-140	13		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
EPH w/MS Targets - Westborough Lab Associated sample(s): 06-10 Batch: WG883875-2 WG883875-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	53		66		40-140
o-Terphenyl	94		85		40-140
2-Fluorobiphenyl	97		87		40-140
2-Bromonaphthalene	96		87		40-140
O-Terphenyl-MS	107		85		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 09 Batch: WG883984-1 WG883984-2								
C5-C8 Aliphatics	84		84		70-130	0		25
C9-C12 Aliphatics	94		93		70-130	2		25
C9-C10 Aromatics	92		92		70-130	0		25
Benzene	83		83		70-130	1		25
Toluene	84		84		70-130	0		25
Ethylbenzene	89		89		70-130	0		25
p/m-Xylene	89		88		70-130	0		25
o-Xylene	87		87		70-130	0		25
Methyl tert butyl ether	88		89		70-130	1		25
Naphthalene	99		100		70-130	1		25
1,2,4-Trimethylbenzene	92		92		70-130	0		25
Pentane	79		80		70-130	2		25
2-Methylpentane	88		87		70-130	1		25
2,2,4-Trimethylpentane	87		87		70-130	0		25
n-Nonane	88		87		30-130	1		25
n-Decane	90		87		70-130	3		25
n-Butylcyclohexane	93		92		70-130	1		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 09 Batch: WG883984-1 WG883984-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	99		97		70-130
2,5-Dibromotoluene-FID	112		109		70-130

METALS

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-01
Client ID: B-1/S1
Sample Location: Not Specified
Matrix: Soil
Percent Solids: 95%

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Westborough Lab											
Lead, Total	ND		mg/kg	10	--	5	04/11/16 11:04	04/13/16 16:38	EPA 3050B	97,6010C	PS

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-02
Client ID: B-2/S1
Sample Location: Not Specified
Matrix: Soil
Percent Solids: 92%

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Westborough Lab											
Lead, Total	ND		mg/kg	2.1	--	1	04/11/16 11:04	04/13/16 11:01	EPA 3050B	97,6010C	PS

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-03
Client ID: B-3/S1
Sample Location: Not Specified
Matrix: Soil
Percent Solids: 88%

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Westborough Lab											
Lead, Total	ND		mg/kg	2.2	--	1	04/11/16 11:04	04/13/16 11:06	EPA 3050B	97,6010C	PS

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-04
Client ID: B-4/S3
Sample Location: Not Specified
Matrix: Soil
Percent Solids: 91%

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Westborough Lab											
Lead, Total	ND		mg/kg	2.1	--	1	04/11/16 11:04	04/13/16 11:10	EPA 3050B	97,6010C	PS

Project Name: NEWTON GARAGE
Lab Number: L1610415
Project Number: 2378
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-05
Client ID: B-6/S3
Sample Location: Not Specified
Matrix: Soil
Percent Solids: 90%

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
MCP Total Metals - Westborough Lab											
Lead, Total	ND		mg/kg	11	--	5	04/11/16 11:04	04/13/16 16:42	EPA 3050B	97,6010C	PS

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
MCP Total Metals - Westborough Lab for sample(s): 01-05 Batch: WG882302-1										
Lead, Total	ND		mg/kg	2.0	--	1	04/11/16 11:04	04/13/16 09:49	97,6010C	PS

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON GARAGE

Project Number: 2378

Lab Number: L1610415

Report Date: 04/18/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Total Metals - Westborough Lab Associated sample(s): 01-05 Batch: WG882302-2 WG882302-3 SRM Lot Number: D088-540								
Lead, Total	98		91		81-117	7		30

INORGANICS
&
MISCELLANEOUS

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-01
Client ID: B-1/S1
Sample Location: Not Specified
Matrix: Soil

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.2		%	0.100	NA	1	-	04/11/16 13:45	121,2540G	RI

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-02
Client ID: B-2/S1
Sample Location: Not Specified
Matrix: Soil
Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.9		%	0.100	NA	1	-	04/11/16 13:45	121,2540G	RI

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-03
Client ID: B-3/S1
Sample Location: Not Specified
Matrix: Soil

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.7		%	0.100	NA	1	-	04/11/16 13:45	121,2540G	RI

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-04
Client ID: B-4/S3
Sample Location: Not Specified
Matrix: Soil

Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	04/11/16 13:45	121,2540G	RI

Project Name: NEWTON GARAGE
Project Number: 2378
Lab Number: L1610415
Report Date: 04/18/16

SAMPLE RESULTS

Lab ID: L1610415-05
Client ID: B-6/S3
Sample Location: Not Specified
Matrix: Soil
Date Collected: 04/05/16 14:00
Date Received: 04/08/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.2		%	0.100	NA	1	-	04/11/16 13:45	121,2540G	RI

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Reagent H2O Preserved Vials Frozen on: 04/05/2016 16:00

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1610415-01A	Vial MeOH preserved	A	N/A	4.5	Y	Absent	MCP-8260HLW-10(14)
L1610415-01B	Vial water preserved	A	N/A	4.5	Y	Absent	MCP-8260HLW-10(14)
L1610415-01C	Vial water preserved	A	N/A	4.5	Y	Absent	MCP-8260HLW-10(14)
L1610415-01D	Plastic 2oz unpreserved for TS	A	N/A	4.5	Y	Absent	TS(7)
L1610415-01E	Glass 250ml/8oz unpreserved	A	N/A	4.5	Y	Absent	EPH-DELUX-10(14),MCP-PB-6010T-10(180)
L1610415-02A	Vial MeOH preserved	A	N/A	4.5	Y	Absent	MCP-8260HLW-10(14)
L1610415-02B	Vial water preserved	A	N/A	4.5	Y	Absent	MCP-8260HLW-10(14)
L1610415-02C	Vial water preserved	A	N/A	4.5	Y	Absent	MCP-8260HLW-10(14)
L1610415-02D	Plastic 2oz unpreserved for TS	A	N/A	4.5	Y	Absent	TS(7)
L1610415-02E	Glass 250ml/8oz unpreserved	A	N/A	4.5	Y	Absent	EPH-DELUX-10(14),MCP-PB-6010T-10(180)
L1610415-03A	Vial MeOH preserved	A	N/A	4.5	Y	Absent	MCP-8260HLW-10(14)
L1610415-03B	Vial water preserved	A	N/A	4.5	Y	Absent	MCP-8260HLW-10(14)
L1610415-03C	Vial water preserved	A	N/A	4.5	Y	Absent	MCP-8260HLW-10(14)
L1610415-03D	Plastic 2oz unpreserved for TS	A	N/A	4.5	Y	Absent	TS(7)
L1610415-03E	Glass 250ml/8oz unpreserved	A	N/A	4.5	Y	Absent	EPH-DELUX-10(14),MCP-PB-6010T-10(180)
L1610415-04A	Vial MeOH preserved	A	N/A	4.5	Y	Absent	VPH-DELUX-10(28)
L1610415-04B	Vial water preserved	A	N/A	4.5	Y	Absent	HOLD-8260HLW(14)
L1610415-04C	Vial water preserved	A	N/A	4.5	Y	Absent	HOLD-8260HLW(14)
L1610415-04D	Plastic 2oz unpreserved for TS	A	N/A	4.5	Y	Absent	TS(7)
L1610415-04E	Glass 250ml/8oz unpreserved	A	N/A	4.5	Y	Absent	EPH-DELUX-10(14),MCP-PB-6010T-10(180)
L1610415-05A	Vial MeOH preserved	A	N/A	4.5	Y	Absent	VPH-DELUX-10(28)
L1610415-05B	Vial water preserved	A	N/A	4.5	Y	Absent	HOLD-8260HLW(14)
L1610415-05C	Vial water preserved	A	N/A	4.5	Y	Absent	HOLD-8260HLW(14)
L1610415-05D	Plastic 2oz unpreserved for TS	A	N/A	4.5	Y	Absent	TS(7)

*Values in parentheses indicate holding time in days

Project Name: NEWTON GARAGE
Project Number: 2378

Lab Number: L1610415
Report Date: 04/18/16

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1610415-05E	Glass 250ml/8oz unpreserved	A	N/A	4.5	Y	Absent	EPH-DELUX-10(14),MCP-PB-6010T-10(180)
L1610415-06A	Vial HCl preserved	A	N/A	4.5	Y	Absent	MCP-8260-10(14)
L1610415-06B	Vial HCl preserved	A	N/A	4.5	Y	Absent	MCP-8260-10(14)
L1610415-06C	Vial HCl preserved	A	N/A	4.5	Y	Absent	MCP-8260-10(14)
L1610415-06D	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1610415-06E	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1610415-07A	Vial HCl preserved	A	N/A	4.5	Y	Absent	MCP-8260-10(14)
L1610415-07B	Vial HCl preserved	A	N/A	4.5	Y	Absent	MCP-8260-10(14)
L1610415-07C	Vial HCl preserved	A	N/A	4.5	Y	Absent	MCP-8260-10(14)
L1610415-07D	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1610415-07E	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1610415-08A	Vial HCl preserved	A	N/A	4.5	Y	Absent	MCP-8260-10(14)
L1610415-08B	Vial HCl preserved	A	N/A	4.5	Y	Absent	MCP-8260-10(14)
L1610415-08C	Vial HCl preserved	A	N/A	4.5	Y	Absent	MCP-8260-10(14)
L1610415-08D	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1610415-08E	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1610415-09A	Vial HCl preserved	A	N/A	4.5	Y	Absent	VPH-DELUX-10(14)
L1610415-09B	Vial HCl preserved	A	N/A	4.5	Y	Absent	VPH-DELUX-10(14)
L1610415-09C	Vial HCl preserved	A	N/A	4.5	Y	Absent	VPH-DELUX-10(14)
L1610415-09D	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1610415-09E	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1610415-10A	Vial HCl preserved	A	N/A	4.5	Y	Absent	VPH-DELUX-10(14)
L1610415-10B	Vial HCl preserved	A	N/A	4.5	Y	Absent	VPH-DELUX-10(14)
L1610415-10C	Vial HCl preserved	A	N/A	4.5	Y	Absent	VPH-DELUX-10(14)
L1610415-10D	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)
L1610415-10E	Amber 1000ml HCl preserved	A	<2	4.5	Y	Absent	EPH-MS-10(14),EPHD-GC-10(14)

*Values in parentheses indicate holding time in days

Project Name:	NEWTON GARAGE	**Lab Number:**	L1610415
Project Number:	2378	**Report Date:**	04/18/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

Report Format: Data Usability Report

Project Name:	NEWTON GARAGE	**Lab Number:**	L1610415
Project Number:	2378	**Report Date:**	04/18/16

Data Qualifiers

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

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

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Report Format: Data Usability Report

Project Name:	NEWTON GARAGE	**Lab Number:**	L1610415
Project Number:	2378	**Report Date:**	04/18/16

REFERENCES

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

98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.

100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 524.2: 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, m/p-xylene, o-xylene
EPA 624: 2-Butanone (MEK), 1,4-Dioxane, tert-Amylmethyl Ether, tert-Butyl Alcohol, m/p-xylene, o-xylene
EPA 625: Aniline, Benzoic Acid, Benzyl Alcohol, 4-Chloroaniline, 3-Methylphenol, 4-Methylphenol.
EPA 1010A: NPW: Ignitability
EPA 6010C: NPW: Strontium; SCM: Strontium
EPA 8151A: NPW: 2,4-DB, Dicamba, Dichloroprop, MCPA, MCPP; SCM: 2,4-DB, Dichloroprop, MCPA, MCPP
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene, Isopropanol; SCM: Iodomethane (methyl iodide), Methyl methacrylate (soil); 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 9010: NPW: Amenable Cyanide Distillation, Total Cyanide Distillation
EPA 9038: NPW: Sulfate
EPA 9050A: NPW: Specific Conductance
EPA 9056: NPW: Chloride, Nitrate, Sulfate
EPA 9065: NPW: Phenols
EPA 9251: NPW: Chloride
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
EPA 8270D: NPW: Biphenyl; SCM: Biphenyl, Caprolactam
EPA 8270D-SIM Isotope Dilution: SCM: 1,4-Dioxane
SM 2540D: TSS
SM2540G: SCM: Percent Solids
EPA 1631E: SCM: Mercury
EPA 7474: SCM: Mercury
EPA 8081B: NPW and SCM: Mirex, Hexachlorobenzene.
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA 8270-SIM: NPW and SCM: Alkylated PAHs.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene, n-Butylbenzene, n-Propylbenzene, sec-Butylbenzene, tert-Butylbenzene.
Biological Tissue Matrix: ***8270D-SIM; 3050B; 3051A; 7471B; 8081B; 8082A; 6020A:*** Lead***; 8270D:*** bis(2-ethylhexyl)phthalate, Butylbenzylphthalate, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, Fluoranthene, Pentachlorophenol.

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

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 4/8/16

ALPHA Job #: L1610415

Project Information
Project Name: Newton garage
Project Location:
Project #: 2378
Project Manager: Nat Finsness
ALPHA Quote #:

Report Information - Data Deliverables
☐ ADEx ☒ EMAIL

Billing Information
☐ Same as Client info PO #:

Client Information
Client: Lord Assoc
Address: 206 Palmer St Somerset MA
Phone: 508 679 2002 #1010
Email: nfinsness@dardenm.com

Turn-Around Time
☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Regulatory Requirements & Project Information Requirements
☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

Low level vials frozen on 4-5-16 at 4pm

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☒ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	TOTAL LEAD	Sample Comments	TOTAL # BOTTLES
10415 -01	B-1/S1	4/5/16	2-	S	NLF	X				X				X		5
-02	B-2/S1					X				X				X		5
-03	B-3/S1					X				X				X		5
-04	B-4/S3									X	X			X		5
-05	B-6/S3									X	X			X		5
-06	B-1/MW	4/8	10-	GW	NLF	X				X						5
-07	B-2/MW		10:10			X				X						5
-08	B-3/MW		10:30			X				X						5
-09	B-4/MW		10:30							X	X					5
-10	B-7/MW		10:25							X	X					5
						Container Type				V				A	V	
						Preservative				B				B	B	

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	4/8/16 1:30	AAL	4/8/16 1575
	4/8/16 1735		4/8/16 1735

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 4/8/16

ALPHA Job #: L1610415

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Project Information
Project Name: Newton garage
Project Location:
Project #: 2378
Project Manager: Nat Finsness
ALPHA Quote #:

Report Information - Data Deliverables
☐ ADEx ☒ EMAIL

Billing Information
☐ Same as Client info PO #:

Client Information
Client: Lord Assoc
Address: 206 Palmer St Somerset MA
Phone: 508 679 2002 #1010
Email: nfinsness@dardenm.com

Turn-Around Time
☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Regulatory Requirements & Project Information Requirements
☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

ANALYSIS: VOC: ☒ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ RCRA5 ☐ MCP 14 ☐ RCRA8 ☐ RCP 15 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; TOTAL LEAD

SAMPLE INFO
Filtration ☐ Field ☐ Lab to do
Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	TOTAL LEAD	Sample Comments	TOTAL # BOTTLES
10415 -01	B-1/S1	4/5/16	2-	S	NCF	X				X				X		5
-02	B-2/S1					X				X				X		5
-03	B-3/S1					X				X				X		5
-04	B-4/S3									X	X			X		5
-05	B-6/S3									X	X			X		5
-06	B-1/MW	4/8	10-	GW	NF	X				X						5
-07	B-2/MW		10:10			X				X						5
-08	B-3/MW		10:30			X				X						5
-09	B-4/MW		10:30							X	X					5
-10	B-7/MW		10:25							X	X					5
	Container Type					V				A	V					
	Preservative					B				B	B					

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	4/8/16 1:30	AAL	4/8/16 1575
	4/8/16 1735		4/8/16 1735

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

4A

VOLATILE ORGANICS METHOD BLANK SUMMARY

SAMPLE NO.
WG884038-3BLANK

Lab Name: Alpha Analytical Labs

SDG No.: L1610415

Lab File ID: 0414N05 Lab Sample ID: WG884038-3

Date Analyzed: 04/14/16 Time Analyzed: 22:12

Instrument ID: CHARLIE.I

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	WG884038-1LCS	WG884038-1	0414N01	04/14/16 20:26
02	WG884038-2LCSD	WG884038-2	0414N02	04/14/16 20:52
03	B-1/S1	L1610415-01	0414N06	04/14/16 22:39
04	B-2/S1	L1610415-02	0414N07	04/14/16 23:05
05	B-3/S1	L1610415-03	0414N08	04/14/16 23:31

COMMENTS: _____

_____

FORM IV MCP-8260HLW-10 LOW

7A
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1610415

Instrument ID: Charlie.i Calibration Date: 14-APR-2016 Time: 20:26

Lab File ID: 0414N01 Init. Calib. Date(s): 06-MAR-2 06-MAR-2

Sample No: 8260 CCAL Init. Calib. Times : 13:10 16:14

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.23627	.29679	.1	26	20	F
chloromethane	100	110	.1	10	20	
vinyl chloride	.23717	.2557	.1	8	20	
bromomethane	.12349	.13621	.1	10	20	
chloroethane	100	129	.1	29	20	F
trichlorofluoromethane	.21638	.29388	.1	36	20	F
ethyl ether	.14907	.13043	.05	-13	20	
1,1,-dichloroethene	.20245	.23878	.1	18	20	
carbon disulfide	.78992	.75865	.1	-4	20	
methylene chloride	.25352	.29099	.1	15	20	
acetone	.07206	.08108	.1	13	20	F
trans-1,2-dichloroethene	.23593	.2711	.1	15	20	
methyl tert butyl ether	.71804	.77233	.1	8	20	
Diisopropyl Ether	.79686	.83146	.05	4	20	
1,1-dichloroethane	.45304	.49289	.2	9	20	
Ethyl-Tert-Butyl-Ether	.80132	.83277	.05	4	20	
cis-1,2-dichloroethene	.26186	.29662	.1	13	20	
2,2-dichloropropane	.34163	.3669	.05	7	20	
bromochloromethane	.11588	.14505	.05	25	20	F
chloroform	.43463	.48094	.2	11	20	
carbontetrachloride	.28473	.32974	.1	16	20	
tetrahydrofuran	.0883	.09442	.05	7	20	
1,1,1-trichloroethane	.35093	.39874	.1	14	20	
2-butanone	.12365	.13888	.1	12	20	
1,1-dichloropropene	.3152	.3664	.05	16	20	
benzene	.98601	1.0952	.5	11	20	
Tertiary-Amyl Methyl Ether	.72692	.7564	.05	4	20	
1,2-dichloroethane	.33728	.36972	.1	10	20	
trichloroethene	.25233	.28839	.2	14	20	
dibromomethane	.15086	.173	.05	15	20	
1,2-dichloropropane	.25329	.27686	.1	9	20	
bromodichloromethane	.32565	.34447	.2	6	20	
1,4-dioxane	.00324	.00367	.05	13	20	F
cis-1,3-dichloropropene	.39512	.43618	.2	10	20	
toluene	.86686	.8522	.4	-2	20	
4-methyl-2-pentanone	.11135	.10958	.1	-2	20	
tetrachloroethene	.33458	.36532	.2	9	20	
trans-1,3-dichloropropene	.50915	.48293	.1	-5	20	

FORM VII MCP-8260HLW-10

7A
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1610415

Instrument ID: Charlie.i Calibration Date: 14-APR-2016 Time: 20:26

Lab File ID: 0414N01 Init. Calib. Date(s): 06-MAR-2 06-MAR-2

Sample No: 8260 CCAL Init. Calib. Times : 13:10 16:14

Compound	RRF	RRF	MIN RRF	%D	MAX %D
1,1,2-trichloroethane	.2674	.26931	.1	1	20
chlorodibromomethane	.33764	.32998	.1	-2	20
1,3-dichloropropane	.55388	.55252	.05	0	20
1,2-dibromoethane	.30099	.30353	.1	1	20
2-hexanone	.26367	.24485	.1	-7	20
chlorobenzene	.93557	.95091	.5	2	20
ethyl benzene	1.6401	1.6225	.1	-1	20
1,1,1,2-tetrachloroethane	.31826	.32473	.05	2	20
p/m xylene	.59296	.61955	.1	4	20
o xylene	.57093	.58794	.3	3	20
styrene	.9358	.97653	.3	4	20
bromoform	.44628	.41314	.1	-7	20
isopropylbenzene	3.0357	2.9108	.1	-4	20
bromobenzene	.74514	.74329	.05	0	20
n-propylbenzene	3.6746	3.5484	.05	-3	20
1,1,2,2,-tetrachloroethane	.91015	.81879	.3	-10	20
2-chlorotoluene	2.5595	2.3692	.05	-7	20
1,3,5-trimethybenzene	2.5925	2.4893	.05	-4	20
1,2,3-trichloropropane	.72838	.67656	.05	-7	20
4-chorotoluene	2.3764	2.2234	.05	-6	20
tert-butylbenzene	2.1163	2.0646	.05	-2	20
1,2,4-trimethylbenzene	2.6052	2.4923	.05	-4	20
sec-butylbenzene	3.2856	3.1969	.05	-3	20
p-isopropyltoluene	2.6638	2.6254	.05	-1	20
1,3-dichlorobenzene	1.4317	1.3943	.6	-3	20
1,4-dichlorobenzene	1.4552	1.4071	.5	-3	20
n-butylbenzene	2.7102	2.5508	.05	-6	20
1,2-dichlorobenzene	1.3425	1.3009	.4	-3	20
1,2-dibromo-3-chloropropane	.12709	.11496	.05	-10	20
hexachlorobutadiene	.50884	.51468	.05	1	20
1,2,4-trichlorobenzene	.95492	.95726	.2	0	20
naphthalene	2.3485	2.2641	.05	-4	20
1,2,3-trichlorobenzene	.87492	.89587	.05	2	20
dibromofluoromethane	.24953	.2561	.05	3	30
1,2-dichloroethane-d4	.30097	.27994	.05	-7	30
toluene-d8	1.3776	1.2527	.05	-9	30
4-bromofluorobenzene	1.0805	.99973	.05	-7	30

FORM VII MCP-8260HLW-10

4A

VOLATILE ORGANICS METHOD BLANK SUMMARY

SAMPLE NO.
WG883427-3BLANK

Lab Name: Alpha Analytical Labs

SDG No.: L1610415

Lab File ID: 0413B06 Lab Sample ID: WG883427-3

Date Analyzed: 04/13/16 Time Analyzed: 11:47

Instrument ID: VOA116.I

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	WG883427-1LCS	WG883427-1	0413B02	04/13/16 10:06
02	WG883427-2LCSD	WG883427-2	0413B03	04/13/16 10:31
03	B-1/MW	L1610415-06	0413B21	04/13/16 18:06
04	B-2/MW	L1610415-07	0413B22	04/13/16 18:31
05	B-3/MW	L1610415-08	0413B23	04/13/16 18:56

COMMENTS: _____

_____

page 1 of 1

FORM IV MCP-8260-10 LOW

7A
Volatile Organics CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1610415

Instrument ID: Voa116.i Calibration Date: 13-APR-2016 Time: 10:06

Lab File ID: 0413B02 Init. Calib. Date(s): 26-MAR-2 28-MAR-2

Sample No: ccv Init. Calib. Times : 18:33 06:37

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
dichlorodifluoromethane	.22719	.26401	.1	16	20	
chloromethane	.39011	.38051	.1	-2	20	
vinyl chloride	.26579	.25203	.1	-5	20	
bromomethane	.11051	.09758	.1	-12	20	
chloroethane	.17656	.14561	.1	-18	20	
trichlorofluoromethane	100	115	.1	15	20	
ethyl ether	.11645	.09235	.05	-21	20	F
1,1,-dichloroethene	.19506	.1984	.1	2	20	
carbon disulfide	.62339	.59586	.1	-4	20	
methylene chloride	.22719	.20523	.1	-10	20	
acetone	100	55.577	.1	-44	20	F
trans-1,2-dichloroethene	.22759	.21771	.1	-4	20	
methyl tert butyl ether	.5663	.46142	.1	-19	20	
Diisopropyl Ether	1.1594	.99605	.05	-14	20	
1,1-dichloroethane	.51677	.50361	.2	-3	20	
Ethyl-Tert-Butyl-Ether	.95884	.81816	.05	-15	20	
cis-1,2-dichloroethene	.25523	.24038	.1	-6	20	
2,2-dichloropropane	.39351	.45166	.05	15	20	
bromochloromethane	.09768	.09636	.05	-1	20	
chloroform	.3475	.35591	.2	2	20	
carbontetrachloride	.26554	.33009	.1	24	20	F
tetrahydrofuran	100	63.176	.05	-37	20	F
1,1,1-trichloroethane	.29866	.35503	.1	19	20	
2-butanone	100	56.496	.1	-44	20	F
1,1-dichloropropene	.25561	.26672	.05	4	20	
benzene	.80742	.76425	.5	-5	20	
Tertiary-Amyl Methyl Ether	.53353	.43589	.05	-18	20	
1,2-dichloroethane	.2788	.26098	.1	-6	20	
trichloroethene	.20696	.21189	.2	2	20	
dibromomethane	.10387	.09091	.05	-12	20	
1,2-dichloropropane	.27917	.25594	.1	-8	20	
bromodichloromethane	.2305	.22334	.2	-3	20	
1,4-dioxane	.00027	.0002	.05	-23	20	F
cis-1,3-dichloropropene	.33757	.28811	.2	-15	20	
toluene	.65558	.66179	.4	1	20	
4-methyl-2-pentanone	100	63.459	.1	-37	20	F
tetrachloroethene	.25806	.30406	.2	18	20	
trans-1,3-dichloropropene	.32418	.31842	.1	-2	20	

FORM VII MCP-8260-10

7A
CONTINUING CALIBRATION CHECK

Lab Name: Alpha Analytical Labs

SDG No.: L1610415

Instrument ID: Voa116.i Calibration Date: 13-APR-2016 Time: 10:06

Lab File ID: 0413B02 Init. Calib. Date(s): 26-MAR-2 28-MAR-2

Sample No: ccv Init. Calib. Times : 18:33 06:37

Compound	RRF	RRF	MIN RRF	%D	MAX %D	
1,1,2-trichloroethane	.1544	.13904	.1	-10	20	
chlorodibromomethane	.23126	.23643	.1	2	20	
1,3-dichloropropane	.31627	.29357	.05	-7	20	
1,2-dibromoethane	.17956	.16088	.1	-10	20	
2-hexanone	.1486	.09737	.1	-34	20	F
chlorobenzene	.69265	.73052	.5	5	20	
ethyl benzene	1.2148	1.3414	.1	10	20	
1,1,1,2-tetrachloroethane	.24628	.2729	.05	11	20	
p/m xylene	.46769	.50983	.1	9	20	
o xylene	.45094	.48123	.3	7	20	
styrene	.73516	.79255	.31	8	20	
bromoform	.24706	.24118	.1	-2	20	
isopropylbenzene	1.2086	1.3636	.1	13	20	
bromobenzene	.523	.54295	.05	4	20	
n-propylbenzene	2.6425	2.9666	.05	12	20	
1,1,2,2,-tetrachloroethane	.40312	.33784	.3	-16	20	
2-chlorotoluene	1.6962	1.8588	.05	10	20	
1,2,3-trichloropropane	.31918	.28374	.05	-11	20	
1,3,5-trimethybenzene	1.9452	2.1357	.05	10	20	
4-chorotoluene	1.6577	1.7761	.05	7	20	
tert-butylbenzene	1.6913	1.8006	.05	6	20	
1,2,4-trimethylbenzene	1.9523	2.1033	.05	8	20	
sec-butylbenzene	2.4904	2.7433	.05	10	20	
p-isopropyltoluene	2.0907	2.2489	.05	8	20	
1,3-dichlorobenzene	1.0339	1.1272	.6	9	20	
1,4-dichlorobenzene	1.0342	1.0988	.5	6	20	
n-butylbenzene	1.8672	2.0756	.05	11	20	
1,2-dichlorobenzene	.91068	.95103	.4	4	20	
1,2-dibromo-3-chloropropane	.05614	.04052	.05	-28	20	F
hexachlorobutadiene	.17618	.21627	.05	23	20	F
1,2,4-trichlorobenzene	.52623	.48043	.2	-9	20	
naphthalene	1.0654	.69584	.05	-35	20	F
1,2,3-trichlorobenzene	.42036	.32944	.05	-22	20	F
dibromofluoromethane	.25658	.25097	.05	-2	20	
1,2-dichloroethane-d4	.29308	.28091	.05	-4	20	
toluene-d8	1.2242	1.2271	.05	0	20	
4-bromofluorobenzene	.99179	.93939	.05	-5	20	

FORM VII MCP-8260-10

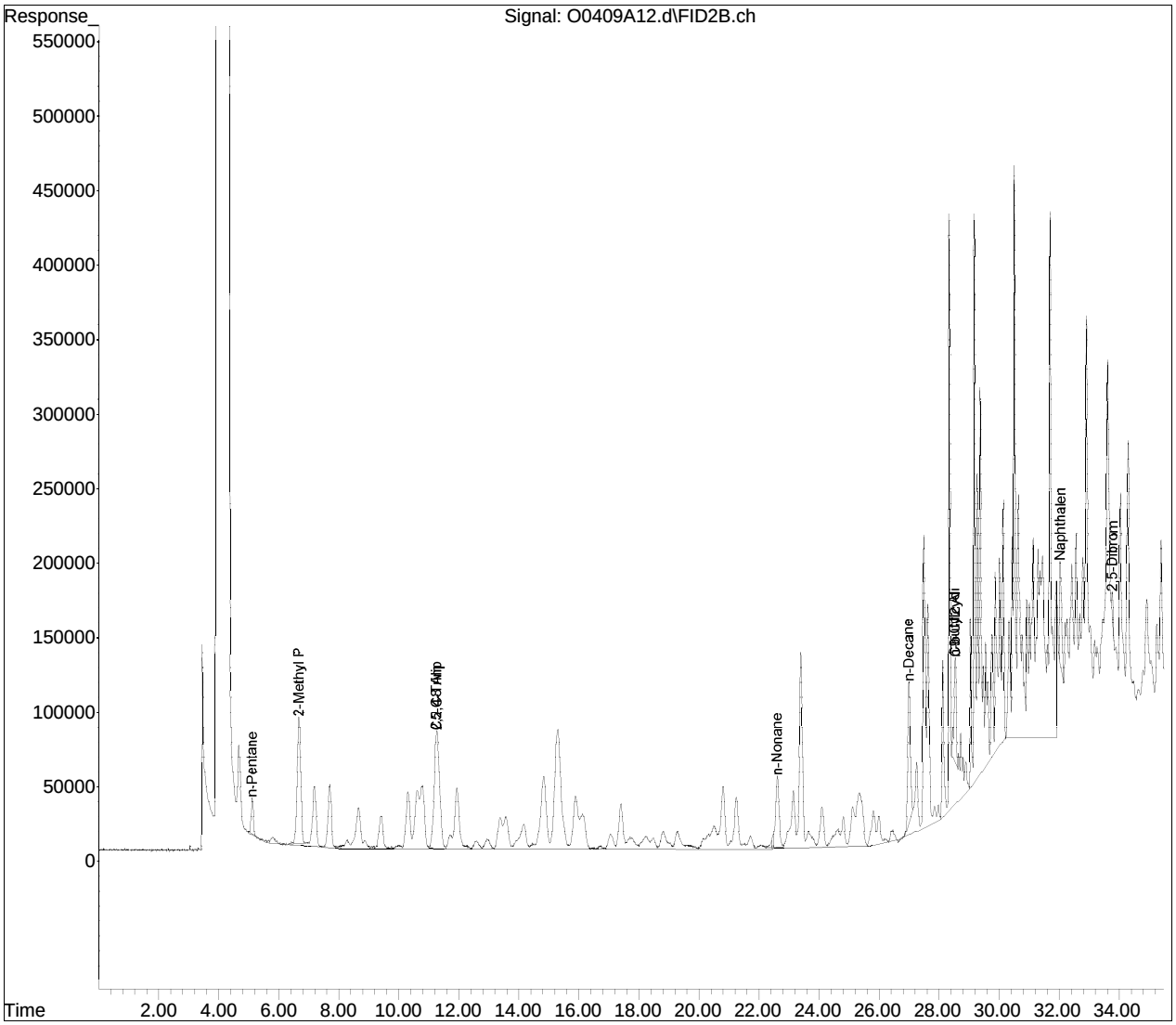
Quantitation Report (QT Reviewed)

Data Path : I:\OVPH\160412ali\
Data File : O0409A12.d
Signal(s) : FID2B.ch
Acq On : 12 Apr 2016 3:03 pm
Operator : OVPH:KD
Sample : l1610415-05D,41,16,10.3,.01
Misc : WG882797,ICAL11945
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Apr 13 10:30:16 2016
Quant Method : I:\OVPH\160412ali\vph-ali.m
Quant Title : VPH ALIPHATIC
QLast Update : Sat Jan 16 16:15:12 2016
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Sub List : Default - All compounds listed



ANALYTICAL REPORT

Lab Number:	L1616050
Client:	Lord Associates, Inc. 1506 Providence Highway - Suite 30 Norwood, MA 02062
ATTN:	Oliver Leek
Phone:	(781) 255-5554
Project Name:	NEWTON
Project Number:	2378
Report Date:	06/06/16

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1616050-01	LB-9, 10'-15'	SOIL	70 CRESCENT	05/24/16 10:00	05/26/16
L1616050-02	LB-10, 10'-15'	SOIL	70 CRESCENT	05/24/16 10:15	05/26/16
L1616050-03	LB-11, 5'-10'	SOIL	70 CRESCENT	05/24/16 10:40	05/26/16
L1616050-04	LB-13, 10'-15'	SOIL	70 CRESCENT	05/24/16 12:00	05/26/16
L1616050-05	LB-15, 10'-15'	SOIL	70 CRESCENT	05/24/16 12:15	05/26/16
L1616050-06	LB-17, 10'-15'	SOIL	70 CRESCENT	05/24/16 12:45	05/26/16
L1616050-07	LB-18, 10'-15'	SOIL	70 CRESCENT	05/24/16 13:00	05/26/16
L1616050-08	LB-19, 10'-15'	SOIL	70 CRESCENT	05/24/16 13:45	05/26/16
L1616050-09	LB-20, 10'-15'	SOIL	70 CRESCENT	05/24/16 14:30	05/26/16

Project Name:	NEWTON	**Lab Number:**	L1616050
Project Number:	2378	**Report Date:**	06/06/16

MADEP MCP Response Action Analytical Report Certification

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

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

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

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

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Case Narrative (continued)

MCP Related Narratives

VPH

In reference to question G:

L1616050-03, -04, -06, -07: One or more of the target analytes did not achieve the requested CAM reporting limits.

EPH

In reference to question H:

The surrogate recoveries for L1616050-07 are outside the acceptance criteria for o-terphenyl (293%) and 2-fluorobiphenyl (141%); however, the sample was not re-extracted due to coelution with obvious interferences. A copy of the chromatogram is included as an attachment to this report. The results are not considered to be biased.

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

Authorized Signature:  Lura L Troy

Title: Technical Director/Representative Date: 06/06/16

ORGANICS

PETROLEUM HYDROCARBONS

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-01	Date Collected:	05/24/16 10:00
Client ID:	LB-9, 10'-15'	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	06/03/16 23:20		
Analyst:	KD		
Percent Solids:	91%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	44.0		mg/kg	2.89	--	1
C9-C12 Aliphatics	18.9		mg/kg	2.89	--	1
C9-C10 Aromatics	10.4		mg/kg	2.89	--	1
C5-C8 Aliphatics, Adjusted	44.0		mg/kg	2.89	--	1
C9-C12 Aliphatics, Adjusted	8.44		mg/kg	2.89	--	1
Benzene	ND		mg/kg	0.116	--	1
Toluene	ND		mg/kg	0.116	--	1
Ethylbenzene	ND		mg/kg	0.116	--	1
p/m-Xylene	ND		mg/kg	0.116	--	1
o-Xylene	ND		mg/kg	0.116	--	1
Methyl tert butyl ether	ND		mg/kg	0.058	--	1
Naphthalene	ND		mg/kg	0.231	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	97		70-130
2,5-Dibromotoluene-FID	111		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-02	Date Collected:	05/24/16 10:15
Client ID:	LB-10, 10'-15'	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	06/03/16 20:40		
Analyst:	KD		
Percent Solids:	90%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	81.6		mg/kg	3.02	--	1
C9-C12 Aliphatics	31.9		mg/kg	3.02	--	1
C9-C10 Aromatics	10.8		mg/kg	3.02	--	1
C5-C8 Aliphatics, Adjusted	81.6		mg/kg	3.02	--	1
C9-C12 Aliphatics, Adjusted	21.0		mg/kg	3.02	--	1
Benzene	ND		mg/kg	0.121	--	1
Toluene	ND		mg/kg	0.121	--	1
Ethylbenzene	ND		mg/kg	0.121	--	1
p/m-Xylene	0.124		mg/kg	0.121	--	1
o-Xylene	ND		mg/kg	0.121	--	1
Methyl tert butyl ether	ND		mg/kg	0.060	--	1
Naphthalene	ND		mg/kg	0.241	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	101		70-130
2,5-Dibromotoluene-FID	116		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-03	Date Collected:	05/24/16 10:40
Client ID:	LB-11, 5'-10'	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified
Matrix:	Soil	Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1	Extraction Date:	06/02/16 07:39
Analytical Date:	06/04/16 04:53	Cleanup Method1:	EPH-04-1
Analyst:	DV	Cleanup Date1:	06/02/16
Percent Solids:	89%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	357		mg/kg	7.32	--	1
C19-C36 Aliphatics	71.8		mg/kg	7.32	--	1
C11-C22 Aromatics	206		mg/kg	7.32	--	1
C11-C22 Aromatics, Adjusted	202		mg/kg	7.32	--	1
Naphthalene	0.370		mg/kg	0.366	--	1
2-Methylnaphthalene	1.77		mg/kg	0.366	--	1
Acenaphthylene	ND		mg/kg	0.366	--	1
Acenaphthene	ND		mg/kg	0.366	--	1
Fluorene	1.06		mg/kg	0.366	--	1
Phenanthrene	1.02		mg/kg	0.366	--	1
Anthracene	ND		mg/kg	0.366	--	1
Fluoranthene	ND		mg/kg	0.366	--	1
Pyrene	ND		mg/kg	0.366	--	1
Benzo(a)anthracene	ND		mg/kg	0.366	--	1
Chrysene	ND		mg/kg	0.366	--	1
Benzo(b)fluoranthene	ND		mg/kg	0.366	--	1
Benzo(k)fluoranthene	ND		mg/kg	0.366	--	1
Benzo(a)pyrene	ND		mg/kg	0.366	--	1
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.366	--	1
Dibenzo(a,h)anthracene	ND		mg/kg	0.366	--	1
Benzo(ghi)perylene	ND		mg/kg	0.366	--	1

Project Name: NEWTON
Lab Number: L1616050
Project Number: 2378
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-03	Date Collected:	05/24/16 10:40
Client ID:	LB-11, 5'-10'	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Extractable Petroleum Hydrocarbons - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	100		40-140
2-Fluorobiphenyl	81		40-140
2-Bromonaphthalene	85		40-140

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-03	D	Date Collected:	05/24/16 10:40
Client ID:	LB-11, 5'-10'		Date Received:	05/26/16
Sample Location:	70 CRESCENT		Field Prep:	Not Specified
Matrix:	Soil			
Analytical Method:	100,VPH-04-1.1			
Analytical Date:	06/04/16 03:20			
Analyst:	KD			
Percent Solids:	89%			

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	192		mg/kg	32.6	--	10
C9-C12 Aliphatics	468		mg/kg	32.6	--	10
C9-C10 Aromatics	288		mg/kg	32.6	--	10
C5-C8 Aliphatics, Adjusted	192		mg/kg	32.6	--	10
C9-C12 Aliphatics, Adjusted	171		mg/kg	32.6	--	10
Benzene	ND		mg/kg	1.30	--	10
Toluene	ND		mg/kg	1.30	--	10
Ethylbenzene	ND		mg/kg	1.30	--	10
p/m-Xylene	8.82		mg/kg	1.30	--	10
o-Xylene	ND		mg/kg	1.30	--	10
Methyl tert butyl ether	ND		mg/kg	0.652	--	10
Naphthalene	6.18		mg/kg	2.61	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	101		70-130
2,5-Dibromotoluene-FID	123		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-04	D	Date Collected:	05/24/16 12:00
Client ID:	LB-13, 10'-15'		Date Received:	05/26/16
Sample Location:	70 CRESCENT		Field Prep:	Not Specified
Matrix:	Soil			
Analytical Method:	100,VPH-04-1.1			
Analytical Date:	06/04/16 00:40			
Analyst:	KD			
Percent Solids:	84%			

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	439		mg/kg	17.5	--	5
C9-C12 Aliphatics	191		mg/kg	17.5	--	5
C9-C10 Aromatics	103		mg/kg	17.5	--	5
C5-C8 Aliphatics, Adjusted	439		mg/kg	17.5	--	5
C9-C12 Aliphatics, Adjusted	81.7		mg/kg	17.5	--	5
Benzene	ND		mg/kg	0.702	--	5
Toluene	ND		mg/kg	0.702	--	5
Ethylbenzene	2.64		mg/kg	0.702	--	5
p/m-Xylene	3.64		mg/kg	0.702	--	5
o-Xylene	ND		mg/kg	0.702	--	5
Methyl tert butyl ether	ND		mg/kg	0.351	--	5
Naphthalene	ND		mg/kg	1.40	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	93		70-130
2,5-Dibromotoluene-FID	98		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-06	D	Date Collected:	05/24/16 12:45
Client ID:	LB-17, 10'-15'		Date Received:	05/26/16
Sample Location:	70 CRESCENT		Field Prep:	Not Specified
Matrix:	Soil			
Analytical Method:	100,VPH-04-1.1			
Analytical Date:	06/04/16 02:00			
Analyst:	KD			
Percent Solids:	86%			

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1.3

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	240		mg/kg	28.3	--	10
C9-C12 Aliphatics	108		mg/kg	28.3	--	10
C9-C10 Aromatics	49.0		mg/kg	28.3	--	10
C5-C8 Aliphatics, Adjusted	240		mg/kg	28.3	--	10
C9-C12 Aliphatics, Adjusted	58.6		mg/kg	28.3	--	10
Benzene	ND		mg/kg	1.13	--	10
Toluene	ND		mg/kg	1.13	--	10
Ethylbenzene	ND		mg/kg	1.13	--	10
p/m-Xylene	ND		mg/kg	1.13	--	10
o-Xylene	ND		mg/kg	1.13	--	10
Methyl tert butyl ether	ND		mg/kg	0.566	--	10
Naphthalene	ND		mg/kg	2.26	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	93		70-130
2,5-Dibromotoluene-FID	119		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-07	D	Date Collected:	05/24/16 13:00
Client ID:	LB-18, 10'-15'		Date Received:	05/26/16
Sample Location:	70 CRESCENT		Field Prep:	Not Specified
Matrix:	Soil			
Analytical Method:	100,VPH-04-1.1			
Analytical Date:	06/04/16 23:18			
Analyst:	KD			
Percent Solids:	81%			

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1.6:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	1320		mg/kg	235	--	40
C9-C12 Aliphatics	2600		mg/kg	235	--	40
C9-C10 Aromatics	1550		mg/kg	235	--	40
C5-C8 Aliphatics, Adjusted	1320		mg/kg	235	--	40
C9-C12 Aliphatics, Adjusted	761		mg/kg	235	--	40
Benzene	ND		mg/kg	9.42	--	40
Toluene	ND		mg/kg	9.42	--	40
Ethylbenzene	52.1		mg/kg	9.42	--	40
p/m-Xylene	203		mg/kg	9.42	--	40
o-Xylene	31.4		mg/kg	9.42	--	40
Methyl tert butyl ether	ND		mg/kg	4.71	--	40
Naphthalene	39.1		mg/kg	18.8	--	40

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	102		70-130
2,5-Dibromotoluene-FID	78		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-07	D	Date Collected:	05/24/16 13:00
Client ID:	LB-18, 10'-15'		Date Received:	05/26/16
Sample Location:	70 CRESCENT		Field Prep:	Not Specified
Matrix:	Soil		Extraction Method:	EPA 3546
Analytical Method:	98,EPH-04-1.1		Extraction Date:	06/02/16 07:39
Analytical Date:	06/06/16 12:41		Cleanup Method1:	EPH-04-1
Analyst:	SR		Cleanup Date1:	06/02/16
Percent Solids:	81%			

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	1520		mg/kg	16.3	--	2
C19-C36 Aliphatics	288		mg/kg	16.3	--	2
C11-C22 Aromatics	1370		mg/kg	16.3	--	2
C11-C22 Aromatics, Adjusted	1320		mg/kg	16.3	--	2
Naphthalene	6.98		mg/kg	0.814	--	2
2-Methylnaphthalene	27.0		mg/kg	0.814	--	2
Acenaphthylene	ND		mg/kg	0.814	--	2
Acenaphthene	4.93		mg/kg	0.814	--	2
Fluorene	5.16		mg/kg	0.814	--	2
Phenanthrene	6.38		mg/kg	0.814	--	2
Anthracene	0.995		mg/kg	0.814	--	2
Fluoranthene	ND		mg/kg	0.814	--	2
Pyrene	ND		mg/kg	0.814	--	2
Benzo(a)anthracene	ND		mg/kg	0.814	--	2
Chrysene	ND		mg/kg	0.814	--	2
Benzo(b)fluoranthene	ND		mg/kg	0.814	--	2
Benzo(k)fluoranthene	ND		mg/kg	0.814	--	2
Benzo(a)pyrene	ND		mg/kg	0.814	--	2
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.814	--	2
Dibenzo(a,h)anthracene	ND		mg/kg	0.814	--	2
Benzo(ghi)perylene	ND		mg/kg	0.814	--	2

Project Name: NEWTON **Lab Number:** L1616050

Project Number: 2378 **Report Date:** 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-07	D	Date Collected:	05/24/16 13:00
Client ID:	LB-18, 10'-15'		Date Received:	05/26/16
Sample Location:	70 CRESCENT		Field Prep:	Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Extractable Petroleum Hydrocarbons - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	73		40-140
o-Terphenyl	**293**	Q	40-140
2-Fluorobiphenyl	**141**	Q	40-140
2-Bromonaphthalene	86		40-140

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-08	Date Collected:	05/24/16 13:45
Client ID:	LB-19, 10'-15'	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	06/03/16 22:00		
Analyst:	KD		
Percent Solids:	89%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1:1 +/- 25%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	38.4		mg/kg	2.96	--	1
C9-C12 Aliphatics	17.3		mg/kg	2.96	--	1
C9-C10 Aromatics	6.06		mg/kg	2.96	--	1
C5-C8 Aliphatics, Adjusted	38.4		mg/kg	2.96	--	1
C9-C12 Aliphatics, Adjusted	11.2		mg/kg	2.96	--	1
Benzene	ND		mg/kg	0.119	--	1
Toluene	ND		mg/kg	0.119	--	1
Ethylbenzene	ND		mg/kg	0.119	--	1
p/m-Xylene	ND		mg/kg	0.119	--	1
o-Xylene	ND		mg/kg	0.119	--	1
Methyl tert butyl ether	ND		mg/kg	0.059	--	1
Naphthalene	ND		mg/kg	0.237	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	100		70-130
2,5-Dibromotoluene-FID	121		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID:	L1616050-09	Date Collected:	05/24/16 14:30
Client ID:	LB-20, 10'-15'	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified
Matrix:	Soil		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	06/03/16 19:52		
Analyst:	KD		
Percent Solids:	84%		

Quality Control Information

Condition of sample received:	Satisfactory
Sample Temperature upon receipt:	Received on Ice
Were samples received in methanol?	Covering the Soil
Methanol ratio:	1.6:1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		mg/kg	5.48	--	1
C9-C12 Aliphatics	ND		mg/kg	5.48	--	1
C9-C10 Aromatics	ND		mg/kg	5.48	--	1
C5-C8 Aliphatics, Adjusted	ND		mg/kg	5.48	--	1
C9-C12 Aliphatics, Adjusted	ND		mg/kg	5.48	--	1
Benzene	ND		mg/kg	0.219	--	1
Toluene	ND		mg/kg	0.219	--	1
Ethylbenzene	ND		mg/kg	0.219	--	1
p/m-Xylene	ND		mg/kg	0.219	--	1
o-Xylene	ND		mg/kg	0.219	--	1
Methyl tert butyl ether	ND		mg/kg	0.110	--	1
Naphthalene	ND		mg/kg	0.439	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	126		70-130
2,5-Dibromotoluene-FID	113		70-130

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 06/03/16 10:31
Analyst: SR

Extraction Method: EPA 3546
Extraction Date: 06/02/16 07:39
Cleanup Method: EPH-04-1
Cleanup Date: 06/02/16

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 03,07 Batch: WG899735-1					
C9-C18 Aliphatics	ND		mg/kg	6.36	--
C19-C36 Aliphatics	ND		mg/kg	6.36	--
C11-C22 Aromatics	ND		mg/kg	6.36	--
C11-C22 Aromatics, Adjusted	ND		mg/kg	6.36	--
Naphthalene	ND		mg/kg	0.318	--
2-Methylnaphthalene	ND		mg/kg	0.318	--
Acenaphthylene	ND		mg/kg	0.318	--
Acenaphthene	ND		mg/kg	0.318	--
Fluorene	ND		mg/kg	0.318	--
Phenanthrene	ND		mg/kg	0.318	--
Anthracene	ND		mg/kg	0.318	--
Fluoranthene	ND		mg/kg	0.318	--
Pyrene	ND		mg/kg	0.318	--
Benzo(a)anthracene	ND		mg/kg	0.318	--
Chrysene	ND		mg/kg	0.318	--
Benzo(b)fluoranthene	ND		mg/kg	0.318	--
Benzo(k)fluoranthene	ND		mg/kg	0.318	--
Benzo(a)pyrene	ND		mg/kg	0.318	--
Indeno(1,2,3-cd)Pyrene	ND		mg/kg	0.318	--
Dibenzo(a,h)anthracene	ND		mg/kg	0.318	--
Benzo(ghi)perylene	ND		mg/kg	0.318	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	72		40-140
o-Terphenyl	65		40-140
2-Fluorobiphenyl	75		40-140
2-Bromonaphthalene	75		40-140

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 06/03/16 19:11
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 09 Batch: WG900696-3					
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--
Benzene	ND		mg/kg	0.107	--
Toluene	ND		mg/kg	0.107	--
Ethylbenzene	ND		mg/kg	0.107	--
p/m-Xylene	ND		mg/kg	0.107	--
o-Xylene	ND		mg/kg	0.107	--
Methyl tert butyl ether	ND		mg/kg	0.053	--
Naphthalene	ND		mg/kg	0.213	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	119		70-130
2,5-Dibromotoluene-FID	105		70-130

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 06/03/16 20:00
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01-04,06,08 Batch: WG900697-3					
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--
Benzene	ND		mg/kg	0.107	--
Toluene	ND		mg/kg	0.107	--
Ethylbenzene	ND		mg/kg	0.107	--
p/m-Xylene	ND		mg/kg	0.107	--
o-Xylene	ND		mg/kg	0.107	--
Methyl tert butyl ether	ND		mg/kg	0.053	--
Naphthalene	ND		mg/kg	0.213	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	88		70-130
2,5-Dibromotoluene-FID	109		70-130

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 06/04/16 10:49
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 07 Batch: WG900775-3					
C5-C8 Aliphatics	ND		mg/kg	2.67	--
C9-C12 Aliphatics	ND		mg/kg	2.67	--
C9-C10 Aromatics	ND		mg/kg	2.67	--
C5-C8 Aliphatics, Adjusted	ND		mg/kg	2.67	--
C9-C12 Aliphatics, Adjusted	ND		mg/kg	2.67	--
Benzene	ND		mg/kg	0.107	--
Toluene	ND		mg/kg	0.107	--
Ethylbenzene	ND		mg/kg	0.107	--
p/m-Xylene	ND		mg/kg	0.107	--
o-Xylene	ND		mg/kg	0.107	--
Methyl tert butyl ether	ND		mg/kg	0.053	--
Naphthalene	ND		mg/kg	0.213	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	80		70-130
2,5-Dibromotoluene-FID	99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 03,07 Batch: WG899735-2 WG899735-3								
C9-C18 Aliphatics	78		77		40-140	1		25
C19-C36 Aliphatics	84		89		40-140	6		25
C11-C22 Aromatics	83		77		40-140	8		25
Naphthalene	69		60		40-140	14		25
2-Methylnaphthalene	75		66		40-140	13		25
Acenaphthylene	74		65		40-140	13		25
Acenaphthene	75		66		40-140	13		25
Fluorene	79		71		40-140	11		25
Phenanthrene	83		76		40-140	9		25
Anthracene	83		77		40-140	8		25
Fluoranthene	86		81		40-140	6		25
Pyrene	88		83		40-140	6		25
Benzo(a)anthracene	83		78		40-140	6		25
Chrysene	81		76		40-140	6		25
Benzo(b)fluoranthene	86		82		40-140	5		25
Benzo(k)fluoranthene	84		78		40-140	7		25
Benzo(a)pyrene	76		72		40-140	5		25
Indeno(1,2,3-cd)Pyrene	78		74		40-140	5		25
Dibenzo(a,h)anthracene	61		58		40-140	5		25
Benzo(ghi)perylene	78		73		40-140	7		25
Nonane (C9)	58		52		30-140	11		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON

Project Number: 2378

Lab Number: L1616050

Report Date: 06/06/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 03,07 Batch: WG899735-2 WG899735-3								
Decane (C10)	67		62		40-140	8		25
Dodecane (C12)	72		69		40-140	4		25
Tetradecane (C14)	75		73		40-140	3		25
Hexadecane (C16)	78		78		40-140	0		25
Octadecane (C18)	82		84		40-140	2		25
Nonadecane (C19)	83		86		40-140	4		25
Eicosane (C20)	82		86		40-140	5		25
Docosane (C22)	81		84		40-140	4		25
Tetracosane (C24)	80		82		40-140	2		25
Hexacosane (C26)	80		83		40-140	4		25
Octacosane (C28)	81		84		40-140	4		25
Triacontane (C30)	81		83		40-140	2		25
Hexatriacontane (C36)	81		84		40-140	4		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	81		78		40-140
o-Terphenyl	81		73		40-140
2-Fluorobiphenyl	87		78		40-140
2-Bromonaphthalene	91		81		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON

Project Number: 2378

Lab Number: L1616050

Report Date: 06/06/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 09 Batch: WG900696-1 WG900696-2								
C5-C8 Aliphatics	72		74		70-130	3		25
C9-C12 Aliphatics	93		97		70-130	4		25
C9-C10 Aromatics	95		99		70-130	4		25
Benzene	83		86		70-130	3		25
Toluene	87		90		70-130	3		25
Ethylbenzene	89		92		70-130	3		25
p/m-Xylene	89		93		70-130	4		25
o-Xylene	92		95		70-130	3		25
Methyl tert butyl ether	79		80		70-130	2		25
Naphthalene	104		108		70-130	4		25
1,2,4-Trimethylbenzene	95		99		70-130	4		25
Pentane	**68**	Q	**69**	Q	70-130	3		25
2-Methylpentane	71		73		70-130	3		25
2,2,4-Trimethylpentane	78		80		70-130	3		25
n-Nonane	90		94		30-130	4		25
n-Decane	98		102		70-130	5		25
n-Butylcyclohexane	94		98		70-130	4		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON

Project Number: 2378

Lab Number: L1616050

Report Date: 06/06/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 09 Batch: WG900696-1 WG900696-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	115		121		70-130
2,5-Dibromotoluene-FID	101		107		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON

Project Number: 2378

Lab Number: L1616050

Report Date: 06/06/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-04,06,08 Batch: WG900697-1 WG900697-2								
C5-C8 Aliphatics	96		95		70-130	1		25
C9-C12 Aliphatics	110		110		70-130	0		25
C9-C10 Aromatics	94		94		70-130	0		25
Benzene	91		91		70-130	0		25
Toluene	93		92		70-130	0		25
Ethylbenzene	95		95		70-130	0		25
p/m-Xylene	94		94		70-130	0		25
o-Xylene	96		95		70-130	0		25
Methyl tert butyl ether	96		95		70-130	2		25
Naphthalene	93		90		70-130	3		25
1,2,4-Trimethylbenzene	93		94		70-130	0		25
Pentane	86		84		70-130	2		25
2-Methylpentane	98		98		70-130	0		25
2,2,4-Trimethylpentane	103		102		70-130	1		25
n-Nonane	108		107		30-130	1		25
n-Decane	110		109		70-130	1		25
n-Butylcyclohexane	114		113		70-130	1		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01-04,06,08 Batch: WG900697-1 WG900697-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	92		90		70-130
2,5-Dibromotoluene-FID	109		111		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON

Project Number: 2378

Lab Number: L1616050

Report Date: 06/06/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 07 Batch: WG900775-1 WG900775-2								
C5-C8 Aliphatics	87		92		70-130	5		25
C9-C12 Aliphatics	98		102		70-130	4		25
C9-C10 Aromatics	84		88		70-130	5		25
Benzene	83		87		70-130	5		25
Toluene	84		88		70-130	5		25
Ethylbenzene	86		90		70-130	5		25
p/m-Xylene	84		89		70-130	5		25
o-Xylene	86		91		70-130	5		25
Methyl tert butyl ether	89		93		70-130	5		25
Naphthalene	85		89		70-130	4		25
1,2,4-Trimethylbenzene	84		88		70-130	5		25
Pentane	78		82		70-130	5		25
2-Methylpentane	90		95		70-130	6		25
2,2,4-Trimethylpentane	92		97		70-130	5		25
n-Nonane	96		100		30-130	4		25
n-Decane	97		101		70-130	4		25
n-Butylcyclohexane	101		106		70-130	5		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 07 Batch: WG900775-1 WG900775-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	81		85		70-130
2,5-Dibromotoluene-FID	102		102		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID: L1616050-01
Client ID: LB-9, 10'-15'
Sample Location: 70 CRESCENT
Matrix: Soil

Date Collected: 05/24/16 10:00
Date Received: 05/26/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.5		%	0.100	NA	1	-	05/28/16 04:19	121,2540G	VB

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID: L1616050-02
Client ID: LB-10, 10'-15'
Sample Location: 70 CRESCENT
Matrix: Soil

Date Collected: 05/24/16 10:15
Date Received: 05/26/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.8		%	0.100	NA	1	-	05/28/16 04:19	121,2540G	VB

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID: L1616050-03
Client ID: LB-11, 5'-10'
Sample Location: 70 CRESCENT
Matrix: Soil

Date Collected: 05/24/16 10:40
Date Received: 05/26/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.1		%	0.100	NA	1	-	05/28/16 04:19	121,2540G	VB

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID: L1616050-04
Client ID: LB-13, 10'-15'
Sample Location: 70 CRESCENT
Matrix: Soil

Date Collected: 05/24/16 12:00
Date Received: 05/26/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.0		%	0.100	NA	1	-	05/28/16 04:19	121,2540G	VB

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID: L1616050-06
Client ID: LB-17, 10'-15'
Sample Location: 70 CRESCENT
Matrix: Soil

Date Collected: 05/24/16 12:45
Date Received: 05/26/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.8		%	0.100	NA	1	-	05/28/16 04:19	121,2540G	VB

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID: L1616050-07
Client ID: LB-18, 10'-15'
Sample Location: 70 CRESCENT
Matrix: Soil

Date Collected: 05/24/16 13:00
Date Received: 05/26/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.5		%	0.100	NA	1	-	05/28/16 04:19	121,2540G	VB

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID: L1616050-08
Client ID: LB-19, 10'-15'
Sample Location: 70 CRESCENT
Matrix: Soil

Date Collected: 05/24/16 13:45
Date Received: 05/26/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.3		%	0.100	NA	1	-	05/28/16 04:19	121,2540G	VB

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

SAMPLE RESULTS

Lab ID: L1616050-09
Client ID: LB-20, 10'-15'
Sample Location: 70 CRESCENT
Matrix: Soil

Date Collected: 05/24/16 14:30
Date Received: 05/26/16
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.5		%	0.100	NA	1	-	05/28/16 04:19	121,2540G	VB

Lab Duplicate Analysis
Batch Quality Control

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04,06-09 QC Batch ID: WG898655-1 QC Sample: L1616050-01 Client ID: LB-9, 10'-15'						
Solids, Total	90.5	91.9	%	2		20

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616050
Report Date: 06/06/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1616050-01A	Vial MeOH preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(28)
L1616050-01B	Glass 250ml/8oz unpreserved	A	N/A	4.4	Y	Absent	TS(7)
L1616050-02A	Vial MeOH preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(28)
L1616050-02B	Glass 250ml/8oz unpreserved	A	N/A	4.4	Y	Absent	TS(7)
L1616050-03A	Vial MeOH preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(28)
L1616050-03B	Glass 250ml/8oz unpreserved	A	N/A	4.4	Y	Absent	TS(7),EPH-DELUX-10(14)
L1616050-04A	Vial MeOH preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(28)
L1616050-04B	Glass 250ml/8oz unpreserved	A	N/A	4.4	Y	Absent	TS(7)
L1616050-05A	Vial MeOH preserved	A	N/A	4.4	Y	Absent	HOLD-VPH(28)
L1616050-05B	Glass 250ml/8oz unpreserved	A	N/A	4.4	Y	Absent	HOLD-VPH(28)
L1616050-06A	Vial MeOH preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(28)
L1616050-06B	Glass 250ml/8oz unpreserved	A	N/A	4.4	Y	Absent	TS(7)
L1616050-07A	Vial MeOH preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(28)
L1616050-07B	Glass 250ml/8oz unpreserved	A	N/A	4.4	Y	Absent	TS(7),EPH-DELUX-10(14)
L1616050-08A	Vial MeOH preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(28)
L1616050-08B	Glass 250ml/8oz unpreserved	A	N/A	4.4	Y	Absent	TS(7)
L1616050-09A	Vial MeOH preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(28)
L1616050-09B	Glass 250ml/8oz unpreserved	A	N/A	4.4	Y	Absent	TS(7)

*Values in parentheses indicate holding time in days

Project Name:	NEWTON	**Lab Number:**	L1616050
Project Number:	2378	**Report Date:**	06/06/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Report Format: Data Usability Report

Project Name:	NEWTON	**Lab Number:**	L1616050
Project Number:	2378	**Report Date:**	06/06/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

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

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Report Format: Data Usability Report

Project Name:	NEWTON	**Lab Number:**	L1616050
Project Number:	2378	**Report Date:**	06/06/16

REFERENCES

98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.

100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 524.2: 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, m/p-xylene, o-xylene
EPA 624: 2-Butanone (MEK), 1,4-Dioxane, tert-Amylmethyl Ether, tert-Butyl Alcohol, m/p-xylene, o-xylene
EPA 625: Aniline, Benzoic Acid, Benzyl Alcohol, 4-Chloroaniline, 3-Methylphenol, 4-Methylphenol.
EPA 1010A: NPW: Ignitability
EPA 6010C: NPW: Strontium; SCM: Strontium
EPA 8151A: NPW: 2,4-DB, Dicamba, Dichloroprop, MCPA, MCPP; SCM: 2,4-DB, Dichloroprop, MCPA, MCPP
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene, Isopropanol; SCM: Iodomethane (methyl iodide), Methyl methacrylate (soil); 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 9010: NPW: Amenable Cyanide Distillation, Total Cyanide Distillation
EPA 9038: NPW: Sulfate
EPA 9050A: NPW: Specific Conductance
EPA 9056: NPW: Chloride, Nitrate, Sulfate
EPA 9065: NPW: Phenols
EPA 9251: NPW: Chloride
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
EPA 8270D: NPW: Biphenyl; SCM: Biphenyl, Caprolactam
EPA 8270D-SIM Isotope Dilution: SCM: 1,4-Dioxane
SM 2540D: TSS
SM2540G: SCM: Percent Solids
EPA 1631E: SCM: Mercury
EPA 7474: SCM: Mercury
EPA 8081B: NPW and SCM: Mirex, Hexachlorobenzene.
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA 8270-SIM: NPW and SCM: Alkylated PAHs.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene, n-Butylbenzene, n-Propylbenzene, sec-Butylbenzene, tert-Butylbenzene.
Biological Tissue Matrix: ***8270D-SIM; 3050B; 3051A; 7471B; 8081B; 8082A; 6020A:*** Lead***; 8270D:*** bis(2-ethylhexyl)phthalate, Butylbenzylphthalate, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, Fluoranthene, Pentachlorophenol.

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

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

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

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

CHAIN OF CUSTODY PAGE 1 OF 1

8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 5/20/16 | ALPHA Job #: L1616050

Client Information
Client: Lord
Address: Norwood MA
Phone: 781 255 5554
Email: oleek@lordnv.com

Project Information
Project Name: Newton
Project Location: 70 Crescent
Project #: 2318
Project Manager: O. Leek
ALPHA Quote #:

Report Information - Data Deliverables
☒ ADEx ☒ EMAIL

Billing Information
☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements
☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Turn-Around Time
☒ Standard ☒ RUSH (only confirmed if pre-approved!)
Date Due:

Additional Project Information:

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2 | SVOC: ☐ ABN ☐ PAH | METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 | METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13 | EPH: ☐ Ranges & Targets ☐ Ranges Only | VPH: ☒ Ranges & Targets ☐ Ranges Only | ☐ PCB ☐ PEST | TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Sample Comments	TOTAL # BOTTLES
16050 01	LB-9, 10'-15'	5/24/16	10:00	S	OL		2
02	LB-10, 10'-15'		10:15				
03	LB-11, 5'-10'		10:40				
04	LB-13, 10'-15'		12:00				
05	LB-15, 10'-15'		12:15				
06	LB-17, 10'-15'		12:45				
07	LB-18, 10'-15'		1:00				
08	LB-19, 10'-15'		1:45				
09	LB-20, 10'-15'		2:30				

Container Type						A	V,A												
Preservative						A	F,A												

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	5/24/16 14:20		5/24/16 14:20
	5/24/16 16:15		5/24/16 16:15

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Date Rec'd in Lab: 5/26/16

ALPHA Job #: L1616050

Client Information

Client: Lord
Address: Norwood MA
Phone: 781 255 5554
Email: oleek@ [illegible].com

Additional Project Information:

Project Information

Project Name: Newton
Project Location: 70 Crescent
Project #: 2518
Project Manager: O. Leek
ALPHA Quote #:

Turn-Around Time

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

Date Due:

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program ________ Criteria ________

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☒ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do; Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	EPH: Ranges & Targets	VPH: Ranges & Targets	Sample Comments	TOTAL # BOTTLES
16050 01	LB-9, 10'-15'	5/24/16	10:00	S	OL		X		2
02	LB-10, 10'-15'	↓	10:15	↓	↓		↓		↓
03	LB-11 5'-10'	↓	10:40	↓	↓	X	↓		↓
04	LB-13, 10'-15'	↓	12:00	↓	↓		↓		↓
05	LB-15, 10'-15'	↓	12:15	↓	↓		↓		↓
06	LB-17, 10'-15'	↓	12:45	↓	↓		↓		↓
07	LB-18, 10'-15'	↓	1:00	↓	↓	X	↓		↓
08	LB-19, 10'-15'	↓	1:45	↓	↓		↓		↓
09	LB-20, 10'-15'	↓	2:30	↓	↓		↓		↓
Container Type						A	V,A		
Preservative						A	F,A		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	5/26/16 1420	[signature] AAL	5/26/16 14:20
[signature] AAL	5/26/16 16:15	[signature]	5/26/16 [illegible]

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

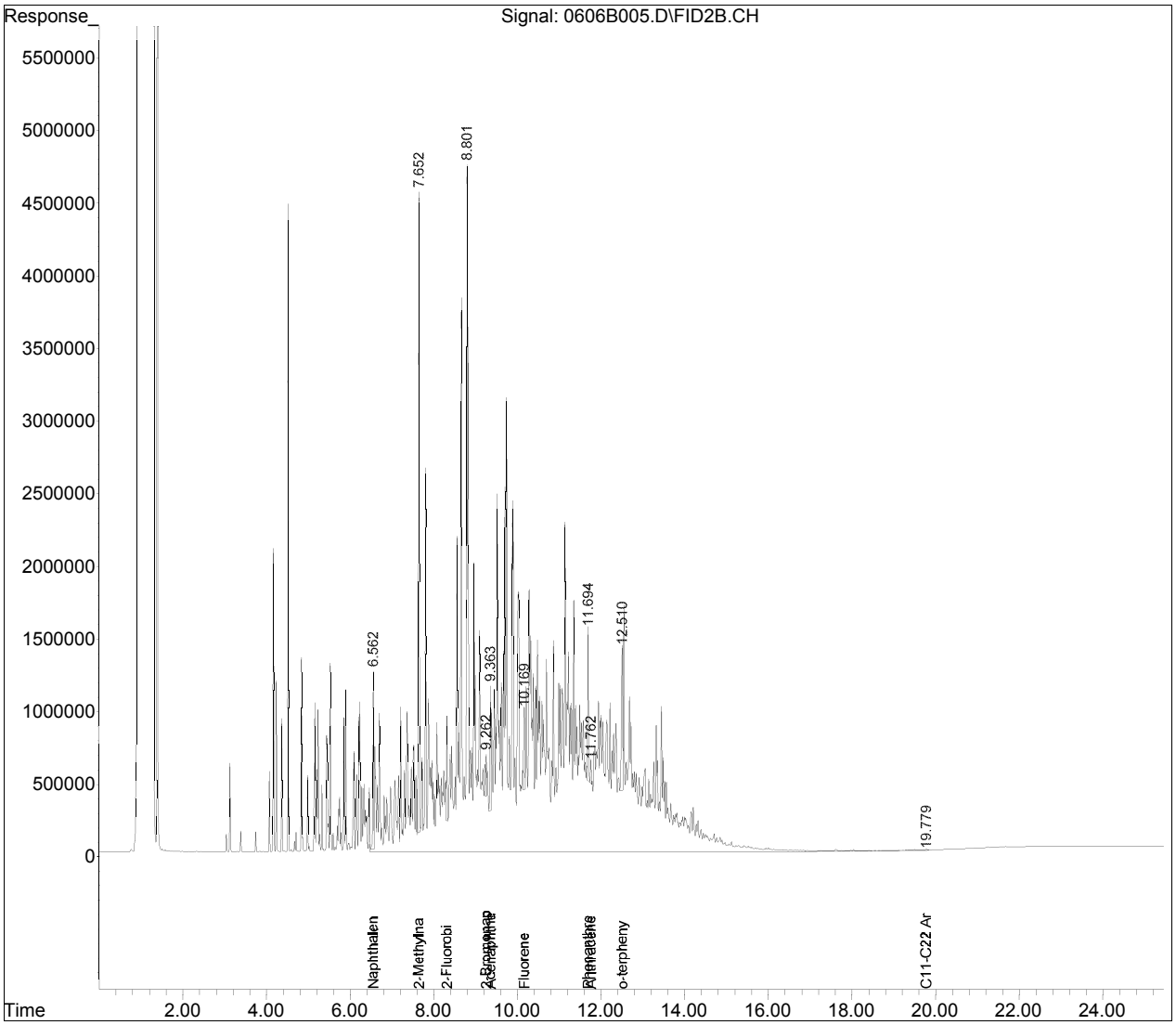
FORM NO: 01-01 (rev. 12-Mar-2012)

Sub List : Default - All compounds listed Reviewed)

Data Path : I:\Petro10\160606.SEC\
Data File : 0606B005.D
Signal(s) : FID2B.CH
Acq On : 06 Jun 2016 12:41 pm
Operator : Petro10b:sr
Sample : l1616050-07d,42,2,
Misc : wg901017,wg899735,ICAL12178
ALS Vial : 54 Sample Multiplier: 1

Integration File: events.e
Quant Time: Jun 06 15:08:50 2016
Quant Method : I:\Petro10\160606.SEC\MAARO160318.M
Quant Title : MA EPH Aromatic
QLast Update : Wed Jun 01 13:30:56 2016
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

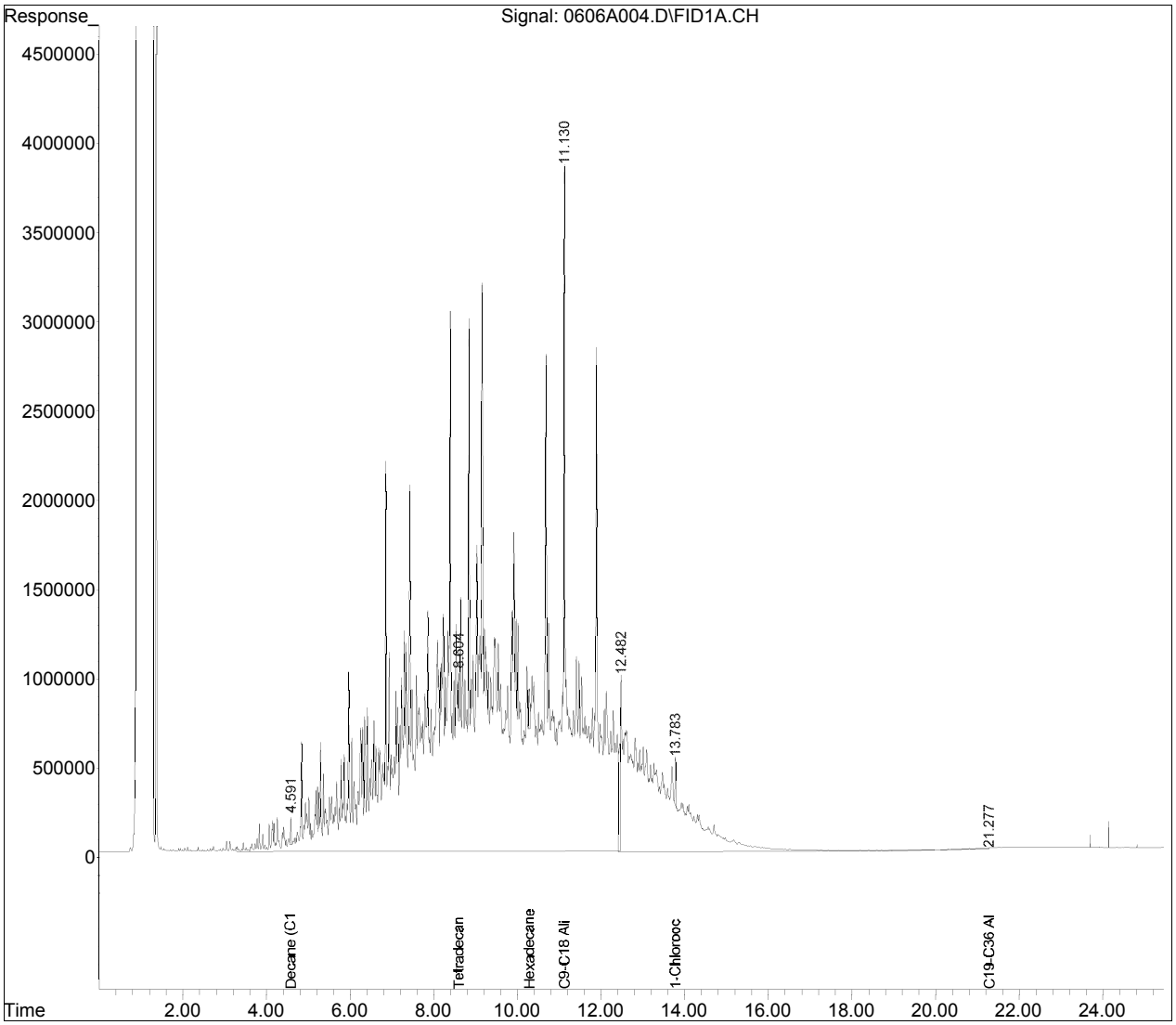


Sub List : Default - All compounds listed Reviewed)

Data Path : I:\Petro10\160606\
Data File : 0606A004.D
Signal(s) : FID1A.CH
Acq On : 06 Jun 2016 12:41 pm
Operator : Petro10a:sr
Sample : l1616050-07d,42,2,
Misc : wg901017,wg899735,ICAL12177
ALS Vial : 4 Sample Multiplier: 1

Integration File: events.e
Quant Time: Jun 06 15:03:34 2016
Quant Method : I:\Petro10\160606\MAALI160318.M
Quant Title : MA EPH Aliphatic
QLast Update : Sat Jun 04 13:50:05 2016
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :



ANALYTICAL REPORT

Lab Number:	L1616049
Client:	Lord Associates, Inc. 1506 Providence Highway - Suite 30 Norwood, MA 02062
ATTN:	Oliver Leek
Phone:	(781) 255-5554
Project Name:	NEWTON
Project Number:	2378
Report Date:	06/05/16

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616049
Report Date: 06/05/16

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1616049-01	LB-10/MW	WATER	70 CRESCENT	05/25/16 10:30	05/26/16
L1616049-02	LB-11/MW	WATER	70 CRESCENT	05/25/16 11:00	05/26/16
L1616049-03	LB-18/MW	WATER	70 CRESCENT	05/25/16 11:30	05/26/16
L1616049-04	LB-19/MW	WATER	70 CRESCENT	05/25/16 12:00	05/26/16
L1616049-05	LB-20/MW	WATER	70 CRESCENT	05/25/16 12:30	05/26/16

Project Name:	NEWTON	**Lab Number:**	L1616049
Project Number:	2378	**Report Date:**	06/05/16

MADEP MCP Response Action Analytical Report Certification

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

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

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES

For any questions answered "No", please refer to the case narrative section on the following page(s).

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

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616049
Report Date: 06/05/16

Case Narrative

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

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

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

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

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

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

Project Name:	NEWTON	**Lab Number:**	L1616049
Project Number:	2378	**Report Date:**	06/05/16

Case Narrative (continued)

MCP Related Narratives

VPH

In reference to question G:

L1616049-03: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

L1616049-02: The surrogate recovery is outside the acceptance criteria for 2,5-dibromotoluene-pid (144%); however, the sample was not re-analyzed due to coelution with obvious interferences. A copy of the chromatogram is included as an attachment to this report. The results are not considered to be biased.

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

Authorized Signature: Melissa Cripps

Title: Technical Director/Representative Date: 06/05/16

ORGANICS

PETROLEUM HYDROCARBONS

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616049
Report Date: 06/05/16

SAMPLE RESULTS

Lab ID:	L1616049-01	Date Collected:	05/25/16 10:30
Client ID:	LB-10/MW	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	06/03/16 00:29		
Analyst:	JM		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	198		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	198		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	77		70-130
2,5-Dibromotoluene-FID	95		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616049
Report Date: 06/05/16

SAMPLE RESULTS

Lab ID:	L1616049-02	Date Collected:	05/25/16 11:00
Client ID:	LB-11/MW	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	06/03/16 19:59		
Analyst:	KD		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	ND		ug/l	50.0	--	1
C9-C12 Aliphatics	784		ug/l	50.0	--	1
C9-C10 Aromatics	503		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	274		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	6.93		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	19.4		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	**144**	Q	70-130
2,5-Dibromotoluene-FID	120		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616049
Report Date: 06/05/16

SAMPLE RESULTS

Lab ID:	L1616049-03	D	Date Collected:	05/25/16 11:30
Client ID:	LB-18/MW		Date Received:	05/26/16
Sample Location:	70 CRESCENT		Field Prep:	Not Specified
Matrix:	Water			
Analytical Method:	100,VPH-04-1.1			
Analytical Date:	06/04/16 01:11			
Analyst:	KD			

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	2070		ug/l	1000	--	20
C9-C12 Aliphatics	9510		ug/l	1000	--	20
C9-C10 Aromatics	4750		ug/l	1000	--	20
C5-C8 Aliphatics, Adjusted	2070		ug/l	1000	--	20
C9-C12 Aliphatics, Adjusted	3310		ug/l	1000	--	20
Benzene	ND		ug/l	40.0	--	20
Toluene	ND		ug/l	40.0	--	20
Ethylbenzene	265		ug/l	40.0	--	20
p/m-Xylene	1020		ug/l	40.0	--	20
o-Xylene	173		ug/l	40.0	--	20
Methyl tert butyl ether	ND		ug/l	60.0	--	20
Naphthalene	117		ug/l	80.0	--	20

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	128		70-130
2,5-Dibromotoluene-FID	115		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616049
Report Date: 06/05/16

SAMPLE RESULTS

Lab ID:	L1616049-04	Date Collected:	05/25/16 12:00
Client ID:	LB-19/MW	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	06/03/16 18:41		
Analyst:	KD		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	670		ug/l	50.0	--	1
C9-C12 Aliphatics	307		ug/l	50.0	--	1
C9-C10 Aromatics	171		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	670		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	137		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	130		70-130
2,5-Dibromotoluene-FID	116		70-130

Project Name: NEWTON
Project Number: 2378
Lab Number: L1616049
Report Date: 06/05/16

SAMPLE RESULTS

Lab ID:	L1616049-05	Date Collected:	05/25/16 12:30
Client ID:	LB-20/MW	Date Received:	05/26/16
Sample Location:	70 CRESCENT	Field Prep:	Not Specified
Matrix:	Water		
Analytical Method:	100,VPH-04-1.1		
Analytical Date:	06/03/16 17:23		
Analyst:	KD		

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	93.8		ug/l	50.0	--	1
C9-C12 Aliphatics	ND		ug/l	50.0	--	1
C9-C10 Aromatics	ND		ug/l	50.0	--	1
C5-C8 Aliphatics, Adjusted	93.8		ug/l	50.0	--	1
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--	1
Benzene	ND		ug/l	2.00	--	1
Toluene	ND		ug/l	2.00	--	1
Ethylbenzene	ND		ug/l	2.00	--	1
p/m-Xylene	ND		ug/l	2.00	--	1
o-Xylene	ND		ug/l	2.00	--	1
Methyl tert butyl ether	ND		ug/l	3.00	--	1
Naphthalene	ND		ug/l	4.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	125		70-130
2,5-Dibromotoluene-FID	115		70-130

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616049
Report Date: 06/05/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 06/02/16 19:49
Analyst: JM

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG900428-3					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--
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	3.00	--
Naphthalene	ND		ug/l	4.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	88		70-130
2,5-Dibromotoluene-FID	104		70-130

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616049
Report Date: 06/05/16

Method Blank Analysis
Batch Quality Control

Analytical Method: 100,VPH-04-1.1
Analytical Date: 06/03/16 10:50
Analyst: KD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 02-05 Batch: WG900752-3					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--
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	3.00	--
Naphthalene	ND		ug/l	4.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	119		70-130
2,5-Dibromotoluene-FID	109		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON

Project Number: 2378

Lab Number: L1616049

Report Date: 06/05/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG900428-1 WG900428-2								
C5-C8 Aliphatics	96		98		70-130	2		25
C9-C12 Aliphatics	112		112		70-130	0		25
C9-C10 Aromatics	97		98		70-130	1		25
Benzene	95		96		70-130	1		25
Toluene	96		97		70-130	1		25
Ethylbenzene	98		99		70-130	1		25
p/m-Xylene	97		98		70-130	1		25
o-Xylene	98		100		70-130	1		25
Methyl tert butyl ether	100		102		70-130	2		25
Naphthalene	97		99		70-130	2		25
1,2,4-Trimethylbenzene	97		98		70-130	1		25
Pentane	87		87		70-130	0		25
2-Methylpentane	99		101		70-130	2		25
2,2,4-Trimethylpentane	102		104		70-130	2		25
n-Nonane	108		109		30-130	1		25
n-Decane	111		110		70-130	1		25
n-Butylcyclohexane	114		116		70-130	2		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616049
Report Date: 06/05/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG900428-1 WG900428-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	95		96		70-130
2,5-Dibromotoluene-FID	109		112		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON

Project Number: 2378

Lab Number: L1616049

Report Date: 06/05/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02-05 Batch: WG900752-1 WG900752-2								
C5-C8 Aliphatics	79		83		70-130	4		25
C9-C12 Aliphatics	89		93		70-130	4		25
C9-C10 Aromatics	118		123		70-130	4		25
Benzene	106		108		70-130	2		25
Toluene	109		111		70-130	2		25
Ethylbenzene	110		112		70-130	2		25
p/m-Xylene	111		114		70-130	3		25
o-Xylene	112		115		70-130	3		25
Methyl tert butyl ether	106		114		70-130	7		25
Naphthalene	105		108		70-130	3		25
1,2,4-Trimethylbenzene	118		123		70-130	4		25
Pentane	73		76		70-130	4		25
2-Methylpentane	80		83		70-130	4		25
2,2,4-Trimethylpentane	84		88		70-130	5		25
n-Nonane	85		90		30-130	5		25
n-Decane	91		96		70-130	4		25
n-Butylcyclohexane	93		98		70-130	5		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616049
Report Date: 06/05/16

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 02-05 Batch: WG900752-1 WG900752-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	104		108		70-130
2,5-Dibromotoluene-FID	96		98		70-130

Project Name: NEWTON
Project Number: 2378

Lab Number: L1616049
Report Date: 06/05/16

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal

Cooler	
A	Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1616049-01A	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)
L1616049-01B	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)
L1616049-02A	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)
L1616049-02B	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)
L1616049-03A	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)
L1616049-03B	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)
L1616049-04A	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)
L1616049-04B	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)
L1616049-05A	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)
L1616049-05B	Vial HCl preserved	A	N/A	4.4	Y	Absent	VPH-DELUX-10(14)

*Values in parentheses indicate holding time in days

Project Name:	NEWTON	**Lab Number:**	L1616049
Project Number:	2378	**Report Date:**	06/05/16

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

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

Terms

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

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

Data Qualifiers

A	- Spectra identified as "Aldol Condensation Product".
B	- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Report Format: Data Usability Report

Project Name:	NEWTON	**Lab Number:**	L1616049
Project Number:	2378	**Report Date:**	06/05/16

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

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

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

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

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

Report Format: Data Usability Report

Project Name:	NEWTON	**Lab Number:**	L1616049
Project Number:	2378	**Report Date:**	06/05/16

REFERENCES

100 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, July 2010.

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 524.2: 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, m/p-xylene, o-xylene
EPA 624: 2-Butanone (MEK), 1,4-Dioxane, tert-Amylmethyl Ether, tert-Butyl Alcohol, m/p-xylene, o-xylene
EPA 625: Aniline, Benzoic Acid, Benzyl Alcohol, 4-Chloroaniline, 3-Methylphenol, 4-Methylphenol.
EPA 1010A: NPW: Ignitability
EPA 6010C: NPW: Strontium; SCM: Strontium
EPA 8151A: NPW: 2,4-DB, Dicamba, Dichloroprop, MCPA, MCPP; SCM: 2,4-DB, Dichloroprop, MCPA, MCPP
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene, Isopropanol; SCM: Iodomethane (methyl iodide), Methyl methacrylate (soil); 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Pentachloronitrobenzene, 1-Methylnaphthalene, Dimethylnaphthalene,1,4-Diphenylhydrazine.
EPA 9010: NPW: Amenable Cyanide Distillation, Total Cyanide Distillation
EPA 9038: NPW: Sulfate
EPA 9050A: NPW: Specific Conductance
EPA 9056: NPW: Chloride, Nitrate, Sulfate
EPA 9065: NPW: Phenols
EPA 9251: NPW: Chloride
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
EPA 8270D: NPW: Biphenyl; SCM: Biphenyl, Caprolactam
EPA 8270D-SIM Isotope Dilution: SCM: 1,4-Dioxane
SM 2540D: TSS
SM2540G: SCM: Percent Solids
EPA 1631E: SCM: Mercury
EPA 7474: SCM: Mercury
EPA 8081B: NPW and SCM: Mirex, Hexachlorobenzene.
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA 8270-SIM: NPW and SCM: Alkylated PAHs.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene, n-Butylbenzene, n-Propylbenzene, sec-Butylbenzene, tert-Butylbenzene.
Biological Tissue Matrix: ***8270D-SIM; 3050B; 3051A; 7471B; 8081B; 8082A; 6020A:*** Lead***; 8270D:*** bis(2-ethylhexyl)phthalate, Butylbenzylphthalate, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, Fluoranthene, Pentachlorophenol.

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

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 5/26/16

ALPHA Job #: L1616049 L1615[illegible]

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Project Information
- Project Name: Newton
- Project Location: 70 Crescent
- Project #: 2378
- Project Manager: O Leek
- ALPHA Quote #:

Report Information - Data Deliverables
- ☒ ADEx ☐ EMAIL

Billing Information
- ☒ Same as Client info
- PO #:

Client Information
- Client: Lord
- Address: Norwood MA
- Phone: 781 255 5554
- Email: oleek@lordeN.com

Turn-Around Time
- ☒ Standard ☐ RUSH (only confirmed if pre-approved!)
- Date Due:

Regulatory Requirements & Project Information Requirements
- ☒ Yes ☐ No MA MCP Analytical Methods
- ☐ Yes ☒ No CT RCP Analytical Methods
- ☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
- ☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
- ☐ Yes ☒ No NPDES RGP
- ☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

ANALYSIS
- VOC: ☐ 8260 ☐ 624 ☐ 524.2
- SVOC: ☐ ABN ☐ PAH
- METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
- METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
- EPH: ☐ Ranges & Targets ☐ Ranges Only
- VPH: ☒ Ranges & Targets ☐ Ranges Only
- ☐ PCB ☐ PEST
- TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
- *Filtration*: ☐ Field ☐ Lab to do
- *Preservation*: ☐ Lab to do

Sample Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VPH: Ranges & Targets	TOTAL # BOTTLES
L1616049 01	LB-10/MW	5/25/16	10:30	GW	OL	X	2
02	LB-11/MW		11:00				
03	LB-18/BMW		11:30				
04	LB-19/MW		12:00				
05	LB-20/MW		12:30				
	Container Type					V	
	Preservative					B	

Container Type
P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

Preservative
A= None, B= HCl, C= HNO_3, D= H_2SO_4, E= NaOH, F= MeOH, G= $NaHSO_4$, H = $Na_2S_2O_3$, I= Ascorbic Acid, J = NH_4Cl, K= Zn Acetate, O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature] ARK	5/26/16 14:30	[signature] ARK	5/26/16 14:30
[signature]	5/26/16 16:15	[signature]	5/26/16 16K

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

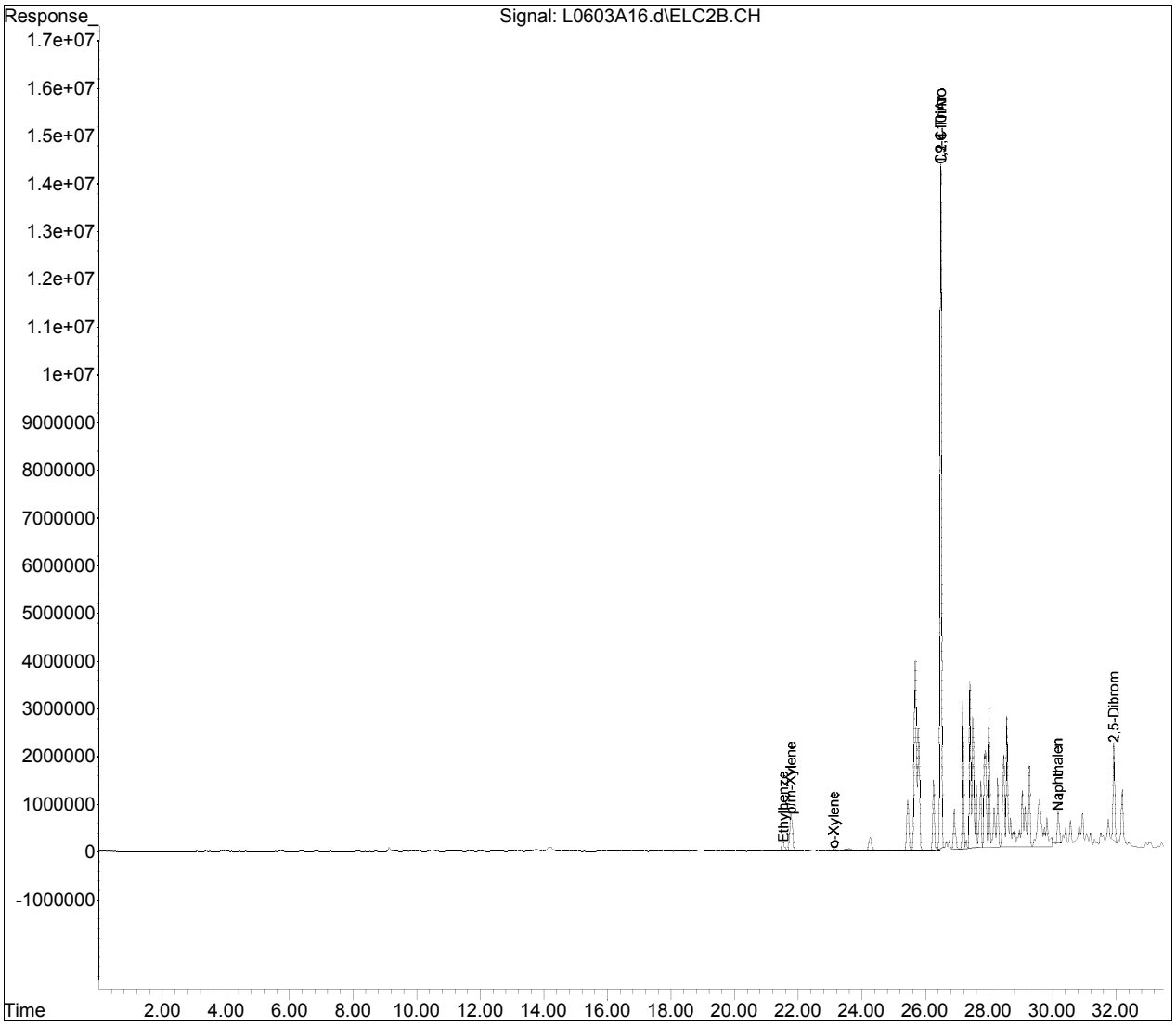
Quantitation Report (QT Reviewed)

Data Path : I:\LVPH\160603aro\
Data File : L0603A16.d
Signal(s) : ELC2B.CH
Acq On : 03 Jun 2016 7:59 pm
Operator : LVPH:KD
Sample : l1616049-02,41,5
Misc : WG900752,ICAL12438
ALS Vial : 0 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Jun 04 12:11:28 2016
Quant Method : I:\LVPH\160603aro\vph-aro.m
Quant Title : VPH AROMATIC
QLast Update : Tue May 17 11:39:34 2016
Response via : Initial Calibration
Integrator: ChemStation 6890 Scale Mode: Large solvent peaks clipped

Volume Inj. :
Signal Phase :
Signal Info :

Sub List : Default - All compounds listed

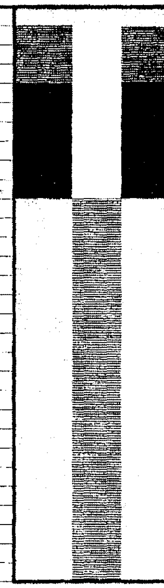


APPENDIX C

GEOPROBE BORING LOG

LORD ASSOCIATES	Site: Newton	Well No.: B-1 / MW)
	Job No:	Surface Elevation: N/A
	Drilling Co.: NEG 6620 DT track	Inspector: H.F.
Drill Method: Geoprobe	Well Diameter: 1.00-INCH I.D.	Instrument:
Sample Method: 5-foot macro	Water Level: ~9	Well Depth:
Date: 4/5/16	Logged By:	Checked by:

Sample No.	Recovery/ 48 Inches (in)	Headspace (ppm)	Depth (feet)	Soil Log	Materials Description (size, grade, color, moisture)	Well Construction
1	36	0	1		3" asph BR F-M sand w/ little gravel	4" dia Steel Road Box Surface Seal; Riser: Schedule 40 1.25" ID
			2		& cobble, dense, dry	
			3		granite trace coal	
			4		ash	
			5		in top	
2	48	0	6		6"	Screen: Schedule 40 10 Slot 1.25in. ID
			7			
			8			
			9	▼	wet at 9'	
			10		BR F sand & gravel, homo.	
3	36	0	11			
			12			
			13		↓	
			14			
			15		EB	
			16			
			17		1" PVC well set to	
			18		15' - 10' screen	
			19		sand, bent & flush grade	
			20			
			21			
			22			
			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			



Comments:

Well Location: See Site Plan

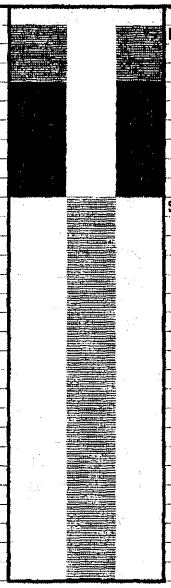
Concrete
Bentonite
Filter Sand
Native Soil
Screen
Water Level

GEOPROBE BORING LOG

LORD ASSOCIATES	Site:	Well No.: B-2/MW
	Job No:	Surface Elevation: N/A
	Drilling Co.:	Inspector:
Drill Method: Geoprobe	Well Diameter: 1.00-INCH I.D.	Instrument:
Sample Method: 5-foot macro	Water Level:	Well Depth:
Date:	Logged By:	Checked by:

Sample No.	Recovery/ 48 Inches (in)	Headspace (ppm)	Depth (feet)	Soil Log	Materials Description (size, grade, color, moisture)
1	48	0	1–5		SAP
2	44	0	6–10		Water @ 9' BAF Sand and gravel brown-gray coarse
3	50	0	11–15		EB
			16–20		SAP
			21–25		
			26–30		

Well Construction



Comments:

Well Location: See Site Plan

Concrete
Bentonite
Filter Sand
Native Soil
Screen
Water Level

GEOPROBE BORING LOG

LORD ASSOCIATES	Site:	Well No.: B3/MW
	Job No:	Surface Elevation: N/A
	Drilling Co.:	Inspector:
Drill Method: Geoprobe	Well Diameter: 1.00-INCH I.D.	Instrument:
Sample Method: 5-foot macro	Water Level:	Well Depth:
Date:	Logged By:	Checked by:

Sample No.	Recovery/ 48 Inches (in)	Headspace (ppm)	Depth (feet)	Soil Log	Materials Description (size, grade, color, moisture)	Well Construction
1	36	0	1–5		SAP	4" dia Steel Road Box; Surface Seal; Riser: Schedule 40 1.25" ID
2	36	0	6–10		Water@8' SAP	Screen: Schedule 40 10 Slot 1.25in. ID
3	48	0	11–15		EOB	
			16–20		SAP	
			21–25			
			26–30			

Comments:

Well Location: See Site Plan

Concrete
Bentonite
Filter Sand
Native Soil
Screen
Water Level

GEOPROBE BORING LOG

LORD ASSOCIATES	Site:	Well No.: B-4
	Job No:	Surface Elevation: N/A
	Drilling Co.:	Inspector:
Drill Method: Geoprobe	Well Diameter: 1.00-INCH I.D.	Instrument:
Sample Method: 5-foot macro	Water Level:	Well Depth:
Date:	Logged By:	Checked by:

Sample No.	Recovery/ 48 Inches (in)	Headspace (ppm)	Depth (feet)	Soil Log	Materials Description (size, grade, color, moisture)
1	36	0	1–5		SAP trace ash & coal @ 3' also.
2	24	0	6–10	▼	wet @ 7-8
3	24	182	11–15		GRAY F Sand & gravel aqd odor EOB @ 15' S.A.P.
			16–20		
			21–25		
			26–30		

Well Construction

- 4" dia Steel Road Box
- Surface Seal
- **Riser:** Schedule 40 1.25" ID
- **Screen:** Schedule 40 10 Slot 1.25in. ID

Comments:

Well Location: See Site Plan

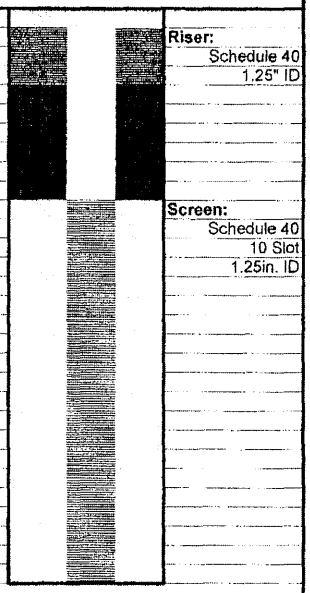
Concrete
Bentonite
Filter Sand
Native Soil
Screen
Water Level

GEOPROBE BORING LOG

LORD ASSOCIATES	Site:	Well No.: B-5
	Job No:	Surface Elevation: N/A
	Drilling Co.:	Inspector:
Drill Method: Geoprobe	Well Diameter: 1.00-INCH I.D.	Instrument:
Sample Method: 5-foot macro	Water Level:	Well Depth:
Date:	Logged By:	Checked by:

Sample No.	Recovery/ 48 Inches (in)	Headspace (ppm)	Depth (feet)	Soil Log	Materials Description (size, grade, color, moisture)
S1	36	0	1–5		SAP No visible
S2	36	0	6–10	↓	
S3	60	115	11–15		11.5 - GRAY - Gasoder 4' column 15.5 - BR F sand & gravel
		0	16–20		10 slot well.
			21–25		
			26–30		

Well Construction



Comments:

Well Location: See Site Plan

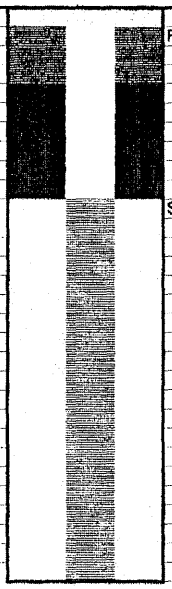
Concrete
Bentonite
Filter Sand
Native Soil
Screen
Water Level

GEOPROBE BORING LOG

LORD ASSOCIATES	Site:	Well No.: B5
	Job No:	Surface Elevation: N/A
	Drilling Co.:	Inspector:
Drill Method: Geoprobe	Well Diameter: 1.00-INCH I.D.	Instrument:
Sample Method: 5-foot macro	Water Level:	Well Depth:
Date:	Logged By:	Checked by:

Sample No.	Recovery/ 48 Inches (in)	Headspace (ppm)	Depth (feet)	Soil Log	Materials Description (size, grade, color, moisture)
S-1	36	0	1–5		trace mottling noted @ 3'
S2	48	0	6–10	▼	wet @ 7'
S3	60	400	11–15		END OF BORING No well
			16–20		
			21–25		
			26–30		

Well Construction



Comments:

Well Location: See Site Plan

Concrete
Bentonite
Filter Sand
Native Soil
Screen
Water Level

GEOPROBE BORING LOG

LORD ASSOCIATES	Site:	Well No.: B7 MW
	Job No:	Surface Elevation: N/A
	Drilling Co.:	Inspector:
Drill Method: Geoprobe	Well Diameter: 1.00-INCH I.D.	Instrument:
Sample Method: 5-foot macro	Water Level:	Well Depth:
Date:	Logged By:	Checked by:

Sample No.	Recovery/ 48 Inches (in)	Headspace (ppm)	Depth (feet)	Soil Log	Materials Description (size, grade, color, moisture)	Well Construction
N/A			1–5		DRIVE 2" CASING TO 15' - INSTALLED WELL	4" dia Steel Road Box; Surface Seal; Riser: Schedule 40 1.25" ID
			6–10			Screen: Schedule 40 10 Slot 1.25in. ID
			11–15			
			16–20			
			21–25			
			26–30			

Comments:

Well Location: See Site Plan

Concrete
Bentonite
Filter Sand
Native Soil
Screen
Water Level

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SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-8**
WELL: LB-8/MW

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	NA
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	NA
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	8'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-8, 0-5'	80%	0-5'	0	Sandy gravel FILL	
5.0 – 10.0	LB-8, 5-10'	80%	5-10'	115	Fine to medium SAND with some gravel, wet at 8 feet with petroleum odor	▽
10.0 – 15.0	LB-8, 10-15'	60%	10-15'	11	Coarse wet SAND and gravel	
					BOTTOM OF BORING AT 15'	

TERMS

Proportion Definition	
trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

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SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-9**
WELL: LB-9/MW

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	NA
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	NA
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	8'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-9, 0-5'	80%	0-5'	0	Sandy gravel FILL	
5.0 – 10.0	LB-9, 5-10'	70%	5-10'	22	Fine to medium SAND with some gravel, wet at 8 feet.	▽
10.0 – 15.0	LB-9, 10-15'	60%	10-15'	199	Coarse wet SAND and gravel with petroleum odor	
15.0					BOTTOM OF BORING AT 15'	

TERMS

Proportion	Definition
trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

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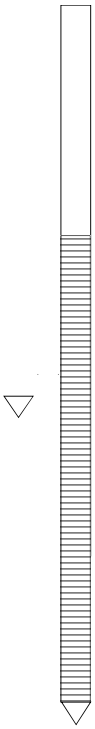
SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-10**
WELL: LB-10/MW

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	5'
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	10'
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	9'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-10, 0-5'	90%	0-5'	0	Sandy gravel FILL to 3 feet, then fine to medium sand.	
5.0 – 10.0	LB-10, 5-10'	70%	5-10'	0	Fine to medium SAND with some gravel, wet at 9 feet.	
10.0 – 15.0	LB-10, 10-15'	60%	10-15'	115	Wet gray SAND and gravel with petroleum odor	
					BOTTOM OF BORING AT 15'	

TERMS

Proportion Definition

trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

SAND PACKED AROUND SCREEN, WELL GROUTED FROM 2-4'. PORTLAND CEMENT USED TO SEAL ROADBOX AT SURFACE.

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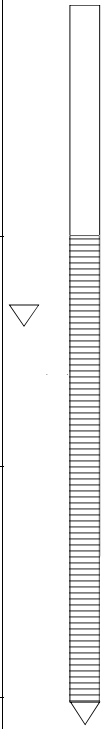
SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-11**
WELL: LB-11/MW

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	5'
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	10'
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	7'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-11, 0-5'	80%	0-5'	0	Sandy gravel FILL.	
5.0 – 10.0	LB-11, 5-10'	70%	5-10'	260	Gray fine to medium SAND, wet at 7 feet with petro odor.	
10.0 – 15.0	LB-11, 10-15'	80%	10-15'	53	Wet coarse SAND and gravel with petroleum odor	
					BOTTOM OF BORING AT 15'	



TERMS

Proportion Definition

trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

SAND PACKED AROUND SCREEN, WELL GROUTED FROM 2-4'. PORTLAND CEMENT USED TO SEAL ROADBOX AT SURFACE.

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SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-12**
NA

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	NA
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	NA
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	7.5'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0	LB-12, 0-5'	80%	0-5'	0	Sandy gravel FILL.	
5.0	LB-12, 5-10'	90%	5-10'	14	Fine to medium SAND and gravel, wet at 7.5 feet,	▽
10.0	LB-12, 10-15'	60%	10-15'	28	Wet coarse SAND and gravel	
15.0					BOTTOM OF BORING AT 15'	

TERMS

Proportion	Definition
trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

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SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-13**
NA

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	NA
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	NA
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	8'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0	LB-13, 0-5'	80%	0-5'	0	Sandy gravel FILL.	
5.0	LB-13, 5-10'	80%	5-10'	1.1	Fine to coarse SAND and gravel, wet at 8 feet,	▽
10.0	LB-13, 10-15'	60%	10-15'	172	Wet gray fine to coarse SAND and gravel with petro odor	
15.0					BOTTOM OF BORING AT 15'	
26.0						

TERMS

Proportion	Definition
trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

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SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-14**
NA

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	NA
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	NA
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	9'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-14, 0-5'	80%	0-5'	0	Sandy gravel FILL.	
5.0 – 10.0	LB-14, 5-10'	60%	5-10'	1.2	Fine to coarse SAND and gravel, wet at 9 feet,	▽
10.0 – 15.0	LB-14, 10-15'	60%	10-15'	49	Wet fine to coarse SAND and gravel with gray layer from 13.5-14.5 feet that has petro odor	
15.0 – 26.0					BOTTOM OF BORING AT 15'	

TERMS

Proportion	Definition
trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

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SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-15**
NA

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	NA
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	NA
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	8'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0	LB-15, 0-5'	90%	0-5'	0	Sandy gravel FILL.	
5.0	LB-15, 5-10'	80%	5-10'	0	Fine to coarse SAND and gravel, wet at 8 feet,	▽
10.0	LB-15, 10-15'	70%	10-15'	190	We fine to coarse SAND and gravel, gray layer from 14.5-15 feet with petor odor	
15.0					BOTTOM OF BORING AT 15'	

TERMS

Proportion	Definition
trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

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SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-16**
NA

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	NA
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	NA
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	9'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-16, 0-5'	70%	0-5'	0	Sandy gravel FILL.	
5.0 – 10.0	LB-16, 5-10'	70%	5-10'	0	Fine to coarse SAND and gravel, wet at 9 feet,	▽
10.0 – 15.0	LB-16, 10-15'	80%	10-15'	0	Wet fine to coarse SAND and gravel	
15.0 – 26.0					BOTTOM OF BORING AT 15'	

TERMS

Proportion	Definition
trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

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SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-17**
WELL: LB-17/MW

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	5'
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	10'
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	8.5'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-17, 0-5'	80%	0-5'	0	Sandy gravel FILL.	
5.0 – 10.0	LB-17, 5-10'	80%	5-10'	0	Fine to medium SAND, wet at 8.5.	
10.0 – 15.0	LB-17, 10-15'	80%	10-15'	0	Wet coarse SAND and gravel	
					BOTTOM OF BORING AT 15'	

TERMS

Proportion Definition

trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

SAND PACKED AROUND SCREEN, WELL GROUTED FROM 2-4'. PORTLAND CEMENT USED TO SEAL ROADBOX AT SURFACE.

Lord Associates, Inc.
Environmental Consulting & LSP Services
1506 Providence Highway
Suite 30
Norwood, MA 02062
Voice: 781.255.5554
Fax: 781.255.5535

SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-18**
WELL: LB-18/MW

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	5'
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	10'
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	8'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-18, 0-5'	80%	0-5'	0	Sandy gravel FILL.	
5.0 – 10.0	LB-18, 5-10'	60%	5-10'	0	Fine to medium SAND and gravel, wet at 8.	
10.0 – 15.0	LB-18, 10-15'	70%	10-15'	196	Wet coarse SAND and gravel with dark vein from 13.5 to 15 feet with strong petro odor	
					BOTTOM OF BORING AT 15'	

TERMS

Proportion	Definition
trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

SAND PACKED AROUND SCREEN, WELL GROUTED FROM 2-4'. PORTLAND CEMENT USED TO SEAL ROADBOX AT SURFACE.

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Fax: 781.255.5535

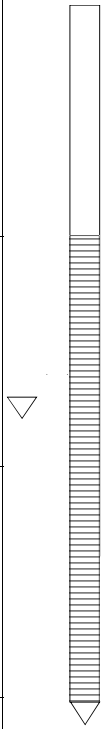
SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-19**
WELL: LB-19/MW

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	5'
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	10'
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	9'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-19, 0-5'	90%	0-5'	0	Fine to medium SAND and gravel	
5.0 – 10.0	LB-19, 5-10'	90%	5-10'	0	Fine to coarse SAND and gravel, wet at 9.	
10.0 – 15.0	LB-19, 10-15'	50%	10-15'	18	Wet medium to coarse SAND and gravel, gray from 14-15 feet with petro odor	
					BOTTOM OF BORING AT 15'	



TERMS

Proportion	Definition
trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

SAND PACKED AROUND SCREEN, WELL GROUTED FROM 2-4'. PORTLAND CEMENT USED TO SEAL ROADBOX AT SURFACE.

Lord Associates, Inc.
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1506 Providence Highway
Suite 30
Norwood, MA 02062
Voice: 781.255.5554
Fax: 781.255.5535

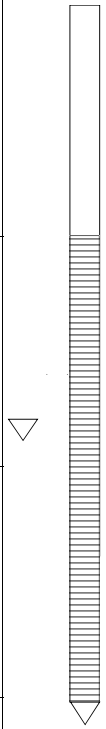
SOIL TEST BORING LOG & WELL COMPLETION REPORT

BORING: **LB-20**
WELL: LB-20/MW

CONTRACTOR:	New England GeoTech	**SITE LOCATION:**	70 Crescent Street	**WELL RISER:**	5'
DRILLER:	Hayes Rembijas	**PROJECT NO.:**	2378	**WELL SCREEN:**	10'
SUPERVISOR:	Oliver P. Leek	**START DATE:**	05/24/16	**OBSERVED DTW:**	9.5'
EQUIPMENT:	Geoprobe 6600	**FINISH DATE:**	05/24/16		

DIRECT-PUSH BORING & WELL COMPLETION LOG

DEPTH (FT)	SAMPLE ID	% RECOVERY	SAMPLE INTERVAL	PID READING ppm-v	SOIL DESCRIPTION	WELL COMPLETION
0.0 – 5.0	LB-20, 0-5'	90%	0-5'	0	Fine to medium SAND and gravel	
5.0 – 10.0	LB-20, 5-10'	90%	5-10'	0	Fine to coarse SAND and gravel, wet at 9.5.	
10.0 – 15.0	LB-20, 10-15'	50%	10-15'	18	Wet fine to coarse SAND and gravel,	
					BOTTOM OF BORING AT 15'	



TERMS

Proportion Definition

trace	0% - 10%
little	10% - 20%
some	20% - 35%
and	35% - 50%

NOTES

SAND PACKED AROUND SCREEN, WELL GROUTED FROM 2-4'. PORTLAND CEMENT USED TO SEAL ROADBOX AT SURFACE.

APPENDIX D

SAFETY DATA SHEET
Klozur® SP

SDS # : 7775-27-1-12
Revision date: 2015-05-01
Format: NA
Version 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Klozur® SP

Other means of identification

CAS-No 7775-27-1
Synonyms Sodium Peroxydisulfate; Disodium Peroxydisulfate; Peroxydisulfuric acid, disodium salt; Peroxydisulfuric acid, sodium salt

Recommended use of the chemical and restrictions on use

Recommended Use: In situ and ex situ chemical oxidation of contaminants and compounds of concern for environmental remediation applications

Restrictions on Use: No uses to be advised against were identified.

Manufacturer/Supplier

PeroxyChem LLC
2005 Market Street
Suite 3200
Philadelphia, PA 19103
Phone: +1 267/ 422-2400 (General Information)
E-Mail: sdsinfo@peroxychem.com

Emergency telephone number

For leak, fire, spill or accident emergencies, call:
1 800 / 424 9300 (CHEMTREC - U.S.A.)
1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)
1 303/ 389-1409 (Medical - U.S. - Call Collect)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Oxidizing Solids	Category 3

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Danger

Hazard Statements
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H319 - Causes serious eye irritation
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H302 - Harmful if swallowed
H272 - May intensify fire; oxidizer

Precautionary Statements - Prevention
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P285 - In case of inadequate ventilation wear respiratory protection
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P264 - Wash face, hands and any exposed skin thoroughly after handling
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P220 - Keep/Store away from clothing/combustible materials
P221 - Take any precaution to avoid mixing with combustibles

Precautionary Statements - Response
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/ attention
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
P330 - Rinse mouth
P370 + P378 - In case of fire: Use water for extinction

Precautionary Statements - Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Hazards not otherwise classified (HNOC)
No hazards not otherwise classified were identified.

Other Information

Risk of decomposition by heat or by contact with incompatible materials.

Unknown acute toxicity
0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula Na2O8S2 and $Na_2S_2O_8$

Chemical name	CAS-No	Weight %
Sodium Persulfate	7775-27-1	> 99

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

General Advice Remove from exposure, lie down. Show this material safety data sheet to the doctor in attendance.

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids intermittently. Consult a physician. If symptoms persist, call a physician.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Inhalation Remove from exposure, lie down. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth. Drink 1 or 2 glasses of water.

Most important symptoms and effects, both acute and delayed None known

Indication of immediate medical attention and special treatment needed, if necessary Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Water. Cool containers with flooding quantities of water until well after fire is out.

Unsuitable extinguishing media Do not use carbon dioxide or other gas filled fire extinguishers; they will have little effect on decomposing persulfate.

Specific Hazards Arising from the Chemical Decomposes under fire conditions to release oxygen that intensifies the fire.

Explosion data
Sensitivity to Mechanical Impact Not sensitive.
Sensitivity to Static Discharge Not sensitive.

Protective equipment and precautions for firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Keep off any unprotected persons. Avoid contact with the skin and the eyes. Avoid breathing dust. Wear personal protective equipment.

Other Never add other substances or combustible waste to product residues.

Environmental Precautions Prevent material from entering into soil, ditches, sewers, waterways, and/or groundwater. See Section 12, Ecological Information for more detailed information.

Methods for Containment Vacuum, shovel or pump waste into a drum and label contents for disposal. Avoid dust

formation. Store in closed container.

Methods for cleaning up Clean up spill area and treat as special waste. Dispose of waste as indicated in Section 13.

7. HANDLING AND STORAGE

Handling Wear personal protective equipment. Use only in area provided with appropriate exhaust ventilation. Avoid dust formation. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Avoid contact with skin and eyes. Avoid breathing dust. Remove and wash contaminated clothing before re-use. Reference to other sections.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat. Do not store near combustible materials. Avoid contamination of opened product. Keep away from food, drink and animal feedingstuffs. Avoid formation and deposition of dust.

Incompatible products Acids, alkalis, halides (fluorides, chlorides, bromides), combustible materials, reducing agents and organic compounds.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Sodium Persulfate 7775-27-1	TWA: 0.1 mg/m^3	-	-	-
Chemical name	**British Columbia**	**Quebec**	**Ontario TWAEV**	**Alberta**
Sodium Persulfate 7775-27-1	TWA: 0.1 mg/m^3	-	TWA: 0.1 mg/m^3	TWA: 0.1 mg/m^3

Appropriate engineering controls

Engineering measures Local exhaust ventilation w >90% efficiency.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Eye protection recommended. Chemical goggles consistent with EN 166 or equivalent.

Skin and Body Protection Wear suitable protective clothing. Protective shoes or boots.

Hand Protection Protective gloves: Neoprene gloves, Polyvinylchloride, Natural Rubber.

Respiratory Protection For dust, splash, mist or spray exposures wear a filtering mask.

Hygiene measures Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Wash hands before breaks and after shifts. Keep work clothes separate, remove contaminated clothing - launder after open handling of product.

General information Protective engineering solutions should be implemented and in use before personal protective equipment is considered.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance Crystalline solid
Physical State Solid
Color White
Odor odorless

Odor threshold	Not applicable
pH	6.0 (1% solution)
Melting point/freezing point	180 °C (Decomposes)
Boiling Point/Range	Decomposes upon heating
Flash point	Not flammable
Evaporation Rate	Not applicable
Flammability (solid, gas)	Not flammable
Flammability Limit in Air	Not applicable
Upper flammability limit:	
Lower flammability limit:	
Vapor pressure	6.07E-30 mm Hg at 25ºC
Vapor density	No information available
Density	2.59 g/cm³ (crystal density)
Specific gravity	No information available
Water solubility	575 g/l @ 25 °C
Solubility in other solvents	No information available
Partition coefficient	No information available (inorganic)
Autoignition temperature	No evidence of combustion up to 600 °C
Decomposition temperature	> 100 °C (assume)
Viscosity, kinematic	No information available (Solid)
Viscosity, dynamic	No information available
Explosive properties	Not explosive
Oxidizing properties	oxidizer
Molecular weight	238.1
VOC content (%)	Not applicable
Bulk density	1.12 g/cm³ (loose)

10. STABILITY AND REACTIVITY

Reactivity

Chemical Stability Stable.

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Heat Moisture

Incompatible materials Acids, alkalis, halides (fluorides, chlorides, bromides), combustible materials, reducing agents and organic compounds. .

Hazardous Decomposition Products Oxygen which supports combustion.

11. TOXICOLOGICAL INFORMATION

Product Information

Unknown acute toxicity	0% of the mixture consists of ingredient(s) of unknown toxicity
LD50 Oral	Sodium Persulfate: 895 mg/kg (rat) CAB-O-SIL: >5,000 mg/kg (rat)
LD50 Dermal	Sodium Persulfate: > 10 g/kg
LC50 Inhalation	Sodium Persulfate: >5.10 mg/L (4h) (rat) CAB-O-SIL: >2.08 mg/L (4h) (rat)

Sensitization Sodium Persulfate:. (Skin) May be sensitizing to allergic persons.

Information on toxicological effects

Symptoms No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Contains no ingredient listed as a carcinogen.

Mutagenicity No information available

Reproductive toxicity No information available.

STOT - single exposure No information available.
STOT - repeated exposure No information available.

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects

Sodium Persulfate (7775-27-1)				
Active Ingredient(s)	Duration	Species	Value	Units
Sodium Persulfate	96 h LC50	Rainbow trout	163	mg/L
Sodium Persulfate	48 h LC50	Daphnia magna	133	mg/L
Sodium Persulfate	96 h LC50	Grass shrimp	519	mg/L
Sodium Persulfate	72 h EC50	Algae Selenastrum capricornutum	116	mg/L

Persistence and degradability Biodegradability does not pertain to inorganic substances.

Bioaccumulation Does not bioaccumulate.

Mobility Dissociates into ions.

Other Adverse Effects None known.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.

Contaminated Packaging Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION

DOT

UN/ID no UN 1505
Proper Shipping Name SODIUM PERSULFATE
Hazard class 5.1
Packing Group III

TDG

UN/ID no UN 1505
Proper Shipping Name SODIUM PERSULFATE
Hazard class 5.1
Packing Group III

MEX

UN/ID no	UN 1505
Proper Shipping Name	SODIUM PERSULFATE
Hazard class	5.1
Packing Group	III

ICAO/IATA

UN/ID no	UN 1505
Proper Shipping Name	SODIUM PERSULFATE
Hazard class	5.1
Packing Group	III

IMDG/IMO

UN/ID no	UN 1505
Proper Shipping Name	SODIUM PERSULFATE
Hazard class	5.1
Packing Group	III

ADR/RID

UN/ID no	UN 1505
Proper Shipping Name	SODIUM PERSULFATE
Hazard class	5.1
Packing Group	III

ADN

Proper Shipping Name	SODIUM PERSULFATE
Hazard class	5.1
Packing Group	III

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

International Inventories

Component	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)	NZIoC (New Zealand)

Sodium Persulfate 7775-27-1 (> 99)	X	X	X	X	X	X	X	X	X

Mexico - Grade Slight risk, Grade 1

CANADA

WHMIS Hazard Class C - Oxidizing materials
D2B - Toxic materials

16. OTHER INFORMATION

NFPA	**Health Hazards** 2	**Flammability** 0	**Stability** 1	**Special Hazards** OX
HMIS	**Health Hazards** 2	**Flammability** 0	**Physical hazard** 0	**Special precautions** J

NFPA/HMIS Ratings Legend Special Hazards: OX = Oxidizer
Protection=J (Safety goggles, gloves, apron, combination dust and vapor respirator)

Revision date: 2015-05-01
Revision note Initial Release

Disclaimer

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Prepared By:

PeroxyChem

KLOZUR - Trademark of Peroxychem

End of Safety Data Sheet

APPENDIX E

HEALTH AND SAFETY PLAN
for
In-Situ Chemical Oxidation

Newton Parks & Recreation Property
70 Crescent Street
Newton, MA

_____

Prepared for:

City of Newton Public Buildings
52 Elliot Street
Newton, MA

Prepared by:

Lord Associates, Inc.
1506 Providence Highway, Suite 30
Norwood, MA 02062

October 17, 2016

SECTION 1 - INTRODUCTION

1.1 Introduction

The purpose of this Health and Safety Plan is to identify, evaluate and control health and safety hazards and to provide for emergency response for any accidents that may occur during proposed in-situ chemical oxidation (ISCO) at the site located at 70 Crescent Street property in Newton, MA.

Objectives of the document include but are not limited to the following:

- Regulations
- Organization/Administration
- Hazard Communication Training
- Medical Surveillance
- Exposure Monitoring
- Health and Safety Equipment
- Standard Operating Procedures
- Identification and evaluation of potential and unanticipated hazards
- Definition of levels of protection required for certain work activities
- Establishment of work zones
- Formation of emergency action plans
- Development of personnel training
- Development of decontamination procedures

Information and guidelines used to develop this Site Safety and Health Plan (HASP) are based upon the following documents:

1. NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards, A. D. Little, Inc., January 1981.

2. Dangerous Properties of Industrial Materials, Sax, 1979.

3. Toxic and Hazardous Industrial Chemicals Safety Manual, The International Technical Information Institute, 1979.

4. American National Standard Practices for Respiratory Protection, Z288.1-180, May 22, 1980.

5. Respiratory Protection: A Manual and Guideline, American Industrial Hygiene Association, 1st edition, 1980.

Lord Associates, Inc. views the Safety and Health Plan (HASP) as an important document that is a necessary component to the success of the proposed in-situ chemical oxidation activities. Every effort has been made to insure that the HASP shall be in compliance with applicable federal, state and local regulations and is consistent with the requirements of the Mid Island Service's commitment to personnel health and safety.

Sections 1.0 - 12.0 are the site-specific portions of the HASP. These sections are intended to be the working document for the site. The Standard Operating Procedures are, for the most part, general policies and procedures and are incorporated for reference.

The purpose and intent of the HASP is to ensure that the proposed site work is conducted in a safe manner. The program shall be directed at recognizing and dealing with the specific site hazards. Along with site personnel safety, a second major objective is to perform site operations in such a manner as to minimize the possibility of fire, explosion, or any unplanned or sudden release of hazardous waste contaminants into the environment that could adversely affect local receptors. The HASP has been developed to meet these essential objectives and promote the safe execution of this project.

The HASP shall be reviewed and may be modified throughout the site work to ensure flexibility and adaptability as changes occur and new situations develop. These changes shall be reviewed and approved by Lord Associates, Inc. Any changes to the plan shall be brought to the attention of those covered under the plan through additional training.

Several Standard Operating Procedures (SOPs) are attached to this HASP as references for preventing accidents and protecting personnel from injury and occupational illness for all operations having significant accident potential. They are required to be read and followed by all site personnel.

SECTION 2 - ORGANIZATION AND SAFETY RESPONSIBILITY

2.1 Introduction

Implementation of the comprehensive safety and health program is a line management responsibility. The HASP shall include a listing of key supervisory, management, and health/safety personnel, and a description of their specific responsibilities for implementation of the program. Clear lines of authority, consistent with good operating policies and procedures, have been established for enforcing safety compliance. The qualifications of the site safety and health personnel are included in the appendices. The following health and safety organization shall be used.

2.2 Line Management

Lord Associates, Inc., shall monitor the project for environmental hazards and soil handling, and shall have overall responsibility for field implementation of the HASP.

2.3 Site Safety and Health Officer (SSHO)

As the Project Manager for Lord Associates, Inc., Oliver P. Leek shall serve as the person with the responsibility of monitoring site health and safety for employees of Lord Associates, Inc. The SSHO shall be familiar with all matters pertinent to this project. The SSHO shall be responsible for coordinating the enforcement of the contents of the HASP. Private contractors employed to perform any work associated with this project shall be given a copy of the Health and Safety Plan and shall be required to appoint their own SSHO.

Oliver P. Leek is also to be empowered to deny access to the site or restrict the presence of any persons (under his control); in addition, the aforementioned also has the authority to cease activities on-site if and when conditions present uncontrollable risks to site personnel and off-site receptors. The SSHO shall also be responsible for coordinating, conducting and documenting any required training activities, performing and maintaining record keeping duties, and carrying out any other duties specified by site management. The SSHO shall be the main contact for any on-site emergency situation.

In addition, the SSHO shall monitor work locations for employee health and safety purposes, as well as document any employee exposures and/or substance releases that may occur through the course of this project. The SSHO shall be trained and experienced to be proficient in the proper use and limitations of all equipment to be used. The SSHO shall be responsible for operating the equipment, assisting in implementing the HASP, and performing any other duties assigned to them.

2.5 Training and Site Briefing

The SSHO shall keep records of all training and proof of training for all site personnel and site visitors.

1. Training Requirements

All site personnel are required to provide proof of having training which meets the initial 40-hour and 8-hour refresher training for hazardous waste site workers of 29 CFR 1910.120. This includes the three days of supervised on-site training.

2. Site Safety and Health Briefing

Personnel covered by this HASP shall be required to read and understand this document. Prior to *any* on-site activity, all site personnel and visitors shall be required to attend a site safety and health briefing from the SSHO or other qualified person. This is applicable to all personnel located within the Exclusion Zone, Contaminant Reduction Zone, and Support Zone who are involved with site work. Periodic updates shall be undertaken by the SSHO when operational or site conditions change or when designated refreshers are so

warranted. The topics to be covered by the training include the entire contents of the HASP with emphasis on emergency procedures, areas of restricted access, methods of decontamination, and general safety.

A safety meeting shall be held for all site personnel and shall be conducted by Project field supervisor prior to commencement of the exploratory test excavations.

2.6 Medical Surveillance

All on-site personnel shall have a medical examination meeting the requirements of 29 CFR 1910.120 prior to commencement of work. The results shall be evaluated by a board certified physician to determine if the employees are physically fit for the work to be performed including the use of respirators. The physician shall specify content of the exams and frequency using the guidelines of the referenced documentation. Work at this site is *not* expected to involve the use of respirators. The responsibility for medical examinations of personnel not employed by Lord Associates, Inc. lies with the subcontractor or the client employing said individuals.

2.6 First Aid

First aid kits shall be available at the site in the Support Zone that shall be established near the work area. If necessary, an ambulance service shall be called for transport of severely injured persons to the hospital. At least one person trained in first aid/CPR shall be available on-site at all times when workers are present.

2.7 Emergency Medical Care

Emergency medical care services are available at Newton Wellesley Hospital – 2014 Washington Street, Newton, MA - (617) 243-6000 - 1.4 mi South. Section 11.11 contains information regarding emergency transport to the hospital.

2.8 Accident Reporting and Record keeping

Lord Associates, Inc. shall immediately notify the Mid Island Service Limited Partnership of any accident/incident and maintain a record of the incident.

2.9 Daily Safety Inspections

Since site work is scheduled to occur over the course of one day only, the safety inspection shall be a continuous, ongoing process.

SECTION 3 - SITE CHARACTERIZATION AND ANALYSIS

3.1 Site Information

The work site shall be the property located at 70 Crescent Street in Newton, MA. This Site is currently a Parks & Recreation building and yard. Proposed work at the Site includes the remediation of soil and groundwater using in-situ chemical oxidation (ISCO).

3.2 HASP Application and Coverage

This HASP applies to the evaluation and handling of contaminated groundwater and/or soils that may be encountered during the course of the ongoing work.

3.3 Chemical Health Hazards

Site characterization data reveals that the following hazardous materials may be encountered on the site:

- Petroleum hydrocarbon (i.e., waste oil, gasoline, petroleum constituents) contaminated soil/groundwater

Exposure risks for the work are primarily through respiratory exposure through inhalation of volatile compounds and through dermal contact. Ambient air monitoring at the site shall be conducted with portable direct reading instruments. If concentrations exceed the upgrade criteria for the contaminants, a decision shall be made to change the level of protection according to the criteria described in Section 6.

3.4 Safety Hazards

Caution should be exercised when near heavy machinery on the site. Workers shall be advised of all known hazards at the site prior to startup and thereafter as needed. They shall be encouraged to be observant of site safety and health hazards and to report them to their supervisors and/or the SSHO. and caution should be used. Due to the nature of the Site work, there will be various trip hazards present.

3.5 Unanticipated Hazards

The following conditions and situations are not anticipated at this site and therefore safety procedures appropriate to them are not included in this HASP: the need to handle or open drums or containers that may contain hazardous substances; activities requiring personal protective equipment more extensive than Level C (described in Section 6); and field work in non-illuminated areas during periods of darkness. If any of these conditions are encountered, the SSHO is to immediately contact representatives of the City of Newton (the RP).

3.6 Biological Hazards - none

3.7 Site Inspections by the SSHO

At least every thirty minutes during field operations, the SSHO shall visually inspect all site activities for compliance with this Plan. The results of this inspection shall be recorded in a log. Deficiencies in compliance shall be corrected upon discovery and noted in the log.

SECTION 4 - SITE CONTROL

Site control zones shall be established in order to reduce hazards to the smallest area possible. The SSHO shall ensure that each employee has the proper personal protective equipment for the area or zone in which he or she is to perform work.

4.1 Exclusion Zone

The Exclusion Zones are defined as any area on the site that is within 10 feet of soil intrusive activities. In general, all trenching, excavation and excavated materials storage areas shall be considered within the Exclusion Zone. The required protective equipment for use by personnel working or entering the exclusion areas is specified in Section 7. Eating, drinking or smoking is prohibited in this area. The Exclusion Zone shall be expanded by the SSHO if site conditions warrant this action.

4.2 Support Zone (Non-Contaminated)

The Support Zone encompasses the remainder of the site. The Support Zone contains the following: lunch area, break areas, support operations and storage and maintenance facilities. Eating, drinking, smoking, and chewing are permitted only in this area. Access to the Support Zone shall be restricted to site personnel and invited visitors since construction activities may pose a physical hazard.

SECTION 5 - SITE ACTIVITIES

The proposed scope of services has been described in Section 1.0. During the course of site activities, various tasks shall be undertaken that may result in the exposure of project personnel to potentially hazardous materials. The following is a brief description of task activities that shall be conducted during the course of this project:

5.1 Daily Site Work

During daily site work, the SSHO shall enter the work areas to verify existing conditions and monitor for the presence of airborne contaminants. Direct reading field instruments shall be used to determine baseline levels of suspected exposure contaminants. No site work should result in confined space situations. Regardless, in the event a confined space situation arises, monitoring for the presence of an oxygen deficient and explosive atmosphere shall be undertaken.

Air monitoring with a photo-ionization detector (PID) shall be required to determine variations in organic compound levels. Work shall be conducted in a manner to minimize inhalation or direct contact exposure to hazardous contaminants.

Dust from excavation work is not anticipated to pose any adverse condition, but if so, shall be controlled to avoid creation of nuisance dust fallout in the surrounding area. Water may be used for dust control only if it does not create hazardous or objectionable conditions such as flooding or pollution.

5.2 Hazard Assessment

The following is a summary listing of potential hazard conditions as identified in accordance with the previously referenced tasks.

HAZARD EVALUATION

Task	Low	Medium	High
1 – ISCO		X	

SITE OPERATING PROCEDURES/SAFETY GUIDELINES

- All safety equipment and protective equipment shall be worn at all times in designated areas, by all persons, in conformance with the HASP.
- Always observe the buddy system. Never enter or exit site alone, and never work alone in an isolated area. Never wander off by yourself.
- Practice contamination avoidance. Never sit down or kneel, never lay equipment on the ground, avoid obvious sources of contamination, and avoid unnecessary contact with on-site objects.
- No eating, drinking, or smoking outside the designated Support zone.
- In the event Personal Protective Equipment is ripped, torn or otherwise damaged (e.g., gloves with holes, etc.) work shall stop and it shall be removed and replaced as soon as possible.
- Be alert to any unusual changes in your own condition; never ignore warning signs. Notify SSHO as to suspected exposures or accidents.
- A vehicle shall be readily available exclusively for emergency use. All personnel going on-site shall be familiar with the most direct route to the nearest hospital.
- In the event of direct skin contact, the affected area shall be washed immediately with soap and water. Water service is present at the adjacent condominiums to the job site.
- Copies of the HASP shall be readily accessible at the command post. Note wind direction. Personnel shall remain upwind whenever possible during on-site activities.
- Never climb over or under refuse or obstacles. Use safety harness/safety lines when sampling lagoons, stream beds, and ravines with steep banks.
- Hands and face must be thoroughly washed before eating, drinking, etc.
- Any modifications to this safety plan **MUST** be approved by the Site Safety and Health Officer.

SECTION 6 - LEVELS OF PROTECTION

6.1 Introduction

Personal protective equipment (PPE) is the primary method used to minimize potential employee exposure to possible hazards. The levels of protection for on-site personnel have been based on OSHA requirements. All on-site personnel shall have their own personal safety equipment which shall be used according to the direction of the SSHO. All PPE shall be kept clean and maintained in a proper manner. Personnel shall have been trained in the use and maintenance of PPE and shall be properly fitted prior to beginning site activities.

It is unlikely that personnel will be exposed above the Permissible Exposure Limits (PELs), Threshold Limit Values (TLVs), or will encounter conditions that are immediately dangerous to life and health (IDLH). Therefore, no special engineering controls or extraordinary work practices are deemed necessary. It is also unlikely that there shall be releases of chemical substances to the environment at health effect levels.

Although the site is considered to have a low hazard evaluation, contingencies have been made to upgrade the site to Level C if necessary. If conditions requiring Level B are encountered, the site shall be evacuated and work shall be stopped until a new HASP is prepared that reflects the more critical requirements of this level of work is prepared.

6.2 Air Monitoring for Worker Protection

Air monitoring with a photoionization detector (PID) shall be conducted at least every half hour and as appropriate (nearly continuously if readings indicate the necessity) during the excavation activities. Monitoring shall be conducted on a more frequent basis if necessary as determined by site conditions, e.g. whenever working at Level C or B, continuous real time monitoring shall be conducted.

Description of the Levels of Protection

The following is a brief description of levels of protection to be used by site personnel:

Level D:	Work Clothes Safety Shoes Gloves Hard Hat
Modified Level D:	Chemically Resistant Suit - Tyvek Outer Rubber Slush Boots Outer Chemically Resistant Gloves - Butyl/Neoprene Gloves Hard Hat Safety Shoes Safety Glasses or Face Shield
Level C:	Full Face Respirator with appropriate cartridges. Chemically Resistant Suit - Tyvek Outer Rubber Boots Outer Chemically Resistant Gloves - Butyl/Neoprene Inner Gloves - cotton Hard Hat Safety Shoes Safety Glasses or Face Shield
Level B:	Self Contained Breathing Apparatus Chemically Resistant Suit - Tyvek Outer Rubber Boots Outer Chemically Resistant Gloves - Butyl/Neoprene Inner Gloves - cotton Hard Hat Safety Shoes

Safety Glasses or Face Shield

Site Activities Classification

Entry Task	Level of Protection	Upgrade/ Downgrade
1 - Daily Site Work	D	Upgrade to Modified D or C Modified D or C, or B

6.4 Upgrade Criteria

Upgrade from Level D to Modified Level D shall occur when work clothing or skin contact with contaminated soils or hazardous materials is possible. Upgrade from Level D or Modified Level D to Level C (air purifying respirator) may occur under any of the following conditions:

- Ambient volatile organic compound levels exceed five (5) parts per million (ppm) above background for a continuous five (5) minute duration as monitored with a photoionization (PID) general survey instrument.
- On-site personnel monitoring or direct reading instrument survey indicates that appropriate Threshold Limit Values (TLV's) for specific compounds are being exceeded.
- Levels of visible dust from the site are airborne in the breathing zone of the employees. This condition may also result in an upgrade to Modified Level D in order to provide enhanced protective clothing.

Upgrade to Level B may occur under any of the following conditions:

- Ambient volatile organic compound levels exceed fifty (50) parts per million (ppm) above background for a continuous five (5) minute duration as monitored with a PID general survey instrument.
- Any detectable amount of airborne PCBs are detected with Drager Tubes.
- An oxygen meter reading of 19.5% or less.

6.5 Downgrade Criteria

Downgrade from Level C shall occur when ambient volatile organic compound levels fall below five (5) ppm above background as monitored on a PID general survey instrument for five (5) minutes, or when ambient dust levels are no longer visible or below corresponding Threshold Limit Values (TLV's). Downgrade from Level C or Modified Level D may also occur if visible dust levels decline and/or are controlled through dust suppression techniques.

Downgrade from Level B shall occur when ambient volatile organic compound levels fall below fifty (50) ppm above background as monitored on a PID general survey instrument for five (5) minutes or longer. It shall also occur when there are no detectable amounts of airborne PCB vapors detectable.

6.6 Evacuation Criteria

If the site is operating at Level B, any of the following conditions shall require evacuation of the work area:

- A PID sustained reading greater than 500 ppm for 5 minutes or more as monitored in the breathing zone.
- A combustible gas meter indication of 10% of the lower explosive limit.
- A PID sustained concentration exceeding the maximum allowable concentration specified on an air purifying respirator filter cartridge: Generally 1,000 ppm total organic vapor.

SECTION 7 - PERSONAL PROTECTIVE EQUIPMENT

7.1 Provision of Equipment

Appropriate personal protective equipment (PPE) for site workers shall be provided. Failure to use the appropriate equipment shall be grounds for dismissal from the site.

7.2 Personal Protective Equipment Program

A Personal Protective Equipment (PPE) Program shall be implemented for the site. This program is contained in SOP Number 1, attached to this HASP. Section 8.0 contains the Respiratory Protection Program.

7.3 Decontamination

PPE shall be disposed of or decontaminated in accordance with Section 10.0 when leaving the Exclusion Zone.

7.4 Preliminary Levels of Protection

Preliminary personal protective equipment to be used at the site is described in Section 6.0. These levels may be changed based on ambient air monitoring by the SSHO with the approval of the site management. The general requirements for the different levels of protection at this site have been specified; however, the protective items within each class may be added to or downgraded by the SSHO depending on site conditions or work activities.

SECTION 8 - RESPIRATORY PROTECTION

8.1 Introduction

Appropriate respiratory protection may be required for on-site personnel exposed to suspected hazardous contaminants through inhalation. In general, the primary respiratory hazard shall consist of exposure vapors in the trench or manholes or sewers. If volatile organic compounds are determined to be present at levels requiring an upgrade, then full-face air purifying respirators (MSA manufacture or equivalent) with dual organic vapor/dust mist cartridges (MSA GMC-H or equivalent) shall be used.

If upgrading the site to Level C is necessary, all employees who are required to wear air purifying respiratory equipment shall be required to show proof of medical examination which indicates that the employee is capable of wearing such a device. Training and fit testing for use of air purifying respirators is also necessary.

8.2 Standard Operating Procedures for Respirators

The following are standard use operations to be employed when employees are to wear designated air purifying respirators:

1. MSA Ultra-Twin Full Face Respirator (or equivalent)

In the event volatile organic compounds are detected at levels requiring an upgrade, a full-face respirator with organic cartridges shall be used. Respirators (e.g., MSA Ultra-Twin) shall be cleaned daily according to procedures prescribed by the manufacturer. Organic vapor cartridges shall be used and replaced either daily, or if breakthrough is detected, at anytime while in use. Negative and positive pressure fit checks shall be performed daily by each individual respirator wearer upon donning the respirator. The following checks shall be performed on a daily basis in addition to the above:

- Exhalation Valve - pull off plastic cover and check valve for debris or for tears in the neoprene valve (which could cause leakage).
- Inhalation Valves (two) - screw off cartridges and visually inspect neoprene valves for tears. Make sure that the inhalation valves and cartridge receptacle gaskets are in place.
- Make sure a protective lens cover is attached to the lens. Lenses are expensive to replace and should be protected at all times.
- Make sure you have the right cartridge.
- Make sure that the facepiece harness is not damaged. The serrated portion of the harness can fragment, thus preventing proper face seal adjustment.
- Make sure the speaking diaphragm retainer ring is hand tight.

SECTION 9 - INSTRUMENTATION

9.1 Introduction

The following is a listing of on-site monitoring instrumentation that shall be employed during the course of the site work. Personnel operating this instrumentation shall be fully trained and experienced in the use and operation.

9.2 Site Monitoring Equipment

___ Dual LEL/Oxygen Meter
__X_ Photoionization Detector with 10.0 or 10.2 e.v. lamp
___ Draeger Pump and Tubes
___ Personnel Sampling Pump with media

9.3 Confined Space Entry

Because entry into confined spaces such as trenches, pits, or manholes may occur, anyone entering these areas must be trained in Confined Space Entry techniques as outlined in the attached SOPs. When using an oxygen/LEL meter, if the alarm sounds, immediate evacuation is required. The alarms for the instruments must be set at 19.5% for the oxygen meter and 10% of the LEL for the combustible gas meter.

SECTION 10 - DECONTAMINATION

10.1 Introduction

Appropriate decontamination activities shall be conducted whenever site workers leave the contaminated area. Designated locations shall be identified for decontamination of personnel and equipment. The following is a description of procedures to be performed.

10.2 Personnel Decontamination

Decontamination procedures shall be followed by all personnel leaving the sites. Under no circumstances (except emergency evacuation) shall personnel be allowed to leave the site prior to decontamination.

When worn, disposable items (i.e., Tyvek coveralls, inner gloves, and overboots) shall be changed on a daily basis as required unless there is a reason to change sooner. Respirator cartridges shall be changed daily, unless more frequent changes are deemed appropriate, such as breakthrough.

Washing facilities and/or other designated equipment shall be available in the decontamination area for wash down and cleaning of personnel, samples and equipment. If non-disposable equipment (i.e., boots, gloves, respirators, etc.) are visibly contaminated with oil or grease, they should be washed at the end of the shift with a surfactant such as Alconox, methanol and water or equivalent, and rinsed with water. Workers are to segregate and store their personal protective equipment separate from their personal clothing. In no circumstances are workers allowed to take from the site or wear home any contaminated clothing or equipment.

10.3 Small Equipment Decontamination

Small equipment shall be protected from contamination as much as possible by covering the instruments with plastic (to the extent feasible) without hindering operation of the unit. Contaminated equipment shall be cleaned as needed. The units shall be checked, standardized, recharged as necessary for the next day's operation, and then prepared with new protective coverings.

10.4 Disposal of Decontaminated Materials

It is anticipated that excavation and earth moving equipment may be contaminated during site activities. They shall be cleaned and decontaminated followed by a water wash and rinse. Loose material shall be removed with a brush. The person performing this activity shall usually be at least at the level of protection utilized during the personnel and monitoring equipment decontamination. All protective gear, decontamination fluids (for both personnel and equipment), and other disposal materials shall be collected and disposed of at each site in accordance with applicable regulations.

SECTION 11 - EMERGENCY/CONTINGENCY PLANNING

11.1 Emergency/Contingency Plan

This section identifies the emergency contingency planning undertaken for operations at the site. Other sections provide further information to be used under emergency conditions. Refer to the emergency telephone numbers, routes to emergency medical facilities, and emergency signals.

11.2 Evacuation

Withdrawal Upwind - When conditions warrant moving away from the work site, the crew shall relocate upwind at a distance of approximately 100 feet or farther, as indicated by site monitoring instruments. In the event of withdrawal, the SSHO and a member of the crew (the buddy system must be used) may return to the work site to determine if the condition noted is transient or persistent.

If persistent levels of air contaminants remain, an alarm should be sounded to notify personnel of the situation and the need to leave the site. The site management shall be notified of conditions. When site access is restricted, thus hindering escape, the crew may be instructed to evacuate the site rather than move upwind, especially if withdrawal upwind moves the crew away from escape routes.

Site Evacuation - When conditions warrant site evacuation, the work party shall proceed upwind of the work site and notify the SSHO, security force, and field office of site conditions.

11.3 Emergency Medical Treatment/First Aid

First aid shall be rendered to any person injured on-site as necessary. The injured person shall then be transported for further examination and/or treatment. The preferred transport method is a professional emergency transportation service; however, when this is not readily available or would result in excessive delay, other transport is authorized. Under no circumstances shall injured persons transport themselves to a medical facility for emergency treatment.

If an injury occurs in a downrange position, provisions for decontamination of the victim shall be made. However, life threatening conditions may preclude normal decontamination procedures. In such cases, arrangements shall be made with the medical facility and transporter to provide for the situation. Information on this is listed in Section 11.11, Emergency Information.

11.4 Heat Stress

SOP #3 deals with the signs, symptoms, and first aid for heat stress victims. Monitoring for heat stress should begin whenever the work area temperature exceeds 70 F. The procedures for monitoring heat stress shall be to measure the radial heart rate (pulse) during a 30 second interval at the beginning of a rest period. If the heart rate exceeds 110 beats per minute, shorten the next work cycle by one-third, while keeping the rest period the same length. If the heart rate exceeds 110 beats per minute at the beginning of the next rest period, shorten the following work cycle by one-third. Continue monitoring and shortening work cycles until the heart rate is less than 110 beats per minute.

11.5 Cold Stress

SOP #3 deals with the signs, symptoms and first aid for cold stress victims. Monitoring for cold stress should begin whenever the work area temperature drops below 70 F. Employees should be aware of the symptoms of cold stress and frost bite. If any signs or symptoms appear, report it immediately to the SSHO. Take immediate action to prevent injury.

11.6 Noise Exposure

Employees must be aware that noise exposure may occur during operations on the site. If there is any concern regarding noise levels on the site, Lord Associates, Inc. shall arrange for noise monitoring to be conducted. If noise levels are found to be excessive, personal protective devices such as hearing protectors (plugs and muffs) shall be made available for the employees. No such condition is expected to be encountered during the proposed work.

11.7 Illumination

Site operations shall not be permitted without adequate lighting: at least 5 footcandles. Therefore, unless provisions are made for artificial light, downrange operations must halt in time to permit personnel and equipment to exit the Exclusion Zone and proceed through decontamination before dusk. Conversely, operations shall not begin until lighting is adequate.

11.8 Sanitation

Provisions have been made for sanitation facilities for the work force. At a minimum, the provision of toilet facilities shall meet the requirements of 29 CFR 1910.120(n), which includes one facility for less than 20 employees, or one toilet and one urinal for every 40 employees, up to 200; then one of each for every 50 employees. If it is a mobile crew *and* they have transport readily available, these requirements do not apply.

11.9 Excavation

Site excavations shall be shored or sloped to prevent accidental collapse, and otherwise conducted in accordance with 29 CFR 1926 (Subpart P). Under no circumstances shall site personnel enter excavations that are not adequately shored or sloped.

11.10 Fire Extinguisher

A fire extinguisher, ABC type, shall be available in the support zone.

11.11 Emergency Information

Emergency Telephone Numbers

Police/Fire Department	911
Hospital - ambulance: Arrange with Police/Fire	911
Fire Department	911
National Poison Control Center	(800) 682-9211
National Response Center	(800) 424-8802
Regional USEPA Emergency Response	(800) 424-8802
Chemical Manufacturers Association Chemical Referral Center	(800) 262-8200
Site Health & Safety Officer (Oliver P. Leek)	(617)-956-2864

Primary Source of Medical Attention

Facility Name: Newton Wellesley Hospital
2014 Washington Street, Newton, MA - (617) 243-6000 - 1.4 mi S

Driving directions to Newton Wellesley Hospital

1.4 mi – about 4 minutes

1.	Head west on Robinhood Street	0.2 mi
2.	Turn left onto Comm. Ave.	0.4 mi
3.	Turn righto onto Washington Street. Hosp. on left	0.8 mi

11.12 Emergency Signals

Because the work area covers relatively small extents, the primary emergency signal among site employees shall be by voice contact. All employees shall be trained in the following air horn signals:

HELP	three short blasts	(. . .)
EVACUATION	three long blasts	(- - -)
ALL CLEAR	alternating long and short	(-.-.-)

Fire/Explosion

Upon notification of a fire or explosion on-site, all personnel shall evacuate the site and the fire department shall be alerted.

Personal Protective Equipment Failure

If any site personnel experience a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy shall immediately leave the exclusion zone. Re-entry shall not be permitted until the equipment has been repaired or replaced.

Other Equipment Failure

If any other equipment on-site fails to operate properly, the SSHO shall be notified and then shall determine the effect of this failure on continuing operations on-site. If the failure affects the safety of on-site personnel or prevents completion of the tasks, all personnel shall leave the exclusion zone until the situation is evaluated and appropriate actions taken.

In all situations, when an on-site emergency results in evacuation of the exclusion zone, no personnel shall re-enter until:

1. The conditions resulting in the emergency have been corrected.
2. The hazards have been reassessed.
3. The Site Safety Plan has been reviewed.
4. All site personnel have been briefed on any changes in the HASP.

SECTION 12 - RECORDKEEPING, LOGS, AND REPORTS

12.1 General Requirements

All required records, logs, and forms shall be maintained according to the appropriate regulations. This includes all safety inspection reports, accident/incident reports, medical certifications, first aid/cpr, 40 hour training, 8-hour refresher training, 8-hour supervisor training, hazard communication training, monitoring results, etc. All exposure and medical monitoring records shall be maintained to OSHA 29 CFR 1910 and 29 CFR 1926.

STANDARD OPERATING PROCEDURE NUMBER 1
Personal Protective Equipment Program

Standard Operating Procedure
Personal Protective Equipment Program

I. PURPOSE

To provide minimum requirements for protection of employees, visitors and contractors from injury or ill health through the proper selection and use of Personal Protective Equipment (PPE).

II. PROGRAM RESPONSIBILITIES

A. The Site Safety and Health Officer is the personal protective equipment administrator and has the responsibility to:

1. Coordinate the program.

2. Ensure that annual training is conducted.

3. Review the program annually.

B. Supervisors are responsible for informing workers of the personal protective equipment requirements within their department/area. The supervisor shall also ensure that workers have been instructed in the proper donning, wearing, removal, and the cleaning or disposal procedures for such equipment, and that the worker has understood the instructions. The supervisor shall provide additional instructions as needed and shall strictly enforce site rules related to PPE use.

C. Workers are responsible for properly donning, wearing, removing, cleaning, and disposing of the required protective equipment.

D. The Site Health and Safety Officer (SSHO) is responsible for ensuring that Contractors provide their own protective equipment as specified in this Program.

E. The SSHO is responsible for maintaining the site PPE inventory control program.

F. The Project Manager and SSHO are responsible for the purchase of PPE, including respiratory protection.

III. GENERAL REQUIREMENTS

A. Employees shall only use personal protective equipment supplied by the company.

B. Visitors shall be supplied with the following personal protective equipment as outlined in the visitor safety policy.

Other Visitors - Hard hats and safety glasses (other PPE to be provided by employer).

C. Personal protective equipment requirements are posted in the site specific Health and Safety Plan.

D. Disposal of PPE and cleaning of reusable PPE is governed by the procedures specified in the Respirator Program.

E. Written procedures governing the safe use of PPE that might be required in an emergency are contained in this Standard Operating Procedure. These plans also contain the training requirements for emergency PPE.

IV. CHEMICAL PROTECTIVE CLOTHING

A. Selection of Chemical Protective Clothing (CPC) shall be based on the following:

1. Manufacturers' instructions and degradation, penetration and permeation data

2. Published literature such as the ACGIH Guidelines for the Selection of Chemical Protective Clothing

3. Selected clothing shall be contained in the Site Safety and Health Plan (HASP)

V. PPE INSPECTION

A. Respirators shall be inspected in accordance with the Respiratory Protection Program.

B. Other PPE should be inspected prior to use by the wearer. Inspection considerations shall give attention to obvious signs of contamination, tears and holes, proper function of closures, seams, etc. Sample PPE inspection checklists are found in Standard Operating Procedure 2.

C. PPE stored for emergency use should be inspected monthly.

VI. STORAGE

Storage of PPE at the site shall be performed in accordance with the following general guidelines:

A. Boots shall be decontaminated and stored on a boot rack at the hot line to dry.

B. Disposable protective clothing may be stored before use at the hot line. However, a covering or other method should be provided to prevent contamination. Disposable clothing articles are placed in waste containers at the hot line after being removed. Disposable clothing is not to be reused.

C. Respirators are stored in accordance with the Respiratory Protection Program. They should not be stored in the open air in contaminated areas.

D. Reusable PPE should be stored in accordance with manufacturer's instructions to prevent equipment failure.

E. Potentially contaminated coveralls worn under disposable coveralls shall be stored in containers in a separate area from street clothing.

VII. WORK MISSION DURATION

Since the work mission durations vary by site and task, it shall be the responsibility of the Project Manager and the SSHO to maintain adequate supplies of PPE and breathing air to accomplish the work mission and comply with this program.

STANDARD OPERATING PROCEDURE NUMBER 2

Respiratory Protection Program (IF APPLICABLE)

AIR PURIFYING RESPIRATORY PROTECTION

RESPIRATOR TRAINING OUTLINE

A. Training of respirator wearers in the use, field maintenance, capabilities, and limitations of respirators is given initially upon employment to all employees whose work shall require the use of respirators, or where an

employee changes into a job classification that requires respiratory protection. Retraining is given at least annually thereafter. No employee is allowed to wear a respirator in a work situation until he or she has been trained.

B. Each employee's training shall have included the following:

1. Instruction in the nature of the respiratory hazards, and what may happen if the respirator is not used properly.

2. An explanation of the engineering and administrative control measures being used and why respirators are needed to provide protection.

3. Instruction in the selection, use, sanitary care, maintenance, proper storage, and limitations of each applicable respirator type.

4. Demonstrations and practice in proper fitting, wearing, adjusting, and checking the face-to-face piece seal of each applicable respiratory type.

5. An opportunity to handle the respirator and to wear it in a safe atmosphere for an adequate period of time to ensure familiarity with the characteristics of the respirator.

6. An opportunity to wear the respirator in a test atmosphere (such as atmospheres generated by smoke tubes or isoamyl acetate) to demonstrate that the respirator protects the worker.

7. Instructions in how to recognize and cope with emergency situations requiring respiratory protection.

8. An explanation of the requirement for a self-contained breathing device for work in unknown concentrations and immediately dangerous to life or health (IDLH) atmospheres, and for fire fighting.

9. An explanation of the medical surveillance program as it relates to the use of respiratory protective equipment.

10. An explanation of the requirements for maintaining the respirator gas-tight seal, including beard and facial hair policies; and the policy prohibiting the use of contact lenses while wearing respirators.

C. Records of the training undergone by each individual are placed in the employees training record file.

Respirator Fit Test Form

Employee Name: _____

Respirator Type (1)

Face Piece (2)

Make, Model

Size

Cartridge Used

Test (3)

Normal Breathing

Deep Breathing

Side to Side

Up and Down

Speaking

Bending

Jogging

Normal Breathing

Sensitive to Smoke

Pass (P)/Fail (F)

Comments: _____

_____

Person Conducting Fit Test: _____

Date: _____

(1) Respirator Type: AP (air purifying); SA/SCBA (supplied air with SCBA escape bottle); SCBA (self-contained breathing apparatus
(2) Face Piece: F (full face); H (half mask)
(3) Test: IS (irritant smoke); QN (quantitative)

Monthly Written Respiratory Protection Program Evaluation

11 Points of 29 CFR 1910.134

___ 1. There are written standard operating procedures governing the selection and use of respirators.

___ 2. Respirators are selected on the basis of hazards to which the worker is exposed.

___ 3. Approved or accepted respirators are used when they are available.

___ 4. The user is instructed and trained in the proper use of respirators and their limitations.

___ 5. Where practical, the respirators are assigned to individual workers for their exclusive use.

___ 6. There are regular inspection and evaluations to determine the continued effectiveness of the program.

___ 7. Persons shall not be assigned to tasks requiring the use of respirators unless it has been determined that they are physically able to perform the work and use the equipment; i.e., medically qualified.

___ 8. Respirators shall be regularly cleaned and disinfected.

___ 9. Respirators shall be stored in a convenient, clean and sanitary location.

___ 10. Respirators used routinely shall be inspected during cleaning.

___ 11. Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained.

Reviewed by: _____ Date of Review: _____

SELF-CONTAINED BREATHING APPARATUS

DONNING AND DOFFING SCBA

Donning breathing apparatus from wall mount

1. Open canvas bag to expose equipment.
2. Open cylinder valve fully, check pressure; if less than 1,500 psi, change cylinder or get another mask.
3. Check pressure on regulator; if more than 400 psi difference between cylinder pressure and regulator pressure, change cylinder or get another mask. (Report condition.)
4. Back up to equipment, insert both arms into the harness and fasten securely adjusting shoulder straps.
5. Walk away from mounting rack to disengage the equipment and prepare to don facepiece.

Donning breathing apparatus using overhead method.

1. Remove case from apparatus.
2. Lay case on ground so you are facing fire building when donning mask.
3. Open case, remove facepiece, put aside.
4. Remove helmet from your head, put aside.
5. Raise cylinder neck and open valve fully, check pressure on gauge, if less than 1,500 psi, change cylinder or get another mask.
6. Check pressure on regulator; if there is more than 400 psi difference between cylinder pressure and regulator pressure, change cylinder or get another mask.
7. Lay apparatus flat again.
8. Grasp the backplate in a convenient manner with one hand on each side of the plate in preparation to lifting the equipment from the case.
9. Lift the equipment from the case and permit the demand regulator and harness to hang freely.
10. Raise cylinder overhead and permit elbows to find their respective harness shoulder strap loops.
11. Continue to carry the cylinder overhead toward the back where it can be released to the back.
12. Lean forward when the cylinder is released so that the cylinder shall not slide down the back. Fasten and adjust the upper chest strap to hold the demand regulator in position.
13. With both hands on their respective sides, grasp the two harness take-up straps located near the chest, just below the armpits, and pull down and tighten the equipment firmly to the back.
14. Fasten and adjust the low waist straps which shall conclude harness adjustment to secure the equipment to the body.

Donning the back strap model (coat method)

There is a certain degree of preparation that needs to be done to the harness of the back strap model before equipment is lifted from the case. There are two shoulder straps on this model and one strap supports the demand regulator. The harness should be arranged so that this shoulder strap and regulator can be used to lift the breathing equipment.

1. With the right hand, palm up, grasp the shoulder strap that supports the demand regulator, about midway between the regulator and cylinder, and lift the equipment from its case so that the cylinder control valve points downward.
2. Lift the equipment up along the left side of the body raising the right hand and arm toward the left shoulder. At the same time, run the left arm through the loop that is formed by the harness and cylinder, then grasp the cylinder control valve with the left hand.
3. Continue to hold the cylinder control valve with the left hand in order to stabilize the weight of the cylinder and reach back with the right hand and arm for the right shoulder strap, similar to putting on a coat. Boost the cylinder into position on the back.

4. Fasten and adjust the top chest strap while slightly bent forward to secure the cylinder to the back and to hold the demand regulator in position.
5. With both hands, on their respective sides, grasp the two harness take-up straps located near the chest, just below the armpits, and pull down and out to tighten the equipment firmly to the back.
6. Fasten and adjust the lower waist strap which shall conclude harness adjustment to secure the equipment to the body.
7. The breathing tube can be connected to the regulator any time the wearer desires.
8. The minute the connection is made to the demand regulator, the wearer breathes from the cylinder.

(Source: IFSTA Manual #108)

CARE, INSPECTION AND MAINTENANCE OF SCBA

Cleaning the apparatus after each use

Cleaning the Pack

1. Remove cylinder from carrying case and detach high pressure hose from cylinder; remove cylinder from harness.
2. Slide regulator loop assembly off strap. Lay regulator assembly carefully aside.
3. With warm detergent, or soap and water solution, wash entire equipment (except regulator and alarm). Rinse with clean water and hang to air dry.
4. To clean regulator assembly and alarm, protect opening with thumb and use clean damp rag or sponge.
5. Carrying case should be thoroughly cleaned. Dirt left in the case shall find its way into facepiece and regulator openings.

Cleaning the Facepiece

A. Equipment Required:
   1. Pail of warm water not to exceed 100^{o} F with a mild disinfectant solution.
   2. Pail of clean water not to exceed 100^{o} F for rinsing.
   3. A sponge and soft, lint-free cloth for washing.

B. Cleaning Procedure:
   1. Rinse facepiece under faucet or with hose (to remove loose dirt and foreign material).
   2. Scrub mask portion, inside and out, with a sponge saturated with solution. Clean lens with a soft cloth or sponge.
   3. Hold facepiece by the end harness and submerge the inhalation tube and the exhalation valve in the disinfectant solution. Remove from solution.
   4. Remove protective cap from exhalation valve. With corner of sponge, gently lift and clean under the edge of the rubber valve.
   5. Replace protective cap. Submerge the facepiece in clear water to rinse.
   6. Dry the facepiece with a clean, lint-free cloth.

Inspection

AFTER EACH USE

After use, equipment should be inspected as follows (in addition to daily check):

A. Pressure on gauge - if less than 1,500 psi, replace or recharge.
   1. Harness and fitting sound.
   2. Screws in regulator assembly in position and tight.
   3. Bezel rings on pressure gauge tight.

4. Disinfect facepiece.
5. Clean entire unit.

B. Checking breathing apparatus if in safe condition for use (once a week or as often as possible).
1. Check cylinder pressure - if less than 1,500 psi, change cylinder or get another mask.
2. Turn cylinder on fully, check regulator pressure; if more than 200 psi difference, report defect.
3. Check facepiece and hose by inhaling slowly with the thumb over the end of the hose connection; facepiece should collapse against face; if not, there is a poor fit or a leak.
4. Check exhalation valve - remove thumb from end of hose connection, take a deep breath, place thumb over the end of hose connection, exhale. Air should go out through exhalation valve. If it goes out side of facepiece, exhalation valve is defective.
5. Check harness straps, look for worn or broken straps, all straps extended to tab at buckle.
6. Main line valve (yellow knob) should be fully opened and locked (if a locking device is provided).
7. By-pass valve (red valve) should be in closed position.
8. Connect facepiece hose to regulator, take a few breaths to check regulator.
9. Check alarm bell - open cylinder valve to put pressure on the regulator (close the tank valve, breathe the air pressure of the regulator slowly; the alarm should sound when you have reduced the pressure in the regulator to approximately 400 psi).
10. Check facepiece.
    a. Cleanliness
    b. Threaded fittings for damaged threads and possible obstructions.
    c. Head harness straps - check for worn or broken straps and buckles.
    d. Check lens for cracks.
    e. All harness straps are extended to the tab at the buckle.
    f. When putting facepiece back in box, the head harness should be reversed over mask portion of facepiece in readiness to don and inhalation tube is curled correctly and is not pinched or kinked when the lid of storage box is closed.

SCHEDULED INSPECTIONS

The following inspection procedures should be performed *daily* if possible. If not possible to inspect daily, then *at least* once a week.

1. Proper assembly and position of mask and facepiece in case.
2. Straps of facepiece and harness are fully loosened and lens intact.
3. Open tank valve to charge unit. Close tank valve.
4. Check pressure in unit. Replace or recharge unit if below 1,500 psi.
5. Listen for leaks.
6. Check position of valves on regulator. Operating (mainline) valve fully open and locked, emergency valve (by-pass) closed.
7. Breathe pressure off unit. (Do not use by-pass valve.) Note operation of regulator. Note operation of alarm bell.
8. Proper condition of inhalation tube. Visual check, by stretching tube, for breaks and punctures.
9. Cleanliness of mask case.
10. Thorough cleanliness of all parts.

SCBA INSPECTION CHECKLIST

SCBA Harness # _____ Tank # _____

Location _____

Next Hydrostatic Test Date _____

	OK	FAIL	DATE/INITIALS
1.	MASK - check for distortion, dirt, tears, age cracks, water moisture		
2.	MASK STRAPS - check for broken or missing buckles, tabs, tears, age cracks		
3.	MASK LENS - check for cracks, scratches, attachment fasteners		
4.	MASK EXHALATION VALVE - check for moisture, cleanliness, ease of exhalation		
5.	BREATHING TUBE - check for age cracks, holes, loose or missing fittings, do leak test		
6.	REGULATOR - check for missing or loose parts, screws, dirt, moisture		
7.	REGULATOR DIAPHRAGM - check by gently blowing into breathing tube connection		
8.	REGULATOR GAUGE - check for damage, leaks, within 200 psi of tank gauge?		
9.	MAIN AND BY-PASS VALVES - test operation, leaks, damage, not jammed open-closed		
10.	REGULATOR BREATHING TUBE CONNECTOR "O" ring, threads, dirt		
11.	ALARM BELL - test operation at 25% full tank pressure		
12.	HI-PRESSURE HOSE - cuts and severe abrasion, leaks under pressure, bubbles or swelling		
13.	HI-PRESSURE HOSE CONNECTOR - seal missing or damaged, thread damage, leaks under pressure		
14.	CYLINDER TANK - Hydro-test date, tank full, surface damage, dents or gouges		
15.	CYLINDER VALVE AND GAUGE - damage or leaks, valve seat bent, gauge within 200 psi of regulator?		
16.	CYLINDER BACKPLATE LATCH - tank secure, damage or loose		
17.	HARNESS STRAPS - correctly installed, worn, loose, cut, abrasion, clean		
18.	HARNESS HARDWARE - broken buckles, latches in place and functional		
19.	SCBA FULL OPERATIONAL TEST - don unit and fully test		

List any maintenance performed on unit and date: _____

General Maintenance

1. Cylinder hand wheel must be tight. Check allen screw or pin.
2. Threads on cylinder valve, if exposed, must be protected, preferably with a plastic cap supplied as original equipment.
3. Cylinders should never be picked up or carried by cylinder hand wheel. Proper manner is with neck of cylinder between fingers at a point below the cylinder gauge.
4. Caution in handling cylinders should always be practiced. A sharp blow or fall can damage the cylinder, cause damage to valve threads, or blow the fusible plugs.
5. Store wrench, supplied with apparatus in proper place in case.
6. Repairs to regulator or alarm assemblies should be made by authorized mechanics. However, this should not prevent members from performing general maintenance, such as tightening screws, nuts, and cylinder packing nuts.

Replacing Cylinders

When in quarters and it is noted that the cylinder pressure is less than 1,500 psi, cylinders should be removed from the apparatus and replaced by a fully charged spare cylinder. When the change is made, the assembly should be placed on another member and adjusted so that the regulator fits flat against the chest and the high pressure hose is as close to the wearer as possible (to prevent snagging). **Never leave** the valve open even if the cylinder is empty. Leaving the valve open tends to ventilate interior with atmospheric air and thus introduces moisture which could cause rust inside the cylinder. When replacing cylinders in the mask assembly, the following steps should be used:

1. Remove high pressure hose from cylinder valve.
2. Release backplate lever handle on band holding cylinder.
3. Lift cylinder up and out of backplate band.
4. Replace cylinder by reversing above procedure. In addition, while tightening backplate lever, hold cylinder slightly above cylinder wheel guard and point cylinder valve opening toward left hip side of backplate. Cylinder hand wheel should be positioned high enough above guard so the cylinder valve can be fully opened.
5. When replacing cylinder during fire operations, always work in fresh air by leaving contaminated or fire area.

Care and inspection of cylinders: After two and one-half years, the regulator with regulator hose should be returned to the factory or representative for test. Each cylinder is stamped with the month and year of manufacture and the date of the last test. After each five-year period, these cylinders should be hydrostatically tested. This procedure is necessary to meet requirements of the Department of Transportation.

Methods of Filling Small Cylinders

When self-contained breathing equipment is used infrequently, it may be safer and more economical to keep on hand extra filled cylinders so that a change can be made when needed. Empty cylinders can then be sent to a refilling station with complete safety. If, however, this type of equipment is frequently used, either in training or during firefighting, it is a distinct advantage to maintain a rigid cylinder inspection and provide a recharging system within the department. High pressure compressor units are sometimes maintained and operated by a local fire department. This type compressor differs from the usual service station low-pressure compressor, since these high-pressure compressors use water or soap and water lubrication, and all connections and tubing are high-pressure fittings. The quality of the compressed air should be checked periodically to conform with Compressed Gas Association Standard in GAS Pamphlet G-7.

STANDARD OPERATING PROCEDURE NUMBER 3

First Aid

IDENTIFICATION AND TREATMENT OF HEAT EXHAUSTION OR HEAT STROKE

1. **Heat Exhaustion**

   A. Symptoms: Usually begins with muscular weakness, dizziness, nausea, and a staggering gait. Vomiting is frequent. The bowels may move involuntarily. The victim is very pale, his skin is clammy, and he may perspire profusely. The pulse is weak and fast, breathing is shallow. The victim may faint unless he lies down. This may pass, but sometimes it persists and, while heat exhaustion is generally not considered life-threatening, death could occur.

   B. First Aid: Immediately remove the victim to the decontamination area in a shady or cool area with good air circulation. Remove all protective outer wear. Call a physician. Treat the victim for shock. (Make the victim lie down, raise feet 6-12 inches, maintain body temperature but loosen all clothing.) If the victim is conscious, it may be helpful to give sips of water. Transport victim to a medical facility.

2. **Heat Stroke**

   A. Symptoms: This is the most serious of heat casualties due to the fact that the body excessively overheats. Body temperatures often are between 107-110^{o} F. The victim shall have a red face and may not be breathing. First there is often pain in the head, dizziness, nausea, depression, and a dryness of the skin and mouth. Unconsciousness follows quickly and death is imminent if exposure continues. The attack shall usually occur suddenly. Heat stroke is *always* serious.

   B. First Aid: Immediately evacuate the victim to a cool and shady area in the Decontamination Reduction Zone. Remove all protective outer wear and all personal clothing. Lay the victim on his back so that the head and shoulders are slightly elevated. It is imperative that the body temperature be lowered immediately. This can be accomplished by applying cold wet towels, ice bags, etc., to the head and groin. Sponge off the bare skin with cool water or rubbing alcohol, if available, or even place in a tub of cool water. The main objective is to cool without chilling. Give no stimulants. Transport the victim to a medical facility as soon as possible.

IDENTIFICATION AND TREATMENT OF FROSTBITE

Frostbite is a localized injury, resulting from a freezing of tissue. It is most common to the fingers and toes due to reduced circulation in the extremities and on the face and ears as they are most commonly exposed (uncovered) to the weather.

For frostbite to occur, there must be subfreezing temperatures. It is most prevalent in very cold temperatures or when cold temperatures are extenuated by the wind (wind chill).

A. Symptoms

   1. Pre-Frostbite - Affected area feels painfully cold, but usually flushed (red-rosy) in color.

   2. First Degree Frostbite (frost nip - Crystallization in superficial tissues. Affected area no longer feels cold, and is completely numb. Skin coloration is a small white or grayish-

yellow waxy patch. Immediate treatment shall completely reverse the condition with no ill effects.

3. Second Degree (Deep) Frostbite - A deep freezing of the fluids in the underlying soft tissues. Symptoms and treatment are the same as for above. Usually results in a death of tissue, blistering, black skin, loss of toes, etc., with possible complications from gangrene.

B. First Aid

1. Cover and protect the affected part

2. Provide extra clothes

3. Bring indoors as soon as possible

4. Give warm drink

5. Rewarm frozen part quickly by immersing in warm water (if thawed and refrozen, warm at room temperature)

6. Do not rub - causes tissue death

7. Do not apply direct heat

8. Do not break blisters

9. Do not allow to walk after feet thaw

10. Discontinue warming as soon as part becomes flushed

11. Exercise thawed part

12. Separate fingers and toes with sterile gauze

13. Elevate frostbitten parts

14. Seek medical attention because of chance of infection, or gangrene.

C. Treatment

For all frostbite - rapid rewarming (thawing) as soon and as quickly as possible is the preferred treatment. Do not warm tissue that shall only be refrozen, or warm feet if they are to be walked upon. Second degree frostbite requires medical attention and the victim should not be re-exposed to the cold.

D. Prevention

1. Fatigue, cigarettes, alcohol, lack of food and drink, clothing which restricts circulation, and any other factors which reduce circulation shall contribute to frostbite.

2. Properly insulate all body parts. Extreme cold may require a face mask. Use insulated gloves and boots.

3. Winds and wetness shall accentuate frostbite. Keep dry and do not expose skin to the wind.

4. Be observant of each other. Look at ears, rosy cheeks, etc. Often the victim does not realize he has frostbite.

IDENTIFICATION AND TREATMENT OF HYPOTHERMIA

Hypothermia is a systematic lowering of the body temperature. Extreme cases (core temperature below 90^{o} F) result in death of the victim. Hypothermia is the most common cause of death for persons involved in outdoor wilderness sport activities. It does not require freezing temperatures and, in fact, can occur in ambient temperatures as high as 70^{o} F. Wind and wetness greatly accentuate hypothermia due to the enhanced cooling. Typical hypothermia conditions are a rainy, windy day with 50^{o} F air temperatures.

A. Symptoms

1. First Stage: goose bumps, shivering, feeling chilly

2. Second Stage: violent shivering, blue lips, pale complexion, feeling extremely cold

3. Third Stage: victim *no longer feels cold*, lack of coordination, mild unresponsiveness, drowsiness, stumbling

4. Fourth Stage: failing eyesight, victim barely responsive, cannot speak, barely able to or cannot walk.

5. Fifth Stage: coma and rapid death

B. Treatment

For all levels - remove wet, frozen or restrictive clothing. Dry the victim. Rewarming should be via an external heat source which completely envelopes the victim - a warm vehicle, a warm room, a sauna, a tub of warm water, by placing the victim in a sleeping bag with another person(s), etc. - and not a source of radiant heat which shall warm only one side of the victim. Be prepared to administer CPR. Do not give the victim alcohol.

1. First Stage: Put on hat, shirt, additional clothing, wind breaker, etc. Eat and drink. Exercise on tense muscles.

2. Second Stage: Same as above, only more so. Warm drinks and rewarm if possible.

NOTE: In hypothermia beyond second stage, the victim can no longer warm himself and must have an external heat source.

3. Third Stage: Rewarming, warm food and drink.

4. Fourth Stage: Remove wet or cold clothing and gradually rewarm victim so that blood trapped in extremities is re-warmed before it is circulated back into inner body to prevent afterdrop. Afterdrop is a further lowering of the body core temperature which results from recirculation of cold blood. Avoid hot, radiant heat sources which shall warm surface blood before inner blood has been warmed. Do not give warm drinks which fool the body internally into feeling it is warm. Fourth stage hypothermia victims are best treated by supervised, experienced medical help, as complications can cause death. Place victim in warm vehicle and evacuate immediately to a medical facility.

5. Fifth Stage: Gradual rewarming, but requires sophisticated medical help to prevent death from after shock (a recirculation of chilled blood causing heart fibrillation).

C. Prevention

1. Wear proper clothing which shall insulate the body, keep it dry and break the wind.

2. Cover the head, neck, wrists, and ankles in particular, as heat loss is most prevalent from these points.

3. Eat and drink warm fluids. Avoid eating snow.

4. Keep active to raise body temperature.

5. Avoid fatigue, alcohol, smoking and drugs.

6. Be aware of team members' condition and note symptoms.

STANDARD OPERATING PROCEDURE NUMBER 4

Confined Space Entry Policy

CONFINED SPACE ENTRY PROCEDURES

A. Confined Space Classification

Confined spaces are classified according to their existing or potential chemical and physical hazards. Classification is based on characteristics of the confined space, oxygen level, flammability, and toxicity. If any of the hazards present a situation that is immediately dangerous to life and health (IDLH), the confined space is classified as Class A. Classification is determined by the most hazardous condition of entering, working in, and exiting a confined space. Class B confined spaces have the potential for causing injury and illness, but are not IDLH. Class C entry is one in which the chemical hazard potential is minimal and does not require any special modification in work procedures.

B. Entry Procedures

Team Size - A minimum of three workers is required for each confined space activity (two entry and one standby; or one entry, one rescue, and one standby).

The one entry/one rescue/one standby arrangement should only be used when the confined space is relatively small and/or the entry person shall be in the line of sight at all times. In this instance, the rescue person acts as the second person in the "buddy system."

The two entry/one standby arrangement is used when the area of the confined space is larger, and the tasks may take the worker away from the entryway. Again, care must be taken with this arrangement because the standby person cannot enter the confined space and attempt rescue unless adequately protected (i.e., respiratory and dermal) and replaced by another qualified standby person.

This number of workers is the minimum buddy for these activities and, in most cases, should only be used for relatively nonhazardous confined spaces. Additional crew may be needed if entering a Class A or B confined space. Additional crew could include rescue, decontamination, and line-of-sight personnel.

C. General Entry Procedures

The following steps must be taken when entering a confined space:

1. Inspect all pieces of equipment to ensure they are in good working order. DO NOT ENTER CONFINED SPACE WITH DEFECTIVE EQUIPMENT.

2. Conduct a background check to identify all potential hazards that may be encountered in the confined space. Determine if there is a potential for fire/explosion hazards, as well as a potential for a toxic or oxygen-deficient atmosphere.

3. Before entry, the atmosphere inside the confined space must be tested. An attempt should be made to test the atmosphere without opening the entryway (i.e., through a vent line or a small opening). If the entryway must be opened to test and only low levels are expected in the confined space, crack open entryway, test breathing zone first, and then test the confined space. If potentially high levels are expected in the breathing zone, respiratory protection should be worn prior to opening the entryway cover.

4. If explosive, toxic, or oxygen-deficient atmosphere is detected, purge or ventilate the confined space prior to entry. Retest the atmosphere three times at 5-minute intervals. A person can enter the confined space without respiratory protection only if all three test results are below the Permissible Exposure Limit/Threshold Limit Value (PEL/TLV), 10 per cent of the LEL, and above 19.5 per cent oxygen (all three conditions must be met).

(NOTE: Any downward deflection of the readings on the oxygen meter from background (i.e., 20.9 per cent) should be viewed as a potential for an IDLH atmosphere. Unless contaminants are known to be nontoxic, do not enter the confined space without respiratory protection if the oxygen level is below background.)

5. Blank, block, or otherwise isolate, lockout, and tag all chemical, physical, and/or electrical hazards wherever possible.

6. If using an air-purifying respirator or if an IDLH and/or explosive atmosphere exists, air monitoring must be on a continuous basis. If respiratory protection is not used and there is potential for atmospheric conditions to change due to work practices or conditions, air monitoring should be done periodically. In all these cases, a 5-minute escape pack must be used.

7. Record all results of the tests for hazardous conditions including the location, time, date, weather (if applicable), and readings on the PID, combustible gas meter, oxygen deficiency meter, Drager tubes, and any other equipment.

8. Wear appropriate clothing for site conditions, as determined by the Site Safety and Health Officer (SSHO).

9. A safety belt or harness with lifeline must be worn if hazardous conditions exist, although good safety precautions dictate their use regardless of "existing" conditions. If the diameter of the entryway is less than 18 inches, the wrist-type harness must be used and special provisions made if a supplied air respirator is necessary.

10. One person (standby) must remain at the entryway at all times and must keep continuous contact with the person entering the confined space. Contact can be maintained by line-of-sight, listening for sounds, the safety line, and/or radio. The standby person must not enter the confined space unless another trained person is available to act as standby, and he/she is equipped with adequate respiratory and dermal protection. (In most cases, respiratory protection would be an airline respirator or SCBA.)

11. Do not smoke when working in or near confined spaces and do not take flash-lighted

photographs when explosive gases are known or suspected to be present.

12. Do not rely on permanent ladders because they are often in poor condition. If they must be used, be sure of footing. Inspect permanent ladders for deterioration before entering and while descending. Try each step with one foot, while standing on the step above. When in doubt, use a portable ladder of adequate height to reach 3 feet above opening or a rope ladder, or lower the entry person using the tripod. If a portable ladder is used, it should be tied off, if possible; otherwise, it should be held in place by the standby person.

13. Do not work without adequate lighting. Use only "explosion-proof" lights or hand lamps.

14. The entry person must not remain in the confined space if he/she becomes even slightly drowsy, faint, dizzy, or otherwise uncomfortable. Many of the gases that cause the most problems are odorless, tasteless, and invisible.

D. MANHOLE/SEWER ENTRY

When preparing to enter a manhole/sewer, the following safety measures must be taken:

1. Inspect all pieces of equipment to ensure they are all in good working order. DO NOT ENTER CONFINED SPACE WITH DEFECTIVE EQUIPMENT.

2. Park the vehicle near the manhole (do NOT leave the vehicle running). If the manhole is in the street, it is best to park so as to detour oncoming traffic around the manhole. The vehicle's emergency flashers and portable yellow warning beacon must be ON. The vehicle serves as protection from oncoming traffic, can be used to store emergency equipment (e.g., SCBA and first aid kit), and can be used in an extreme emergency to slowly pull an injured person from the confined space if a tripod with hoist attachment is unavailable or inoperative.

3. Erect portable barricades or cones around the manhole and in front of the vehicle to see that traffic is adequately diverted and to prevent pedestrians from falling in. Reflective vests should be worn so that workers are visible to approaching traffic.

4. If there are openings large enough to admit sampling tubes, test for the presence of explosive and toxic gases before removing each manhole cover. Otherwise, raise one side of the cover using the cover hook or pick, prop it slightly open, and conduct the tests.

5. If toxic or explosive gases are detected in the sewer, report this immediately to the local Fire Department and/or Department of Public Works.

6. Record the results of tests for hazardous conditions, including location, manhole number (if applicable), time and date, weather (if applicable), and the readings on the PID, combustible gas meter, oxygen deficiency meter, and Drager tube.

7. Remove manhole covers with a cover hook or pick; do not improvise. Be careful of fingers and toes; the cover is usually heavy and difficult to handle. Unless the cover is extremely heavy, it is safer for only one worker to handle it.

8. Test the atmosphere; if a toxic, flammable, or oxygen-deficient atmosphere exists, ventilate the sewer. Depending on the hazard, ventilation can be accomplished in a variety of ways: for example, (1) remove and vent the adjoining upstream and downstream manhole covers, as soon as possible, and well in advance of entering the manhole (high hazard); and (2) vent the manhole in which entry shall occur (very low hazard). If a blower is used, it is desirable to

establish a flow of air in the sewer, in one manhole and out another. Ensure that the air intake is well away from automobile exhaust, and combustible and/or toxic atmospheres. Appropriate traffic control measures must be taken by barricading or otherwise marking the open manholes.

9. After ventilating, test for explosive and toxic gases and oxygen deficiency in the manhole at ground level and at the bottom; record results. If entering the sewer itself, make the same tests at the manholes at either end. If ventilation is necessary, monitor the atmosphere in the manhole while work progresses, or continue operation of the blower. Continuous monitoring (i.e., equipment ON during entire entry) is imperative because conditions within the sewer may change rapidly. Do not enter a manhole while there is an oxygen deficiency without a pressure-demand, air-supplied breathing apparatus. If the oxygen level is lower than 20.9 per cent of background, caution must be taken because an IDLH atmosphere may exist.

10. When entering manholes or tanks, wear hardhats, protective clothing, and unless inappropriate, respiratory protection and safety belt or harness with lifeline. If the manhole is less than 18 inches in diameter, a wrist-type harness must be used and special provisions made if air-supplied respirators are necessary. When working in manholes greater than 12 feet deep, in the sewer itself, of where potential exists for gases to appear unexpectedly, a 5-minute emergency egress air supply is required (unless the time required to don the emergency respirator is greater than what would be needed to exit the manhole.)

11. At least one person (i.e., standby) must remain at the manhole at all times and must keep continuous contact with the person entering the sewer. Contact can be maintained by line-of-sight, listening for sounds, and the safety line and/or radio. The standby person must not enter the manhole unless another trained person is available to act as standby and has adequate respiratory and dermal protection available. (in most cases, respiratory protection shall be an airline respirator or SCBA). The standby/rescue person should be suited up (but not yet on air) before the work crew enters the confined space.

12. Do not smoke when working in or near manholes. Do not take flash-lighted photographs when explosive gases are known or suspected to be present.

13. Do not rely on the manhole ladders because they are often in poor condition. If they must be used, be sure of footing. Inspect manhole ladders for deterioration before entering and while descending. Try each step with one foot, while standing on the step above. When in doubt, use a portable or rope ladder of adequate height to reach 3 feet above the manhole opening, or lower the entry person using the tripod. If a portable ladder is used, it should be tied off if possible; otherwise, it should be held in place by the standby person.

14. Do not work without adequate lighting. Use only "explosion-proof" lights or hand lamps in the manhole or sewer.

15. The entry person must not remain in the manhole or sewer if he/she becomes even slightly drowsy, faint, dizzy, or otherwise uncomfortable. Remember that carbon monoxide, carbon dioxide, methane, and hydrogen sulfide, which cause the most trouble, are odorless (hydrogen sulfide has a distinct odor only during initial exposure), tasteless, and invisible.