

November 8, 2018

Dr. Dennis Li, Ph.D.
North Carolina Department of Transportation
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Reference: **Preliminary Site Assessment for the Quality Oil Company Property
2005 New Hope Church Road
Raleigh, Wake County, North Carolina
State Project: P-5715
WBS Element 46927.1.1
DAA Project No. 18110166-010701 Rev 1**

Dear Dr. Li:

Draper Aden Associates (DAA) has completed the Preliminary Site Assessment conducted at the above-referenced property. DAA performed the work in accordance with the Technical and Cost proposal dated March 30, 2018, and the North Carolina Department of Transportation's (NCDOT's) Notice to Proceed dated April 3, 2018. Activities associated with the assessment consisted of conducting a geophysical investigation and collecting soil samples for analysis. The purpose of this report is to document the field activities, present the laboratory analyses, and provide recommendations regarding the property.

Location and Description

The Quality Oil Company Property (Parcel #9) is located at 2005 New Hope Church Road in Raleigh, Wake County, North Carolina. The property is situated in the northwestern quadrant of the intersection of New Hope Church Road and Stillwell Court (**Figure 1**). The property is an active gas station and convenience store (Quality Mart). One building with detached gas dispensers and a canopy are located at the site with the existing underground storage tanks (USTs) located on the north side of the building (**Figure 2**). Concrete and asphalt paving dominates the site. According to the NCDOT, a new right-of-way acquisition will occur for eliminating the at-grade crossing for the rail line on the west side of the site. The proposed right-of-way will take the entire property; therefore, the taking will affect the building, canopy, and USTs.

The NCDOT requested a Preliminary Site Assessment for the right-of-way because the property contains an active gas station. The scope of work as defined in the Request for Technical and Cost Proposal was to evaluate the site with respect to the presence of known and unknown USTs, and

assess whether contamination exists on the study area. An estimate of the quantity of impacted soil is to be provided, should impacted soils be encountered.

DAA reviewed the on-line NCDEQ Incident Management database and UST Number RA-4260 was assigned to the site. According to the on-line NCDEQQ database, four 8,000-gallon gasoline USTs were removed from the site in 1993. Soil samples collected from the closure indicated no contamination and the no incident number was assigned. Although no incident number was assigned, it should be noted that a groundwater monitoring well was located north of the UST area. No information was available regarding the monitoring well.

DAA also examined the UST registration database to obtain UST ownership information. According to the database, the site operates under Facility Number 00-0-000006631 and includes one 12,000-gallon and two 8,000-gallon gasoline tanks installed in 1993. The database also indicates the three closed USTs. The owner and operator of the tanks are:

Owner

Quality Oil Company
PO Box 2736/1540 Silas Creek Parkway
Winston-Salem, NC 27102-2736

Operator

Quality Mart #6
2005 New Hope Church Road
Raleigh, NC 27284

Geophysical Survey

Prior to DAA's mobilization to the site, Pyramid Environmental & Engineering of Greensboro, NC (Pyramid) conducted a geophysical survey in the study area to determine if unknown USTs were present in the proposed easement. The geophysical survey consisted of an electromagnetic survey using a Geonics EM61 time-domain electromagnetic (EM) induction meter to locate buried metallic objects, and ground penetrating radar (GPR) using a Geophysical Survey Systems Inc. Utility Scan DF with a dual frequency 300/800 MHz antenna. Pyramid used the instruments specifically to locate USTs.

The geophysical team laid out a survey grid along the study area with the X-axis oriented approximately parallel to New Hope Church Road and the Y-axis oriented approximately perpendicular to New Hope Church Road. **Figure 2** of the geophysical survey report in **Attachment A** shows the EM survey area.

The geophysical survey lines were spaced five feet apart and the instruments collected magnetic data continuously along each survey line with a data logger. After collection, Pyramid reviewed the data in the field with graphical computer software. Following the electromagnetic survey, a GPR survey was conducted to further evaluate any significant metallic anomalies. GPR transects are shown on **Figure 3** of **Attachment A**.

Access was available to all areas of the study area and the geophysical survey detected several anomalies. With the exception of the known USTs, the survey attributed the anomalies to visible

cultural features, metallic debris, underground utilities, signage, or vehicles. The collective geophysical data did not record any evidence of unknown metallic USTs at the site. **Attachment A** presents Pyramid's detailed report of findings and interpretations.

Site Assessment Activities

On October 3 and 4, 2018, DAA mobilized to the site to conduct a Geoprobe® direct-push investigation to evaluate subsurface soil conditions on the property to a depth of 8 to 10 feet below ground surface (ft bgs) in non-UST areas and 15 ft bgs in the UST area. DAA advanced 15 direct-push holes (SB-1 through SB-15) throughout the proposed right-of-way (**Figure 2**). The soil boring logs are included as **Attachment B**. The borings were located to evaluate the subsurface conditions in the study area (see boring location photos in **Attachment C**).

The lithology encountered by the direct-push samples was generally consistent throughout the site. The ground surface was covered with about six inches of topsoil or asphalt. Below this surface cover was to a depth of about 3 ft bgs was reworked soil consistent with site work prior to construction. Below the reworked soil was a reddish brown to orange brown silty clay with interlayered seams of medium-grained sand. No bedrock or groundwater was noted in any of the borings, but parent rock fabric was noted in several of the soil samples. Each boring was backfilled with bentonite and drill cuttings to the surface after completion.

According to the 1985 Geologic Map of North Carolina, the site is within the Piedmont Physiographic Province in North Carolina. The strata indicated for this area is a biotite gneiss and schist intruded by numerous sills and dikes of granite, pegmatite and aplite. The soils observed at the site are consistent with this description.

Continuous sampling using a Geoprobe® resulted in good recovery of soil samples from the direct-push holes. DAA collected and contained soil samples in four-foot long acetate sleeves inside the direct-push Macro-Core® sampler. Each of the sleeves was divided into two-foot long sections for soil sample screening. Soil from each two-foot interval was placed in a resealable plastic bag and the bag was set aside for volatilization of organic compounds from the soil to the bag headspace. A photoionization detector (PID) probe was inserted into the bag and the reading was recorded (**Table 1**).

DAA submitted one sample per boring for analysis, the depth interval with the highest PID reading (**Table 1**). The soil samples were submitted to REDLab in Wilmington, North Carolina, for analysis of total petroleum hydrocarbons (TPH) diesel range organics (DRO) and gasoline range organics (GRO) using ultraviolet fluorescence (UVF) methodology.

Analytical Results

Table 1 summarizes the laboratory data and **Attachment D** presents the complete report. DAA submitted 15 soil samples for TPH DRO/GRO analysis. Of these samples, two contained detectable

GRO compounds at concentrations of 8.5 milligrams per kilogram (mg/kg) and 792.9 mg/kg at SB-5 and SB-3, respectively. Fourteen of the 15 soil samples contained detectable DRO compounds ranging from 0.13 to 1725 mg/kg. The action levels are 50 mg/kg for GRO and 100 mg/kg for DRO¹. One of the soil samples analyzed for this site contained DRO or GRO concentrations above their respective action levels. No other soil samples were above either the GRO or DRO action levels.

Contaminated Soil Volume Estimate

The UVF analytical results (**Table 1**) of the soil samples collected on October 3 and 4, 2018 indicate that one of the soil samples contained DRO and GRO concentrations above the action level. Therefore, DAA made an estimate of the volume of soil requiring possible remediation.

To estimate the volume of soil requiring possible remediation, DAA considered only the soil samples that contained a DRO and/or GRO concentration above the respective action levels. The thickness of the potentially contaminated soil was estimated from the UVF results and field screening, which indicated a thickness of four feet (**Table 1**). After estimating the potential contamination geometry using field observations and experience with similar sites and geology, DAA measured the affected section on **Figure 3** by using CAD software, which indicated a total area of about 340 ft². Estimating a four-foot contamination thickness, this calculates to a volume of about 50 bank cubic yards.

The use of DRO and GRO concentrations to determine UST closure and immediate soil removal is a valid analytical method. However, any cleanup beyond the closure is governed by risk-based methods that are based on individual constituents and do not correlate with DRO and GRO concentrations. Because of the uncertainty associated with the differences in these analytical methods, the actual volume of contaminated soil may be higher or lower.

Conclusions and Recommendations

DAA conducted a Preliminary Site Assessment to evaluate the Quality Oil Company Property (Parcel #9) located at 2005 New Hope Church Road in Raleigh, Wake County, North Carolina. A geophysical survey conducted at the site indicated that no unknown metallic USTs were detected within the proposed right-of-way on the site. Fifteen soil borings were advanced to evaluate the subsurface soil conditions within the site. One of the 15 soil samples analyzed for TPH contained a GRO and DRO concentration above the action level. Based on the action level, DAA estimates a contaminated soil volume of about 50 bank cubic yards.

¹ NCDEQ, *Guidelines for North Carolina Action Limits for Total Petroleum Hydrocarbons (TPH)*, July 26, 2016,

DAA appreciates the opportunity to work with the NCDOT on this project. Because compounds were detected above the action level in the soil samples, DAA recommends that a copy of this report be submitted to the Division of Waste Management, UST Section, in the Raleigh Regional Office. If you have any questions, please contact us at (919) 873-1060.

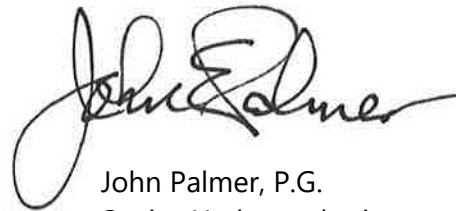
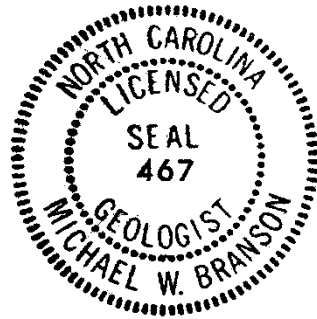
Sincerely,

Solutions-IES



Michael W. Branson, P.G.
Project Manager

Attachments



John Palmer, P.G.
Senior Hydrogeologist

TABLE 1
SOIL FIELD SCREENING AND ANALYTICAL RESULTS
QUALITY OIL COMPANYy PROPERTY
RALEIGH, WAKE COUNTY, NORTH CAROLINA
STATE PROJECT: P-5715
WBS ELEMENT 46927.1.1
DAA PROJECT NO. 18110166-010701

SAMPLE ID	DEPTH (ft)	PID READING (ppm)	SAMPLE ID	ANALYTICAL RESULTS (mg/kg)	
				UVF GRO	UVF DRO
		Action Level (mg/kg)		50	100
SB-01	0 - 2	3.6			
	2 - 4	5.7			
	4 - 6	12.7	SB-1-4-6	<0.52	29.2
	6 - 8	7.1			
	8 - 10	10.7			
	10 - 12	4.8			
SB-2	0 - 2	4.2			
	2 - 4	4.6			
	4 - 6	10.1			
	6 - 8	5.5			
	8 - 10	4.7			
	10 - 12	11.7	SB-2-10-12	<0.53	43.2
SB-3	0 - 2	2.0			
	2 - 4	1.7			
	4 - 6	1.7			
	6 - 8	1.2			
	8 - 10	5.9			
	10 - 12	15.0			
	12 - 14	56.7			
	14 - 16	1,303	SB-3-14-16	792.9	1,725
SB-4	0 - 2	3.7			
	2 - 4	3.5			
	4 - 6	3.6			
	6 - 8	3.7			
	8 - 12	2.7			
	12 - 15	461.0	SB-4-12-15	<0.51	2.9
SB-5	0 - 2	11.6			
	2 - 4	13.0			
	4 - 6	4.3			
	6 - 8	3.0			
	8 - 10	3.8			
	10 - 12	5.9			
	12 - 14	5.7			
	14 - 16	47.0	SB-5-14-16	8.5	55.8

TABLE 1
SOIL FIELD SCREENING AND ANALYTICAL RESULTS
QUALITY OIL COMPANYy PROPERTY
RALEIGH, WAKE COUNTY, NORTH CAROLINA
STATE PROJECT: P-5715
WBS ELEMENT 46927.1.1
DAA PROJECT NO. 18110166-010701

SB-6	0 - 2	2.3			
	2 - 4	4.4			
	4 - 6	4.4			
	6 - 8	7.8			
	8 - 10	43.4			
	10 - 12	95.1			
	12 - 14	78.0			
	14 - 16	153.0	SB-6-14-16	<0.65	0.13
SB-7	0 - 2	5.7			
	2 - 4	9.1			
	4 - 6	11.4			
	6 - 8	13.4			
	8 - 10	46.4			
	10 - 12	55.9	SB-7-10-12	<0.58	<0.23
	12 - 14	41.0			
	14 - 16	44.7			
SB-8	0 - 2	2.6			
	2 - 4	5.0			
	4 - 6	9.5			
	6 - 8	16.7	SB-8-6-8	<0.64	83.8
SB-9	0 - 2	2.2			
	2 - 4	2.2			
	4 - 6	5.7			
	6 - 8	17.7			
	8 - 10	14.4			
	10 - 12	11.5			
	12 - 14	22.8	SB-9-12-14	<0.66	55.6
	14 - 16	15.2			
SB-10	0 - 2	2.0			
	2 - 4	2.5			
	4 - 6	3.3			
	6 - 8	5.2	SB-10-6-8	<0.52	5.6
SB-11	0 - 2	3.0			
	2 - 4	4.0			
	4 - 6	4.8	SB-11-4-6	<0.77	34.7
	6 - 8	4.7			

TABLE 1
SOIL FIELD SCREENING AND ANALYTICAL RESULTS
QUALITY OIL COMPANYy PROPERTY
RALEIGH, WAKE COUNTY, NORTH CAROLINA
STATE PROJECT: P-5715
WBS ELEMENT 46927.1.1
DAA PROJECT NO. 18110166-010701

SB-12	0 - 2	2.8			
	2 - 4	2.9			
	4 - 6	3.1	SB-12-4-6	<0.63	20
	6 - 8	2.8			
SB-13	0 - 2	3.7			
	2 - 4	2.9			
	4 - 6	4.9	SB-13-4-6	<0.53	11.5
	6 - 8	4.4			
SB-14	0 - 2	3.5			
	2 - 4	3.7			
	4 - 6	4.5	SB-14-4-6	<0.8	4.5
	6 - 8	3.8			
SB-15	0 - 2	3.1			
	2 - 4	3.3	SB-15-2-4	<0.6	8.9
	4 - 6	3.1			
	6 - 8	2.0			

1) ft - feet

2) ppm - parts per million

3) PID - photoionization detector

4) mg/kg - milligrams per kilogram

5) UVF DRO - Diesel range organics by ultraviolet fluorescence (UVF)

6) UVF GRO - Gasoline range organics by UVF

7) Action level for TPH based upon NCDEQ memo *Guidelines for North Carolina Action Limits for Total Petroleum Hydrocarbons* - July 29, 2016. VOC action levels based on Maximum Soil Contaminant Concentrations

8) Soil samples were collected on October 3 and 4, 2018.

9) **Bold** values are above the detection level.

10) Shaded values are above the action level.

FIGURES

PROJECT NUMBER
1810166-010701

CHECKED BY
JEP

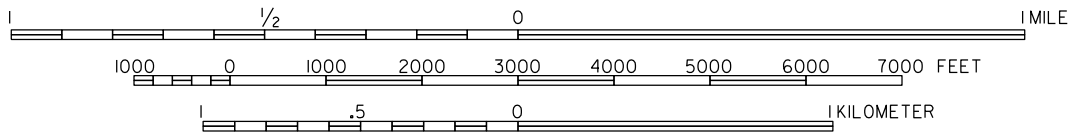
PROJECT MANAGER
MWB

DATE
SEPTEMBER 2018

FILE
NCDOT QUALITY OIL COMPANY PSA



SCALE 1:24,000



SOURCE: U.S. GEOLOGICAL SURVEY 7.5 MIN QUADRANGLE: RALEIGH EAST, NC (2016)

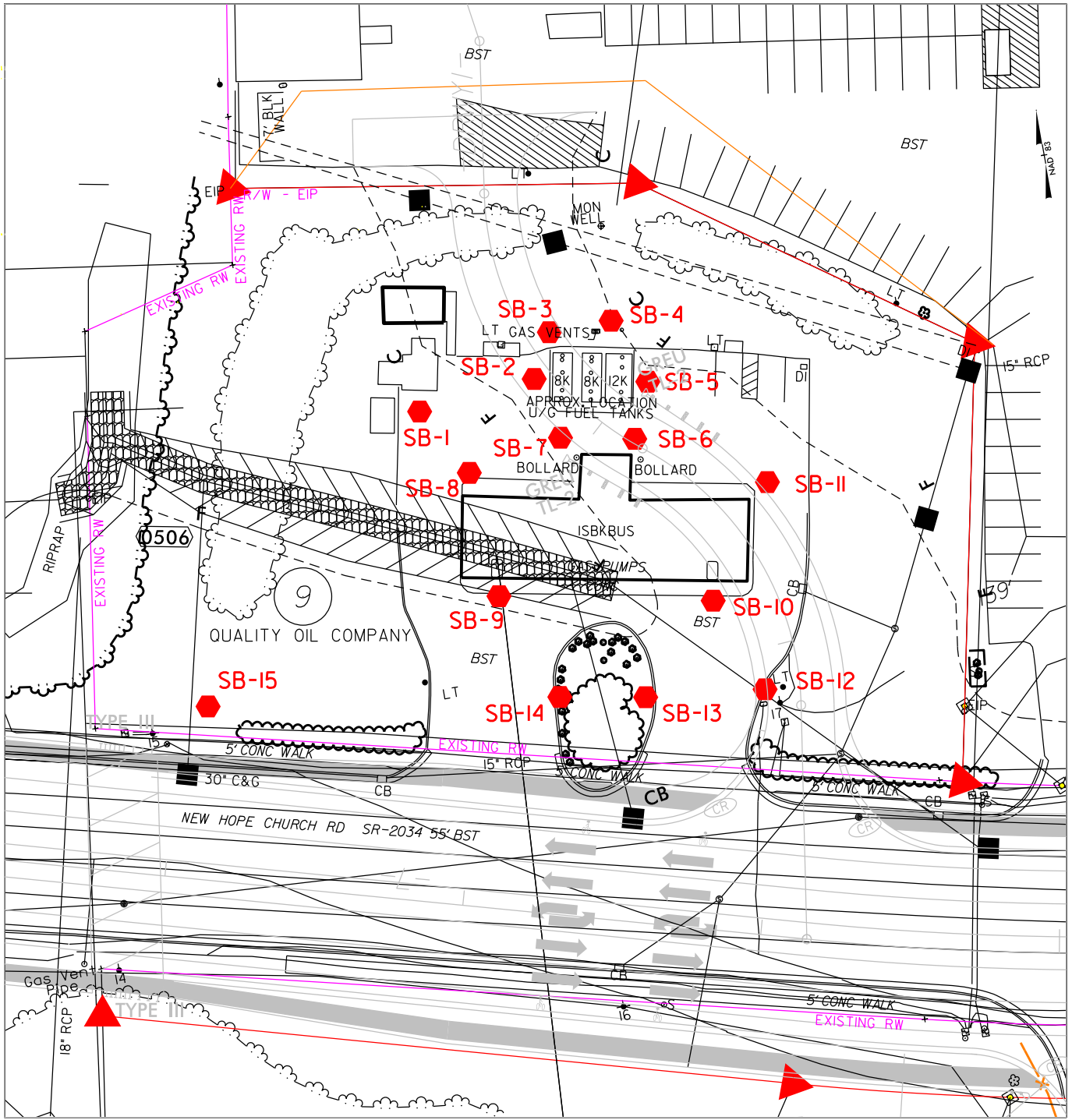


1101 NOWELL ROAD
 RALEIGH, NORTH CAROLINA 27607
 TEL: (919) 873-1060 FAX: (919) 873-1074

VICINITY MAP
 QUALITY OIL COMPANY PROPERTY
 RALEIGH, NORTH CAROLINA

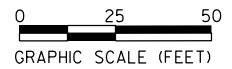
FIGURE
 1

PROJECT NUMBER 1810166-010701
 DRAFTER MWB
 CHECKED BY JEP
 PROJECT MANAGER MWB
 DATE OCTOBER 2018
 FILE QUALITY OIL COMPANY PSA



LEGEND

- ◆ SB-1 SOIL BORING LOCATION AND ID
- PROPOSED RIGHT-OF-WAY



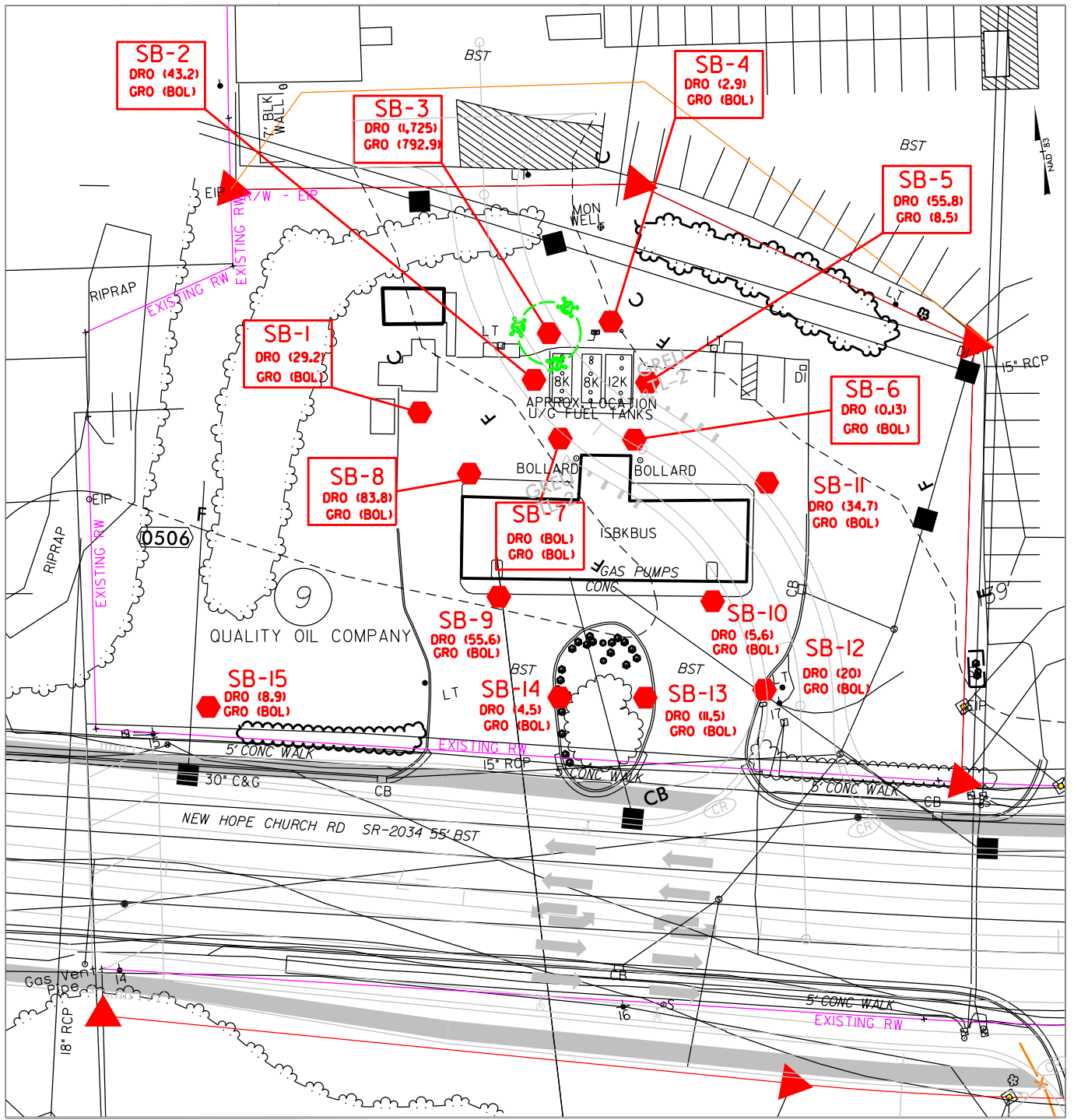
1101 NOWELL ROAD
 RALEIGH, NORTH CAROLINA 27607
 TEL: (919) 873-1060 FAX: (919) 873-1074

SITE MAP
 QUALITY OIL COMPANY PROPERTY
 RALEIGH, NORTH CAROLINA

FIGURE

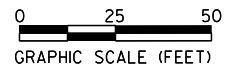
2

PROJECT NUMBER: 1811018664-0003701
 DRAFTER: MWB
 CHECKED BY: JEP
 PROJECT MANAGER: MWB
 DATE: NOVEMBER 2017
 FILE: 000KINVILOE COMPANY PSA



LEGEND

- SB-01** SOIL BORING LOCATION AND ID
- DRO (123)** DIESEL RANGE ORGANICS (MG/KG)
- GRO (123)** GASOLINE RANGE ORGANICS (MG/KG)
- BOL** BELOW QUANTITION LIMIT
- ESTIMATED EXTENT OF POTENTIAL CONTAMINATION



1101 NOWELL ROAD
 RALEIGH, NORTH CAROLINA 27607
 TEL: (919) 873-1060 FAX: (919) 873-1074

SOIL TPH CONCENTRATIONS MAP
 QUALITY OIL COMPANY PROPERTY
 RALEIGH, NORTH CAROLINA

FIGURE
 3

ATTACHMENT A



PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2018-246)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCEL 9 NCDOT PROJECT P-5715

2005 NEW HOPE CHURCH ROAD, RALEIGH, NC
SEPTEMBER 21, 2018

Report prepared for: Mike Branson
Draper Aden Associates
1101 Nowell Road
Raleigh, NC 27607

Prepared by: _____

Eric C. Cross, P.G.
NC License #2181

Reviewed by: _____

Douglas A. Canavello, P.G.
NC License #1066

LIST OF ACRONYMS

CADD	Computer Assisted Drafting and Design
DF	Dual Frequency
EM.....	Electromagnetic
GPR.....	Ground Penetrating Radar
GPS	Global Positioning System
NCDOT.....	North Carolina Department of Transportation
ROW	Right-of-Way
UST	Underground Storage Tank

GEOPHYSICAL INVESTIGATION REPORT
Parcel 9 – 2005 New Hope Church Road
Raleigh, Wake County, North Carolina

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- Figure 5 – Overlay of Geophysical Survey Boundaries with Three Known USTs on NCDOT Engineering Plans

Appendices

- Appendix A – GPR Transect Images

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for Draper Aden Associates at Parcel 9, located at 2005 New Hope Church Road, in Raleigh, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project P-5715). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted on September 19, 2018, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Geophysical Results: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of eighteen EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Several EM anomalies were associated with known USTs, a suspected storm sewer, and the pump islands/building/vehicles and were further investigated with GPR. GPR recorded evidence of hyperbolic reflectors consistent with various utilities (storm sewer, electrical lines) and the gas station product lines.

GPR also verified the sizes and orientations of the three known USTs on the north side of the service station building. The western UST (UST #1) was approximately 23 feet long by 9 feet wide. The central UST (UST #2) was approximately 24.5 feet long by 10 feet wide. The eastern UST (UST #3) was approximately 32 feet long by 9 feet wide. Collectively, the geophysical data recorded evidence of three known USTs at Parcel 9.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Draper Aden Associates at Parcel 9, located at 2005 New Hope Church Road, in Raleigh, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project P-5715). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. For this parcel, the proposed ROW encompassed the entire parcel. Conducted from September 19, 2018, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site included an active gas station surrounded by concrete, asphalt, and grass surfaces. Three known USTs were located within the survey area on the north side of the service station building. An aerial photograph showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. Pyramid collected the EM data using a Geonics EM61-MK2 (EM61) metal detector integrated with a Geode External GPS/GLONASS receiver. The integrated GPS system allows the location of the instrument to be recorded in real-time during data collection, resulting in an EM data set that is geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter of the site with marks every 10 feet to maintain orientation of the instrument throughout the survey and assure complete coverage of the area.

According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data were digitally collected at approximately 0.8-foot intervals along north-south trending or east-west trending,

generally parallel survey lines, spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 15.0 software programs.

GPR data were acquired across select EM anomalies on September 19, 2018, using a Geophysical Survey Systems, Inc. (GSSI) UtilityScan DF unit equipped with a dual frequency 300/800 MHz antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the DF unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the DF unit for post-processing and figure generation.

Pyramid’s classifications of USTs for the purposes of this report are based directly on the geophysical UST ratings provided by the NCDOT. These ratings are as follows:

Geophysical Surveys for Underground Storage Tanks on NCDOT Projects			
High Confidence	Intermediate Confidence	Low Confidence	No Confidence
Known UST Active tank - spatial location, orientation, and approximate depth determined by geophysics.	Probable UST Sufficient geophysical data from both magnetic and radar surveys that is characteristic of a tank. Interpretation may be supported by physical evidence such as fill/vent pipe, metal cover plate, asphalt/concrete patch, etc.	Possible UST Sufficient geophysical data from either magnetic or radar surveys that is characteristic of a tank. Additional data is not sufficient enough to confirm or deny the presence of a UST.	Anomaly noted but not characteristic of a UST. Should be noted in the text and may be called out in the figures at the geophysicist’s discretion.

DISCUSSION OF RESULTS

Discussion of EM Results

A contour plot of the EM61 results obtained across the survey area at the property is presented in **Figure 2**. Each EM anomaly is numbered for reference in the figure. The

following table presents the list of EM anomalies and the cause of the metallic response, if known:

LIST OF METALLIC ANOMALIES IDENTIFIED BY EM SURVEY

Metallic Anomaly #	Cause of Anomaly	Investigated with GPR
1	Air Pump/Lamp Post	
2	Three Known USTs	☑
3	Fallen Lamp Post	
4	Vehicle	
5	Manhole	
6	Drop Inlet	
7	Storm Sewer	☑
8	Sign/Utility	
9	Sign	
10	Drop Inlet/Sign	
11	Manholes	
12	Utilities	
13	Sign	
14	Drop Inlet	
15	Utilities	
16	Lamp Post	
17	Pump Islands/Building/Vehicles	☑
18	AST/Dumpsters/Shed	

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including the known USTs, an air pump, lamp posts, vehicles, manholes, drop inlets, signs, utilities, an aboveground storage tank (AST), dumpsters, and a shed. Three large high-amplitude EM anomalies (Anomaly 2), were associated with the three known USTs within the survey area. GPR was performed across the known USTs to verify their sizes and orientations.

Anomaly 7 was suspected to be the result of a corrugated steel storm sewer pipe and investigated further with GPR.

The canopy above the pump islands/building resulted in a lack of GPS signal, so this area was investigated using GPR.

Discussion of GPR Results

Figure 3 presents the locations of the formal GPR transects performed at the property, as well as select transect images. A total of sixteen formal GPR transects were performed at the site. All of the transect images are included in **Appendix A**. GPR Transect 1 was performed across EM Anomaly 7. This transect recorded a hyperbolic reflector consistent with a buried utility.

GPR Transect 2 was performed across the widths of the three known USTs associated with EM Anomaly 2. This transect, as well as additional reconnaissance GPR scans, verified the sizes and orientations of the three known tanks. The western UST (UST #1) was approximately 23 feet long by 9 feet wide. The central UST (UST #2) was approximately 24.5 feet long by 10 feet wide. The eastern UST (UST #3) was approximately 32 feet long by 9 feet wide. **Figure 4** provides the locations and sizes of the three known USTs overlain on an aerial, along with ground-level photographs.

GPR Transects 3-16 were performed in a grid-like fashion beneath the canopy to investigate for buried structures due to the loss of GPS signal during the EM survey. These transects recorded hyperbolic reflectors laid out in a linear fashion surrounding the pumps that were consistent with suspected product lines.

Collectively, the geophysical data recorded evidence of three known USTs at Parcel 9. **Figure 5** provides an overlay of the geophysical survey area and the locations of the known USTs onto the NCDOT MicroStation engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 9 in Raleigh, North Carolina, provides the following summary and conclusions:

- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface.
- Several EM anomalies were associated with known USTs, a suspected storm sewer, and the pump islands/building/vehicles and were further investigated with GPR.
- GPR recorded evidence of hyperbolic reflectors consistent with various utilities (storm sewer, electrical lines) and the gas station product lines.
- GPR verified the sizes and orientations of the three known USTs on the north side of the service station building. The western UST (UST #1) was approximately 23 feet long by 9 feet wide. The central UST (UST #2) was approximately 24.5 feet long by 10 feet wide. The eastern UST (UST #3) was approximately 32 feet long by 9 feet wide.
- Collectively, the geophysical data recorded evidence of three known USTs at Parcel 9.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Draper Aden Associates in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined the definitive presence or absence of metallic USTs, but the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA



View of Survey Area
(Facing Approximately North)



View of Survey Area
(Facing Approximately West)



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PROJECT
PARCEL 9
RALEIGH, NORTH CAROLINA
NCDOT PROJECT P-5715

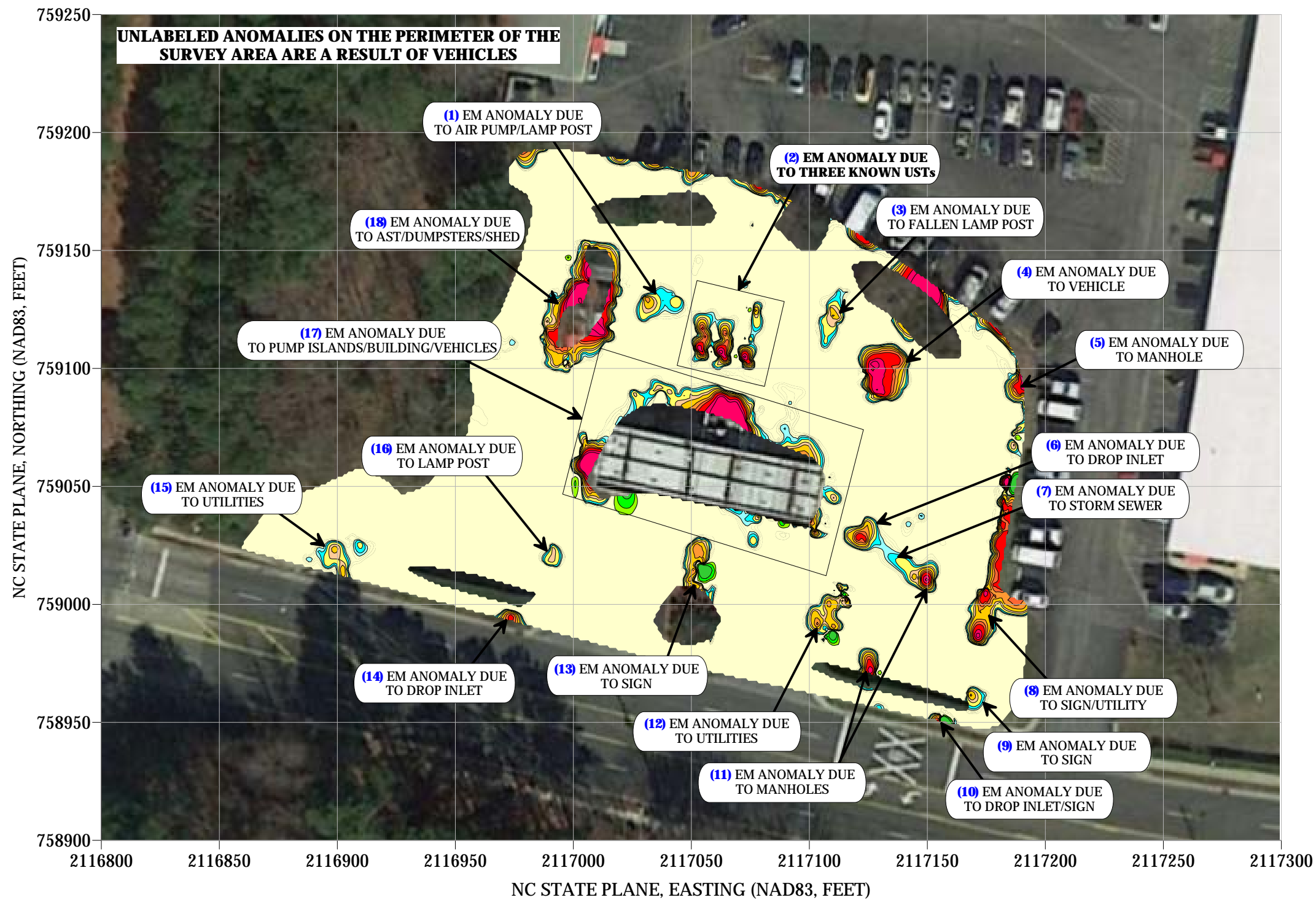
TITLE
**PARCEL 9 - GEOPHYSICAL SURVEY
BOUNDARIES AND SITE PHOTOGRAPHS**

DATE
9/19/2018
PYRAMID PROJECT #:
2018-246

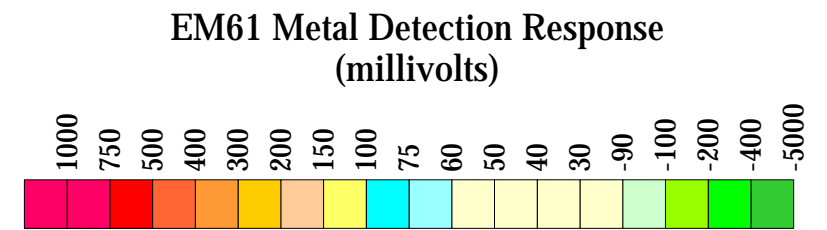
CLIENT
DRAPER ADEN ASSOCIATES
FIGURE 1

EM61 METAL DETECTION RESULTS

EVIDENCE OF THREE KNOWN USTs OBSERVED.

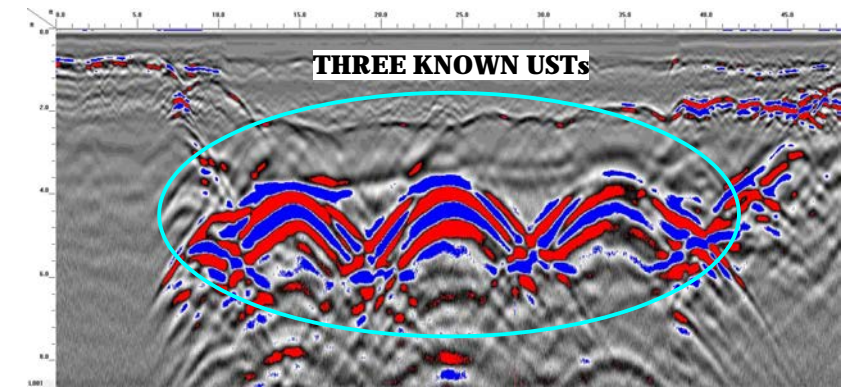
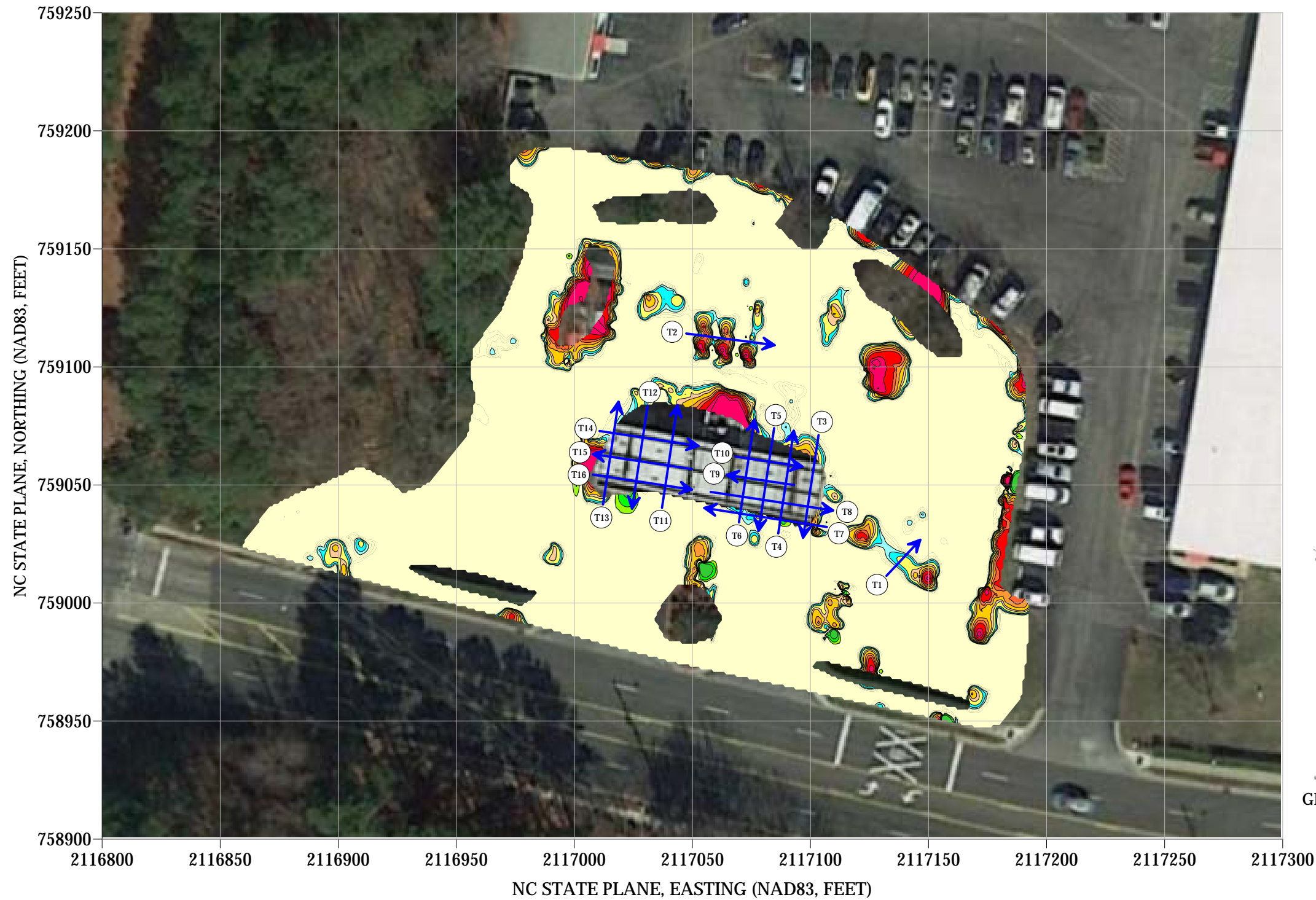


The contour plot shows the differential results of the EM61 instrument in millivolts (mV). The differential results focus on larger metallic objects such as USTs and drums. The EM61 data were collected on September 19, 2018, using a Geonics EM61 instrument. Verification GPR data were collected using a GSSI UtilityScan DF instrument with a dual frequency 300/800 MHz antenna on September 19, 2018.

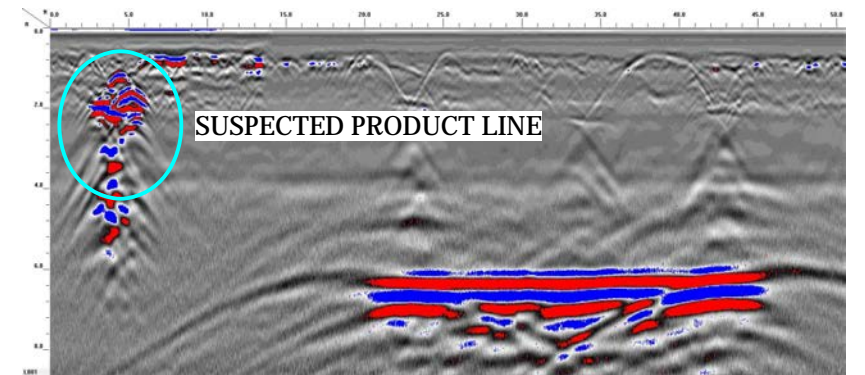


	503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 9 RALEIGH, NORTH CAROLINA NCDOT PROJECT P-5715	TITLE PARCEL 9 - EM61 METAL DETECTION CONTOUR MAP	DATE	9/19/2018	CLIENT	DRAPER ADEN ASSOCIATES
				PYRAMID PROJECT #:	2018-246	FIGURE 2	

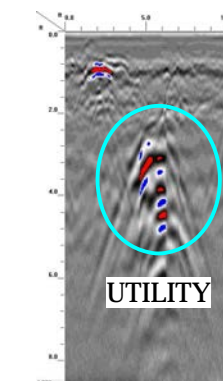
LOCATIONS OF GPR TRANSECTS



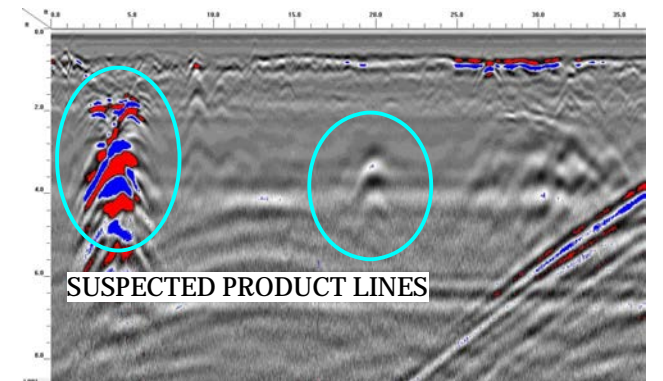
GPR TRANSECT 2 (T2)



GPR TRANSECT 3 (T3)




GPR TRANSECT 1 (T1)



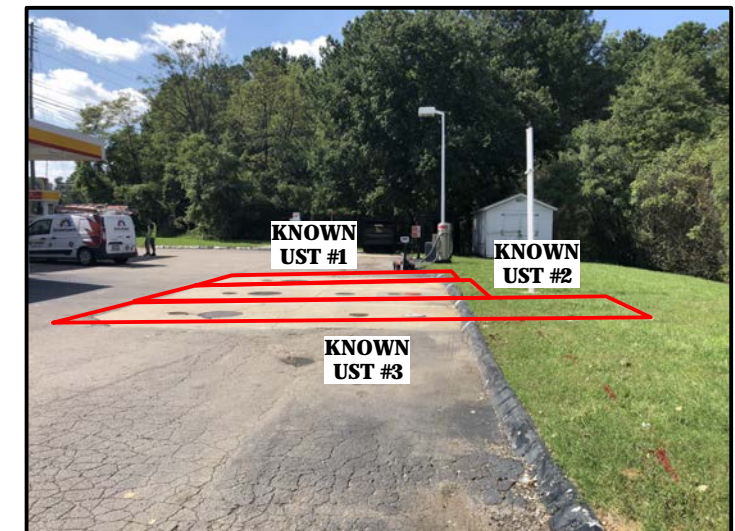
GPR TRANSECT 14 (T14)

*EXTENSIVE GPR SCANS WERE CONDUCTED OVER THE ENTIRE SITE. TRANSECT LINES ON THE MAP ABOVE INDICATE LOCATIONS WHERE DATA WERE SAVED. THESE LOCATIONS WERE CHOSEN TO HIGHLIGHT STRUCTURES IDENTIFIED IN THE SUBSURFACE OR TRANSECTS THAT ARE REPRESENTATIVE OF GENERAL SUBSURFACE CONDITIONS.

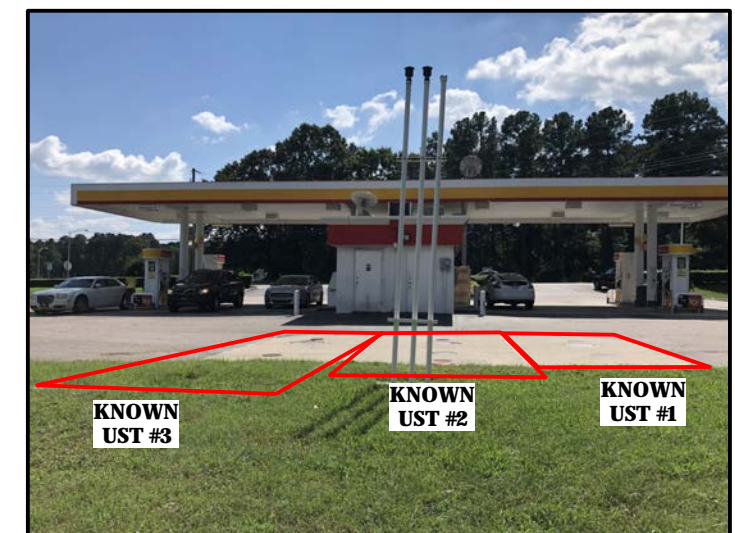


 503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 9 RALEIGH, NORTH CAROLINA NCDOT PROJECT P-5715	TITLE PARCEL 9 - GPR TRANSECT LOCATIONS AND SELECT IMAGES	DATE	9/19/2018	CLIENT	DRAPER ADEN ASSOCIATES
			PYRAMID PROJECT #:	2018-246	FIGURE 3	

LOCATIONS OF THREE KNOWN USTs



View of Three Known USTs Facing Approximately West



View of Three Known USTs Facing Approximately South



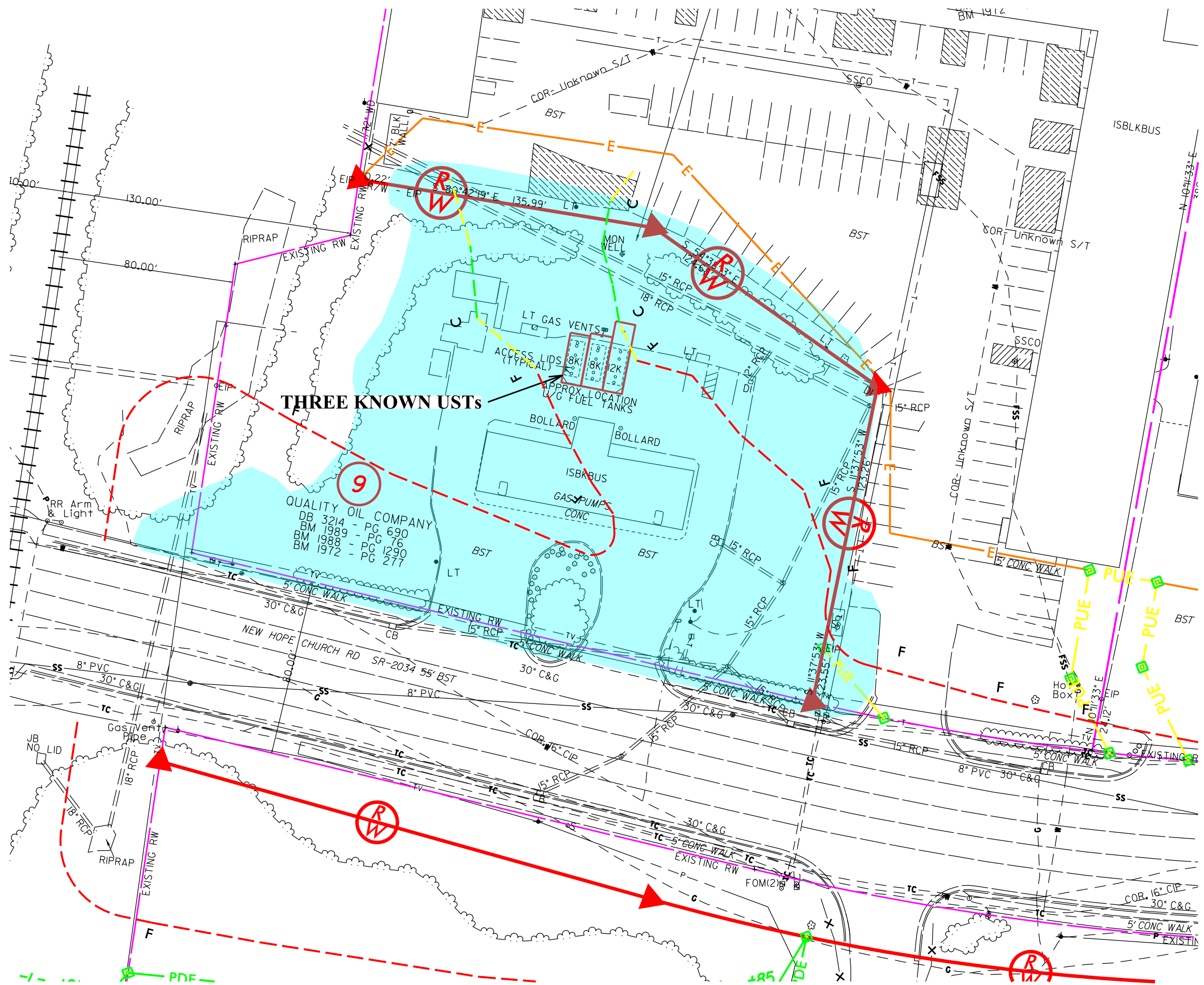
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PROJECT **PARCEL 9**
RALEIGH, NORTH CAROLINA
NCDOT PROJECT P-5715

TITLE **PARCEL 9 - LOCATIONS AND SIZES OF THREE KNOWN USTs**

DATE **9/19/2018**
 PYRAMID PROJECT #: **2018-246**

CLIENT **DRAPER ADEN ASSOCIATES**
FIGURE 4



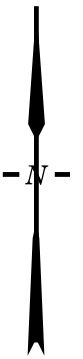
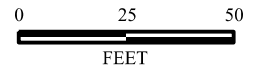
LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- E TEMPORARY CONSTRUCTION EASEMENT
- PDE PROPOSED PERMANENT DRAINAGE
- PUE PROPOSED PERMANENT UTILITY
- - - PROPOSED SS CUT LINE
- - - PROPOSED SS FILL LINE
- GEOPHYSICAL SURVEY AREA
- KNOWN UST

THREE KNOWN USTs

9

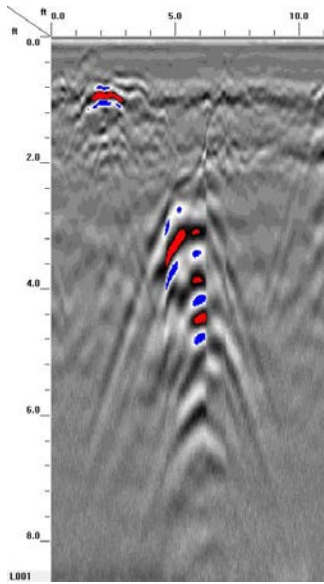
QUALITY OIL COMPANY
 DB 3214 - PG 690
 BM 1989 - PG 76
 BM 1988 - PG 1290
 BM 1972 - PG 277



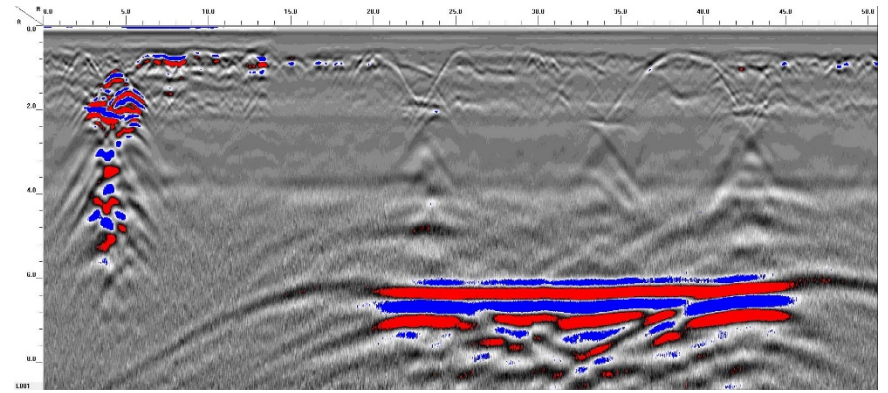
TITLE OVERLAY OF GEOPHYSICAL SURVEY BOUNDARIES AND THREE KNOWN USTs ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 9 RALEIGH, NORTH CAROLINA NCDOT PROJECT P-5715	
503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
DATE: 09-21-2018	REVISION NO. 0
PYRAMID PROJECT NO. 2018-246	FIGURE NO. 5



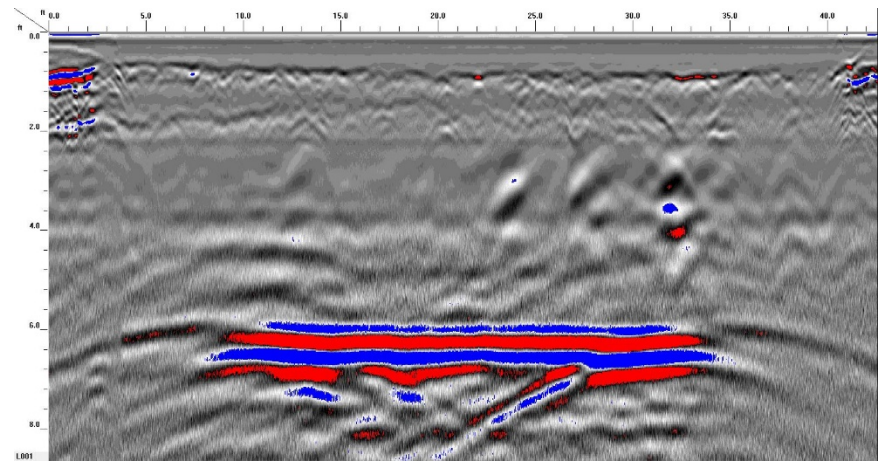
Appendix A – GPR Transect Images



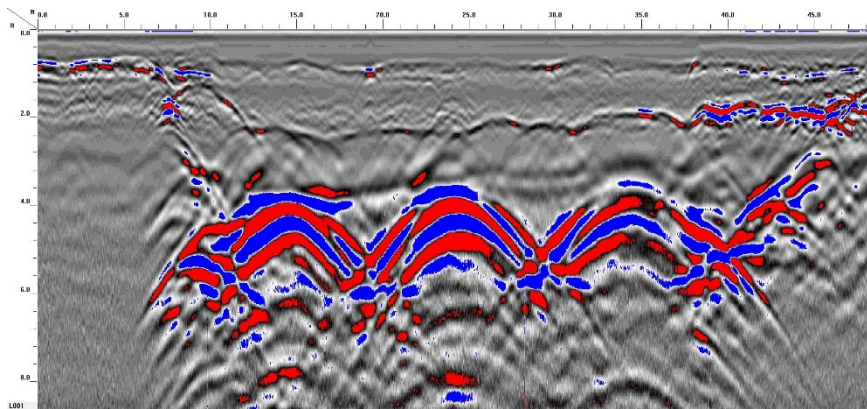
Transect 1



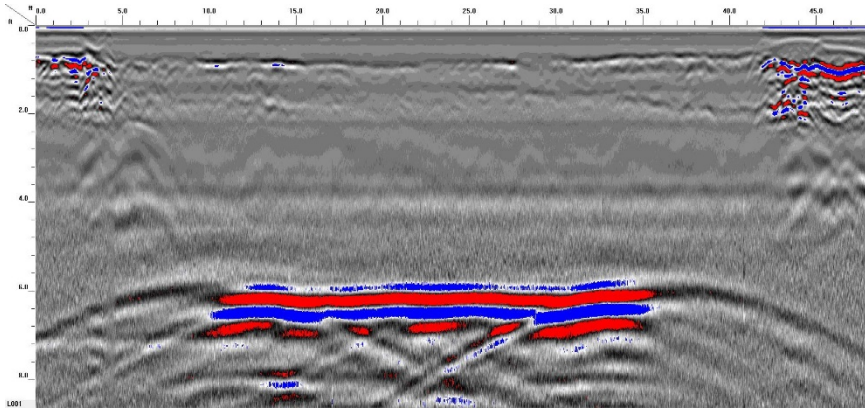
Transect 3



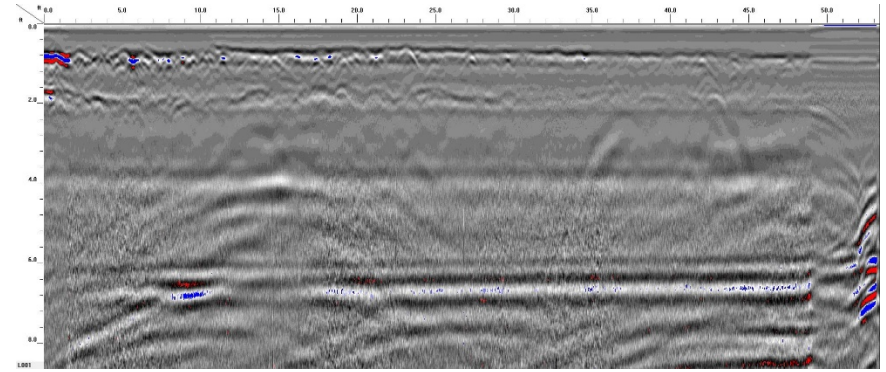
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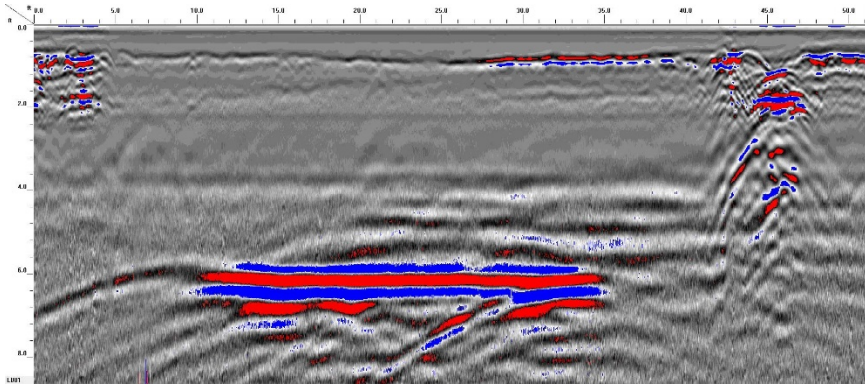
Transect 2



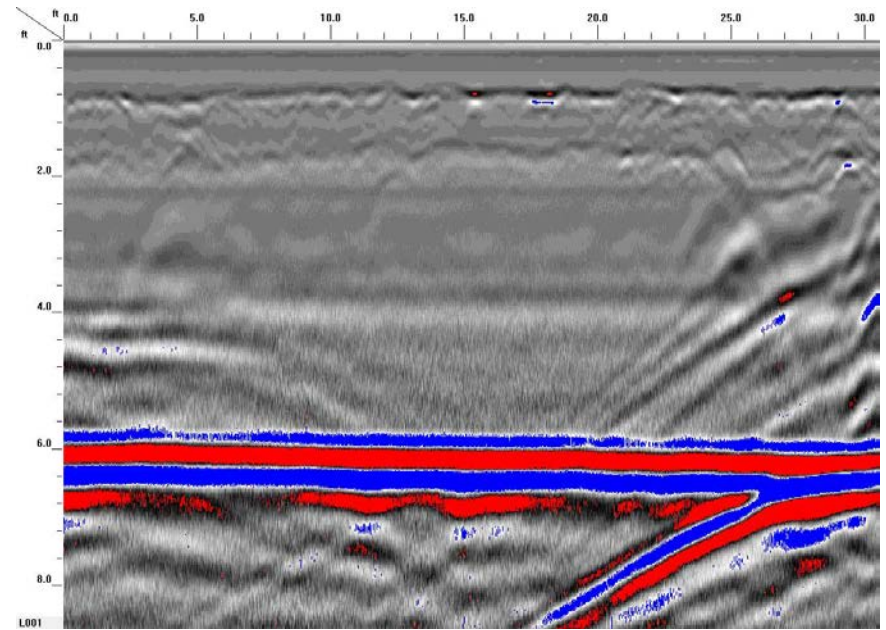
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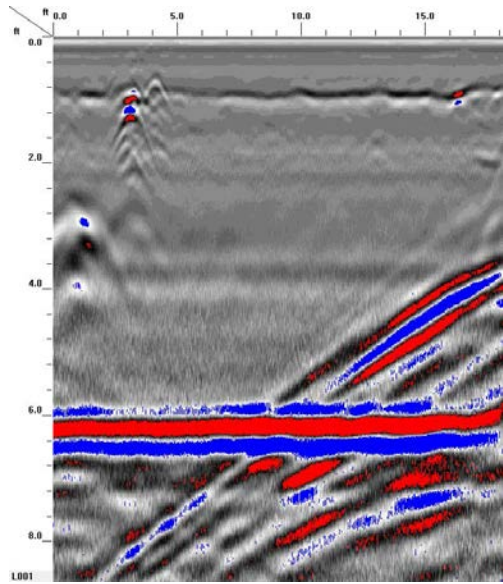
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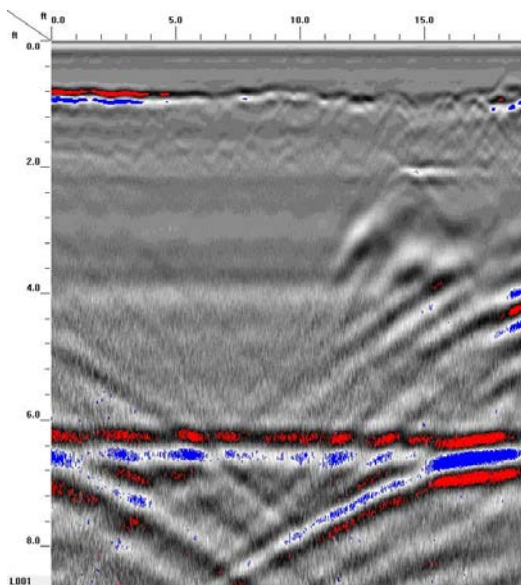
Transect 6



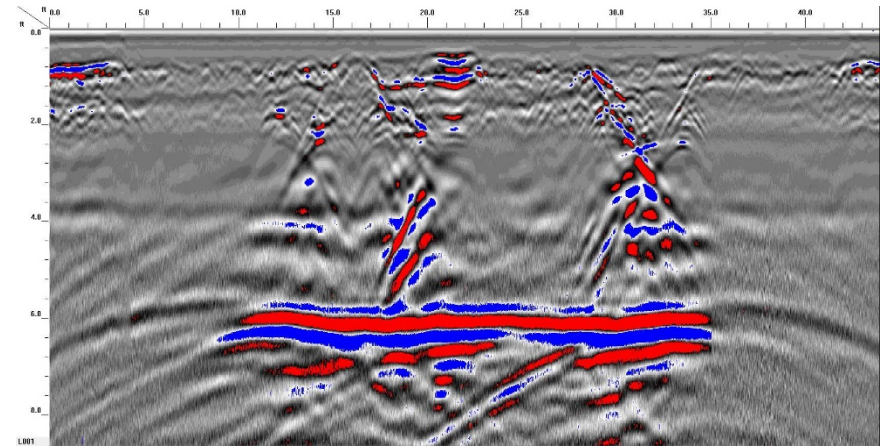
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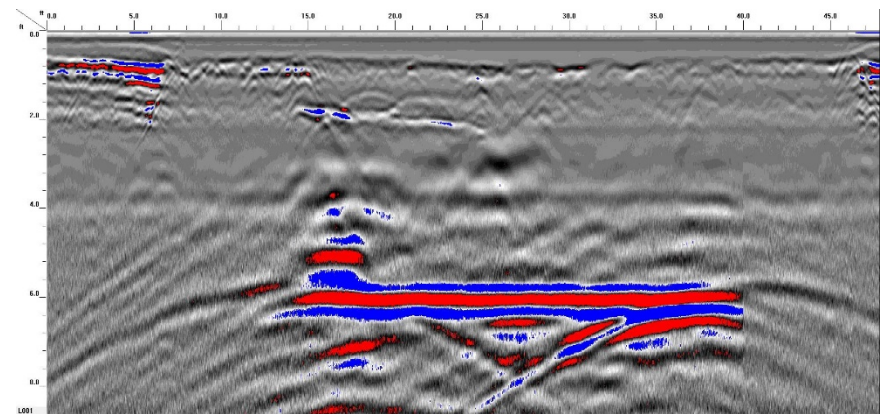
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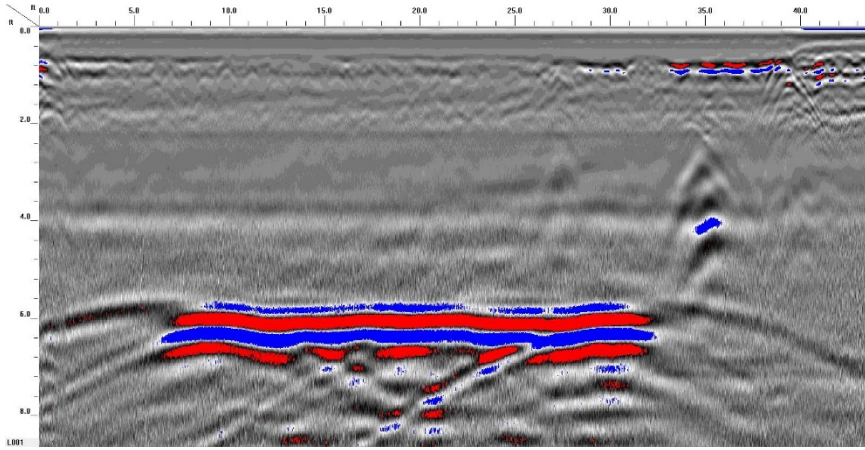
Transect 10



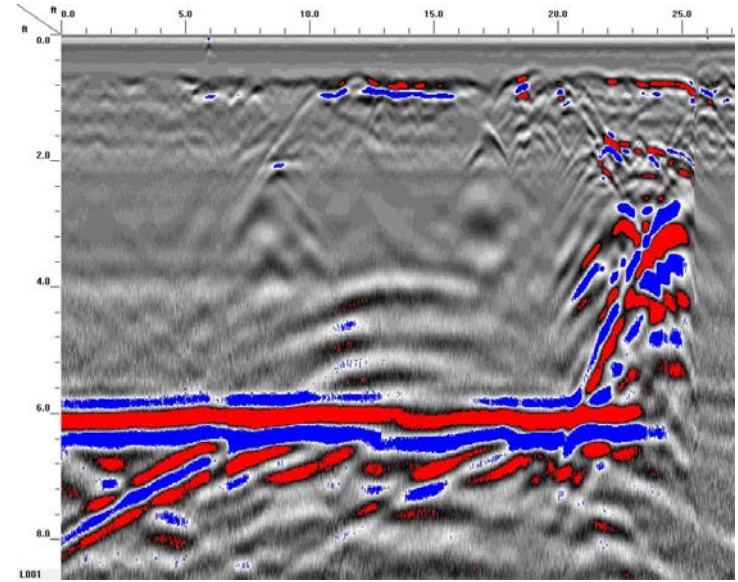
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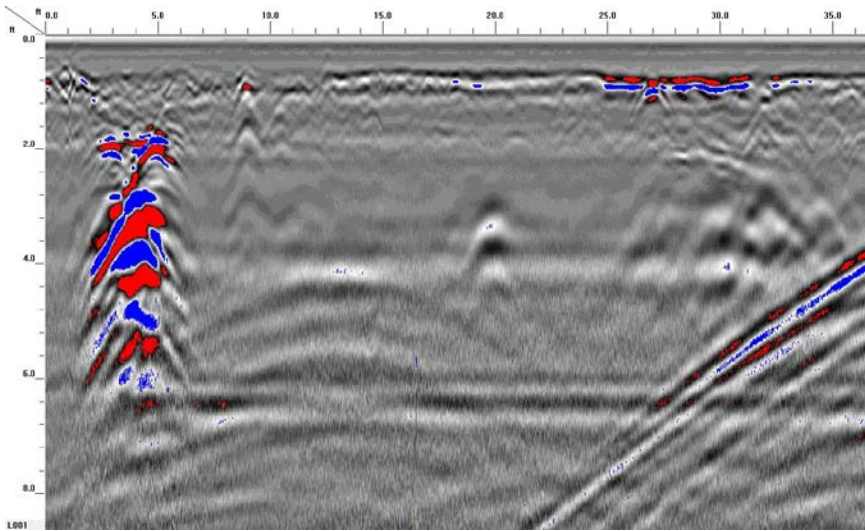
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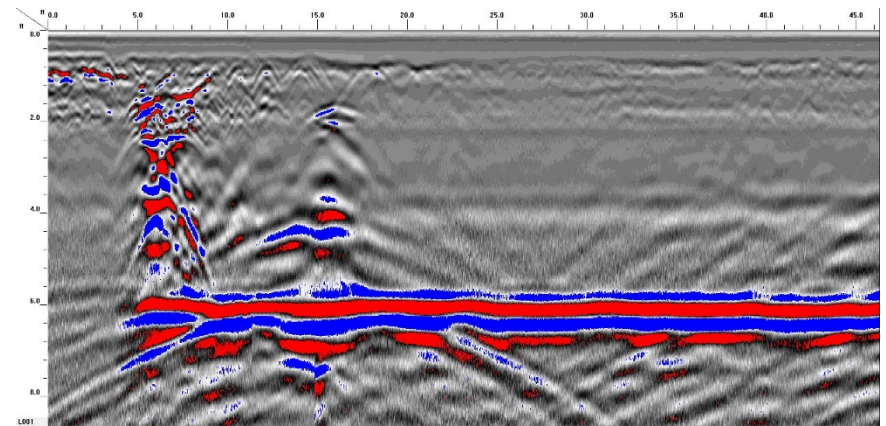
Transect 13



Transect 15



Transect 14



Transect 16

ATTACHMENT B

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/3/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 12
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES		PID Reading (ppm)	USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %				
0					ASPHALT	
0.5				SP	POORLY GRADED SAND, Brown to light brown, medium grained, with lenses of reddish brown clay, fill	
0.5 - 1.0			3.6		CLAY, Reddish brown	
1.0 - 2.0		100		CH/CL	-- Grayish brown with reddish brown, abundant mica and silt	
2.0 - 3.0			5.7		-- Reddish brown with red and brown seams	
3.0 - 5.0						
5.0	SB-1		12.7	SC	CLAYEY SAND, Grayish brown, fine to medium grained, with mica, slight petroleum odor	
5.0 - 6.0		100				
6.0 - 7.0			7.1	SP-SC	POORLY GRADED SAND WITH CLAY, Gray with red, orange, and brown, fine to medium grained, with mica	
7.0 - 9.0						
9.0			10.7	SC	CLAYEY SAND, Greenish yellow, fine grained, with mica	
9.0 - 10.0		100				
10.0 - 11.0			4.8	CH/CL	CLAY, Orange and red brown, with coarse sand and mica, consolidated	
11.0 - 12.0						
12.0	End of Borehole at 12 feet					
13.0						
14.0						
15.0						
16.0						
17.0						
18.0						
19.0						
20.0						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/3/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 12
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:		
	Sample ID	Recovery %	PID Reading (ppm)					
0	SB-2	100	100		ASPHALT			
0.5				SP	POORLY GRADED SAND, Light brown, fine medium grained, fill			
1				4.2	CLAY, Reddish brown, with mica and course grained fragments			
2				100	4.6		CH/CL	With abundant course fragments, rock, and mica, with lenses of sand, and greenish gray staining
3				4				Damp
5				10.1	SP-SC		POORLY GRADED SAND WITH CLAY, Brownish, greenish, red, course grained, with pebbles, with greenish gray staining	
6				100	5.5		SC	CLAYEY SAND, Brown to light brown, fine grained, with fragments of rock and mica, partially consolidated
7				8				CLAY, Reddish brown, moist to damp, with mica
9				4.7	CH/CL		CLAY, Reddish brown, moist to damp, with mica	
10				100	11.7		SC	CLAY, Brown and gray, fine grained, with silt and mica, silt petroleum odor
11				11				End of Borehole at 12 feet
12								
13								
14								
15								
16								
17								
18								
19								
20								


PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/3/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 16
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES		PID Reading (ppm)	USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %				
0						
1			2.0	SP	SAND, Orangeish brown, fine to medium grained, little to no top soil above sand	
2		100				
3			1.7	CH/CL	CLAY, Orangeish red brown, with silt, abundant mica	
4				SC	CLAYEY SAND, Brown with red and orange, fine to coarse grained	
5			1.7	CH/CL	CLAY, Reddish orange, abundant silt and mica, with rock fragments and pebble size grains, staining	
6		100				
7			1.2	SC	CLAYEY SAND, Reddish brown and yellowish brown, fine to medium grained, with mica	
8				SP-SC	POORLY GRADED SAND WITH CLAY, Grayish brown with grayish green, fine to coarse grained	
				CH/CL	CLAY, Reddish brown clay, with mica	
9			5.9			
10		100				
11			15.0	SC	CLAYEY SAND, Orange, red, brown, and gray, fine to coarse grained, with pebbles and rock fragments, slight petroleum odor and staining, black at 12 feet.	
12						
13			56.7			
14		100				
15	SB-3		1303.0	CH/CL	CLAY, Black, light brown, and orange brown, with rock fragments and mica	
16	End of Borehole at 16 feet					
17						
18						
19						
20						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/3/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 15
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %	PID Reading (ppm)			
0						
1			3.7	SC	CLAYEY SAND, Orangeish red brown, fine to coarse grained	
2		50				
3			3.5			
4						
5			3.6			
6		50				
7			3.7			
8				SW	GRAVEL, Gray and brown, with sand, fine to coarse grained, slight petroleum odor, probable tank fill	
9			2.7			
10		50				
11			2.7			
12						
13			461.0			
14	SB-4	50		CH/CL	CLAY, Greenish and yellowish brown, damp, with mica, with petroleum odor	
15					End of Borehole at 15 feet	
16						
17						
18						
19						
20						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/3/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 16
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES: See Appendix
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:	
	Sample ID	Recovery %	PID Reading (ppm)				
0					ASPHALT		
1			11.6	SP	POORLY GRADED SAND, Greenish brown, tan, and gray, fine to coarse grained, interbedded with seams of gravel and one clay seam at 3.5 ft		
2		75					
3			13.0	SC	CLAYEY SAND, Orangeish brown with red, fine to coarse grained, with pebbles and mica		
4		75					
5			4.3	SP	POORLY GRADED SAND, Light brown, fine to medium grained, with black organic debris (wood), trace silt		
6		75					
7			3.0	SC	CLAYEY SAND, Brown and orange, fine to coarse grained, moist		
8		100					
9			3.8	SP	POORLY GRADED SAND, Light brown with black, medium grained, wet, slight petroleum odor, with staining		
10		100					
11			5.9	CH/CL	CLAY, Reddish brown, with greenish gray staining, with mica, damp, petroleum odor		
12		100					
13			5.7	CH/CL	CLAY, Reddish brown, with greenish gray staining, with mica, damp, petroleum odor		
14		100					
15	SB-5		47.0				
16	End of Borehole at 16 feet						
17							
18							
19							
20							

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/3/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 16
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES: See Appendix
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %	PID Reading (ppm)			
0					ASPHALT	
1		100	2.3	CH/CL	CLAY, Reddish brown, with coarse to pebble grains	
2						
3			4.4	SC	CLAYEY SAND, Reddish brown with greenish gray, fine to coarse grained, abundant silt and mica, with rock fragments	
4					Dark gray with red, with lenses of consolidated clay	
5		100	4.4	SP-SC	POORLY GRADED SAND WITH CLAY, Light brown gray and yellow, fine to coarse grained, consolidated/cemented sand lenses	
6						
7			7.8	CH/CL	CLAY, Orange, brown, and cream, trace fine to coarse grained sands, with mica	
8						
9		100	43.4	SC	CLAYEY SAND, Grayish brown, black, and greenish gray, fine to coarse grains	
10						
11			95.1	CH/CL	CLAY, Yellowish to greenish brown and orange brown, with coarse and pebble grains, partially consolidated, with petroleum odor	
12						
13		100	78.0	ML	SILT, Dark orange, red and yellow, abundant mica, petroleum odor	
14						
15	SB-6		153.0	SM	SILTY SAND, Dark reddish brown and orange, fine to coarse grained, with clay	
16						
17					End of Borehole at 16 feet	
18						
19						
20						








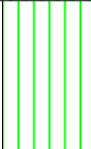
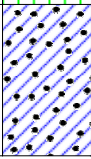
PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/3/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 16
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %	PID Reading (ppm)			
0					ASPHALT	
1			5.7	CH/CL	CLAY, Reddish brown, with fine to coarse grained sand	
2		100				
3			9.1			
4						
5			11.4	SC	CLAYEY SAND, Reddish brown, fine to coarse grained, with silt, pebbles, and mica, slight odor from 4-6 ft, seam of light brown and grayish brown	
6		100				
7			13.4			
8						
9			46.4			
10		100			CLAY, Dark brown with red and gray, with mica and fine to coarse grains, petroleum odor	
11	SB-7		55.9			
12				CH/CL	Orange with yellow and white, with silt and mica, petroleum odor, staining at 12-14ft	
13			41.0			
14		100				
15			44.7			
16				SC	CLAYEY SAND, White, tan, and yellow, fine to coarse grained, with silt and mica, trace roots	
End of Borehole at 16 feet						
17						
18						
19						
20						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/3/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 8
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %	PID Reading (ppm)			
0				ASPHALT		
0.5				SP		
0.5 - 2.6			2.6	CH/CL	POORLY GRADED SAND, Brown to light brown, medium grained, with lenses of reddish brown clay, fill	
2.6 - 5.0	100		5.0	CH/CL	CLAY, Reddish brown, with fine to coarse grained sand, consolidated, with mica	
5.0 - 9.5			9.5	SC	CLAYEY SAND, Gray and brown, fine to coarse grained, with mica, with seams of cemented sands, lenese of medium grained sands	
9.5 - 16.7	SB-8	100	16.7	SC	Brown with yellow, white, and gray, with silt and mica, partially cemented	
16.7 - 8					End of Borehole at 8 feet	

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/3/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 16
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES: See Appendix
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %	PID Reading (ppm)			
0					ASPHALT	
1			2.2	CH/CL 	Reddish brown with brown and gray, with mica and fine to pebbles grains	
2		75		SW 	GRAVEL, Fine to cobble size grains, with seams of greenish brown and red clays and sands	
3			2.2		CLAY, Greenish gray, brown, orange, and red, fine to pebble grains, with mica, silt, and lenses of sand, trace organic debris at 5-7.5ft	
4						
5			5.7	CH/CL 		
6		100				
7			17.7			
8				SC 	CLAYEY SAND, Orange and yellowish brown, fine grained, with trace wood and organic debris, petroleum odor	
9			14.4			
10		100		CH/CL 	CLAY, Orangeish brown with red, yellow, and white, abundant silt and mica, trace organic debris, seams of silt, petroleum odor	
11			11.5			
12						
13	SB-9		22.8	ML 	SILT, Orange gray, red, and yellow, with fine to coarse grains, petroleum odor	
14		100				
15			15.2	SP-SC 	POORLY GRADED SAND WITH CLAY, Yellow, orange, and white, fine to coarse grained, trace silt, petroleum odor	
16					End of Borehole at 16 feet	
17						
18						
19						
20						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/4/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 8
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %	PID Reading (ppm)			
0	SB-10	50	2.0	SP	ASPHALT	
0.5				CH/CL	POORLY GRADED SAND, Brown to light brown, medium grained, fill CLAY, Dark reddish brown with greenish gray, with fine to coarse grained	
2.5				SC	CLAYEY SAND, Greenish gray brown, fine to coarse grained, with gravel, silt, and mica	
3.3				SM	SILTLY SAND, Greenish gray, fine to coarse grained, with seams of dark gray and light brown clay	
5.2	100	5.2				
8	End of Borehole at 8 feet					
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/4/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 8
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %	PID Reading (ppm)			
0				ASPHALT		
0 - 1				SP CH/CL	POORLY GRADED SAND, Brown to light brown, medium grained, fill, with gravel	
1 - 4		100	3.0 4.0	CH/CL	CLAY, Reddish orange brown, with fine to pebble grains, with mica, seams of sand	
4 - 6	SB-11		4.8	SC	CLAYEY SAND, Greenish gray and brown, fine to coarse grained, abundant silt and mica, with seams of reddish brown clay, black staining	
6 - 7		100	4.7	SC		
8	End of Borehole at 8 feet					
9						
10						
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17						
18						
19						
20						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/4/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 8
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES: See Appendix
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES			USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %	PID Reading (ppm)			
0						
1			2.8	SP-SM	POORLY GRADED SAND WITH SILT, Reddish brown, fine with coarse grained, asphalt and trash debris at 1-2 ft	
2		50				
3			2.9	CH/CL	CLAY, Reddish brown, with fine to coarse grained sand, with silt and mica	
4						
5	SB-12		3.1			
6		100		SC	CLAYEY SAND, Reddish brown, gray, and light brown, fine to coarse grained, with mica, with tan and light brown seams of clay	
7			2.8			
8					End of Borehole at 8 feet	
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/4/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 8
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES		PID Reading (ppm)	USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %				
0	SB-13	50	3.7		MULCH/TOP SOIL, with sandy fill	
1				SP	POORLY GRADED SAND, Light brown, coarse grained with pebbles	
2			2.9	CH/CL	CLAY, Orange brown, with fine to coarse grained sand	
3				ML	SILT, Black, wooded debris, organic material	
4	50	4.9	4.4	SC	CLAYEY SAND, Orange to red brown with light brown and yellow brown, fine to coarse grained, with mica, partially cemented	
5						
6	End of Borehole at 8 feet					
7						
8						
9						
10						
11						
12						
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14						
15						
16						
17						
18						
19						
20						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/4/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 8
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES		PID Reading (ppm)	USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %				
0						
1			3.5		MULCH/TOP SOIL, with sandy fill	
2		50				
3			3.7			
4				SW	GRAVEL, Coarse grained with sand, seams of organic debris/wood	
5	SB-14		4.5			
6		75				
7			3.8	CH/CL	CLAY, Reddish brown, with fine to coarse sand, with mica	
8				SC	CLAYEY SAND, Light brown, gray, and orange, fine to coarse grains, with mica,	
9					End of Borehole at 8 feet	
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROJECT NAME: Quality Oil	PROJECT NUMBER: 18110166-010701
CLIENT: NCDOT- Cyrus Parker, PE, PG	DATE: 10/4/2018
SITE LOCATION: 2005 New Hope Church Rd., Raleigh, NC	TOTAL DEPTH (ft bgs): 8
DRILLING CONTRACTOR: Regional Probing Services	BORING COORDINATES:
DRILLING METHOD: Direct Push	BOREHOLE DIAMETER: 2 inches
DRILLING EQUIPMENT: Geoprobe	DEPTH TO WATER (ft bgs): NE
LOGGED BY: Brandy Barnes	PROJECT MANAGER: Mike Branson, PG

DEPTH (ft bgs)	SAMPLES		PID Reading (ppm)	USCS	LITHOLOGIC DESCRIPTION:	Notes:
	Sample ID	Recovery %				
0	SB-15	70	3.1	SP	POORLY GRADED SAND, Light orange brown and red, fine to coarse grained, trace construction debris	
1				CH/CL	CLAY, Reddish brown with light brown, with fine to pebble grains	
2	100	3.1	SP-SC	POORLY GRADED SAND WITH CLAY, Light brown and yellowish green brown, fine to coarse grained		
3			CH/CL	CLAY, Reddish brown, with coarse grains, abundant silt and mica		
4	End of Borehole at 8 feet					
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ATTACHMENT C



PHOTO 1 - VIEW OF SOIL BORING LOOKING WEST



PHOTO 2 - VIEW OF SOIL BORING LOOKING EAST



PHOTO 3 - VIEW OF SOIL BORING LOOKING SOUTH

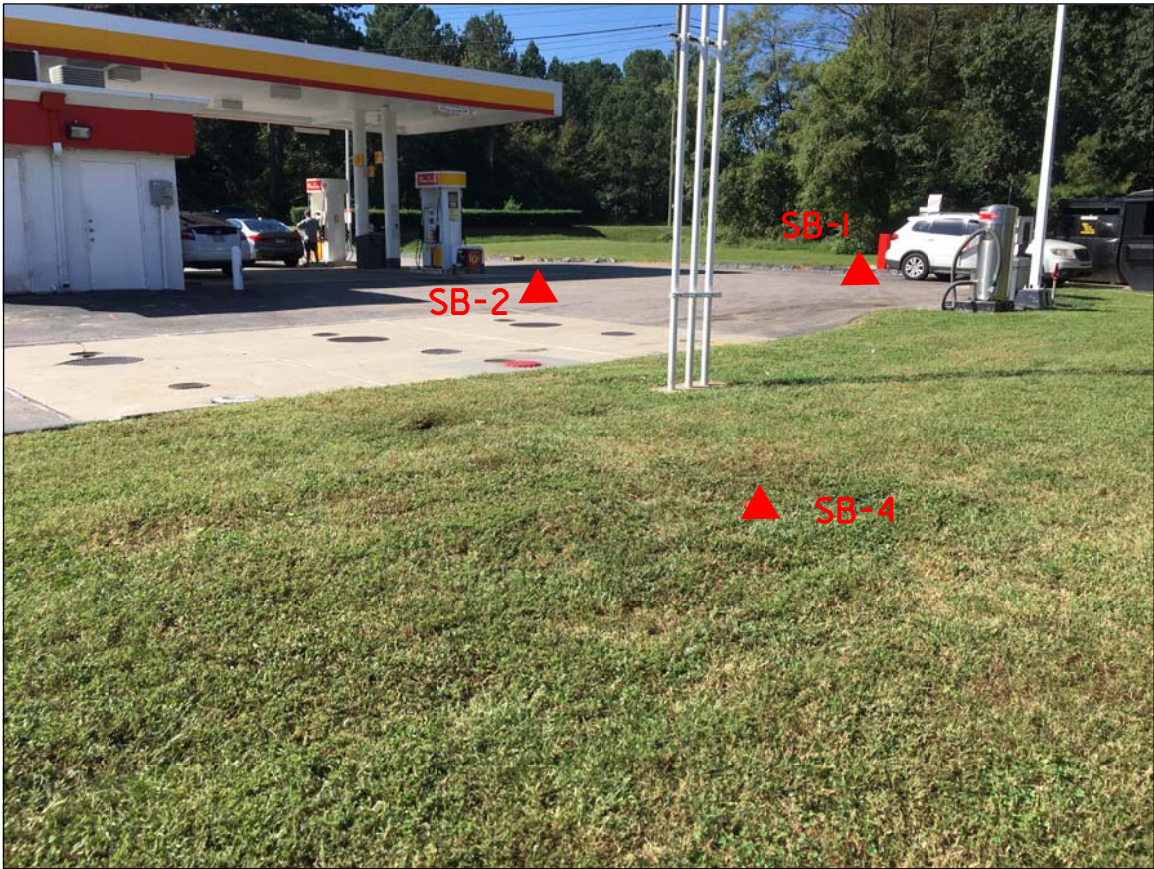


PHOTO 4 - VIEW OF SOIL BORING LOOKING WEST



PHOTO 5 - VIEW OF SOIL BORING LOOKING WEST



PHOTO 6 - VIEW OF SOIL BORING LOOKING NORTHWEST



PHOTO 7- VIEW OF SOIL BORING LOOKING NORTHEAST



PHOTO 8 - VIEW OF SOIL BORING LOOKING EAST



PHOTO 9 - VIEW OF SOIL BORING LOOKING NORTH



PHOTO 10 - VIEW OF SOIL BORING LOOKING NORTH



PHOTO II - VIEW OF SOIL BORING LOOKING SOUTHWEST



PHOTO 12 - VIEW OF SOIL BORING LOOKING NORTHEAST



PHOTO 13 - VIEW OF SOIL BORING LOOKING WEST



PHOTO 14 - VIEW OF SOIL BORING LOOKING EAST



PHOTO 15 - VIEW OF SOIL BORING LOOKING NORTHEAST

ATTACHMENT D



Hydrocarbon Analysis Results

Client: DRAPER ADEN ASSOCIATES
Address: 1101 NOWELL ROAD
 SUITE 100
 RALEIGH, NC 27607

Samples taken Thursday, October 4, 2018
Samples extracted Thursday, October 4, 2018
Samples analysed Tuesday, October 9, 2018

Contact: MIKE BRANSON
 COLLECTED BY DANIEL BEALL
Project: 18110166-010701

Operator MAX MOYER

U04049

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
Soil	SB-1 4'-6'	20.8	<0.52	<0.52	29.2	29.2	13.2	0.72	0.01	0	93.3	6.7	Deg Fuel 90.1%,(FCM)
Soil	SB-2 10'-12'	21.1	<0.53	<0.53	43.2	43.2	23.9	1.3	0.022	0	93.9	6.1	Deg Fuel 75.6%,(FCM)
Soil	SB-3 14'-16'	256.0	<6.4	792.9	1725	2518	157.5	5.7	<0.077	85.8	14.1	0.1	Deg.Gas 70.6%,(FCM)
Soil	SB-4 12'-15'	20.3	<0.51	<0.51	2.9	2.9	0.82	0.06	<0.006	0	96.3	3.7	V.Deg.Diesel 65.4%,(FCM)
Soil	SB-5 14'-16'	22.6	<0.57	8.5	55.8	64.3	4.5	0.17	<0.007	69.3	30.4	0.3	Deg.Bituminous 67.2%,(FCM),(PFM)
Soil	SB-6 14'-16'	26.0	<0.65	<0.65	0.13	0.13	0.12	0.01	<0.008	0	66.8	33.2	Residual HC
Soil	SB-7 10'-12'	23.0	<0.58	<0.58	<0.23	<0.58	<0.01	<0.01	<0.007	0	0	0	PHC ND,(FCM)
Soil	SB-8 6'-8'	25.7	<0.64	<0.64	83.8	83.8	10	0.43	0.002	0	97.3	2.7	Deg.Fuel 78.8%,(FCM)
Soil	SB-9 12'-14'	26.5	<0.66	<0.66	55.6	55.6	31	1.7	0.029	0	94.1	5.9	Deg Fuel 76.4%,(FCM)
Soil	SB-11 4'-6'	31.0	<0.77	<0.77	34.7	34.7	16.9	0.93	0.016	0	94	6	Deg Fuel 76.1%,(FCM)

Initial Calibrator QC check **OK**

Final FCM QC Check **OK**

100.6%

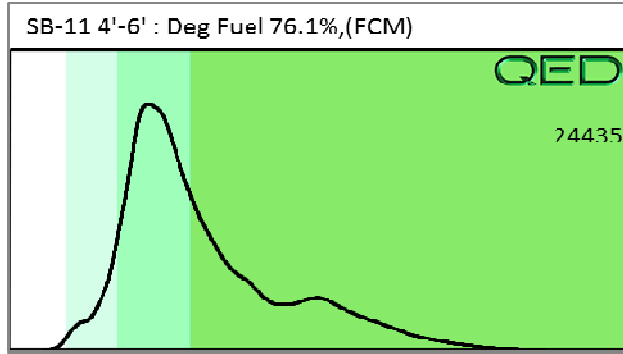
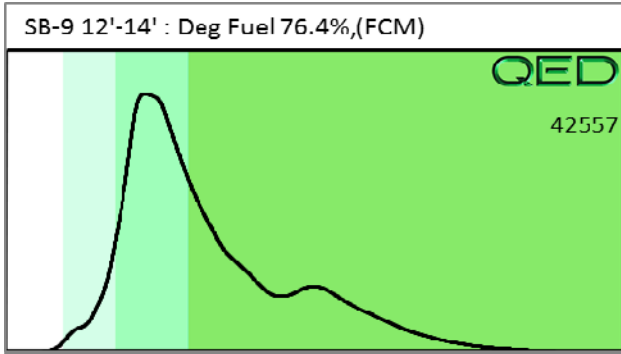
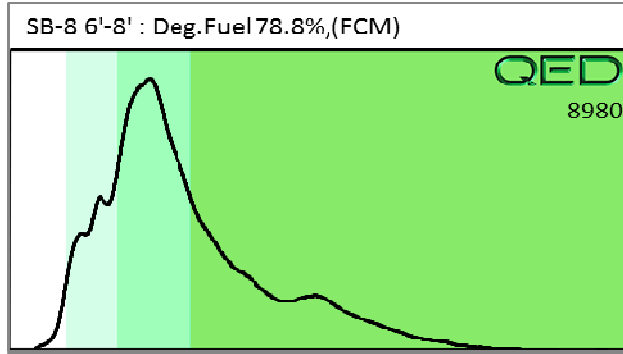
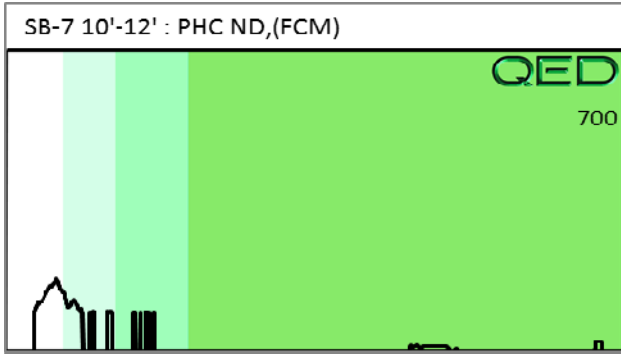
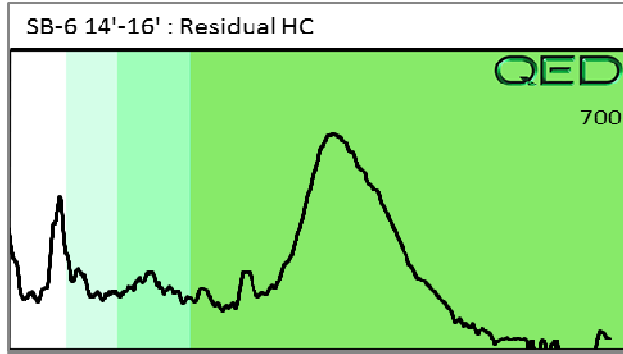
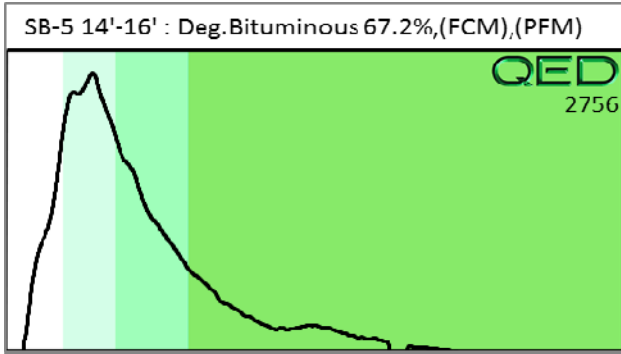
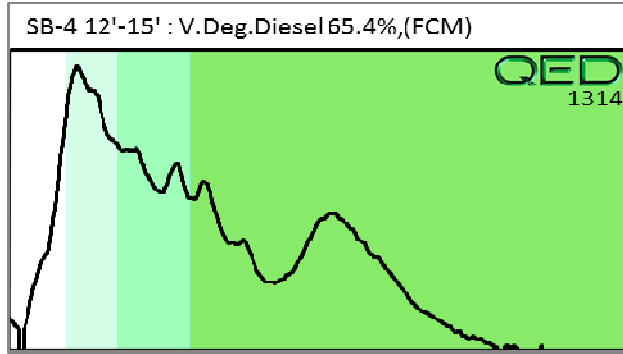
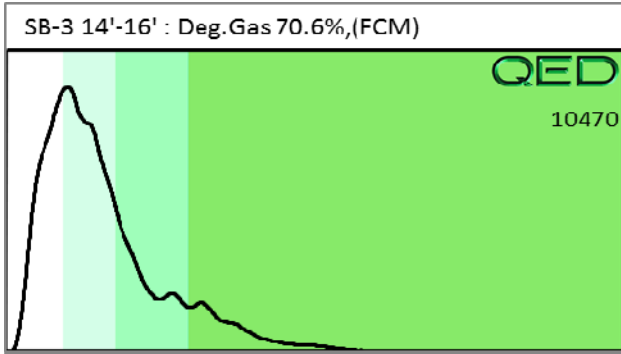
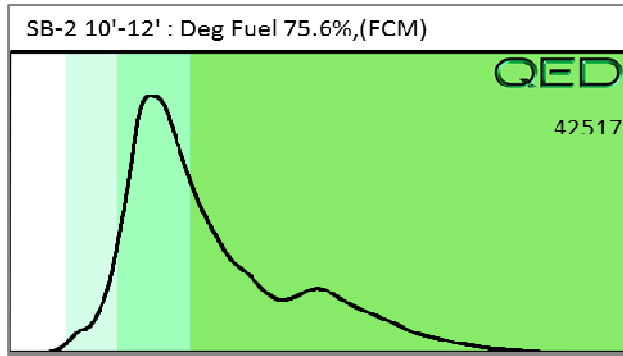
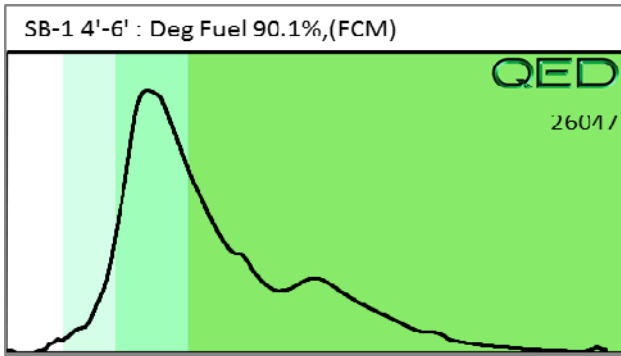
Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only.

Data generated by HC-1 Analyser





Hydrocarbon Analysis Results

Client: DRAPER ADEN ASSOCIATES
Address: 1101 NOWELL ROAD
 SUITE 100
 RALEIGH, NC 27607

Samples taken Thursday, October 4, 2018
Samples extracted Thursday, October 4, 2018
Samples analysed Tuesday, October 9, 2018

Contact: MIKE BRANSON
 COLLECTED BY DANIEL BEALL

Operator MAX MOYER

Project: 18110166-010701

U04049

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
										C5 - C10	C10 - C18	C18	
Soil	SB-10 6'-8'	21.0	<0.52	<0.52	5.6	5.6	2.7	0.13	0.001	0	94	6	Deg Fuel 75.7%,(FCM)
Soil	SB-12 4'-6'	25.2	<0.63	<0.63	20	20	8.2	0.45	0.01	0	92.9	7.1	Deg Fuel 90.3%,(FCM)
Soil	SB-13 4'-6'	21.3	<0.53	<0.53	11.5	11.5	6.1	0.27	0.005	0	95.1	4.9	Deg Fuel 75.1%,(FCM)
Soil	SB-14 4'-6'	32.1	<0.8	<0.8	4.5	4.5	2	0.11	0.003	0	84.1	15.9	V.Deg.PHC 95%,(FCM),(P)
Soil	SB-15 2'-4'	23.9	<0.6	<0.6	8.9	8.9	4	0.21	0.005	0	83.8	16.2	V.Deg.PHC 93.3%,(FCM)

Initial Calibrator QC check **OK**

Final FCM QC Check **OK**

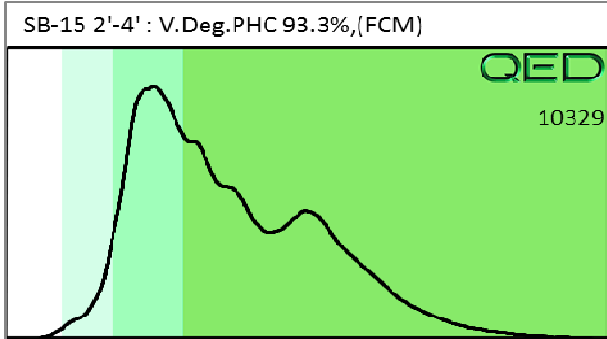
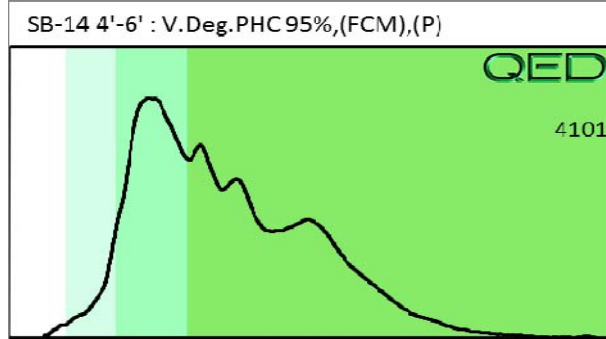
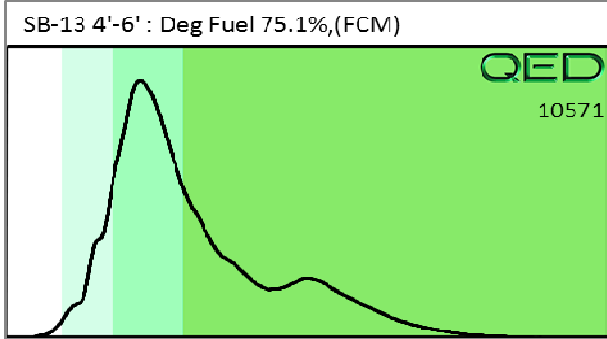
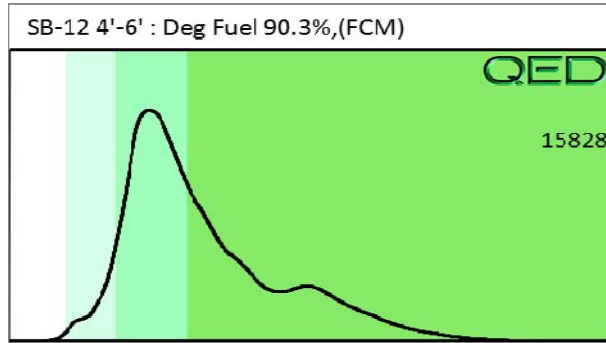
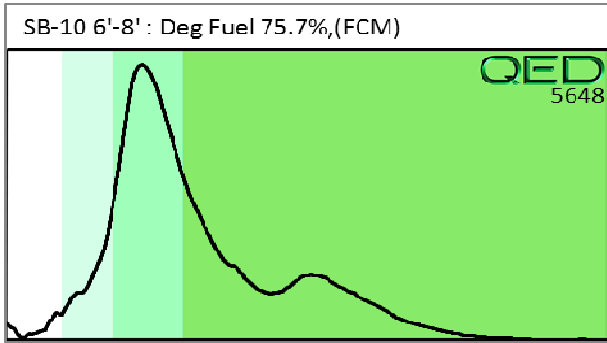
98.6%

Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

Abbreviations :- FCM = Results calculated using Fundamental Calibration Mode : % = confidence of hydrocarbon identification : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate detected

B = Blank Drift : (SBS)/(LBS) = Site Specific or Library Background Subtraction applied to result : (BO) = Background Organics detected : (OCR) = Outside cal range : (M) = Modified Result.

% Ratios estimated aromatic carbon number proportions : HC = Hydrocarbon : PHC = Petroleum HC : FP = Fingerprint only. **Data generated by HC-1 Analyser**



B94

Client Name: Draper Aden Associates
 Address: 1101 Howell Rd. Suite 100 Raleigh, NC 27607
 Contact: Mike Brascan
 Project Ref.: 18110166-010701
 Email: mbranson@ada.com
 Phone #: 919-873-1060
 Collected by: Daniel Beall

RED LAB
 RAPID ENVIRONMENTAL DIAGNOSTICS
 CHAIN OF CUSTODY AND ANALYTICAL
 REQUEST FORM

RED Lab, LLC
 5598 Marvin K Moss Lane
 MARBIONC Bldg, Suite 2003
 Wilmington, NC 28409
 Each sample will be analyzed for
 BTEX, GRO, DRO, TPH, PAH total
 aromatics and Bap

Sample Collection Date/Time	TAT Requested		Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
	24 Hour	48 Hour					
10/31/18 0947			DB	SB-1 4-6'	55.8	43.3	12.5
1023			DB	SB-2 10-12'	56.2	43.9	12.3
1100			DB	SB-3 14-16'	57.2	44.0	13.2
1135			DB	SB-4 12-15'	56.9	44.1	12.8
1210			DB	SB-5 14-16'	54.6	43.1	11.5
1355			DB	SB-6 14-16'	53.7	43.7	10.0
1445			DB	SB-7 10-12'	55.1	43.8	11.3
1520			DB	SB-8 6-8'	54.6	44.5	10.1
1405			DB	SB-9 12-14'	53.6	43.8	9.8
1030			DB	SB-11 4-6'	52.1	43.7	8.4
10/4/18 910			DB	SB-10 6-8'	56.2	43.8	12.4
930			DB	SB-12 4-6'	53.7	43.4	10.3
950			DB	SB-13 4-6'	55.9	43.7	12.2
1015			DB	SB-14 4-6'	52.1	44.0	8.1
1050			DB	SB-15 2-4'	54.6	43.7	10.9

Comments: DRO/GRO X UVF

Relinquished by: Daniel Beall Date/Time: 10/4/18 1300
 Relinquished by: _____ Date/Time: _____
 Accepted by: MM Date/Time: 10/9/18
 Accepted by: _____ Date/Time: _____

RED Lab USE ONLY

15



Groundwater Monitoring Report
Star Flite 52, Incident TF-6896
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
S&ME Project No. 4305-17-108

PREPARED FOR:

NCDEQ, DWM, UST Section
1637 Mail Service Center
Raleigh, NC 27616

PREPARED BY:

S&ME, Inc.
3201 Spring Forest Road
Raleigh, NC 27616

September 14, 2017



September 14, 2017

NCDEQ, DWM, UST Section
1637 Mail Service Center
Raleigh, NC 27616

Attention: Mr. Mark Petermann

Reference: **Groundwater Monitoring Report
Star Flite 52, Incident TF-6896**
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
S&ME Project No. 4305-17-108

Dear Mr. Petermann:

S&ME, Inc., (S&ME) presents this report in accordance with the North Carolina Department of Environmental Quality/S&ME Contract No. N17002 and S&ME Proposal No. 43-1700387 and 43-1700387A, dated June 9, 2017 and July 6, 2017, respectively, as authorized by Task Authorization No. TA-01 and TA-01A, dated June 9, 2017 and July 10, 2017, respectively.

If you have any questions or comments regarding this report, please contact us at your convenience.

Sincerely,

S&ME, Inc.

A handwritten signature in black ink, appearing to read 'Bryan S. Wence'.

Bryan S. Wence
Staff Environmental Professional
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A handwritten signature in black ink, appearing to read 'Thomas P. Raymond'.

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1.0 Site Information

1.1 Site Identification

- Date of Report: 8/25/2017
- Facility I.D. 00-0-0000006212 UST Incident No.: 6896 UST No.: RA-1063
- Site Risk: High Site Rank: I100D Land Use Category: Commercial
- Site Name: Star Flite 52
- Site Address: 1904 St. Albans Drive
- City/Town: Raleigh Zip Code: 27713 County: Wake
- Description of Geographical Data (e.g., diesel fill port): Center of the site
- Location Method (GPS, Topographical map, other): Google Earth
- Latitude (decimal degrees): 35.834392° Longitude (decimal degrees): -78.606611°

1.2 Information about Contacts Associated with the Leaking UST System

- UST Owner: Marshall Oil Company (dissolved 2001)
- Address: P.O. Box 128, Zebulon, NC 27597 Telephone: Not Applicable
- UST Operator: Marshall Oil Company (dissolved 2001)
- Address: P.O. Box 128, Zebulon, NC 27597 Telephone: Not Applicable
- Property Occupant: Isabella Williams Smith
- Consultant/Contractor: S&ME, Inc.
- Address: 3201 Spring Forest Road, Raleigh, NC Telephone: 919-872-2660
- Analytical Laboratory: Con-Test Analytical Laboratory State Certification No.: 652
- Address: 39 Spruce Street, East Longmeadow, MA 01028 Telephone: 413-525-2332

1.3 Information about Release

- Date Discovered: 8/1/1991
- Estimated Quantity of Release: Unknown
- Cause of Release: Unknown
- Source of Release (Dispenser/Piping/UST): UST System
- Sizes and contents of UST system(s) from which the release occurred: Two 10,000-gallon and one 3,000-gallon gasoline USTs
- Criteria Used to Classify Risk: Contaminant concentrations in groundwater greater than 2L Standards

1.4 Information about the Monitoring Report

- Date of Groundwater Monitoring: June 21, 2017 and July 19, 2017 – July 20, 2017



1.5 Certification

I, Thomas P. Raymond, a Licensed Geologist for S&ME, do certify that the information contained in this report is correct and accurate to the best of my knowledge. S&ME is licensed to practice geology/engineering in North Carolina. Geology License Certification #C-145 and Engineering License Certification #F-0176.

Thomas P. Raymond, P.E., P.M.P.



2.0 Executive Summary

S&ME conducted a groundwater sampling event at the Former Star Flite 52 site located at 1904 St. Albans Drive in Raleigh, North Carolina on June 21, 2017. S&ME’s activities for the initial task authorization included collecting groundwater samples from eight monitor wells (MW-3, MW-4, MW-10, MW-13, MW-15, MW-18, and MW-21) to be analyzed for VOCs by EPA Method 6200B. During the sampling event on June 21, 2017, S&ME personnel identified free product in monitoring well MW-3. As a result of the discovery of free product, NCDEQ requested a change order for the project which involved the sampling of 15 additional monitoring wells (MW-1, MW-5, MW-11, MW-14, MW-17, MW-20, MW-22, MW-23, MW-24, MW-28, MW-29, MW-30, MW-32D, MW-33, and MW-34). On July 19, 2017 – July 20, 2017, S&ME personnel mobilized back to the site to complete the sampling of the additional monitoring wells. The following constituents were the highest reported at concentrations above the 15A NCAC 2L.0202 Groundwater Standards (2L Standards) in groundwater samples collected from the June and July 2017 sampling events:

Contaminant	2L Standard (µg/L)	Concentration (µg/L)	Well ID	Date
Benzene	1	4,900	MW-13	6/21/2017
Ethylbenzene	600	1,200	MW-13	6/21/2017
Methyl-tert-butyl ether	20	6,000	MW-13	6/21/2017
Naphthalene	6	400	MW-13	6/21/2017
1,2,4-Trimethylbenzene	400	1,500	MW-21	6/21/2017
Total Xylenes	500	3,940	MW-21	6/21/2017

- Free product was identified in monitor well MW-3, therefore a sample was not collected from this monitor well.
- Monitor wells MW-4 and MW-34 were not located, therefore samples were not collected from these monitor wells.
- Monitor well MW-10 was destroyed and was not sampled. Monitor well MW-17 was dry at the time of the sampling event and was not sampled.
- Groundwater flow direction is generally to the southeast.

Based on the *Receptor Survey Update Report* prepared by S&ME and submitted to NCDEQ on February 6, 2017, the following sensitive receptors were noted within 1,000 feet of the site:



Distance from source (ft)	Municipal Water Available	Active Drinking Water Well	Inactive Drinking Water Well	Irrigation Well	Surface Water Body
750 - NW	Yes	WSW-1	--	--	--

- According to the City of Raleigh Public Utilities Department, municipal water service is available for the area surrounding the site.

To achieve incident closure, the following recommendations are presented:

1. Conduct periodic site-wide groundwater monitoring events to determine if petroleum hydrocarbon concentrations show a downward trend, and the plume is stable or shrinking.
2. If petroleum hydrocarbon concentrations do not decrease, S&ME recommends the removal of free product from the area of the former tank bed identified in MW-3.
3. Connect the property at WSW-1 to the municipal water supply.

3.0 Scope of Services

3.1 Contract Information

The scope of services for this report was performed in general accordance with S&ME's proposal numbers 43-1700387 and 43-1700397A, dated June 9, 2017 and July 6, 2017, respectively. The scope of services was authorized by the North Carolina Department of Environmental Quality (NCDEQ's) Task Authorization TA-01 and TA-01A, dated June 9, 2017 and July 10, 2017, respectively, and within contract number N17002.

3.2 Approved Scope of Services

S&ME's approved Scope of Services for the initial task authorization included collecting groundwater samples from eight monitor wells (MW-3, MW-4, MW-10, MW-13, MW-15, MW-18, and MW-21) to be analyzed for VOCs by EPA Method 6200B. During the sampling event on June 21, 2017, S&ME personnel identified free product in monitoring well MW-3. As a result of the discovery of free product, NCDEQ requested a change order for the project which involved the sampling of 15 additional monitoring wells (MW-1, MW-5, MW-11, MW-14, MW-17, MW-20, MW-22, MW-23, MW-24, MW-28, MW-29, MW-30, MW-32D, MW-33, and MW-34) and preparing this report. These services were completed with the following exceptions: free product was identified in monitor well MW-3, therefore a sample was not collected from this monitor well. Monitor wells MW-4 and MW-34 could not be located, therefore a sample was not collected from these monitor wells. Monitor well MW-10 was destroyed and could not be sampled. Monitor well MW-17 was dry at the time of the sampling event and could not be sampled.



4.0 Site History and Characterization

4.1 UST Owner and Operator Information

The former owner/operator of the UST system, Marshall Oil Company was dissolved in 2001. The property is now owned by Isabella Williams Smith, who inherited the property from her father, Peter Williams in 2009. The three gasoline USTs were removed from the site on July 14, 1991. The extensive history of the site is described in detail in S&ME's *Groundwater Monitoring Report*, dated January 20, 2016 (revised September 1, 2016) which is provided in **Appendix I**. The UST owner/operator information is provided in **Table 1**. A vicinity map is provided as **Figure 1**.

4.2 UST Information

Three gasoline USTs were removed from the site on July 14, 1991; two 10,000-gallon gasoline and one 3,000-gallon gasoline USTs. Information about the UST System is provided in **Table 2**, and the location of the former UST bed is shown in **Figure 2**.

4.3 Description of the UST Release

A release was discovered, in August of 1991 as a result of a site check performed by ESE which included soil borings and soil sampling that revealed free product was present in the subsurface of the site. Soils from the former tank field were excavated from October 21 to 25, 1991. The excavation dimensions were approximately 35 feet by 35 feet by 23 feet in depth.

4.4 Site Characteristics

- ◆ The site is currently vacant. A photographic log of the site and surroundings is provided as **Appendix II**.
- ◆ Based upon the groundwater elevation map (**Figure 3**), groundwater flows to the east, southeast, which is consistent with historic groundwater flow data.

4.5 Owners and Occupants of Adjoining/Nearby Properties and Land Use

The site is currently vacant and covered with grass and overgrowth. The adjacent properties surrounding the site primarily operate as commercial businesses. A site map is provided as **Figure 2** and the adjacent properties are identified on **Figure 5**, with pertinent information included in **Table 6**.

4.6 Receptors/Potential Receptor Information

- ◆ There is one active potable water supply well located within 1,000 feet of the source area. This well is located to the west-northwest of the site approximately 950 feet from the western edge of the property line and up-gradient of the site. Information about the water supply well is included on **Table 5** and the location of the well is identified on **Figure 5**.
- ◆ No surface water bodies were identified within 500 feet of the site.



According to City of Raleigh Public Utilities Department, municipal water service is available for the area surrounding the site.

5.0 Current Site Assessment Information

5.1 Current Liquid Levels

On June 21, 2017 and July 19, 2017 – July 20, 2017, S&ME personnel attempted to measure depth to groundwater from the top of casing in all of the monitor wells associated with the site. Two monitor wells (MW-4 and MW-34) were not located. Monitor well MW-10 was destroyed and monitor well MW-17 was dry at the time of the sampling event. Additionally, approximately two inches of free product was identified in monitor well MW-3. As a result, groundwater elevations could not be determined at these monitor well locations.

The depth to groundwater was measured using an electronic interface probe, which emits an audible tone when encountering free product, and a distinctly different tone when encountering groundwater. The depth to groundwater ranged from 18.12 feet below top of casing (ft-btoc) in monitor well MW-1, to 33.79 ft-btoc in monitor well MW-28. S&ME used the top of casing elevation measurements and the depth to groundwater measurements to calculate the groundwater elevation, which was used to generate a groundwater elevation map (**Figure 3**). Groundwater elevations ranged from 267.82 feet relative elevation (ft-rel) in monitor well MW-15 to 277.81 ft-rel in monitor well MW-20.

The site was last sampled in November 2015. Historically, groundwater flow direction at the site has been variable ranging from east-northeast to east-southeast, which is generally consistent with the groundwater flow direction during this sampling event. The monitor well construction details, depth to groundwater measurements and groundwater elevations are provided in **Table 3**.

5.2 Groundwater Monitoring Event

On June 21, 2017 and July 19, 2017-July 20, 2017, S&ME collected groundwater samples from seventeen monitor wells (MW-1, MW-5, MW-11, MW-13, MW-14, MW-15, MW-18, MW-20, MW-21, MW-22, MW-23, MW-24, MW-28, MW-29, MW-30, MW-32D, and MW-33). Monitor wells MW-4 and MW-34 were not located and therefore samples were not collected from these wells. MW-10 was destroyed and MW-17 was dry at the time of the sampling event and therefore these wells were not sampled. Additionally, approximately two inches of free product was observed in monitor well MW-3 and a sample was not collected from this well.

The monitor wells were purged and sampled using new, polyethylene bailers. The wells were purged approximately three casing volumes prior to sampling and the field parameters temperature, pH, and specific conductance were measured and recorded for each casing volume removed. The groundwater samples were collected directly into laboratory-supplied containers, placed in a cooler on ice, and shipped under standard chain-of-custody protocol to Con-Test Analytical Laboratories (Con-Test) of East Longmeadow, Massachusetts, a North Carolina certified laboratory, for analysis. The samples were analyzed for VOCs by EPA Method 6200B. The field sampling sheets are provided in **Appendix III**.



5.3 Summary of Groundwater Information

The laboratory analytical results for the groundwater samples collected during the June and July 2017 sampling events indicated that the following constituents were reported at concentrations above the 2L Standards:

- Benzene in monitor wells MW-11, MW-13, MW-15, MW-18, MW-21, MW-28, MW-29, and MW-30;
- n-Butylbenzene in MW-21;
- Diisopropyl Ether in MW-13;
- Ethylbenzene in MW-13 and MW-21;
- Isopropylbenzene in MW-21;
- p-Isopropyltoluene in MW-13;
- Methyl-tert-butyl ether in MW-13 and MW-29;
- Naphthalene in MW-13, MW-15, MW-18, MW-21, MW-28, MW-29, and MW-30;
- n-Propylbenzene in MW-13 and MW-21;
- Tetrachloroethylene in MW-28;
- 1,2,4-Trimethylbenzene in MW-13, MW-21, and MW-29;
- 1,3,5-Trimethylbenzene in MW-21; and
- Total Xylenes in MW-13, MW-21, and MW-29.

Additional constituents were reported in groundwater samples collected during the June and July 2017 sampling events below their respective 2L Standards. No targeted constituents were reported at concentrations above the laboratory analytical method detection limits in the groundwater samples collected from monitor wells MW-1, MW-5, MW-20, MW-32D, and MW-33. A summary of the groundwater analytical results is presented in **Table 4** and shown in **Figure 4**, and a copy of the laboratory analytical reports are provided in **Appendix IV**.

5.4 Regional and Site Geology and Hydrogeology

5.4.1 *Soil and Bedrock*

According to the Geologic Map of North Carolina, dated 1985, the site lies within Raleigh Geologic Belt of the Piedmont Geomorphic Province, which is categorized by metamorphosed sedimentary and igneous rocks intruded by early to mid-Paleozoic granitic sills and dikes. According to the Wake County Geologic Map the site lithology is described as an Injected Gneiss Complex. This complex is characterized by mica gneiss and schist intruded by dike and sills of granite, pegmatite, and aplite.

5.4.2 *Hydrogeology*

Using the depth to groundwater measurements and groundwater results from samples collected during June and July 2017, S&ME calculated the groundwater elevations at the site, which is presented as **Figure 3**. Based on the groundwater measurements collected by S&ME during the June and July 2017 sampling events, groundwater flow appears to have an east, southeasterly flow. Groundwater flow has previously been characterized by easterly flow.



5.5 Evaluation of Soil, Groundwater, Surface Water, and Free Product Assessment Information

5.5.1 Current Extent and Severity of Contamination

Free product has historically been measured at the site, but was not measured during the previous groundwater monitoring event conducted in November 2015. During the June 2017 sampling event, approximately two inches of free product was observed in monitor well MW-3. A photograph showing the free product in a bailer is shown in the photograph log included in **Appendix II**, photograph 3. Compared to the previous sampling event in November 2015, concentrations of VOCs appeared to have increased slightly in the monitoring wells that were sampled in both the November 2015 event and the June/July 2017 event. The monitoring well with the highest concentrations of VOCs (MW-13), which is immediately downgradient from the former tank bed, was not sampled during the November 2015 sampling event. Several VOCs were detected above their 2L Standards during the June/July 2017 sampling events. There were no detections of petroleum VOCs in the samples collected from monitor wells MW-1, MW-5, MW-20, MW-32D, and MW-33. One chlorinated solvent not associated with petroleum (PCE) was detected above its 2L Standard in MW-28. PCE was also detected in monitoring wells MW-14, MW-22, MW-24, MW-29, and MW-30 at a concentration below the 2L Standard. Another chlorinated solvent (TCE) was detected in monitor wells MW-28 and MW-29 at concentrations below the 2L Standard.

Based on historical reports, the petroleum hydrocarbon plume on the Starflite 52 property was located in the area of monitor well MW-3. Concentrations of several VOCs were detected in concentrations exceeding their respective 2L Standards immediately downgradient of the former tank bed as well as in monitor wells located on the Harris Park property, adjacent to the south of the Starflite 52 property. Based on the groundwater flow direction (generally to the east, southeast), the groundwater contamination in these monitor wells is likely associated with the free product identified in monitor well MW-3.

5.5.2 Cleanup Levels Achieved

- | | |
|--|------------|
| ◆ Soil (soil-to-groundwater maximum soil contaminant concentrations) | Yes |
| ◆ Groundwater (2L standard concentrations) | No |
| ◆ Free Product - (0.0) | No |



6.0 Conclusion and Recommendations

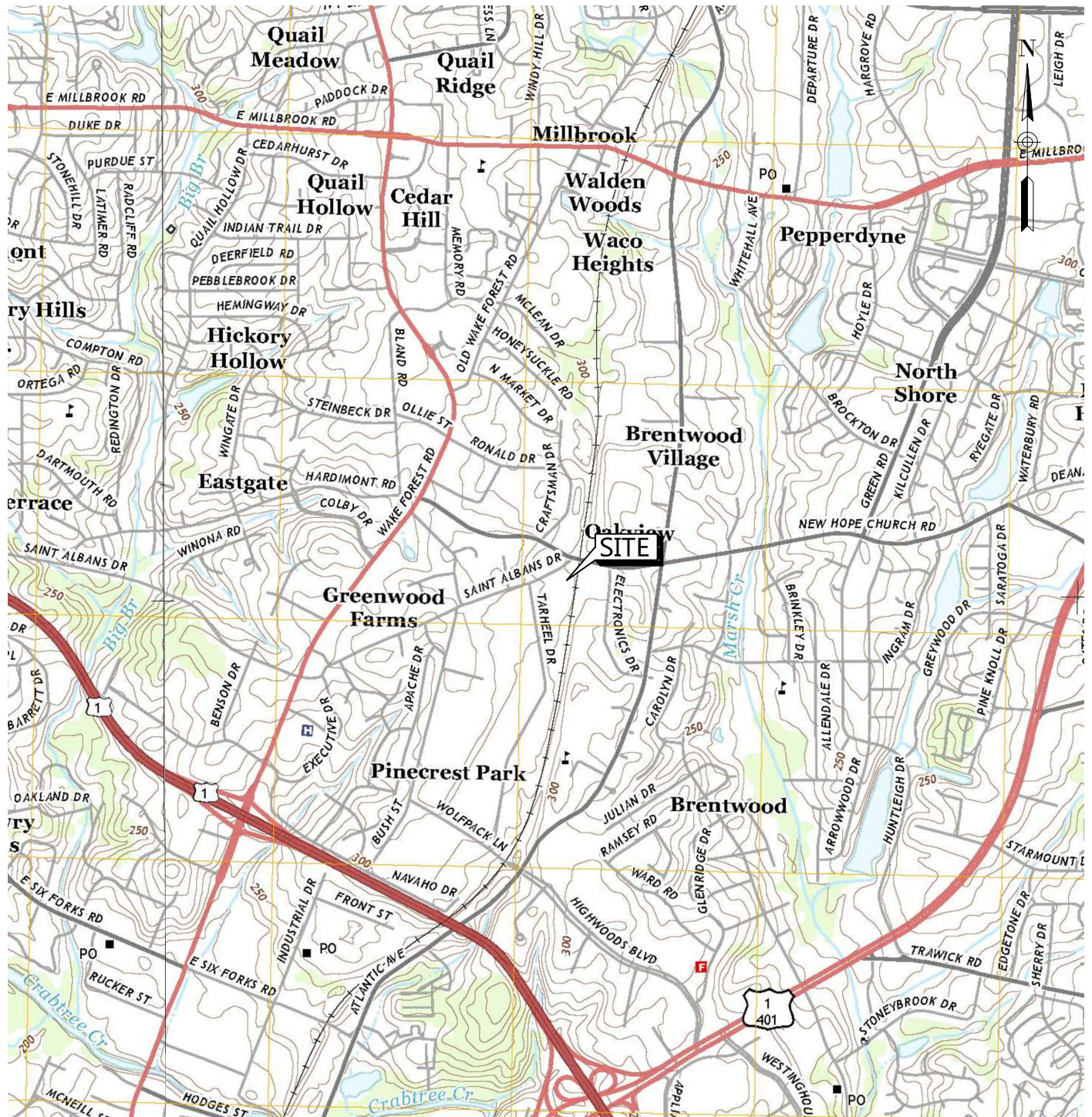
Based on the current and historical assessment information for the site, the following conclusions are presented:

1. Free product was identified in monitor well MW-3 in the area of the former tank bed.
2. Petroleum hydrocarbons are present in concentrations exceeding their respective 2L Standards in monitor wells MW-11, MW-13, MW-15, MW-18, MW-21, MW-28, MW-29, and MW-30.
3. During a receptor survey update, a water supply well (WSW-1) was identified approximately 950 feet NW and topographically upgradient of the site located at 3813 Boddie Drive.
4. According to City of Raleigh Public Utilities Department, municipal water service is available for the area surrounding the site.

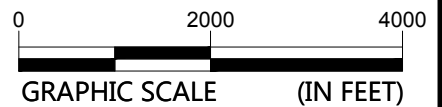
Based on the above, the following recommendations are presented:

1. Monitor the level of free product measured in monitor well MW-3.
2. If petroleum hydrocarbon concentrations do not decrease, S&ME recommends the removal of free product from the area of the former tank bed identified in MW-3.

Maintain the site and keep vegetation trimmed.



TOPO SOURCE: NCGS DRG
 RALEIGH EAST, DATED 2013
 RALEIGH WEST, DATED 2013
 CONTOUR INTERVAL 10 FEET



	VICINITY MAP		SCALE:	FIGURE NO.
	STAR FLITE 52 TF-6896 1904 ST ALBANS DRIVE RALEIGH, NORTH CAROLINA		AS SHOWN	1
			DATE:	
			PROJECT NUMBER	
		4305-17-108		

Drawing path: Q:\4305\2017\17-108 - STAR FLITE 52 TF 6896\Star Flite Figures.dwg



LEGEND

● MONITOR WELL LOCATION
 RW = RECOVERY WELL
 ALL LOCATIONS ARE APPROXIMATE

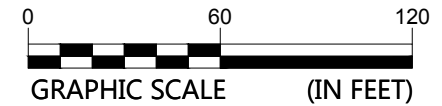


IMAGE SOURCE:
 NC ONEMAP, DATED 2013



SITE MAP

STAR FLITE 52 TF 6896
 1904 ST. ALBANS DRIVE
 RALEIGH, NORTH CAROLINA

SCALE:

AS SHOWN

DATE:

SEPT. 2017

PROJECT NUMBER

4305-17-108

FIGURE NO.

2

Drawing path: Q:\4305\2017\17-108 - STAR FLITE 52 TF 6896\Star Flite Figures.dwg



LEGEND

- MONITOR WELL LOCATION
- (269.95) GROUNDWATER ELEVATION
- GROUNDWATER CONTOUR
- RW = RECOVERY WELL
- NM = NOT MEASURED
- NL = NOT LOCATED
- GROUNDWATER MEASURED ON
JUNE 21, 2017 & JULY 20-21, 2017

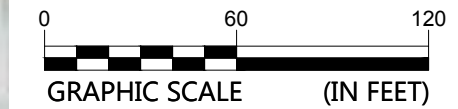


IMAGE SOURCE:
NC ONEMAP, DATED 2013



GROUNDWATER ELEVATION MAP

STAR FLITE 52 TF 6896
1904 ST. ALBANS DRIVE
RALEIGH, NORTH CAROLINA

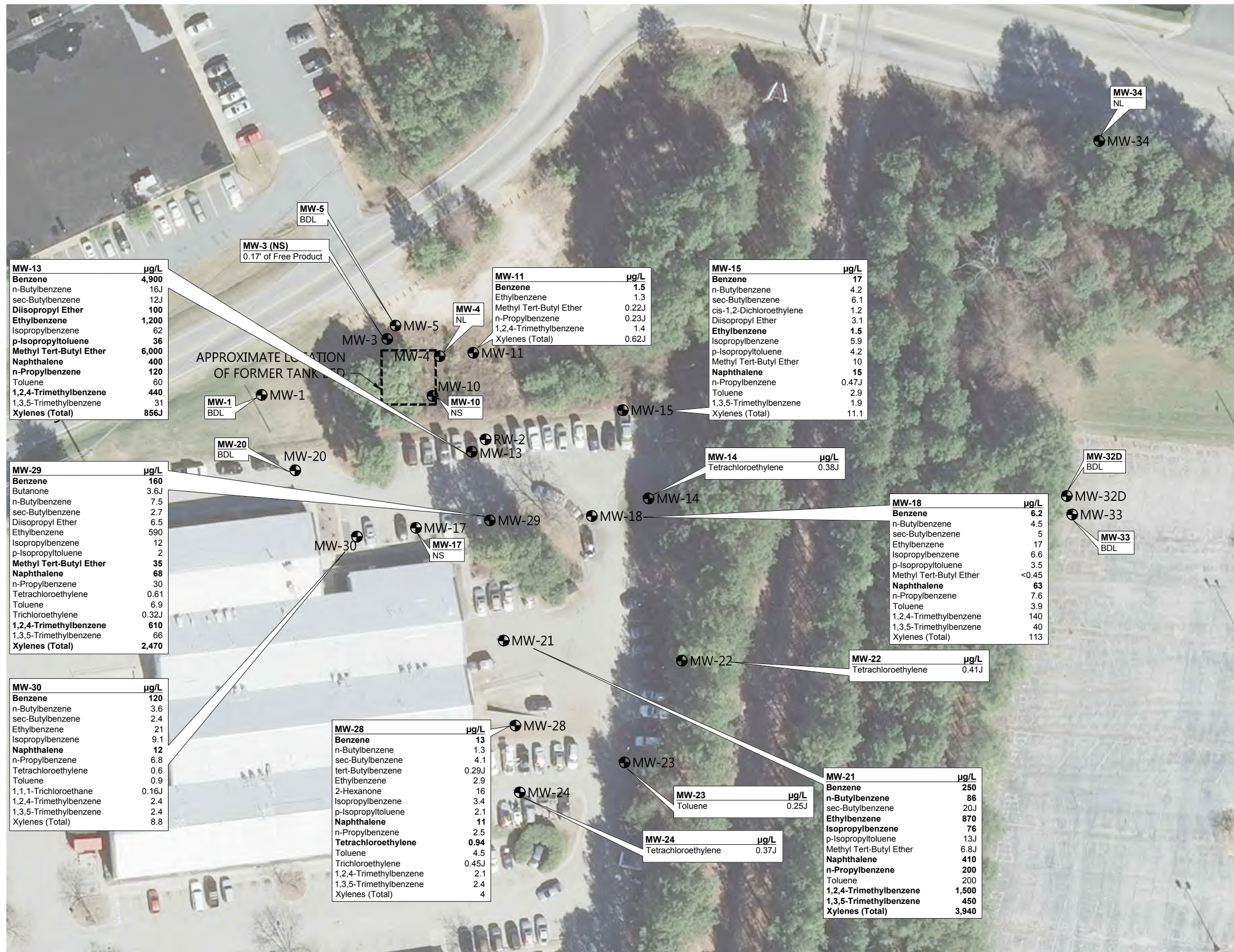
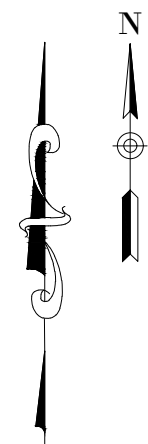
SCALE:
AS SHOWN

DATE:
SEPT. 2017

PROJECT NUMBER
4305-17-108

FIGURE NO.

3



MW-13	µg/L
Benzene	4,900
n-Butylbenzene	16J
sec-Butylbenzene	12J
Diisopropyl Ether	100
Ethylbenzene	1,200
Isopropylbenzene	62
p-Isopropyltoluene	36
Methyl Tert-Butyl Ether	6,000
Naphthalene	400
n-Propylbenzene	120
Toluene	60
1,2,4-Trimethylbenzene	440
1,3,5-Trimethylbenzene	31
Xylenes (Total)	856J

MW-3 (NS)
0.17' of Free Product

MW-11	µg/L
Benzene	1.5
Ethylbenzene	1.3
Methyl Tert-Butyl Ether	0.22J
n-Propylbenzene	0.23J
1,2,4-Trimethylbenzene	1.4
Xylenes (Total)	0.62J

MW-15	µg/L
Benzene	17
n-Butylbenzene	4.2
sec-Butylbenzene	6.1
cis-1,2-Dichloroethylene	1.2
Diisopropyl Ether	3.1
Ethylbenzene	1.5
Isopropylbenzene	5.9
p-Isopropyltoluene	4.2
Methyl Tert-Butyl Ether	10
Naphthalene	15
n-Propylbenzene	0.47J
Toluene	2.9
1,3,5-Trimethylbenzene	1.9
Xylenes (Total)	11.1

MW-29	µg/L
Benzene	160
Butanone	3.6J
n-Butylbenzene	7.5
sec-Butylbenzene	2.7
Diisopropyl Ether	6.5
Ethylbenzene	590
Isopropylbenzene	12
p-Isopropyltoluene	2
Methyl Tert-Butyl Ether	35
Naphthalene	68
n-Propylbenzene	30
Tetrachloroethylene	0.61
Toluene	6.9
Trichloroethylene	0.32J
1,2,4-Trimethylbenzene	610
1,3,5-Trimethylbenzene	66
Xylenes (Total)	2,470

MW-30	µg/L
Benzene	120
n-Butylbenzene	3.6
sec-Butylbenzene	2.4
Ethylbenzene	21
Isopropylbenzene	9.1
Naphthalene	12
n-Propylbenzene	6.8
Tetrachloroethylene	0.6
Toluene	0.9
1,1,1-Trichloroethane	0.16J
1,2,4-Trimethylbenzene	2.4
1,3,5-Trimethylbenzene	2.4
Xylenes (Total)	8.8

MW-28	µg/L
Benzene	13
n-Butylbenzene	1.3
sec-Butylbenzene	4.1
tert-Butylbenzene	0.29J
Ethylbenzene	2.9
2-Hexanone	16
Isopropylbenzene	3.4
p-Isopropyltoluene	2.1
Naphthalene	11
n-Propylbenzene	2.5
Tetrachloroethylene	0.94
Toluene	4.5
Trichloroethylene	0.45J
1,2,4-Trimethylbenzene	2.1
1,3,5-Trimethylbenzene	2.4
Xylenes (Total)	4

MW-23	µg/L
Toluene	0.25J

MW-24	µg/L
Tetrachloroethylene	0.37J

MW-21	µg/L
Benzene	250
n-Butylbenzene	86
sec-Butylbenzene	20J
Ethylbenzene	870
Isopropylbenzene	76
p-Isopropyltoluene	13J
Methyl Tert-Butyl Ether	6.8J
Naphthalene	410
n-Propylbenzene	200
Toluene	200
1,2,4-Trimethylbenzene	1,500
1,3,5-Trimethylbenzene	450
Xylenes (Total)	3,940

MW-14	µg/L
Tetrachloroethylene	0.38J

MW-18	µg/L
Benzene	6.2
n-Butylbenzene	4.5
sec-Butylbenzene	5
Ethylbenzene	17
Isopropylbenzene	6.6
p-Isopropyltoluene	3.5
Methyl Tert-Butyl Ether	<0.45
Naphthalene	63
n-Propylbenzene	7.6
Toluene	3.9
1,2,4-Trimethylbenzene	140
1,3,5-Trimethylbenzene	40
Xylenes (Total)	113

MW-32D	BDL
BDL	

MW-32D	BDL
BDL	

MW-33	BDL
BDL	

LEGEND

- MONITOR WELL LOCATION
- RW = RECOVERY WELL
- NL = NOT LOCATED
- µg/L - MICROGRAMS PER LITER
- NS - NOT SAMPLED
- BDL - BELOW DETECTION LIMIT
- FP - FREE PRODUCT
- J - DETECTED ABOVE THE METHOD DETECTION LIMIT, BUT BELOW THE REPORTING LIMIT; THEREFORE, RESULT IS AN ESTIMATED CONCENTRATION

GROUNDWATER SAMPLED ON
JUNE 21, 2017 & JULY 20-21, 2017
BOLD INDICATES EXCEEDANCE OF 2L STANDARDS

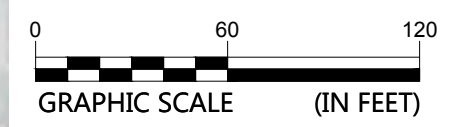


IMAGE SOURCE:
NC ONEMAP, DATED 2013

GROUNDWATER CONSTITUENT MAP

STAR FLITE 52 TF 6896
1904 ST. ALBANS DRIVE
RALEIGH, NORTH CAROLINA

SCALE:
AS SHOWN

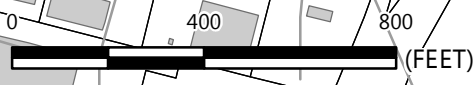
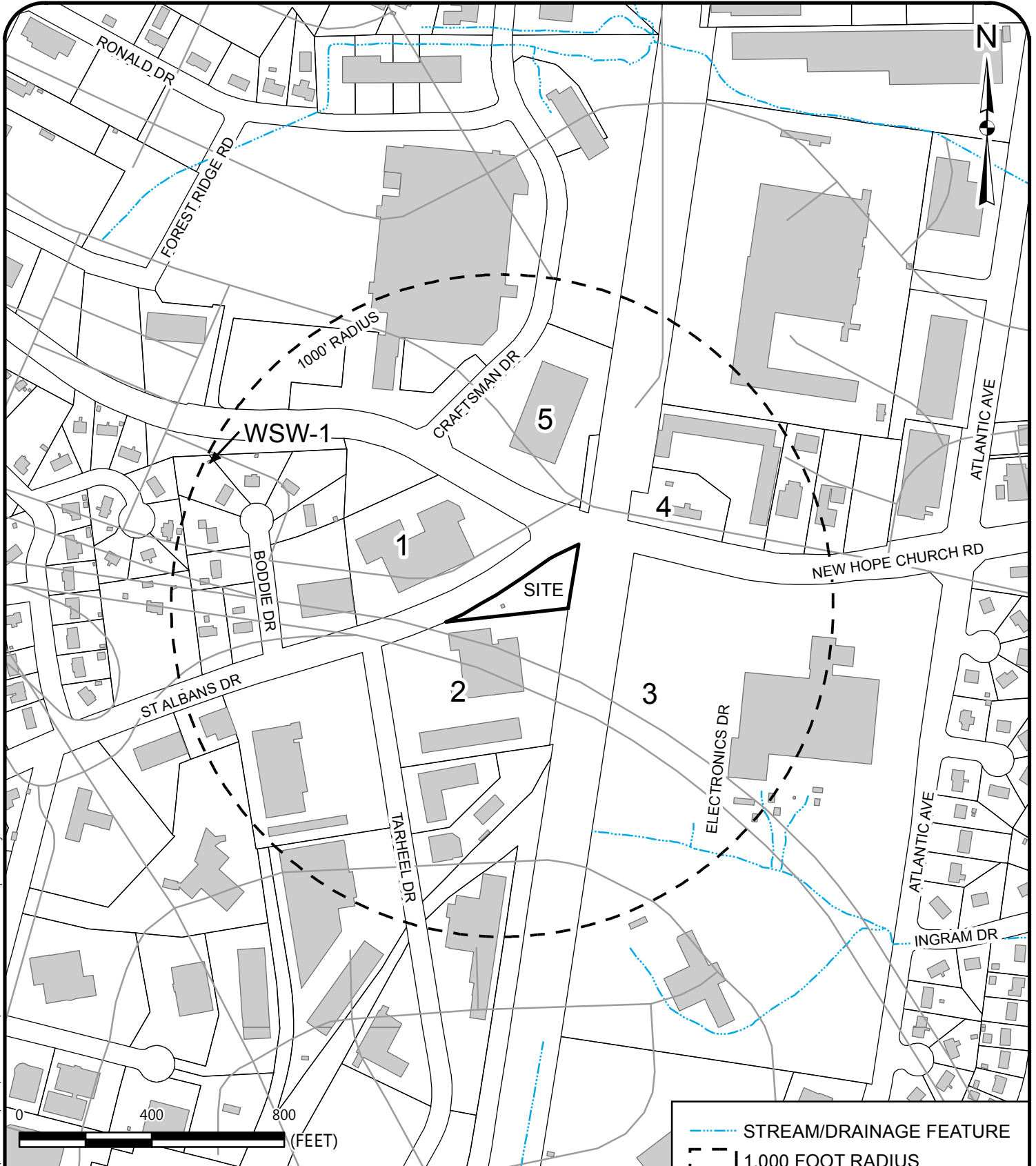
DATE:
SEPT. 2017

PROJECT NUMBER
4305-17-108

FIGURE NO.

4

Drawing Path: Q:\PROJECTS\2017\4305-17-108\FIG 5 RECEPTOR MAP.mxd plotted by abentz 09-13-2017



SOURCE: WAKE COUNTY GIS WEBSITE
 SEE TABLE 5 FOR WSW-1 INFORMATION
 SEE TABLE 6 FOR ADJACENT PROPERTY OWNER INFORMATION

- STREAM/DRAINAGE FEATURE
- 1,000 FOOT RADIUS
- SITE
- STRUCTURE


	RECEPTOR MAP	SCALE: 1" = 400'	FIGURE NO.
	STAR FLITE 52 TF-6896 1904 ST ALBANS DR RALEIGH, NORTH CAROLINA	DATE: 9-13-17	5
		PROJECT NUMBER 4305-17-108	



TABLE 1
SITE HISTORY - UST OWNER INFORMATION
Star Flite 52
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
NCDEQ Incident No. 6896
S&ME Project # 4305-17-108

UST Facility ID # 0-00-000006212

UST/AST ID Number(s)	Name of Owner or Operator	Dates of Ownership / Operation	Incident Number	Owner or Operator?
T1, T2, T3	Marshall Oil Company (Dissolved in 2001)	1972 - 07/14/1991	6896	Operator
Address			Telephone Number	
9083 NW 128th Ct, Chiefland, FL 32644-1665			Unknown	

Notes:

UST owner/operator information from *Comprehensive Site Assessment Report*, EMS Environmental, Inc. January 3, 1991.



TABLE 2
UST SYSTEM INFORMATION
Star Flite 52
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
NCDEQ Incident No. 6896
S&ME Project # 4305-17-108

UST Facility ID # 0-00-000006212

UST ID Number	Current/Last Contents	Previous Contents	Capacity (gallons)	Construction Details	Tank Dimensions D/L (ft)	Description of Associated Piping and Pumps	Estimated Date UST Installed	Status of UST	Was Release Associated With UST System?
T1	Gasoline	Gasoline	10,000	Single-Wall Steel	Unknown	Single-Wall Steel Pipes	1972	Removed 07/14/1991	Yes
T2	Gasoline	Gasoline	10,000	Single-Wall Steel	Unknown	Single-Wall Steel Pipes	1972	Removed 07/14/1991	Yes
T3	Gasoline	Gasoline	3,000	Single-Wall Steel	Unknown	Single-Wall Steel Pipes	1972	Removed 07/14/1991	Yes

Incident Number	Material Released	Date of Release	Description of Release
6896	Gasoline	8/1/1991	A release was discovered, in August of 1991 as a result of a site check performed by ESE which included soil borings and soil sampling that revealed free product was present in the subsurface of the site

Notes:

UST information from *Comprehensive Site Assessment Report* by EMS Environmental, Inc. dated January 3, 1991.



TABLE 3
WELL CONSTRUCTION AND LIQUID LEVEL DATA
Star Flite 52
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
NCDEQ Incident No. 6896
S&ME Project # 4305-17-108

UST Facility ID # 0-00-000006212

Well ID	Date Installed	Date Water Level Measured	Well Casing Depth (ft BGS)	Well Casing Diameter (in)	Screen Interval (ft-BGS)	Depth of Well (ft-BGS)	Top of Casing Elevation (ft)	Depth to Water from Top of Casing (ft)	Free Product Thickness (ft)	Groundwater Elevation (ft)
MW-1	12/04/91	11/20/15	10.0	2.0	10.0 - 25.0	25.0	295.81	18.02	NM	277.79
		07/20/17						18.12	NM	277.69
MW-3*	12/04/91	06/21/17	10.0	4.0	10.0 - 25.0	25.0	293.96	18.59	0.17	275.52
MW-4	12/04/91	06/21/17	10.0	2.0	10.0 - 25.0	25.0	293.95	NL	NL	NA
MW-5	12/04/91	11/20/15	10.0	2.0	10.0 - 25.0	25.0	294.87	18.14	NM	276.73
		07/20/17						18.32	NM	276.55
MW-10	12/04/91	06/21/17	10.0	2.0	10.0 - 25.0	25.0	293.82	NM	NM	NA
MW-11	01/07/92	07/21/17	20.0	2.0	20.0 - 40.0	40.0	294.00	19.43	NM	274.57
MW-13	01/07/92	06/21/17	15.0	2.0	15.0 - 35.0	35.0	298.20	29.71	NM	268.49
MW-14	04/10/92	11/20/15	15.0	2.0	15.0 - 35.0	35.0	296.20	27.76	NM	268.44
		07/20/17						28.37	NM	267.83
MW-15	04/13/93	11/20/15	15.0	2.0	15.0 - 35.0	35.0	293.09	24.71	NM	268.38
		06/21/17						25.27	NM	267.82
MW-17	06/04/98	11/20/15	10.0	2.0	10.0 - 30.0	30.0	300.58	Dry	NM	NA
		07/20/17						Dry	NM	NA
MW-18	06/04/98	06/21/17	20.0	2.0	20.0 - 40.0	40.0	298.71	29.73	NM	268.98
MW-20	11/25/98	11/20/15	19.0	2.0	19.0 - 44.0	44.0	301.86	23.53	NM	278.33
		07/20/17						24.05	NM	277.81
MW-21	11/25/98	11/20/15	15.0	2.0	15.0 - 35.0	35.0	302.99	33.19	NM	269.80
		06/21/17						33.74	NM	269.25
MW-22	11/25/98	11/20/15	14.0	2.0	14.0 - 44.0	44.0	299.87	30.31	NM	269.56
		07/19/17						31.05	NM	268.82
MW-23	11/18/99	11/20/15	35.0	2.0	35.0 - 40.0	40.0	299.79	26.80	NM	272.99
		07/19/17						29.84	NM	269.95
MW-24	10/08/01	11/20/15	35.0	2.0	35.0 - 40.0	40.0	302.08	32.27	NM	269.81
		07/19/17						32.81	NM	269.27
MW-28	10/09/01	11/20/15	13.0	2.0	13.0 - 43.0	43.0	302.16	33.32	NM	268.84
		07/19/17						33.79	NM	268.37
MW-29	08/02/02	11/20/15	10.0	2.0	10.0 - 40.0	40.0	297.77	30.00	NM	267.77
		07/19/17						30.36	NM	267.41
MW-30	10/09/01	07/20/17	15.0	2.0	15.0 - 45.0	45.0	300.74	24.96	NM	275.78
MW-32D	08/02/02	11/20/15	60.0	2.0	60.0 - 65.0	40.0	289.56	19.71	NM	269.85
		07/19/17						20.44	NM	269.12
MW-33	08/02/02	11/20/15	10.0	2.0	10.0 - 35.0	35.0	289.84	19.94	NM	269.90
		07/19/17						20.67	NM	269.17
MW-34	08/02/02	11/20/15	10.0	2.0	10.0 - 35.0	35.0	288.01	22.49	NM	265.52
		07/19/17						NL	NL	NA

NOTES:

MW-3* = groundwater elevation corrected to account for approximately two inches of free product observed in well

The benchmark elevation of the site is 300.00 feet, based on Comprehensive Site Assessment Report, dated February 3, 1991 by EMS Environmental, Inc.

The location of MW-10 was identified and has been destroyed. Therefore a depth to water was not measured.

ft-BGS = feet below ground surface

NM = Not Measured or None Measured

NA = Not Applicable

NL = Not Located

Dry = The well was dry; no water was in the well.



TABLE 4
SUMMARY OF GROUNDWATER SAMPLING RESULTS
Star Flite 52
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
NCDEQ Incident No. 6896
S&ME Project # 4305-17-108

UST Facility ID # 0-00-00006212

Analytical Method →			Volatile Organic Compounds (VOCs) by EPA Method 6200B (µg/L)																				
Contaminant of Concern →																							
Well ID	Date Collected	Incident Phase	Benzene	2-Butanone (MEK)	n-Butylbenzene	sec-Butylbenzene	cis-1,2-Dichloroethylene	tert-Butylbenzene	Diisopropyl Ether (DIPE)	Ethylbenzene	2-Hexanone (MBK)	Isopropylbenzene (Cumene)	p-Isopropyltoluene (p-Cymene)	Methyl tert-Butyl Ether (MTBE)	Naphthalene	n-Propylbenzene	Tetrachloroethylene	Toluene	1,1,1-Trichloroethane	Trichloroethylene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylene (total)
2L Standard (µg/L)			1	4,000	70	70	60	70	70	600	40.00	70	25	20	6	70	0.7	600	200	3	400	400	500
GCL (µg/L)			5,000	4,000,000	6,900	8,500	60,000	15,000	70,000	84,500	40,000	25,000	11,700	20,000	6,000	30,000	700	260,000	200,000	3,000	28,500	25,000	85,500
MW-1	7/20/2017		<0.12	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	<0.13	<1.5	<0.12	<0.15	<0.090	<0.12	<0.13	<0.27	<0.17	<0.13	<0.20	<0.18	<0.13	<0.39
MW-3	7/20/2017		Did Not Sample - Had Approximately Two Inches of Free Product																				
MW-4	6/21/2017		Did Not Sample - Unable to Locate																				
MW-5	7/19/2017		<0.12	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	<0.13	<1.5	<0.12	<0.15	<0.090	<0.12	<0.13	<0.27	<0.17	<0.13	<0.20	<0.18	<0.13	<0.39
MW-10	6/21/2017		Did Not Sample - Well Has Been Destroyed																				
MW-11	6/21/2017		1.5	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	1.3	<1.5	<0.12	<0.15	0.22J	<0.12	0.23J	<0.27	<0.17	<0.13	<0.20	1.4	<0.13	0.62J
MW-13*	6/21/2017		4,900	<120	16J	12J	<7.4	<6.0	100	1,200	<76	62	36	6,000	400	120	<14	60	<6.6	<10	440	31	856J
MW-14	7/20/2017		<0.12	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	<0.13	<1.5	<0.12	<0.15	<0.090	<0.12	<0.13	0.38J	<0.17	<0.13	<0.20	<0.18	<0.13	<0.39
MW-15	6/21/2017		17	<2.4	4.2	6.1	1.2	<0.12	3.1	1.5	<1.5	5.9	4.2	10	15	0.47J	<0.27	2.9	<0.13	<0.20	<0.18	1.9	11.1
MW-17	7/20/2017		Did Not Sample - Well Was Dry																				
MW-18*	6/21/2017		6.2	<12	4.5	5	<1.0	<0.60	<0.90	17	<7.6	6.6	3.5	<0.45	63	7.6	<1.4	3.9	<0.66	<1.0	140	40	113
MW-20	7/20/2017		<0.12	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	<0.13	<1.5	<0.12	<0.15	<0.090	<0.12	<0.13	<0.27	<0.17	<0.13	<0.20	<0.18	<0.13	<0.39
MW-21*	6/21/2017		250	<95	86	20J	<5.9	<4.8	<7.2	870	<61	76	13J	6.8J	410	200	<11	200	<5.2	<8.0	1,500	450	3,940
MW-22	7/19/2017		<0.12	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	<0.13	<1.5	<0.12	<0.15	<0.090	<0.12	<0.13	0.41J	<0.17	<0.13	<0.20	<0.18	<0.13	<0.39
MW-23	7/19/2017		<0.12	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	<0.13	<1.5	<0.12	<0.15	<0.090	<0.12	<0.13	<0.27	0.25J	<0.13	<0.20	<0.18	<0.13	<0.39
MW-24	7/19/2017		<0.12	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	<0.13	<1.5	<0.12	<0.15	<0.090	<0.12	<0.13	0.37J	<0.17	<0.13	<0.20	<0.18	<0.13	<0.39
MW-28	7/19/2017		13	<2.4	1.3	4.1	<0.15	0.29J	<0.18	2.9	16	3.4	2.1	<0.090	11	2.5	0.94	4.5	<0.13	0.45J	2.1	2.4	4
MW-29*	7/19/2017		160	3.6J	7.5	2.7	<0.15	<0.12	6.5	590	<1.5	12	2	35	68	30	0.61	6.9	<0.13	0.32J	610	66	2,470
MW-30	7/20/2017		120	<2.4	3.6	2.4	<0.15	<0.12	<0.18	21	<1.5	9.1	<0.15	<0.090	12	6.8	0.6	0.9	0.16J	<0.20	2.4	2.4	8.8
MW-32D	7/19/2017		<0.12	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	<0.13	<1.5	<0.12	<0.15	<0.090	<0.12	<0.13	<0.27	<0.17	<0.13	<0.20	<0.18	<0.13	<0.39
MW-33	7/19/2017		<0.12	<2.4	<0.15	<0.13	<0.15	<0.12	<0.18	<0.13	<1.5	<0.12	<0.15	<0.090	<0.12	<0.13	<0.27	<0.17	<0.13	<0.20	<0.18	<0.13	<0.39
MW-34	7/19/2017		Did Not Sample - Unable to Locate the Well																				

Notes:

Analytes that are not shown for the method were not detected.

Concentrations are reported in micrograms per liter (µg/L).

2L Standard: North Carolina Groundwater Quality Standards: 15A NCAC 2L.0202

Concentrations exceeding the 2L Standards are shown in Shaded and **BOLD** fields.

Concentrations exceeding the laboratory's reporting limits are shown in **BOLD** fields.

* = Sample was analyzed at a dilution

J: detected above the method detection limit, but below the reporting limit; therefore, result is an estimated concentration

GCL - Gross Contamination Level



TABLE 5
PUBLIC AND PRIVATE WATER SUPPLY WELL INFORMATION
Star Flite 52
1904 St. Albans Drive
S&ME Project # 4305-17-108

UST Facility ID # 0-00-000006212

Well #	Well Owner / User (indicate which)	Address	Phone Number	Latitude (decimal)	Longitude (decimal)	Well Use	Well Depth (ft-BGS)	Type of Well	Well Casing Depth (ft-BGS)	Distance (ft) / Direction from Source	Gradient from Source (Up or Down)
WSW-1	Kari Ann and Martin Hollinger	3813 Boddie Drive, Raleigh, NC	Not Provided	Unknown	Unknown	Active	Unknown	Unknown	Unknown	750 NW	Up



TABLE 6
PROPERTY OWNERS/OCCUPANTS
Star Flite 52
1904 St. Albans Drive
S&ME Project # 4305-17-108

UST Facility ID # 0-00-000006212

Parcel # or Map ID	Owner/Occupant Name	Owner/Occupant Mailing Address			
		Street/PO Box	City	State	Zip
SITE	Isabella Smith	3537 Peakwood Dr. SW	Roanoke	VA	24014
1	New Hope Associates, LLC	1904 New Hope Church Road	Raleigh	NC	27609
2	Harrispark Properties	733 W. Johnson Street	Raleigh	NC	27603
3	AVX Corporation	1 AVW Boulevard	Fountain Inn	SC	29644
4	Quality Oil	P.O. Box 2736	Winston-Salem	NC	27102
5	NU Associates, LLC	P.O. Box 31827	Raleigh	NC	27622

Notes: Information on property ownership was obtained from Wake County GIS Website on August 21, 2017

Appendices

Appendix I – Historical Documents

**GROUNDWATER MONITORING REPORT
STAR FLITE 52, INCIDENT #6896
1904 ST. ALBANS DRIVE
RALEIGH, WAKE COUNTY, NORTH CAROLINA
S&ME PROJECT # 4305-15-206
JANUARY 20, 2016 – REV. SEPTEMBER 1, 2016**

Prepared For:



North Carolina Department of Environmental Quality
Underground Storage Tank Section
1637 Mail Service Center
Raleigh, North Carolina 27699

Prepared by:

S&ME, Inc.
3201 Spring Forest Road
Raleigh, North Carolina 27616



Alexander R. Culpepper, P.G.
Staff Geologist



Thomas P. Raymond, P.E., P.M.P.
Senior Consultant

S&ME is licensed to practice geology/engineering in North Carolina. Geology License Certification #C-145 and Engineering License Certification #F-0176.

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- 1 UST Owner/Operator Information**
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- 3 Monitor Well Construction and Liquid Level Data**
- 4 Summary of Groundwater Sampling Results**

APPENDICES

- I Photographs**
- II Field Sampling Forms**
- III Laboratory Analytical Report and Chain of Custody Forms**

1. FEDERAL/STATE-LEAD MONITORING REPORT

1. Site Identification:

- Date of Report: 9/1/2016
- Facility I.D.: 00-0-0000006212
- Site Risk: High UST Incident Number: 6896
- Site Name: Star Flite 52 Site Rank: I100D Land Use Category: Commercial
- Site Street Address: 1904 St. Albans Drive City/Town: Raleigh Zip Code: 27713 County: Wake
- Description of Geographical Data: Center of the site
- Location Method: Google Earth
- Latitude: 35.834392 Longitude: -78.606611

2. Information about Contacts Associated with the Leaking UST System

- UST Owner: Marshall Oil Company (dissolved 2001))
Address: P.O. Box 128, Zebulan, NC 27597 Telephone: Not Applicable
- UST Operator: Marshall Oil Company (dissolved 2001))
Address: P.O. Box 128, Zebulan, NC 27597 Telephone: Not Applicable
- Property Occupant: Isabella Williams Smith
Address: 3537 Peakwood Dr. SW, Roanoke, VA 24014 Telephone: Not Applicable
- Consultant/Contractor: S&ME, Inc.
Address: 3201 Spring Forest Road, Raleigh, NC Telephone: 919-801-4066
- Analytical Laboratory: Con-Test State Certification No.: 652
Address: 39 Spruce Street Longmeadow, MA, 01028 Telephone: 413-525-2332

3. Information about Release

- Date Discovered: 8/1/1991
- Estimated Quantity of Release: Unknown
- Cause of Release: Unknown
- Source of Release (Dispenser/Piping/UST): UST System
- Sizes and contents of UST system(s) from which the release occurred: Two 10,000-gallon and one 3,000-gallon gasoline USTs
- Criteria Used to Classify Risk: Contaminant concentrations in groundwater greater than 2L Standards

4. Information about the Monitoring Report

- Date of Groundwater Monitoring Event: November 20, 2015

5. Certification

I, Thomas P. Raymond, a Professional Engineer for S&ME, do certify that the information contained in this report is correct and accurate to the best of my knowledge.

Thomas P. Raymond, P.E., P.M.P.

S&ME is licensed to practice engineering (Engineering License Certification #F-0176) and geology (Geology License Certification #C-145) in North Carolina.

2. EXECUTIVE SUMMARY

On November 20, 2015, S&ME conducted a groundwater sampling event at the Former Star Flite 52 site located at 1904 St. Albans Drive in Raleigh, North Carolina. S&ME's activities included collecting depth-to-water measurements from 14 monitor wells (MW-1, MW-5, MW-14, MW-15, MW-17, MW-20 through MW-24, MW-28, MW-29, and MW-32D through MW-34) and collecting groundwater samples from five monitor wells (MW-5, MW-14, MW-15, MW-28, and MW-29). The following summarizes the results of the sampling event:

- Monitor well MW-17 was dry at the time of gauging, and was not sampled.
- Groundwater flow direction is generally to the east and northeast.
- Free product has historically been measured at the site, but was not measured during the November 2015 groundwater monitoring event.
- The following constituents were the highest reported at concentrations above the 15A NCAC 2L.0202 Groundwater Standards (2L Standards) in groundwater samples collected on November 20, 2015:

Contaminant	2L Standard (µg/L)	Concentration (µg/L)	Well ID	Date
Benzene	1	220	MW-29	11/20/2015
Methyl-tert-butyl ether	20	22	MW-29	11/20/2015
Naphthalene	6	190	MW-29	11/20/2015
1,2,4-Trimethylbenzene	400	480	MW-29	11/20/2015
Total Xylenes	500	2,310	MW-29	11/20/2015

- According to the City of Raleigh Public Utilities Department, municipal water service is available for the area surrounding the site.

Recommendations:

1. Update receptor survey and determine status of water supply wells within 1,000 feet of the site.
2. If no water supply wells are present within 1,000 feet of the site, recommend closure with land use restrictions.

3. SCOPE OF SERVICES

3.1 Contract Information

The scope of services for this report was performed in general accordance with S&ME's proposal number 43-1500884, dated October 6, 2015. The scope of services was authorized by the North Carolina Department of Environmental Quality (NCDEQ) Task Authorization TA-01, dated October 12, 2015, and within contract number N14005i.

3.2 Approved Scope of Services

S&ME's approved Scope of Services for this Task Authorization included gauging up to 15 groundwater monitor wells (MW-1, MW-5, MW-15, MW-17, MW-20 through MW-24, MW-28, MW-29, and MW-32D through MW-34), collecting up to six groundwater samples (MW-5, MW-14, MW-15, MW-17, MW-28, and MW-29), and preparing this report. These services were completed with the following exceptions: MW-17 was dry at the time of the sampling event and could not be sampled.

4. SITE HISTORY AND CHARACTERIZATION

The subject site is located at 1904 St. Albans Drive in Raleigh, North Carolina, and is currently vacant. The station building, tanks, pump islands and pavement have been removed from the site. A vicinity map of the site is shown on **Figure 1**, and the site and pertinent features are shown on **Figure 2**. Photographs of the site are provided in **Appendix I**.

According to the *Comprehensive Site Assessment Report*, prepared by EMS Environmental, Inc. (EMS) dated February 3, 1991, three gasoline USTs were removed from the site on July 11, 1991. Information about the owner/operator of the UST system and the dates of operation are provided in **Table 1**. According to the same report, in August of 1991 a site check was performed by ESE Biosciences Inc. (ESE) which included soil borings and soil sampling revealing that free product was present in the subsurface of the site. In order to determine the extent of free product, Marshall Oil Company install eleven temporary monitor wells in the vicinity of the former tank field. Free product thickness in the wells ranged from 0.04 feet to 1.65 feet.

From September 3 to 21, 1991, free product was removed from the affected wells by hand bailers. On September 22, 1991, a skimmer system was installed. Initial recovery rates averaged 9.0 gallons per day and dropped to approximately 5.5 gallons per day from October 2 to 20, 1991.

Soils from the former tank field were excavated from October 21 to 25, 1991. The excavation dimensions were approximately 35 feet by 35 feet by 23 feet in depth. Approximately 420 tons of soil were removed and processed into bricks by Cherokee Sanford Group in early December 1991. Almost all of the temporary wells were destroyed during the excavation of the tankfield soils.

The remedial system for the site was installed between April 20 and June 1, 1992. Pump and treat technology with concurrent soil vapor extraction (SVE) became operational on June 4, 1992. Prior to remediation systems installation, Marshall Oil removed approximately 182 gallons of liquid phase hydrocarbons.

According to the *1st Quarter 1995 Status Report* prepared by EMS, by April 20, 1995, the pump and treat system had removed the following proportions of petroleum hydrocarbons; approximately 86 gallons of dissolved phase hydrocarbons and approximately 70 gallons of liquid phase hydrocarbons. The SVE system removed approximately 1256 gallons of petroleum hydrocarbons. The recorded flow on March 13, 1995 was 1,450,740 gallons treated and discharged by the system. The pump and treat system operated through 1996.

During that time period, total BTEX concentrations ranged from non-detectable (MW-1, MW-2, and AS-1) to 23,996 parts per billion (ppb) in MW-13. Monitor wells MW-3, MW-10, RW-1 and OW-1 were not sampled due to a hydrocarbon sheen on the surface. MTBE concentrations ranged from non-detectable (MW-1, MW-4, MW-5, MW-12, and AS-1) to 5,000 ppb in MW-13.

According to the *2nd Semi-Annual 2002 Groundwater Monitoring Report* prepared by EMS, the following summarizes remediation activities to 2003;

- Remediation consisted of air sparging technology from two dedicated well points, AS-1 and AS-2, and air introduction through bubblers in RW-1 , RW-2 , and RW-3.
- Soil vapor extraction was operational using RW-1 through RW-3, MW-7 through MW-11.
- System re-activation and sparge bubbler additions were completed between October 1, 1998 and November 1, 1998.
- Aggressive fluid vapor recovery (AFVR) events were performed on monitoring well OW-1 on December 3, 1999 and February 11, 2000.
- A secondary source investigation was completed in June, 2002, assessing any potential secondary source on the Harris Park property. Results from soil analysis did not reveal a secondary source area, however, results from groundwater sampling indicated that three piezometers contained phase-separated hydrocarbons. Results of product fingerprinting indicated significant differences in the two apparent source areas both in terms of overall composition and apparent age.

Air sparge and SVE was used through 2003, when the responsible party ceased communications with the state and their consultant and the site subsequently fell below the newly-instituted Funding Bar in 2004.

4.1 UST Owner and Operator Information.

The former owner/operator of the UST system, Marshall Oil Company was dissolved in 2001. The property is now owned by Isabella Williams Smith, who inherited the property from her father, Peter William in 2009. The three gasoline USTs were removed from the site on July 14, 1991. Information about the owner/operator of the UST system and the dates of operation are provided in **Table 1**.

4.2 UST Information

According to the *Comprehensive Site Assessment Report*, prepared by EMS dated February 3, 1991, three gasoline USTs were removed from the site on July 14, 1991; two 10,000-gallon gasoline and one 3,000-gallon gasoline USTs. Information about the UST System is provided in **Table 2**. Based on the CSA Report, three other UST systems were utilized at the site dating from 1972. The USTs removed in 1991 were installed in 1986.

4.3 Description of the UST Release

A release was discovered, in August of 1991 as a result of a site check performed by ESE which included soil borings and soil sampling that revealed free product was present in the subsurface of the site. Soils from the former tank field were excavated from October 21 to 25, 1991. The excavation dimensions were approximately 35 feet by 35 feet by 23 feet in depth.

5. CURRENT SITE ASSESSMENT INFORMATION

5.1 Current Liquid Levels

On November 20, 2015, S&ME personnel measured depth to groundwater from the top of casing in 15 monitoring wells (MW-1, MW-5, MW-14, MW-15, MW-17, MW-20 through MW-24, MW-28, MW-29, and MW-32D through MW-34). Three monitor wells (MW-1, MW-5, and MW-15) were located on the former Starflite 52 property. Nine monitor wells (MW-14, MW-17, MW-20, MW-21, MW-22, MW-23, MW-24, MW-28, and MW-29) were located on the Harris Park property (adjacent to the south), and three monitor wells (MW-32D, MW-33, and MW-34) were located on the AVX property (adjacent to the east). Several monitor wells and remediation vaults at the Starflite 52 site have been destroyed by site clearing activities, or were not located during the November 20, 2015 sampling event.

The depth to groundwater was measured using an electronic interface probe, which emits an audible tone when encountering free product, and a distinctly different tone when encountering groundwater. The depth to groundwater ranged from 18.02 feet below top of casing (ft-btoc) in monitor well MW-1, to 33.32 ft-btoc in monitor well MW-28. S&ME used the top of casing elevation measurements and the depth to groundwater measurements to calculate the groundwater elevation, which was used to generate a groundwater elevation map (**Figure 3**). Groundwater elevations ranged from 265.02 feet relative elevation (ft-rel) in monitor well MW-34 to 278.33 ft-rel in monitor well MW-20.

The last time the site was sampled was in September 2003. In general, the groundwater elevations on the northwestern portion of the site were lower than the same elevations measured in 2002. The elevations measured on the northeastern and southeastern portions of the site were generally higher than the same elevations measured in 2002. Historically, groundwater flow direction at the site has been to the east, however, as indicated in the *Second Semi-Annual 2003 Groundwater Monitoring Report* dated November 24, 2003 and prepared by EMS, groundwater flow appeared to be towards the central portion of the site (towards monitor wells MW-14, MW-18, and MW-29) from the west and east. The EMS report indicated that this may have been attributable to regional drought conditions at the time of sample collection (in September 2003). The monitor well construction details, depth to groundwater measurements and groundwater elevations are provided in **Table 3**.

5.2 Groundwater Monitoring Event

On November 20, 2015, S&ME collected groundwater samples from five monitor wells (MW-5, MW-14, MW-15, MW-28, and MW-29). Monitor well MW-17 was not sampled because it was dry at the time of the sampling event. The monitor wells were purged and sampled using new, polyethylene bailers. The wells were purged approximately three casing volumes prior to sampling and the field parameters temperature, pH, and specific conductance were measured and recorded for each casing volume removed. The groundwater samples were collected directly into laboratory-supplied containers, placed in a cooler on ice, and shipped under standard chain-of-custody protocol to Contest Analytical Laboratories (Contest) of East Longmeadow,

Massachusetts, a North Carolina certified laboratory, for analysis. The samples were analyzed for VOCs by EPA Method 6200B. The field sampling sheets are provided in **Appendix II**.

5.3 Summary of Groundwater Assessment Information

The laboratory analytical results for the groundwater samples collected from monitor (MW-5, MW-14, MW-15, MW-28, and MW-29 indicated that the following constituents were reported at concentrations above the 2L Standards:

- Benzene in monitor wells MW-15, MW-28 and MW-29;
- Methyl-tert-butyl ether in monitor well MW-29;
- Naphthalene in MW-15, MW-28, and MW-29;
- 1,2,4-Trimethylbenzene in MW-29; and,
- Total Xylenes in MW-29.

Additional constituents were reported in groundwater samples collected from MW-14, MW-15, MW-28, and MW-29 below their respective 2L Standards. No targeted constituents were reported at concentrations above the laboratory analytical method detection limits in the groundwater sample collected from monitor well MW-5. A summary of the groundwater analytical results is provided in **Table 4**, and are shown in **Figure 4**. A copy of the laboratory analytical report and chain-of-custody record is provided in **Appendix III**.

5.4 Regional and Site Geology and Hydrogeology

5.4.1 Soil and Bedrock

According to the Geologic Map of North Carolina, dated 1985, the site lies within Raleigh Geologic Belt of the Piedmont Geomorphic Province, which is categorized by metamorphosed sedimentary and igneous rocks intruded by early to mid-Paleozoic granitic sills and dikes. According to the Wake County Geologic Map the site lithology is described as an Injected Gneiss Complex. This complex is characterized by mica gneiss and schist intruded by dike and sills of granite, pegmatite, and aplite.

5.4.2 Hydrogeology

Using the depth to groundwater measurements and groundwater results from samples collected on November 20, 2015, S&ME calculated the groundwater elevations at the site, which is presented as **Figure 3**. Based on the groundwater measurements collected by S&ME on November 20, 2015, groundwater flow appears to have a northerly flow from the Harris Park property and easterly flow from the Starflite 52 property. Groundwater flow has previously been characterized by northerly to northeasterly flow.

5.5 Evaluation of Groundwater Assessment Information

5.5.1 *Current Extent and Severity of Contamination*

Free product has historically been measured at the site, but was not measured during the November 2015 groundwater monitoring event. Compared to the previous sampling event in September 2003, concentrations of VOCs decreased in monitor well MW-28, while increasing in monitor well MW-29. Although monitor well MW-17 was dry at the time of S&ME's sampling event, the well has historically contained several VOCs in concentrations exceeding their respective 2L Standards, including the last time the well was sampled in September 2003. There were no detections of petroleum VOCs in the samples collected from monitor wells MW-5 and MW-14, which is consistent with historical analytical data for these wells. One chlorinated solvent not associated with petroleum (tetrachloroethylene) was detected in MW-14 in a concentration below the 2L Standard.

Based on historical reports, the petroleum hydrocarbon plume on the Starflite 52 property was located in the area of former monitor well MW-3. Concentrations of several VOCs were detected in concentrations exceeding their respective 2L Standards in monitor wells located on the Harris Park property, adjacent to the south of the Starflite 52 property. The groundwater contamination in these monitor wells is likely associated with an undocumented release of petroleum product on the Harris Park property in the general area of monitor well MW-21. Based on the groundwater flow direction (generally to the east), the contamination identified in monitor well MW-15 (located on along the southern property boundary with Harris Park) may be attributable to the comingling of the two plumes.

5.5.2 *Cleanup Levels Achieved*

- | | |
|---|------------|
| • Soil (<i>soil-to-groundwater maximum soil contaminant concentrations</i>) | Yes |
| • Groundwater (<i>2L Standard and GCL concentrations</i>) | No |
| • Free Product (<i>0.0</i>) | Yes |

6. CONCLUSIONS AND RECOMMENDATIONS

Based on the current and historical assessment information for the site, the following conclusions are presented:

1. Free product has historically been measured at the site, but was not measured during the November 2015 groundwater monitoring event.
2. Petroleum hydrocarbons are present in concentrations exceeding their respective 2L Standards in one of the monitor wells (MW-15) located on the Starflite 52 site and in two monitor wells (MW-28 and MW-29) on the adjacent Harris Park property.
3. According to City of Raleigh Public Utilities Department, municipal water service is available for the area surrounding the site.

Based on the above, the following recommendations are presented:

1. Update receptor survey and determine status of water supply wells within 1,000 feet of the site.
2. If no water supply wells are present within 1,000 feet of the site, recommend closure with land use restrictions.

TABLES

TABLE 1
UST Owner/Operator Information
Star Flite 52
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
NCDEQ Incident No. 6896
S&ME Project No. 4305-15-206

UST ID Number	UST Information	Owner/ Operator	Dates of Operation
T1	10,000-gasoline	Responsible Party Marshall Oil Company (Dissolved in 2001)	1972 - 7/14/1991
T2	10,000-gasoline		1972 - 7/14/1991
T3	3,000-gasoline		1976 - 7/14/1991

Notes:

UST owner/operator information from *Comprehensive Site Assessment Report* by EMS Environmental, Inc. on January 3, 1991.

TABLE 2
UST Information
Star Flite 52
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
NCDEQ Incident No. 6896
S&ME Project No. 4305-15-206

UST ID Number	Contents	Capacity (gallons)	Tank Dimensions	Date Installed	Date Closed	Release from System
T1	gasoline	10,000	Unknown	1972	7/14/1991	Yes
T2	gasoline	10,000	Unknown	1972	7/14/1991	Yes
T3	gasoline	3,000	Unknown	1976	7/14/1991	Yes

Notes:

UST information from *Comprehensive Site Assessment Report* by EMS Environmental, Inc. dated January 3, 1991.

TABLE 3
Monitoring Well Construction Details and Groundwater Elevation Measurements
Star Flite 52
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
NCDEQ Incident No. 6896
S&ME Project No. 4305-15-206

Well ID	Date Installed	Well Casing Depth (ft.-bgs)	Well Screened Interval (ft.-bgs)	Total Depth (ft)	Top of Casing Elevation (ft-rel)	Date of Measurement	Depth to Water (ft BTOC)	Free Product Thickness (inches)	Groundwater Elevation (ft)
MW-1	12/4/1991	10.0	10.0 - 25.0	25.0	295.81	11/20/2015	18.02	0.00	277.79
MW-5	12/4/1991	10.0	10.0 - 25.0	25.0	294.87	11/20/2015	18.14	0.00	276.73
MW-14	4/10/1992	15.0	15.0 - 35.0	35.0	296.20	11/20/2015	27.76	0.00	268.44
MW-15	4/13/1993	15.0	15.0 - 35.0	35.0	293.09	11/20/2015	24.71	0.00	268.38
MW-17	6/4/1998	10.0	10.0 - 30.0	30.0	300.58	11/20/2015	Dry	N/A	N/A
MW-20	11/25/1998	19.0	19.0 - 44.0	44.0	301.86	11/20/2015	23.53	0.00	278.33
MW-21	11/25/1998	15.0	15.0 - 35.0	35.0	302.99	11/20/2015	33.19	0.00	269.80
MW-22	11/25/1998	14.0	14.0 - 44.0	44.0	299.87	11/20/2015	30.31	0.00	269.56
MW-23	11/18/1999	35.0	35.0 - 40.0	40.0	299.79	11/20/2015	26.80	0.00	272.99
MW-24	11/18/1999	35.0	35.0 - 40.0	40.0	302.08	11/20/2015	32.27	0.00	269.81
MW-28	10/8/2001	43.0	13.0 - 43.0	43.0	302.16	11/20/2015	33.32	0.00	268.84
MW-29	10/9/2001	10.0	10.0 - 40.0	40.0	297.77	11/20/2015	30.00	0.00	267.77
MW-32D	8/2/2002	60.0	60.0 - 65.0	40.0	289.56	11/20/2015	19.71	0.00	269.85
MW-33	8/2/2002	10.0	10.0 - 35.0	35.0	289.84	11/20/2015	19.94	0.00	269.90
MW-34	8/1/2002	10.0	10.0 - 35.0	35.0	288.01	11/20/2015	22.49	0.00	265.52

NOTES:

1. Top of casing elevations and well construction details from *Semi-Annual Groundwater Monitoring Report* by EMS Environmental, Inc. dated February 12, 2003
2. BTOC - Below top of casing
3. Ft-bgs - Feet below ground surface
4. N/A - not applicable

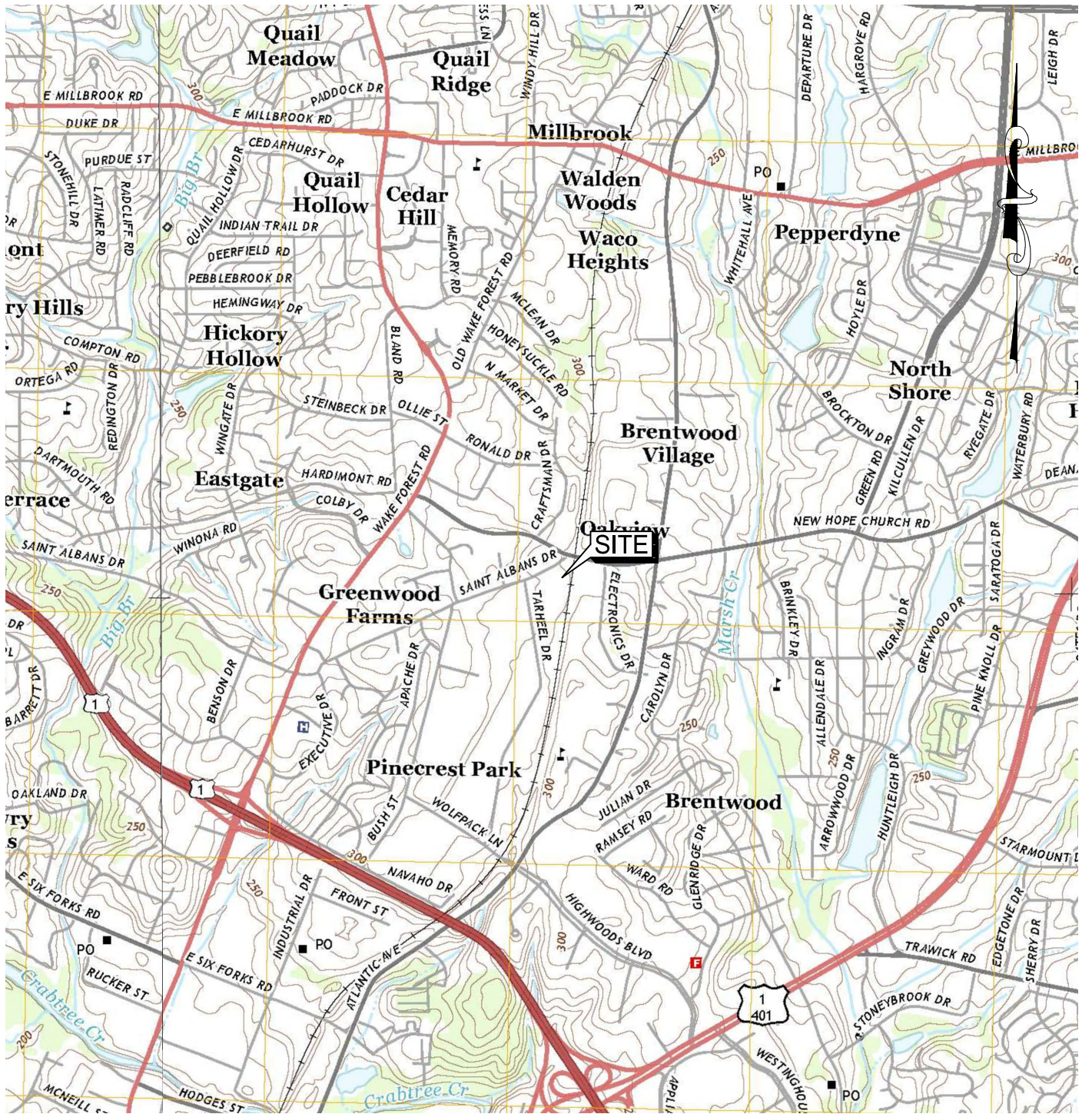
TABLE 4
Summary of Groundwater Analytical Results
Star Flite 52
1904 St. Albans Drive
Raleigh, Wake County, North Carolina
NCDEQ Incident No. 6896
S&ME Project No. 4305-15-206

		Volatile Organic Compounds (VOCs) by EPA Method 6200B or Equivalent (µg/L)																				
Sample ID	Contaminant of Concern	benzene	n-butylbenzene	sec-butylbenzene	tert-butylbenzene	1,1-dichloroethane	1,1-dichloroethylene	cis-1,2-dichloroethylene	di-isopropyl ether	ethylbenzene	isopropylbenzene	p-Isopropyltoluene	methyl-tert-butyl ether	naphthalene	n-propylbenzene	styrene	tetrachloroethylene	toluene	trichloroethylene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	total xylenes
	Date																					
MW-5	11/20/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MW-14	11/20/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.43	BDL	BDL	BDL	BDL
MW-15	11/20/2015	17	2.8	4.7	0.26	1.60	0.57	0.85	4.3	7.2	6.6	1.8	9.1	16	2.1	0.2	DBL	2.6	BDL	5	5.7	22
MW-17	11/20/2015	Well Dry - No Sample Collected																				
MW-28	11/20/2015	3.9	2.2	3.5	0.19	BDL	BDL	BDL	BDL	2.6	3.1	1.4	BDL	9.9	2.1	0.18	BDL	1	0.34	1.9	1.8	4.2
MW-29	11/20/2015	220	7.2	7.2	BDL	BDL	BDL	BDL	7	440	28	4	22	190	52	BDL	BDL	37	BDL	480	150	2,310
2L Standards		1	70	70	70	70	7	NE	70	600	70	25	20	6	70	70	0.7	600	3	400	400	500
Gross Contamination Levels		5,000	6,900	8,500	15,000	70,000	7,000	NE	70,000	84,500	25,000	11,700	20,000	6,000	30,000	70,000	7,000	260,000	3,000	28,500	25,000	85,500

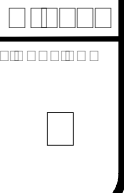
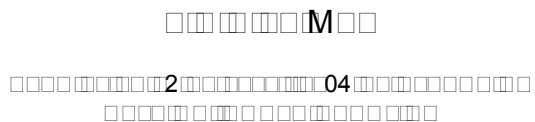
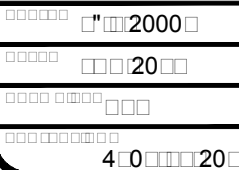
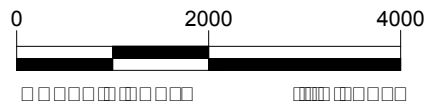
Notes:

1. Analytes that are not shown were not detected for the method.
2. All concentrations are reported in micrograms per liter (µg/L).
3. 2L Standard: North Carolina Groundwater Quality Standards: 15A NCAC 2L.0202
4. VOCs: Volatile Organic Compounds
5. Concentrations exceeding the 2L Standards are shown in Shaded and **BOLD** fields.
6. Concentrations exceeding the laboratory's reporting limits are shown in **BOLD** fields.
7. BDL: Below laboratory detection limits
8. NE: Regulatory Standard Not Established

FIGURES



TOPO SOURCE: NCGS DRG
 RALEIGH EAST, DATED 2013
 RALEIGH WEST, DATED 2013
 CONTOUR INTERVAL 10 FEET





LEGEND

- MONITOR WELL LOCATION
- RW = RECOVERY WELL
- NL = NOT LOCATED
- ALL LOCATIONS ARE APPROXIMATE

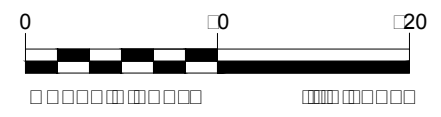
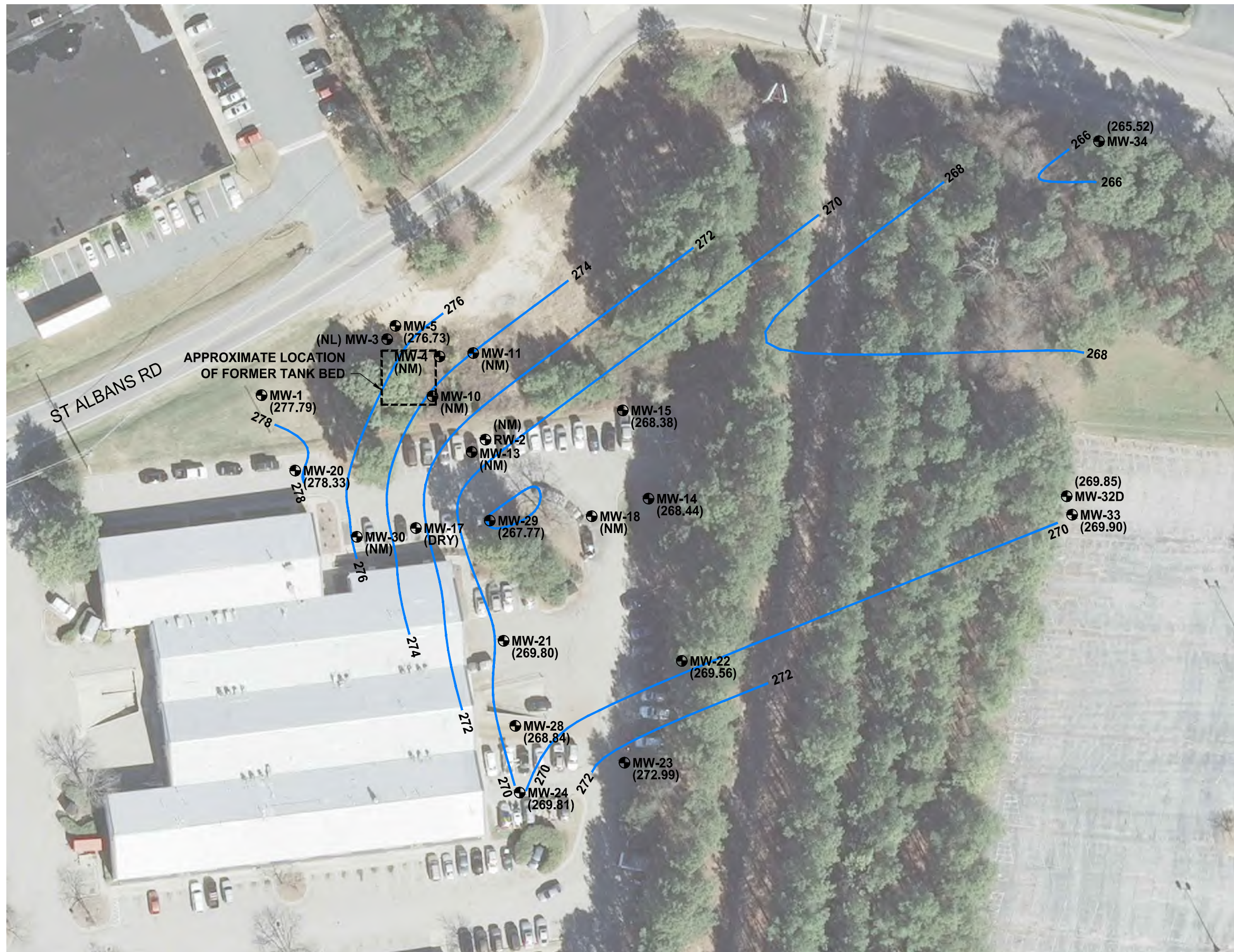


IMAGE SOURCE:
NC ONEMAP, DATED 2013



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LEGEND

- MONITOR WELL LOCATION
- (269.90) GROUNDWATER ELEVATION
- GROUNDWATER CONTOUR
- RW = RECOVERY WELL
- NM = NOT MEASURED
- NL = NOT LOCATED
- ALL LOCATIONS ARE APPROXIMATE
- GROUNDWATER MEASURED ON
- NOVEMBER 20, 2015

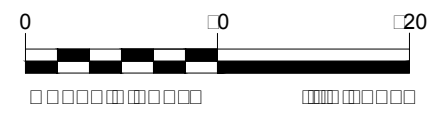


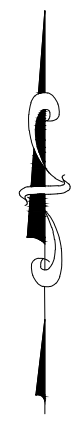
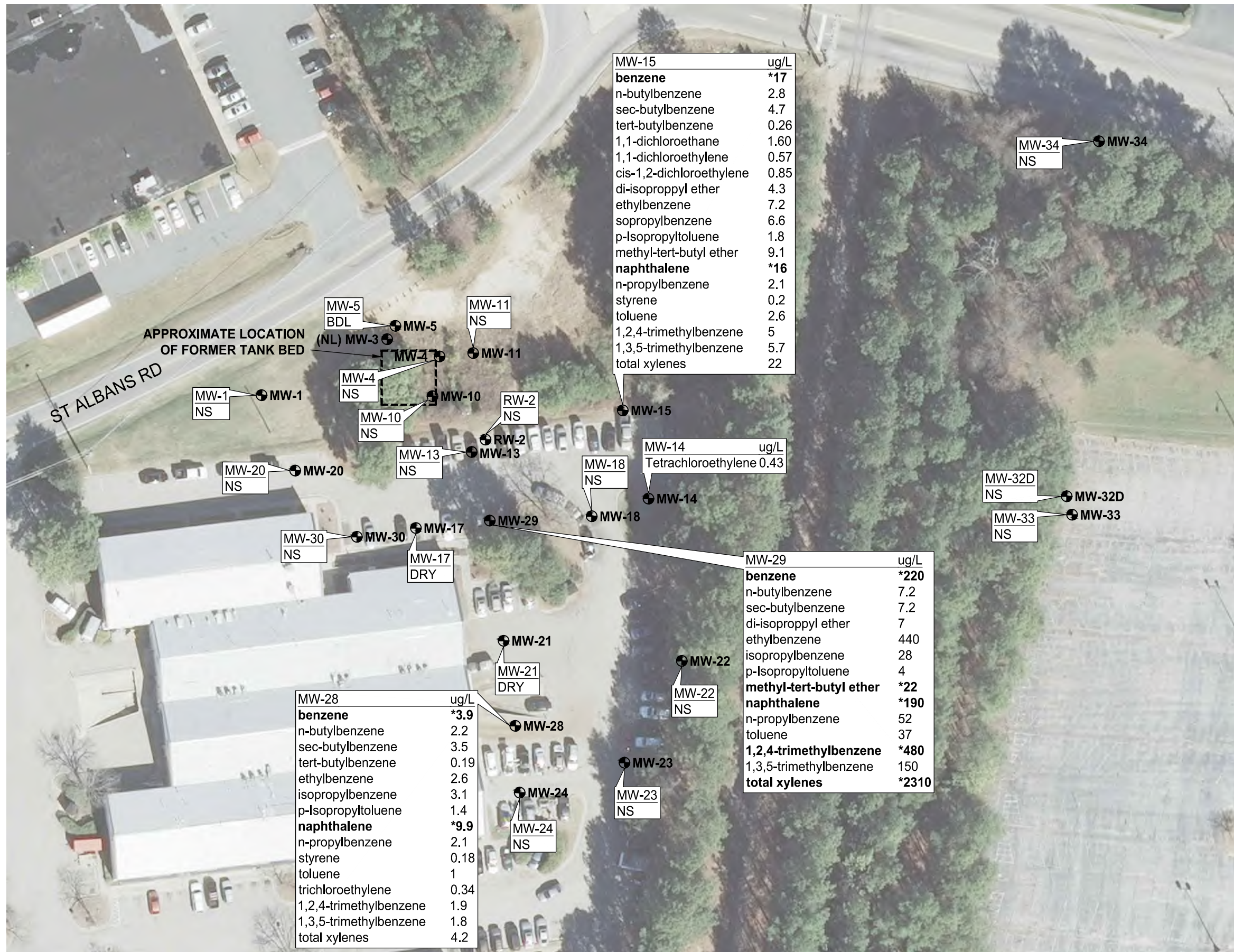
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LEGEND

- MONITOR WELL LOCATION
- RW = RECOVERY WELL
- NL = NOT LOCATED
- ug/L - MICROGRAMS PER LITER
- NS - NOT SAMPLED
- BDL - BELOW DETECTION LIMIT
- ALL LOCATIONS ARE APPROXIMATE
- GROUNDWATER SAMPLED ON NOVEMBER 20, 2015
- * INDICATES EXCEEDANCE OF 2L STANDARDS

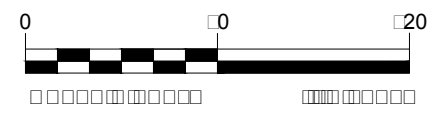
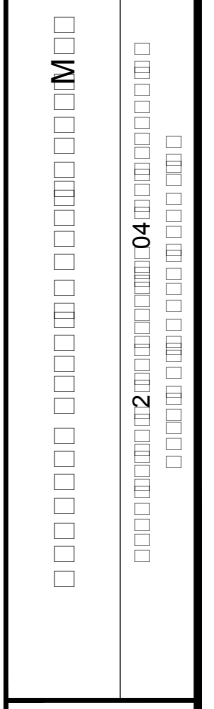
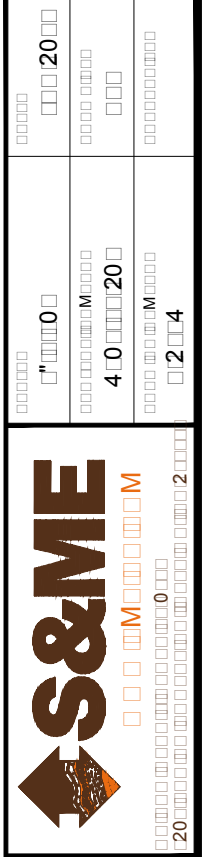


IMAGE SOURCE:
NC ONEMAP, DATED 2013



APPENDICES

APPENDIX I

Photographs



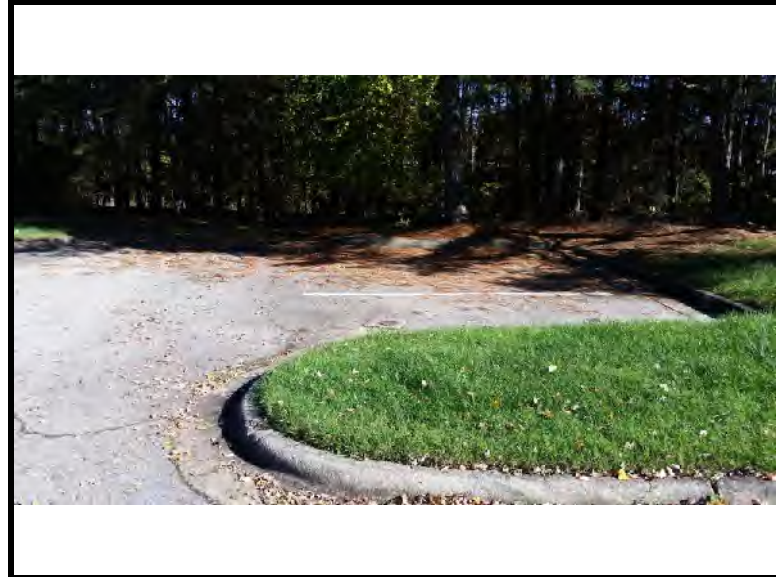
1 Area of MW-1 and MW-5



2 Location of MW-1



3 Location of MW-5



4 Location of MW-14



Star Flite 52, Incident #6896
Raleigh , North Carolina

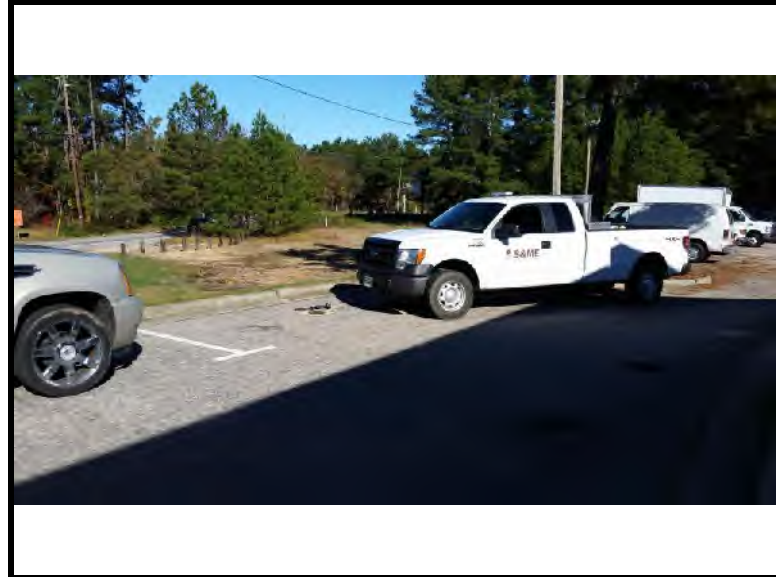
S&ME Project No. 4305-15-206

Taken by: BB

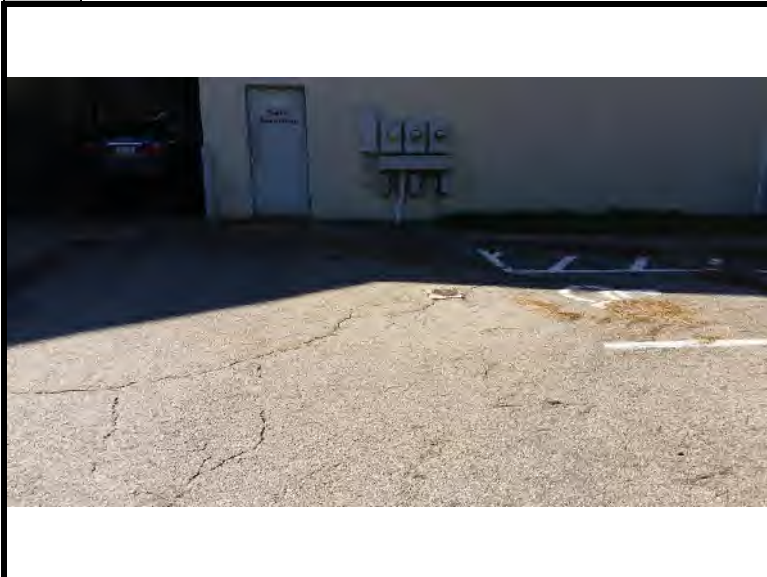
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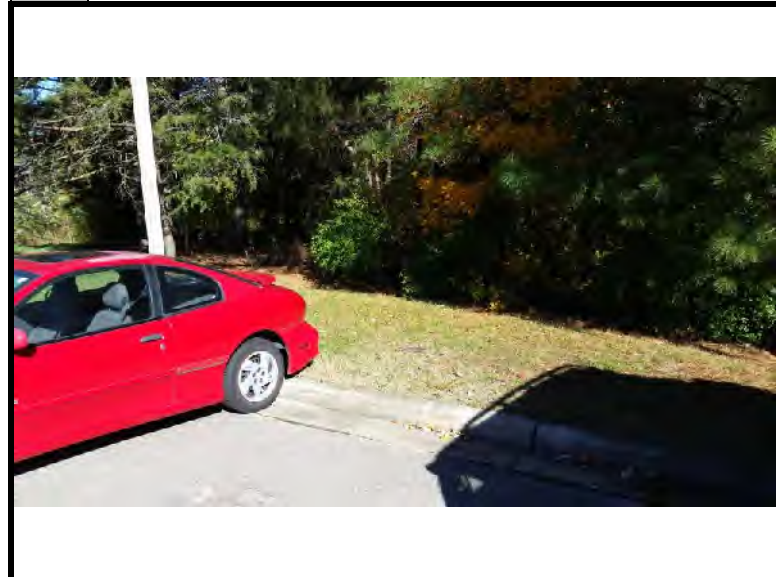
5 Location of MW-15



6 Location of MW-20



7 Location of MW-21



8 Location of MW-22



Star Flite 52, Incident #6896
Raleigh, North Carolina

S&ME Project No. 4305-15-206

Taken by: BB

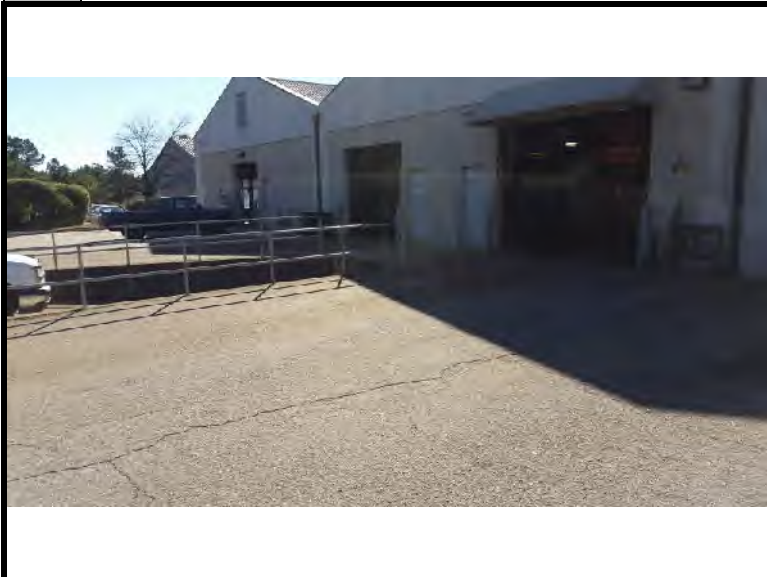
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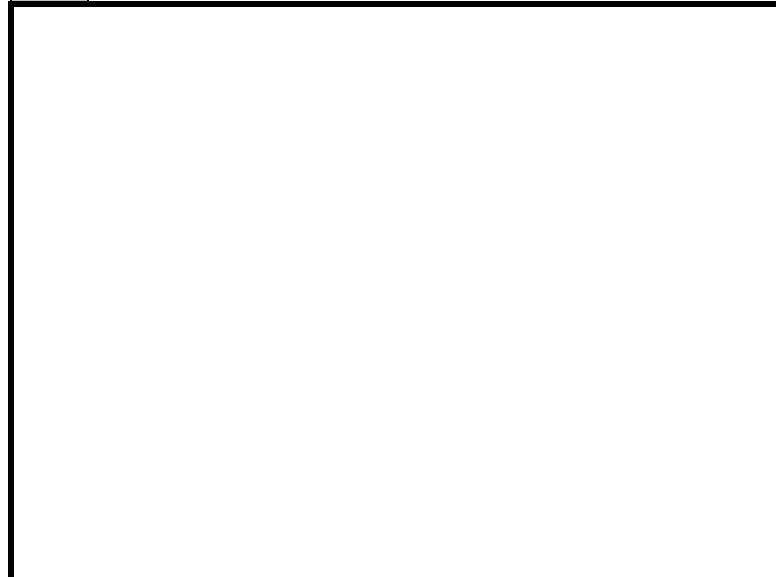
9 Location of MW-23



10 Location of MW-24



11 Location of MW-28



APPENDIX II

Field Sampling Forms

Monitor Well Sampling Form



Client: NCDEHNR		S&ME Project No.: 4305-15-206		Weather Conditions: Clear 52°						
Site Name: TF# 6896 Former Starflite #52				Date: 11/20/2015						
Site Address: 1904 St. Albans Rd. Raleigh NC				Bob Bryant						
Well ID / Diameter	MW-17	MW-29	MW-28	MW-14	MW-15					
Collection Order	X	X 1	X 2	3						
Total Well Depth (ft)	30'	40'	43'	35'	35'					
Depth to Water (ft)	30.0' - Dry	30.0'	33.32'	27.76'	24.71'					
Water Column (ft)		10.0'	9.68'	7.24'	10.29'					
Well Volume (X3)		1.63	1.57	1.18	1.67					
Volume Purged (gal)		5	4.75	3.5	5					
Purge Time Interval										
pH	v1 5.5	v4	v1 5.5	v4	v1 6.7	v4	v1 7.2	v4	v1 6.8	v4
	v2	v5	v2 6.1	v5	v2 6.3	v5	v2 6.0	v5	v2 6.6	v5
	v3	v6	v3 6.2	v6	v3 6.3	v6	v3 5.7	v6	v3 6.5	v6
Specific Conductivity	v1 426	v4	v1 426	v4	v1 227	v4	v1 120	v4	v1 466	v4
	v2	v5	v2 415	v5	v2 255	v5	v2 115	v5	v2 460	v5
	v3	v6	v3 415	v6	v3 277	v6	v3 108	v6	v3 451	v6
Temp. °C	v1 17.3	v4	v1 17.3	v4	v1 18.4	v4	v1 17.6	v4	v1 17.8	v4
	v2	v5	v2 18.0	v5	v2 19.2	v5	v2 18.2	v5	v2 17.6	v5
	v3	v6	v3 18.5	v6	v3 19.5	v6	v3 18.3	v6	v3 17.5	v6
Purge Rate	In.	Fin.	In.	Fin.	In.	Fin.	In.	Fin.	In.	Fin.
Final Turbidity (ntu)										
Well Condition	Vault broken lock cap		Needs lock & cap		Needs lock & cap		1 bolt broken, needs lock		No bolts, needs lock	
Date/Time Collected	11/20/2015		11/20/2015 0950		11/20/2015 0925		11/20/2015 1005		11/20/2015 1320	
Field Calibration	Date/Time: 11/20/15									
	pH 7.0 = 7.0		4.0 = 3.9							
	C 1413µs = 1412									
	DO									
Preservative	HCl		HCl		HCl		HCl		HCl	
	HCl		HCl		HCl		HCl		HCl	
Sampler's Name:	Bob Bryant		Bob Bryant		Bob Bryant		Bob Bryant		Bob Bryant	
Comments:	Not enough H2O to sample - dry									

Well Dia. (in)	Gal/ft
1	0.041
2	0.163
4	0.653
8	2.611
10	4.08

Well Vol. (gal.) = 3.141(dia.(ft)/2)² X Water Col. X 7.48 gal/ft³

Sampler Signature(s): Bob Bryant

Monitor Well Sampling Form



Client: NCDEHNR		S&ME Project No.: 4305-15-206		Weather Conditions: <i>Clear</i>								
Site Name: TF# 6896 Former Starflite #52				Date: 11/20/2015								
Site Address: 1904 St. Albans Rd. Raleigh NC				Bob Bryant								
Well ID / Diameter	MW-5 2"											
Collection Order	5											
Total Well Depth (ft)	25'											
Depth to Water (ft)	18.14'											
Water Column (ft)	6.86'											
Well Volume (X3)	1.11											
Volume Purged (gal)	3.5											
Purge Time Interval												
pH	v1	7.0	v4		v1		v4		v1		v4	
	v2	5.8	v5		v2		v5		v2		v5	
	v3	5.4	v6		v3		v6		v3		v6	
Specific Conductivity	v1	191	v4		v1		v4		v1		v4	
	v2	183	v5		v2		v5		v2		v5	
	v3	179	v6		v3		v6		v3		v6	
Temp. °C	v1	19.4	v4		v1		v4		v1		v4	
	v2	19.7	v5		v2		v5		v2		v5	
	v3	19.7	v6		v3		v6		v3		v6	
Purge Rate	In.	Fin.	In.	Fin.	In.	Fin.	In.	Fin.	In.	Fin.	In.	Fin.
Final Turbidity (ntu)												
Well Condition												
Date/Time Collected	11/20/2015 1410		11/ /2015		11/ /2015		11/ /2015		11/ /2015		11/ /2015	
Field Calibration	Date/Time: 11/ /15											
	pH 7.0 =		4.0 =									
	C 1413µs =											
	DO											
Preservative	HCl		HCl		HCl		HCl		HCl		HCl	
	HCl		HCl		HCl		HCl		HCl		HCl	
Sampler's Name:	Bob Bryant		Bob Bryant		Bob Bryant		Bob Bryant		Bob Bryant		Bob Bryant	
Comments:												

Well Dia.(in)	Gal/ft
1	0.041
2	0.163
4	0.653
8	2.611
10	4.08

Well Vol. (gal.) = 3.141(dia.(ft)/2)² X Water Col. X 7.48 gal/ft³

Sampler Signature(s): *Bob Bryant*

APPENDIX III

Laboratory Analytical Report and Chain of Custody Forms

December 4, 2015

Michael Pfeifer
S&ME, Inc - Raleigh, NC
3201 Spring Forest Rd.
Raleigh, NC 27616

Project Location: Raleigh, NC
Client Job Number:
Project Number: 4305-15-206
Laboratory Work Order Number: 15K1047

Enclosed are results of analyses for samples received by the laboratory on November 20, 2015. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa Worthington", is displayed on a light gray rectangular background.

Lisa A. Worthington
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

S&ME, Inc - Raleigh, NC
3201 Spring Forest Rd.
Raleigh, NC 27616
ATTN: Michael Pfeifer

REPORT DATE: 12/4/2015

PURCHASE ORDER NUMBER: TF# 6896

PROJECT NUMBER: 4305-15-206

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 15K1047

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Raleigh, NC

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-29	15K1047-01	Ground Water		SM21-22 6200B	
MW-28	15K1047-02	Ground Water		SM21-22 6200B	
MW-14	15K1047-03	Ground Water		SM21-22 6200B	
MW-15	15K1047-04	Ground Water		SM21-22 6200B	
MW-5	15K1047-05	Ground Water		SM21-22 6200B	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

EXECUTIVE SUMMARY

Client ID: **MW-5**

Lab ID: **15K1047-05**

No Results Detected

Con-Test does not accept liability for the consequences of any actions taken solely on the basis of the information provided in the Executive Summary section of this report. Users must review this report in its entirety to determine data usability and assessment.

EXECUTIVE SUMMARY

Client ID: **MW-29**

Lab ID: **15K1047-01**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	480	3.6	10	µg/L	SM21-22 6200B
1,3,5-Trimethylbenzene	150	2.0	10	µg/L	SM21-22 6200B
Benzene	220	1.6	10	µg/L	SM21-22 6200B
Diisopropyl Ether (DIPE)	7.0 J	3.6	10	µg/L	SM21-22 6200B
Ethylbenzene	440	2.6	10	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	28	2.4	10	µg/L	SM21-22 6200B
m+p Xylene	1600	5.0	20	µg/L	SM21-22 6200B
Methyl tert-Butyl Ether (MTBE)	22	1.8	10	µg/L	SM21-22 6200B
Naphthalene	190	2.4	10	µg/L	SM21-22 6200B
n-Butylbenzene	7.2 J	2.0	10	µg/L	SM21-22 6200B
n-Propylbenzene	52	2.2	10	µg/L	SM21-22 6200B
o-Xylene	710	2.6	10	µg/L	SM21-22 6200B
p-Isopropyltoluene (p-Cymene)	4.0 J	2.5	10	µg/L	SM21-22 6200B
sec-Butylbenzene	7.2 J	2.2	10	µg/L	SM21-22 6200B
Toluene	37	2.0	10	µg/L	SM21-22 6200B

Client ID: **MW-28**

Lab ID: **15K1047-02**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	1.9	0.18	0.50	µg/L	SM21-22 6200B
1,3,5-Trimethylbenzene	1.8	0.10	0.50	µg/L	SM21-22 6200B
Benzene	3.9	0.079	0.50	µg/L	SM21-22 6200B
Ethylbenzene	2.6	0.13	0.50	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	3.1	0.12	0.50	µg/L	SM21-22 6200B
m+p Xylene	2.2	0.25	1.0	µg/L	SM21-22 6200B
Naphthalene	9.9	0.12	0.50	µg/L	SM21-22 6200B
n-Butylbenzene	2.2	0.10	0.50	µg/L	SM21-22 6200B
n-Propylbenzene	2.1	0.11	0.50	µg/L	SM21-22 6200B
o-Xylene	2.0	0.13	0.50	µg/L	SM21-22 6200B
p-Isopropyltoluene (p-Cymene)	1.4	0.12	0.50	µg/L	SM21-22 6200B
sec-Butylbenzene	3.5	0.11	0.50	µg/L	SM21-22 6200B
Styrene	0.18 J	0.15	0.50	µg/L	SM21-22 6200B
tert-Butylbenzene	0.19 J	0.11	0.50	µg/L	SM21-22 6200B
Tetrachloroethylene	0.97	0.17	0.50	µg/L	SM21-22 6200B
Toluene	1.0	0.10	0.50	µg/L	SM21-22 6200B
Trichloroethylene	0.34 J	0.20	0.50	µg/L	SM21-22 6200B

Client ID: **MW-14**

Lab ID: **15K1047-03**

Analyte	Results/Qual	DL	RL	Units	Method
Tetrachloroethylene	0.43 J	0.17	0.50	µg/L	SM21-22 6200B

Client ID: **MW-15**

Lab ID: **15K1047-04**

Analyte	Results/Qual	DL	RL	Units	Method
1,1-Dichloroethane	1.6	0.16	0.50	µg/L	SM21-22 6200B
1,1-Dichloroethylene	0.57	0.21	0.50	µg/L	SM21-22 6200B
1,2,4-Trimethylbenzene	5.0	0.18	0.50	µg/L	SM21-22 6200B
1,3,5-Trimethylbenzene	5.7	0.10	0.50	µg/L	SM21-22 6200B
Benzene	17	0.079	0.50	µg/L	SM21-22 6200B
cis-1,2-Dichloroethylene	0.85	0.15	0.50	µg/L	SM21-22 6200B
Diisopropyl Ether (DIPE)	4.3	0.18	0.50	µg/L	SM21-22 6200B
Ethylbenzene	7.2	0.13	0.50	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	6.6	0.12	0.50	µg/L	SM21-22 6200B
m+p Xylene	13	0.25	1.0	µg/L	SM21-22 6200B
Methyl tert-Butyl Ether (MTBE)	9.1	0.090	0.50	µg/L	SM21-22 6200B
Naphthalene	16	0.12	0.50	µg/L	SM21-22 6200B
n-Butylbenzene	2.8	0.10	0.50	µg/L	SM21-22 6200B
n-Propylbenzene	2.1	0.11	0.50	µg/L	SM21-22 6200B
o-Xylene	9.2	0.13	0.50	µg/L	SM21-22 6200B
p-Isopropyltoluene (p-Cymene)	1.8	0.12	0.50	µg/L	SM21-22 6200B
sec-Butylbenzene	4.7	0.11	0.50	µg/L	SM21-22 6200B
Styrene	0.20 J	0.15	0.50	µg/L	SM21-22 6200B
tert-Butylbenzene	0.26 J	0.11	0.50	µg/L	SM21-22 6200B
Toluene	2.6	0.10	0.50	µg/L	SM21-22 6200B

Con-Test does not accept liability for the consequences of any actions taken solely on the basis of the information provided in the Executive Summary section of this report. Users must review this report in its entirety to determine data usability and assessment.

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SM21-22 6200B

Qualifications:

RL-11

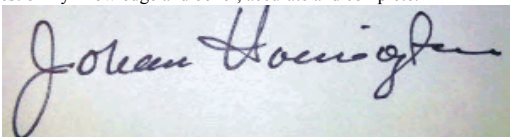
Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

15K1047-01[MW-29]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Johanna K. Harrington
Manager, Laboratory Reporting

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-29

Sampled: 11/20/2015 08:50

Sample ID: 15K1047-01

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	1000	97	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Benzene	220	10	1.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Bromobenzene	ND	10	3.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Bromochloromethane	ND	10	4.5	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Bromodichloromethane	ND	10	1.8	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Bromoform	ND	10	4.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Bromomethane	ND	20	19	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
2-Butanone (MEK)	ND	100	47	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
n-Butylbenzene	7.2	10	2.0	µg/L	20	J	SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
sec-Butylbenzene	7.2	10	2.2	µg/L	20	J	SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
tert-Butylbenzene	ND	10	2.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Carbon Tetrachloride	ND	10	2.4	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Chlorobenzene	ND	10	3.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Ethanol	ND	1000	560	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Chlorodibromomethane	ND	10	2.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Chloroethane	ND	40	5.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Chloroform	ND	10	4.4	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Chloromethane	ND	10	6.5	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
2-Chlorotoluene	ND	10	2.4	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
4-Chlorotoluene	ND	10	2.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,2-Dibromoethane (EDB)	ND	10	1.8	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,2-Dichlorobenzene	ND	10	2.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,3-Dichlorobenzene	ND	10	3.4	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,4-Dichlorobenzene	ND	10	3.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Dichlorodifluoromethane (Freon 12)	ND	10	3.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,1-Dichloroethane	ND	10	3.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,2-Dichloroethane	ND	20	3.9	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,1-Dichloroethylene	ND	10	4.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
cis-1,2-Dichloroethylene	ND	10	2.9	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
trans-1,2-Dichloroethylene	ND	10	3.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,2-Dichloropropane	ND	10	2.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,3-Dichloropropane	ND	10	2.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
2,2-Dichloropropane	ND	10	3.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,1-Dichloropropene	ND	10	2.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
cis-1,3-Dichloropropene	ND	10	1.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
trans-1,3-Dichloropropene	ND	10	2.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Diisopropyl Ether (DIPE)	7.0	10	3.6	µg/L	20	J	SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Ethylbenzene	440	10	2.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
2-Hexanone (MBK)	ND	100	30	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Isopropylbenzene (Cumene)	28	10	2.4	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
p-Isopropyltoluene (p-Cymene)	4.0	10	2.5	µg/L	20	J	SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Methyl tert-Butyl Ether (MTBE)	22	10	1.8	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Methylene Chloride	ND	100	64	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
4-Methyl-2-pentanone (MIBK)	ND	100	29	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-29

Sampled: 11/20/2015 08:50

Sample ID: 15K1047-01

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	190	10	2.4	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
n-Propylbenzene	52	10	2.2	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Styrene	ND	10	3.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,1,2,2-Tetrachloroethane	ND	10	2.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Tetrachloroethylene	ND	10	3.4	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Toluene	37	10	2.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,2,3-Trichlorobenzene	ND	10	2.8	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,2,4-Trichlorobenzene	ND	10	3.8	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,1,1-Trichloroethane	ND	10	1.9	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,1,2-Trichloroethane	ND	10	2.3	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Trichloroethylene	ND	10	4.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Trichlorofluoromethane (Freon 11)	ND	10	2.9	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,2,3-Trichloropropane	ND	10	3.8	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,2,4-Trimethylbenzene	480	10	3.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
1,3,5-Trimethylbenzene	150	10	2.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Vinyl Acetate	ND	100	29	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
Vinyl Chloride	ND	10	2.7	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
m+p Xylene	1600	20	5.0	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH
o-Xylene	710	10	2.6	µg/L	20		SM21-22 6200B	12/3/15	12/4/15 3:40	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	92.8	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	101	70-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-28

Sampled: 11/20/2015 09:25

Sample ID: 15K1047-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Benzene	3.9	0.50	0.079	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Bromodichloromethane	ND	0.50	0.088	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
n-Butylbenzene	2.2	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
sec-Butylbenzene	3.5	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
tert-Butylbenzene	0.19	0.50	0.11	µg/L	1	J	SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Carbon Tetrachloride	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Ethanol	ND	50	28	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Chloroethane	ND	2.0	0.28	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Chloromethane	ND	0.50	0.32	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
4-Chlorotoluene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,2-Dibromoethane (EDB)	ND	0.50	0.089	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,2-Dichlorobenzene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,2-Dichloroethane	ND	1.0	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,3-Dichloropropane	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
2,2-Dichloropropane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
cis-1,3-Dichloropropene	ND	0.50	0.062	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Ethylbenzene	2.6	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Isopropylbenzene (Cumene)	3.1	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
p-Isopropyltoluene (p-Cymene)	1.4	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-28

Sampled: 11/20/2015 09:25

Sample ID: 15K1047-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	9.9	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
n-Propylbenzene	2.1	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Styrene	0.18	0.50	0.15	µg/L	1	J	SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Tetrachloroethylene	0.97	0.50	0.17	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Toluene	1.0	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,1,1-Trichloroethane	ND	0.50	0.094	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,1,2-Trichloroethane	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Trichloroethylene	0.34	0.50	0.20	µg/L	1	J	SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,2,3-Trichloropropane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,2,4-Trimethylbenzene	1.9	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
1,3,5-Trimethylbenzene	1.8	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
m+p Xylene	2.2	1.0	0.25	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH
o-Xylene	2.0	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 1:54	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	92.2	70-130	
Toluene-d8	98.5	70-130	
4-Bromofluorobenzene	102	70-130	

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Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-14

Sampled: 11/20/2015 10:05

Sample ID: 15K1047-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Benzene	ND	0.50	0.079	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Bromodichloromethane	ND	0.50	0.088	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
n-Butylbenzene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
sec-Butylbenzene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
tert-Butylbenzene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Carbon Tetrachloride	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Ethanol	ND	50	28	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Chloroethane	ND	2.0	0.28	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Chloromethane	ND	0.50	0.32	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
4-Chlorotoluene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,2-Dibromoethane (EDB)	ND	0.50	0.089	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,2-Dichlorobenzene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,2-Dichloroethane	ND	1.0	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,3-Dichloropropane	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
2,2-Dichloropropane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
cis-1,3-Dichloropropene	ND	0.50	0.062	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-14

Sampled: 11/20/2015 10:05

Sample ID: 15K1047-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
n-Propylbenzene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Tetrachloroethylene	0.43	0.50	0.17	µg/L	1	J	SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Toluene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,1,1-Trichloroethane	ND	0.50	0.094	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,1,2-Trichloroethane	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,2,3-Trichloropropane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
1,3,5-Trimethylbenzene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
m+p Xylene	ND	1.0	0.25	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:21	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	92.9	70-130	
Toluene-d8	98.9	70-130	
4-Bromofluorobenzene	99.6	70-130	

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Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-15

Sampled: 11/20/2015 13:20

Sample ID: 15K1047-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Benzene	17	0.50	0.079	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Bromodichloromethane	ND	0.50	0.088	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
n-Butylbenzene	2.8	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
sec-Butylbenzene	4.7	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
tert-Butylbenzene	0.26	0.50	0.11	µg/L	1	J	SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Carbon Tetrachloride	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Ethanol	ND	50	28	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Chloroethane	ND	2.0	0.28	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Chloromethane	ND	0.50	0.32	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
4-Chlorotoluene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,2-Dibromoethane (EDB)	ND	0.50	0.089	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,2-Dichlorobenzene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,1-Dichloroethane	1.6	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,2-Dichloroethane	ND	1.0	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,1-Dichloroethylene	0.57	0.50	0.21	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
cis-1,2-Dichloroethylene	0.85	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,3-Dichloropropane	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
2,2-Dichloropropane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
cis-1,3-Dichloropropene	ND	0.50	0.062	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Diisopropyl Ether (DIPE)	4.3	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Ethylbenzene	7.2	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Isopropylbenzene (Cumene)	6.6	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
p-Isopropyltoluene (p-Cymene)	1.8	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Methyl tert-Butyl Ether (MTBE)	9.1	0.50	0.090	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH

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Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-15

Sampled: 11/20/2015 13:20

Sample ID: 15K1047-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	16	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
n-Propylbenzene	2.1	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Styrene	0.20	0.50	0.15	µg/L	1	J	SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Tetrachloroethylene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Toluene	2.6	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,1,1-Trichloroethane	ND	0.50	0.094	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,1,2-Trichloroethane	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,2,3-Trichloropropane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,2,4-Trimethylbenzene	5.0	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
1,3,5-Trimethylbenzene	5.7	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
m+p Xylene	13	1.0	0.25	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH
o-Xylene	9.2	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 2:47	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	92.4	70-130	12/4/15 2:47
Toluene-d8	97.7	70-130	12/4/15 2:47
4-Bromofluorobenzene	100	70-130	12/4/15 2:47

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Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-5

Sampled: 11/20/2015 14:10

Sample ID: 15K1047-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Benzene	ND	0.50	0.079	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Bromodichloromethane	ND	0.50	0.088	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
n-Butylbenzene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
sec-Butylbenzene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
tert-Butylbenzene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Carbon Tetrachloride	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Ethanol	ND	50	28	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Chloroethane	ND	2.0	0.28	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Chloromethane	ND	0.50	0.32	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
4-Chlorotoluene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,2-Dibromoethane (EDB)	ND	0.50	0.089	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,2-Dichlorobenzene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,2-Dichloroethane	ND	1.0	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,3-Dichloropropane	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
2,2-Dichloropropane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
cis-1,3-Dichloropropene	ND	0.50	0.062	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH

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Project Location: Raleigh, NC

Sample Description:

Work Order: 15K1047

Date Received: 11/20/2015

Field Sample #: MW-5

Sampled: 11/20/2015 14:10

Sample ID: 15K1047-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
n-Propylbenzene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,1,2,2-Tetrachloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Tetrachloroethylene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Toluene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,1,1-Trichloroethane	ND	0.50	0.094	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,1,2-Trichloroethane	ND	0.50	0.12	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,2,3-Trichloropropane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
1,3,5-Trimethylbenzene	ND	0.50	0.10	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
m+p Xylene	ND	1.0	0.25	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	12/3/15	12/4/15 3:14	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	91.5	70-130	
Toluene-d8	100	70-130	
4-Bromofluorobenzene	101	70-130	

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Sample Extraction Data

Prep Method: SW-846 5030B-SM21-22 6200B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
15K1047-01 [MW-29]	B136779	0.25	5.00	12/03/15
15K1047-02 [MW-28]	B136779	5	5.00	12/03/15
15K1047-03 [MW-14]	B136779	5	5.00	12/03/15
15K1047-04 [MW-15]	B136779	5	5.00	12/03/15
15K1047-05 [MW-5]	B136779	5	5.00	12/03/15

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B136779 - SW-846 5030B

Blank (B136779-BLK1)

Prepared & Analyzed: 12/03/15

Acetone	ND	50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	1.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Ethanol	ND	50	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	0.50	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	0.50	µg/L							
n-Propylbenzene	ND	0.50	µg/L							
Styrene	ND	0.50	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	0.50	µg/L							
Toluene	ND	0.50	µg/L							
1,2,3-Trichlorobenzene	ND	0.50	µg/L							
1,2,4-Trichlorobenzene	ND	0.50	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B136779 - SW-846 5030B

Blank (B136779-BLK1)

Prepared & Analyzed: 12/03/15

1,1,1-Trichloroethane	ND	0.50	µg/L							
1,1,2-Trichloroethane	ND	0.50	µg/L							
Trichloroethylene	ND	0.50	µg/L							
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L							
1,2,3-Trichloropropane	ND	0.50	µg/L							
1,2,4-Trimethylbenzene	ND	0.50	µg/L							
1,3,5-Trimethylbenzene	ND	0.50	µg/L							
Vinyl Acetate	ND	5.0	µg/L							
Vinyl Chloride	ND	0.50	µg/L							
m+p Xylene	ND	1.0	µg/L							
o-Xylene	ND	0.50	µg/L							
Surrogate: 1,2-Dichloroethane-d4	23.3		µg/L	25.0		93.0	70-130			
Surrogate: Toluene-d8	25.0		µg/L	25.0		100	70-130			
Surrogate: 4-Bromofluorobenzene	25.1		µg/L	25.0		100	70-130			

LCS (B136779-BS1)

Prepared & Analyzed: 12/03/15

Acetone	80.6	50	µg/L	100		80.6	70-130			†
Benzene	9.95	0.50	µg/L	10.0		99.5	70-130			
Bromobenzene	10.0	0.50	µg/L	10.0		100	70-130			
Bromochloromethane	11.1	0.50	µg/L	10.0		111	70-130			
Bromodichloromethane	9.29	0.50	µg/L	10.0		92.9	70-130			
Bromoform	9.13	0.50	µg/L	10.0		91.3	70-130			
Bromomethane	12.1	1.0	µg/L	10.0		121	60-140			†
2-Butanone (MEK)	101	5.0	µg/L	100		101	70-130			†
n-Butylbenzene	9.81	0.50	µg/L	10.0		98.1	70-130			
sec-Butylbenzene	9.99	0.50	µg/L	10.0		99.9	70-130			
tert-Butylbenzene	9.69	0.50	µg/L	10.0		96.9	70-130			
Carbon Tetrachloride	9.32	0.50	µg/L	10.0		93.2	70-130			
Chlorobenzene	9.89	0.50	µg/L	10.0		98.9	70-130			
Ethanol	114	50	µg/L	100		114	70-130			
Chlorodibromomethane	9.06	0.50	µg/L	10.0		90.6	70-130			
Chloroethane	10.3	0.50	µg/L	10.0		103	60-140			
Chloroform	9.15	0.50	µg/L	10.0		91.5	70-130			
Chloromethane	9.48	0.50	µg/L	10.0		94.8	60-140			†
2-Chlorotoluene	9.72	0.50	µg/L	10.0		97.2	70-130			
4-Chlorotoluene	9.97	0.50	µg/L	10.0		99.7	70-130			
1,2-Dibromoethane (EDB)	9.65	0.50	µg/L	10.0		96.5	70-130			
1,2-Dichlorobenzene	9.00	0.50	µg/L	10.0		90.0	70-130			
1,3-Dichlorobenzene	9.42	0.50	µg/L	10.0		94.2	70-130			
1,4-Dichlorobenzene	9.19	0.50	µg/L	10.0		91.9	70-130			
Dichlorodifluoromethane (Freon 12)	9.19	0.50	µg/L	10.0		91.9	60-140			†
1,1-Dichloroethane	9.57	0.50	µg/L	10.0		95.7	70-130			
1,2-Dichloroethane	8.56	0.50	µg/L	10.0		85.6	70-130			
1,1-Dichloroethylene	9.89	0.50	µg/L	10.0		98.9	70-130			
cis-1,2-Dichloroethylene	9.93	0.50	µg/L	10.0		99.3	70-130			
trans-1,2-Dichloroethylene	9.68	0.50	µg/L	10.0		96.8	70-130			
1,2-Dichloropropane	9.85	0.50	µg/L	10.0		98.5	70-130			
1,3-Dichloropropane	10.0	0.50	µg/L	10.0		100	70-130			
2,2-Dichloropropane	8.59	0.50	µg/L	10.0		85.9	70-130			†
1,1-Dichloropropene	9.81	0.50	µg/L	10.0		98.1	70-130			
cis-1,3-Dichloropropene	9.55	0.50	µg/L	10.0		95.5	70-130			
trans-1,3-Dichloropropene	9.49	0.50	µg/L	10.0		94.9	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B136779 - SW-846 5030B

LCS (B136779-BS1)

Prepared & Analyzed: 12/03/15

Diisopropyl Ether (DIPE)	9.67	0.50	µg/L	10.0		96.7	70-130			
Ethylbenzene	10.0	0.50	µg/L	10.0		100	70-130			
2-Hexanone (MBK)	101	5.0	µg/L	100		101	70-130			†
Isopropylbenzene (Cumene)	10.0	0.50	µg/L	10.0		100	70-130			
p-Isopropyltoluene (p-Cymene)	10.2	0.50	µg/L	10.0		102	70-130			
Methyl tert-Butyl Ether (MTBE)	9.24	0.50	µg/L	10.0		92.4	70-130			
Methylene Chloride	9.19	5.0	µg/L	10.0		91.9	70-130			
4-Methyl-2-pentanone (MIBK)	108	5.0	µg/L	100		108	70-130			†
Naphthalene	10.2	0.50	µg/L	10.0		102	70-130			†
n-Propylbenzene	10.2	0.50	µg/L	10.0		102	70-130			
Styrene	10.2	0.50	µg/L	10.0		102	70-130			
1,1,2,2-Tetrachloroethane	10.5	0.50	µg/L	10.0		105	70-130			
Tetrachloroethylene	9.27	0.50	µg/L	10.0		92.7	70-130			
Toluene	9.63	0.50	µg/L	10.0		96.3	70-130			
1,2,3-Trichlorobenzene	9.47	0.50	µg/L	10.0		94.7	70-130			
1,2,4-Trichlorobenzene	9.35	0.50	µg/L	10.0		93.5	70-130			
1,1,1-Trichloroethane	9.16	0.50	µg/L	10.0		91.6	70-130			
1,1,2-Trichloroethane	9.48	0.50	µg/L	10.0		94.8	70-130			
Trichloroethylene	9.89	0.50	µg/L	10.0		98.9	70-130			
Trichlorofluoromethane (Freon 11)	8.91	0.50	µg/L	10.0		89.1	70-130			
1,2,3-Trichloropropane	10.5	0.50	µg/L	10.0		105	70-130			
1,2,4-Trimethylbenzene	9.55	0.50	µg/L	10.0		95.5	70-130			
1,3,5-Trimethylbenzene	10.1	0.50	µg/L	10.0		101	70-130			
Vinyl Acetate	98.7	5.0	µg/L	100		98.7	70-130			
Vinyl Chloride	9.64	0.50	µg/L	10.0		96.4	60-140			†
m+p Xylene	20.3	1.0	µg/L	20.0		101	70-130			
o-Xylene	10.1	0.50	µg/L	10.0		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	23.2		µg/L	25.0		92.7	70-130			
Surrogate: Toluene-d8	24.6		µg/L	25.0		98.2	70-130			
Surrogate: 4-Bromofluorobenzene	25.6		µg/L	25.0		102	70-130			

LCS Dup (B136779-BSD1)

Prepared & Analyzed: 12/03/15

Acetone	83.2	50	µg/L	100		83.2	70-130	3.17	25	†
Benzene	9.84	0.50	µg/L	10.0		98.4	70-130	1.11	25	
Bromobenzene	9.72	0.50	µg/L	10.0		97.2	70-130	3.24	25	
Bromochloromethane	10.5	0.50	µg/L	10.0		105	70-130	5.29	25	
Bromodichloromethane	9.54	0.50	µg/L	10.0		95.4	70-130	2.66	25	
Bromoform	9.18	0.50	µg/L	10.0		91.8	70-130	0.546	25	
Bromomethane	10.4	1.0	µg/L	10.0		104	60-140	15.1	25	†
2-Butanone (MEK)	100	5.0	µg/L	100		100	70-130	0.457	25	†
n-Butylbenzene	9.71	0.50	µg/L	10.0		97.1	70-130	1.02	25	
sec-Butylbenzene	9.92	0.50	µg/L	10.0		99.2	70-130	0.703	25	
tert-Butylbenzene	9.67	0.50	µg/L	10.0		96.7	70-130	0.207	25	
Carbon Tetrachloride	9.25	0.50	µg/L	10.0		92.5	70-130	0.754	25	
Chlorobenzene	9.50	0.50	µg/L	10.0		95.0	70-130	4.02	25	
Ethanol	119	50	µg/L	100		119	70-130	4.33	25	
Chlorodibromomethane	9.32	0.50	µg/L	10.0		93.2	70-130	2.83	25	
Chloroethane	9.91	0.50	µg/L	10.0		99.1	60-140	3.47	25	
Chloroform	9.08	0.50	µg/L	10.0		90.8	70-130	0.768	25	
Chloromethane	11.8	0.50	µg/L	10.0		118	60-140	21.4	25	†
2-Chlorotoluene	9.35	0.50	µg/L	10.0		93.5	70-130	3.88	25	
4-Chlorotoluene	9.75	0.50	µg/L	10.0		97.5	70-130	2.23	25	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B136779 - SW-846 5030B										
LCS Dup (B136779-BSD1)										
Prepared & Analyzed: 12/03/15										
1,2-Dibromoethane (EDB)	9.52	0.50	µg/L	10.0		95.2	70-130	1.36	25	
1,2-Dichlorobenzene	9.23	0.50	µg/L	10.0		92.3	70-130	2.52	25	
1,3-Dichlorobenzene	9.39	0.50	µg/L	10.0		93.9	70-130	0.319	25	
1,4-Dichlorobenzene	9.22	0.50	µg/L	10.0		92.2	70-130	0.326	25	
Dichlorodifluoromethane (Freon 12)	9.17	0.50	µg/L	10.0		91.7	60-140	0.218	25	†
1,1-Dichloroethane	9.85	0.50	µg/L	10.0		98.5	70-130	2.88	25	
1,2-Dichloroethane	8.58	0.50	µg/L	10.0		85.8	70-130	0.233	25	
1,1-Dichloroethylene	9.68	0.50	µg/L	10.0		96.8	70-130	2.15	25	
cis-1,2-Dichloroethylene	9.95	0.50	µg/L	10.0		99.5	70-130	0.201	25	
trans-1,2-Dichloroethylene	9.68	0.50	µg/L	10.0		96.8	70-130	0.00	25	
1,2-Dichloropropane	10.1	0.50	µg/L	10.0		101	70-130	2.90	25	
1,3-Dichloropropane	9.92	0.50	µg/L	10.0		99.2	70-130	0.803	25	
2,2-Dichloropropane	8.54	0.50	µg/L	10.0		85.4	70-130	0.584	25	†
1,1-Dichloropropene	9.55	0.50	µg/L	10.0		95.5	70-130	2.69	25	
cis-1,3-Dichloropropene	9.32	0.50	µg/L	10.0		93.2	70-130	2.44	25	
trans-1,3-Dichloropropene	9.52	0.50	µg/L	10.0		95.2	70-130	0.316	25	
Diisopropyl Ether (DIPE)	9.70	0.50	µg/L	10.0		97.0	70-130	0.310	25	
Ethylbenzene	9.71	0.50	µg/L	10.0		97.1	70-130	3.44	25	
2-Hexanone (MBK)	104	5.0	µg/L	100		104	70-130	2.73	25	†
Isopropylbenzene (Cumene)	9.63	0.50	µg/L	10.0		96.3	70-130	3.77	25	
p-Isopropyltoluene (p-Cymene)	10.2	0.50	µg/L	10.0		102	70-130	0.685	25	
Methyl tert-Butyl Ether (MTBE)	9.50	0.50	µg/L	10.0		95.0	70-130	2.77	25	
Methylene Chloride	8.64	5.0	µg/L	10.0		86.4	70-130	6.17	25	
4-Methyl-2-pentanone (MIBK)	109	5.0	µg/L	100		109	70-130	0.746	25	†
Naphthalene	10.1	0.50	µg/L	10.0		101	70-130	1.08	25	†
n-Propylbenzene	9.89	0.50	µg/L	10.0		98.9	70-130	2.69	25	
Styrene	9.93	0.50	µg/L	10.0		99.3	70-130	2.29	25	
1,1,2,2-Tetrachloroethane	10.3	0.50	µg/L	10.0		103	70-130	2.02	25	
Tetrachloroethylene	9.42	0.50	µg/L	10.0		94.2	70-130	1.61	25	
Toluene	9.59	0.50	µg/L	10.0		95.9	70-130	0.416	25	
1,2,3-Trichlorobenzene	9.04	0.50	µg/L	10.0		90.4	70-130	4.65	25	
1,2,4-Trichlorobenzene	9.65	0.50	µg/L	10.0		96.5	70-130	3.16	25	
1,1,1-Trichloroethane	9.09	0.50	µg/L	10.0		90.9	70-130	0.767	25	
1,1,2-Trichloroethane	9.56	0.50	µg/L	10.0		95.6	70-130	0.840	25	
Trichloroethylene	9.70	0.50	µg/L	10.0		97.0	70-130	1.94	25	
Trichlorofluoromethane (Freon 11)	9.13	0.50	µg/L	10.0		91.3	70-130	2.44	25	
1,2,3-Trichloropropane	10.1	0.50	µg/L	10.0		101	70-130	4.09	25	
1,2,4-Trimethylbenzene	9.57	0.50	µg/L	10.0		95.7	70-130	0.209	25	
1,3,5-Trimethylbenzene	9.97	0.50	µg/L	10.0		99.7	70-130	0.899	25	
Vinyl Acetate	101	5.0	µg/L	100		101	70-130	1.97	25	
Vinyl Chloride	9.61	0.50	µg/L	10.0		96.1	60-140	0.312	25	†
m+p Xylene	19.6	1.0	µg/L	20.0		97.8	70-130	3.71	25	
o-Xylene	9.83	0.50	µg/L	10.0		98.3	70-130	3.01	25	
Surrogate: 1,2-Dichloroethane-d4	23.2		µg/L	25.0		92.8	70-130			
Surrogate: Toluene-d8	25.0		µg/L	25.0		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	25.0		µg/L	25.0		100	70-130			

FLAG/QUALIFIER SUMMARY

- * QC result is outside of established limits.
 - † Wide recovery limits established for difficult compound.
 - ‡ Wide RPD limits established for difficult compound.
 - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
No results have been blank subtracted unless specified in the case narrative section.
- J Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
- RL-11 Elevated reporting limit due to high concentration of target compounds.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SM21-22 6200B in Water</i>	
Acetone	NC
Benzene	NC
Bromobenzene	NC
Bromochloromethane	NC
Bromodichloromethane	NC
Bromoform	NC
Bromomethane	NC
2-Butanone (MEK)	NC
n-Butylbenzene	NC
sec-Butylbenzene	NC
tert-Butylbenzene	NC
Carbon Tetrachloride	NC
Chlorobenzene	NC
Ethanol	NC
Chlorodibromomethane	NC
Chloroethane	NC
Chloroform	NC
Chloromethane	NC
2-Chlorotoluene	NC
4-Chlorotoluene	NC
1,2-Dibromoethane (EDB)	NC
1,2-Dichlorobenzene	NC
1,3-Dichlorobenzene	NC
1,4-Dichlorobenzene	NC
Dichlorodifluoromethane (Freon 12)	NC
1,1-Dichloroethane	NC
1,2-Dichloroethane	NC
1,1-Dichloroethylene	NC
cis-1,2-Dichloroethylene	NC
trans-1,2-Dichloroethylene	NC
1,2-Dichloropropane	NC
1,3-Dichloropropane	NC
2,2-Dichloropropane	NC
1,1-Dichloropropene	NC
cis-1,3-Dichloropropene	NC
trans-1,3-Dichloropropene	NC
Diisopropyl Ether (DIPE)	NC
Ethylbenzene	NC
2-Hexanone (MBK)	NC
Isopropylbenzene (Cumene)	NC
p-Isopropyltoluene (p-Cymene)	NC
Methyl tert-Butyl Ether (MTBE)	NC
Methylene Chloride	NC
4-Methyl-2-pentanone (MIBK)	NC
Naphthalene	NC
n-Propylbenzene	NC
Styrene	NC

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SM21-22 6200B in Water</i>	
1,1,2,2-Tetrachloroethane	NC
Tetrachloroethylene	NC
Toluene	NC
1,2,3-Trichlorobenzene	NC
1,2,4-Trichlorobenzene	NC
1,1,1-Trichloroethane	NC
1,1,2-Trichloroethane	NC
Trichloroethylene	NC
Trichlorofluoromethane (Freon 11)	NC
1,2,3-Trichloropropane	NC
1,2,4-Trimethylbenzene	NC
1,3,5-Trimethylbenzene	NC
Vinyl Acetate	NC
Vinyl Chloride	NC
m+p Xylene	NC
o-Xylene	NC

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2016
MA	Massachusetts DEP	M-MA100	06/30/2016
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2016
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2016
RI	Rhode Island Department of Health	LAO00112	12/30/2015
NC	North Carolina Div. of Water Quality	652	12/31/2015
NJ	New Jersey DEP	MA007 NELAP	06/30/2016
FL	Florida Department of Health	E871027 NELAP	06/30/2016
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2016
WA	State of Washington Department of Ecology	C2065	02/23/2016
ME	State of Maine	2011028	06/9/2017
VA	Commonwealth of Virginia	460217	12/14/2015
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2016



FedEx Tracking

775031316747

Ship date:

Fri 11/20/2015

Raleigh, NC US



Delivered

Signed for by: R.FAUST

Actual delivery:

Sat 11/21/2015 9:11 am

EAST LONGMEADOW, MA US

3 Piece shipment

Travel History

Date/Time	Activity	Location
11/21/2015 - Saturday		
9:11 am	Delivered	EAST LONGMEADOW, MA
8:09 am	On FedEx vehicle for delivery	WINDSOR LOCKS, CT
8:04 am	At local FedEx facility	WINDSOR LOCKS, CT
6:56 am	At destination sort facility	EAST GRANBY, CT
3:46 am	Departed FedEx location	MEMPHIS, TN
11/20/2015 - Friday		
10:45 pm	Arrived at FedEx location	MEMPHIS, TN
8:41 pm	Left FedEx origin facility	DURHAM, NC
5:40 pm	Picked up	RALEIGH, NC
4:10 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	775031316747	Service	FedEx Priority Overnight
Master tracking number	775031316699	Weight	15 lbs / 6.8 kgs
Dimensions	17x11x16 in.	Delivered To	Shipping/Receiving
Total pieces	3	Total shipment weight	15 lbs / 6.8 kgs
Shipper reference	80	Packaging	Your Packaging
Special handling section	For Saturday Delivery		



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- Small Business Center
- Service Guide
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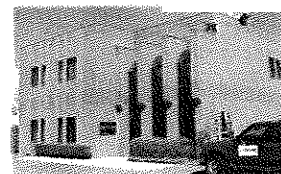
- FedEx Compatible
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 East Longmeadow, MA. 01028
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 F: 413-525-6405
 www.contestlabs.com



Sample Receipt Checklist

CLIENT NAME: S&ME RECEIVED BY: RLF DATE: 11/24/15

- 1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included
- 2) Does the chain agree with the samples? Yes No
 If not, explain: _____
- 3) Are all the samples in good condition? Yes No
 If not, explain: _____

4) How were the samples received:

On Ice Direct from Sampling Ambient In Cooler(s)

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank _____ Temperature °C by Temp gun 5.3°C

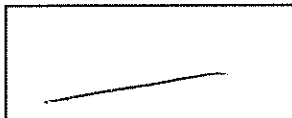
5) Are there Dissolved samples for the lab to filter? Yes No

Who was notified _____ Date _____ Time _____

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes No

Who was notified _____ Date _____ Time _____

7) Location where samples are stored:



Permission to subcontract samples? Yes No
 (Walk-in clients only) if not already approved
 Client Signature: _____

8) Do all samples have the proper Acid pH: Yes No N/A _____

9) Do all samples have the proper Base pH: Yes No N/A _____

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Plastic Bag / Ziploc	
500 mL Plastic		SOC Kit	
250 mL plastic		Non-ConTest Container	
40 mL Vial - type listed below	<u>15</u>	Perchlorate Kit	
Colisure / bacteria bottle		Flashpoint bottle	
Dissolved Oxygen bottle		Other glass jar	
Encore		Other	

Laboratory Comments:

40 mL vials: # HCl 15 # Methanol _____
 # Bisulfate _____ # DI Water _____
 # Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Login Sample Receipt Checklist
 (Rejection Criteria Listing - Using Sample Acceptance Policy)
 Any False statement will be brought to the attention of Client

Question	Answer (True/False)		Comment
	T	F/NA	
1) The cooler's custody seal, if present, is intact.	T		
2) The cooler or samples do not appear to have been compromised or tampered with.	T		
3) Samples were received on ice.	T		
4) Cooler Temperature is acceptable.	T		
5) Cooler Temperature is recorded.	T		
6) COC is filled out in ink and legible.	T		
7) COC is filled out with all pertinent information.	T		
8) Field Sampler's name present on COC.	T		
9) There are no discrepancies between the sample IDs on the container and the COC.	T		
10) Samples are received within Holding Time.	T		
11) Sample containers have legible labels.	T		
12) Containers are not broken or leaking.	T		
13) Air Cassettes are not broken/open.	NA		
14) Sample collection date/times are provided.	T		
15) Appropriate sample containers are used.	T		
16) Proper collection media used.	T		
17) No headspace sample bottles are completely filled.	T		
18) There is sufficient volume for all requested analyses, including any requested MS/MSDs.	T		
19) Trip blanks provided if applicable.	NA		
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	T		
21) Samples do not require splitting or compositing.	T		

Doc #277 Rev. 4 August 2013 Who notified of False statements? Date/Time:
 Login Technician Initials: Date/Time:

RLF 11/20/15 911

Appendix II – Photo Log



1	Location / Orientation	View of MW-1, facing northeast.
	Remarks	Click here.



Date: 7/21/2017

Photographer: JW

2	Location / Orientation	Location of MW-3 and area of former tank bed, facing south/southeast.
	Remarks	Click here.



Date: 7/21/2017

Photographer: JW



3	Location / Orientation	View of product observed in MW-3.	Date: 7/21/2017
	Remarks	Click here.	



4	Location / Orientation	View of MW-5, facing south.	Date: 7/21/2017
	Remarks	Click here.	





		Date: 7/21/2017
		Photographer: JW
5	Location / Orientation	View of the destroyed monitoring well MW-10.
	Remarks	Click here.

		Date: 7/21/2017
		Photographer: JW
6	Location / Orientation	View of MW-11, facing south/southwest.
	Remarks	Click here.



		Date: 7/21/2017
		Photographer: JW
7	Location / Orientation	View of MW-13, facing south.
	Remarks	Click here.

		Date: 7/21/2017
		Photographer: JW
8	Location / Orientation	View of MW-14, facing west/southwest.
	Remarks	Click here.



9	Location / Orientation	View of MW-15, facing south/southwest.	Date: 7/21/2017
	Remarks	Click here.	



10	Location / Orientation	View of MW-17, facing southwest.	Date: 7/21/2017
	Remarks	Click here.	





11	Location / Orientation	View of MW-18, facing west.	Date: 7/21/2017 Photographer: JW
	Remarks	Click here.	



12	Location / Orientation	View of MW-20, facing west/southwest.	Date: 7/21/2017 Photographer: JW
	Remarks	Click here.	





13	Location / Orientation	View of MW-21, facing northwest.	Date: 7/21/2017 Photographer: JW
	Remarks	Click here.	



14	Location / Orientation	View of MW-22, facing west.	Date: 7/21/2017 Photographer: JW
	Remarks	Click here.	





15	Location / Orientation	View of MW-23, facing west.	Date: 7/21/2017 Photographer: JW
	Remarks	Click here.	



16	Location / Orientation	View of MW-24, facing west.	Date: 7/21/2017 Photographer: JW
	Remarks	Click here.	





		Date: 7/21/2017
		Photographer: JW
17	Location / Orientation	View of MW-28, facing west. View of MW-29, facing south/southwest.
	Remarks	Click here.

		Date: 7/21/2017
		Photographer: JW
18	Location / Orientation	Click here.
	Remarks	Click here.



19	Location / Orientation	View of MW-30, facing south.	Date: 7/21/2017
	Remarks	Click here.	Photographer: JW



20	Location / Orientation	View of MW-32D, facing west.	Date: 7/21/2017
	Remarks	Click here.	Photographer: JW





21	Location / Orientation	View of MW-33, facing west.	Date: 7/21/2017
	Remarks	Click here.	Photographer: JW



22	Location / Orientation	View of a new sidewalk over the area of MW-34, facing west. MW-34 was not located.	Date: 7/21/2017
	Remarks	Click here.	Photographer: JW





23	Location / Orientation	General view of the site, facing south.	Date: 7/21/2017 Photographer: JW
	Remarks	Click here.	



24	Location / Orientation	General view of the site, facing south/southeast.	Date: 7/21/2017 Photographer: JW
	Remarks	Click here.	



Appendix III – Field Notes and Field Sampling Forms

Environmental Field Report	
Date: June 21, 2017	Job Number: 4305-17-108
Project Name: TF-6896 Star Flite 52	Weather/Temperature: Cloudy, 80°F
Project Location: 1904 St. Albans Dr. Raleigh, NC	
Notes By: <input checked="" type="checkbox"/> <input type="checkbox"/>	Present at the Site: James Waters



Equipment Used
Water level meter
Multipurpose meter

Purpose: Sample monitor wells.

0900- Arrive at site.

0910- Health and safety plan.

0920- Go search for monitor wells. Unable to locate MW-4. MW-10 is destroyed.

1200- Left site for lunch.

1300- Arrive back at the site. Calibration of multipurpose meter. See attached sampling field forms.

1320-Take photos around the site.

1340- Begin sampling monitor wells. See attached sampling field forms.

1425- Field Blank is taken at 1425 after sampling MW-21.

1640- No parameters or sampling at MW-3 due to finding free product.

1700- Left site for the day.

Hours	Mileage	Signature of S&ME Personnel
7 on site	10	<i>James A. Waters</i>

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	June 21, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	
Project Number:	4305-17-108	Sample Date:	June 21, 2017
Source Well:	MW-3	Sample Time:	
Locked?:	No	Weather:	Cloudy
Sampled By:	James Waters	Air Temp:	80 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	6/21/17	12:00	4.00, 7.00, 10.00	4.00	7.01	10.00
Conductivity	6/21/17	12:00	1,413 µS/cm	1,414 µS/cm		

Water Level & Well Data

Measuring Point:		Top of Casing	
Depth to Water:	18.59	ft-TOC	
Total Well Depth:	25.00	ft-TOC	
Height of Water Column:	6.41	feet	
Screen Length	15	feet	
Stickup Height:	0	feet	

Well Volume		
Well Diameter	4	inch
Well Volume	4.2	gal
3 * Well Volume	12.6	gal
5 * Well Volume	20.9	gal

Well Purging Information

Purge Method: Purge Start Time: End Time:

Volume Purged: gal Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors

Sample Method: Sample Start Time: End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		6/21/2017
(2) _____	_____	

Notes: No sample at MW-3 due to finding product. See photo of bailer.

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	June 21, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	
Project Number:	4305-17-108	Sample Date:	June 21, 2017
Source Well:	MW-4	Sample Time:	
Locked?:		Weather:	Cloudy
Sampled By:	James Waters	Air Temp:	80 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	6/21/17	12:00	4.00, 7.00, 10.00	4.00 7.01 10.00
Conductivity	6/21/17	12:00	1,413 µS/cm	1,414 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:		ft-TOC
Total Well Depth:	25.00	ft-TOC
Height of Water Column:	25.00	feet
Screen Length	15	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	4.1	gal
3 * Well Volume	12.2	gal
5 * Well Volume	20.4	gal

Well Purging Information

Purge Method: Purge Start Time: End Time:

Volume Purged: gal Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH <input type="checkbox"/>	Temp <input type="checkbox"/>	Cond µS/cm	Turbidity <input type="checkbox"/>	Odors

Sample Method: Sample Start Time: End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		6/21/2017
(2) _____	_____	

Notes: Unable to locate MW-4.

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	June 21, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	
Project Number:	4305-17-108	Sample Date:	June 21, 2017
Source Well:	MW-10	Sample Time:	
Locked?:	No	Weather:	Cloudy
Sampled By:	James Waters	Air Temp:	80 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	6/21/17	12:00	4.00, 7.00, 10.00	4.00	7.01	10.00
Conductivity	6/21/17	12:00	1,413 µS/cm	1,414 µS/cm		

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:		ft-TOC
Total Well Depth:	25.00	ft-TOC
Height of Water Column:	25.00	feet
Screen Length:	15	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	4.1	gal
3 * Well Volume	12.2	gal
5 * Well Volume	20.4	gal

Well Purging Information

Purge Method: **Purge Start Time:** **End Time:**

Volume Purged: gal **Well Purged Dry?:**

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors

Sample Method: **Sample Start Time:** **End Time:**

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		6/21/2017
(2)		

Notes: MW-10 has been destroyed.

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	June 21, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	June 21, 2017
Source Well:	MW-11	Sample Time:	16:20
Locked?:	No	Weather:	Cloudy
Sampled By:	James Waters	Air Temp:	80 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	6/21/17	12:00	4.00, 7.00, 10.00	4.00 7.01 10.00
Conductivity	6/21/17	12:00	1,413 µS/cm	1,414 µS/cm

Water Level & Well Data

Measuring Point:		Well Volume	
Depth to Water:	19.43	2	inch
Total Well Depth:	40.00	Well Volume	3.4
Height of Water Column:	20.57	3 * Well Volume	10.1
Screen Length:	20	5 * Well Volume	16.8
Stickup Height:	0		

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
3.7	16:10	7.1	22.4	119	NA	None
3.7	16:15	6.1	20.1	192	NA	None
3.6	16:20	6.1	19.9	210	NA	None

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters	<i>James A Waters</i>	6/21/2017
(2)		

Notes: MW-11 does not have a flush mount cover.

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	June 21, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	June 21, 2017
Source Well:	MW-13	Sample Time:	15:45
Locked?:	Yes	Weather:	Cloudy
Sampled By:	James Waters	Air Temp:	80 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	6/21/17	12:00	4.00, 7.00, 10.00	4.00 7.01 10.00
Conductivity	6/21/17	12:00	1,413 µS/cm	1,414 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	29.71	ft-TOC
Total Well Depth:	35.00	ft-TOC
Height of Water Column:	5.29	feet
Screen Length:	20	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	0.9	gal
3 * Well Volume	2.6	gal
5 * Well Volume	4.3	gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
1.0	15:35	6.9	22.5	1,029	NA	Slight Petroleum
1.0	15:40	6.8	21.8	1,044	NA	Slight Petroleum
1.0	15:45	6.8	20.4	1,038	NA	Slight Petroleum

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		6/21/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	June 21, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	10
Project Number:	4305-17-108	Sample Date:	June 21, 2017
Source Well:	MW-15	Sample Time:	15:20
Locked?:	Yes	Weather:	Cloudy
Sampled By:	James Waters	Air Temp:	80 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	6/21/17	12:00	4.00, 7.00, 10.00	4.00	7.01	10.00
Conductivity	6/21/17	12:00	1,413 µS/cm	1,414 µS/cm		

Water Level & Well Data

Measuring Point:		Top of Casing	
Depth to Water:	25.27	ft-TOC	
Total Well Depth:	35.00	ft-TOC	
Height of Water Column:	9.73	feet	
Screen Length:	20	feet	
Stickup Height:	0	feet	

Well Volume		
Well Diameter	2	inch
Well Volume	1.6	gal
3 * Well Volume	4.8	gal
5 * Well Volume	7.9	gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
2.0	15:10	6.9	21.1	671	NA	None
1.0	15:15	6.7	20.1	661	NA	None

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		6/21/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	June 21, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	10
Project Number:	4305-17-108	Sample Date:	June 21, 2017
Source Well:	MW-18	Sample Time:	14:50
Locked?:	Yes	Weather:	Cloudy
Sampled By:	James Waters	Air Temp:	80 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	6/21/17	12:00	4.00, 7.00, 10.00	4.00	7.01	10.00
Conductivity	6/21/17	12:00	1,413 µS/cm	1,414 µS/cm		

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	29.73	ft-TOC
Total Well Depth:	40.00	ft-TOC
Height of Water Column:	10.27	feet
Screen Length:	20	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	1.7	gal
3 * Well Volume	5.0	gal
5 * Well Volume	8.4	gal

Well Purging Information

Purge Method: **Purge Start Time:** **End Time:**

Volume Purged: gal **Well Purged Dry?:**

Field Parameters

Total Volume (Gal)	Time	pH (s.u.)	Temp (°C)	Cond µS/cm	Turbidity (NTU)	Odors
2.0	14:40	6.9	22.1	558	NA	None
2.0	14:45	6.7	21.4	527	NA	None

Sample Method: **Sample Start Time:** **End Time:**

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		6/21/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	June 21, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	7
Project Number:	4305-17-108	Sample Date:	June 21, 2017
Source Well:	MW-21	Sample Time:	14:15
Locked?:	Yes	Weather:	Cloudy
Sampled By:	James Waters	Air Temp:	80 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	6/21/17	12:00	4.00, 7.00, 10.00	4.00 7.01 10.00
Conductivity	6/21/17	12:00	1,413 µS/cm	1,414 µS/cm

Water Level & Well Data

Measuring Point:		Well Volume	
Depth to Water:	33.74	ft-TOC	Well Diameter
Total Well Depth:	35.00	ft-TOC	2
Height of Water Column:	1.26	feet	Well Volume
Screen Length	20	feet	0.2
Stickup Height:	0	feet	3 * Well Volume
			0.6
			5 * Well Volume
			1.0
			gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
0.3	14:07	7.1	23.1	660	NA	None
0.3	14:09	6.9	21.9	706	NA	None
0.3	14:12	6.7	21.9	707	NA	Slight Petroleum

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		6/21/2017
(2) _____	_____	

Notes: Field Blank is taken at 1425 after sampling MW-21.

Environmental Field Report



Environmental Field Report	
Date: July 19, 2017	Job Number: 4305-17-108
Project Name: TF-6896 Star Flite 52	Weather/Temperature: Sunny 95°F
Project Location: 1904 St. Albans Dr. Raleigh, NC	
Notes By: <input checked="" type="checkbox"/>	Present at the Site: James Waters

Equipment Used
Water level meter Multipurpose meter

Purpose: Sample monitor wells.

0930- Arrive at site.

0940- Health and safety plan.

0950- Search for monitor wells on adjacent lot. Take photos and measure water levels. Checked depths based on IDs located in flush mounts. MW-32D and MW-33 are switched on the figure.

1000- Calibration of multipurpose meter. See attached field forms.

1015- Begin sampling monitor wells on the adjacent site. See the attached field forms.

1200- Unable to find MW-34.

1245- Left site for lunch.

1315- Arrive back at the site. GPS monitor well locations around the site.

1415- Sample monitor wells on at the main lot on site. See attached sampling field forms.

1500- Field Blank is taken at after sampling MW-23. Continued sampling monitor wells.

1705- Stopped sampling monitor wells for the day.

1710- Cleaned up.

1730- Left site for the day.

Hours	Mileage	Signature of S&ME Personnel
7.5 on site	12	<i>James A. Waters</i>

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 19, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 19, 2017
Source Well:	MW-22	Sample Time:	16:25
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	7/19/17	10:00	4.00, 7.00, 10.00	4.00 7.03 10.02
Conductivity	7/19/17	10:00	1,413 µS/cm	1,415 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	31.05	ft-TOC
Total Well Depth:	44.00	ft-TOC
Height of Water Column:	12.95	feet
Screen Length:	30	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	2.1	gal
3 * Well Volume	6.3	gal
5 * Well Volume	10.6	gal

Well Purging Information

Purge Method: <input type="text" value="Bailer"/>	Purge Start Time: <input type="text" value="16:10"/>	End Time: <input type="text" value="16:25"/>
Volume Purged: <input type="text" value="7.0"/> gal	Well Purged Dry?: <input type="text" value="No"/>	

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
2.3	16:15	6.3	21.3	192	NA	None
2.3	16:20	6.0	19.9	184	NA	None
2.4	16:25	6.0	19.9	184	NA	None

Sample Method: <input type="text" value="Bailer"/>	Sample Start Time: <input type="text" value="16:25"/>	End Time: <input type="text" value="16:30"/>
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Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/19/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 19, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	5
Project Number:	4305-17-108	Sample Date:	July 19, 2017
Source Well:	MW-23	Sample Time:	14:50
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	7/19/17	10:00	4.00, 7.00, 10.00	4.00	7.03	10.02
Conductivity	7/19/17	10:00	1,413 µS/cm	1,415 µS/cm		

Water Level & Well Data

Measuring Point:		Top of Casing	
Depth to Water:	29.84	ft-TOC	
Total Well Depth:	40.00	ft-TOC	
Height of Water Column:	10.16	feet	
Screen Length:	5	feet	
Stickup Height:	0	feet	

Well Volume		
Well Diameter	2	inch
Well Volume	1.7	gal
3 * Well Volume	5.0	gal
5 * Well Volume	8.3	gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
1.7	14:40	6.9	24.3	516	NA	Slight Petroleum

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/19/2017
(2) _____	_____	

Notes: Field Blank 7-19-17 is taken at 1500, after sampling and at MW-23.

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 19, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 19, 2017
Source Well:	MW-24	Sample Time:	15:20
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	7/19/17	10:00	4.00, 7.00, 10.00	4.00 7.03 10.02
Conductivity	7/19/17	10:00	1,413 µS/cm	1,415 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	32.81	ft-TOC
Total Well Depth:	40.00	ft-TOC
Height of Water Column:	7.19	feet
Screen Length:	5	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	1.2	gal
3 * Well Volume	3.5	gal
5 * Well Volume	5.9	gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
1.2	15:10	6.1	22.5	180	NA	None
1.2	15:15	6.0	20.6	185.5	NA	None
1.1	15:20	6.0	20.7	185	NA	None

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/19/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 19, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 19, 2017
Source Well:	MW-28	Sample Time:	15:45
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	7/19/17	10:00	4.00, 7.00, 10.00	4.00	7.03	10.02
Conductivity	7/19/17	10:00	1,413 µS/cm	1,415 µS/cm		

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	33.79	ft-TOC
Total Well Depth:	43.00	ft-TOC
Height of Water Column:	9.21	feet
Screen Length:	30	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	1.5	gal
3 * Well Volume	4.5	gal
5 * Well Volume	7.5	gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
1.7	15:35	6.4	21.7	325	NA	Slight Petroleum
1.7	15:40	6.4	21.3	432	NA	None
1.6	15:45	6.5	21.3	458	NA	None

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/19/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 19, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 19, 2017
Source Well:	MW-29	Sample Time:	17:05
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	7/19/17	10:00	4.00, 7.00, 10.00	4.00 7.03 10.02
Conductivity	7/19/17	10:00	1,413 µS/cm	1,415 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	30.36	ft-TOC
Total Well Depth:	40.00	ft-TOC
Height of Water Column:	9.64	feet
Screen Length:	30	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	1.6	gal
3 * Well Volume	4.7	gal
5 * Well Volume	7.9	gal

Well Purging Information

Purge Method: <input type="text" value="Bailer"/>	Purge Start Time: <input type="text" value="16:50"/>	End Time: <input type="text" value="17:05"/>
Volume Purged: <input type="text" value="5.0"/> gal	Well Purged Dry?: <input type="text" value="No"/>	

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
1.7	16:55	6.6	21	587	NA	Slight Petroleum
1.7	17:00	6.6	20.5	619	NA	Slight Petroleum
1.6	17:05	6.7	20.5	613	NA	None

Sample Method: <input type="text" value="Bailer"/>	Sample Start Time: <input type="text" value="17:05"/>	End Time: <input type="text" value="17:10"/>
---	--	---

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/19/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 19, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	30
Project Number:	4305-17-108	Sample Date:	July 19, 2017
Source Well:	MW-32D	Sample Time:	10:45
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	7/19/17	10:00	4.00, 7.00, 10.00	4.00	7.03	10.02
Conductivity	7/19/17	10:00	1,413 µS/cm	1,415 µS/cm		

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	20.44	ft-TOC
Total Well Depth:	65.00	ft-TOC
Height of Water Column:	44.56	feet
Screen Length:	5	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	7.3	gal
3 * Well Volume	21.8	gal
5 * Well Volume	36.4	gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
7.3	10:25	6.9	19.7	145	NA	None
7.3	10:35	6.5	18.7	145	NA	None
7.4	10:45	6.4	18.5	146	NA	None

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/19/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 19, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 19, 2017
Source Well:	MW-33	Sample Time:	11:30
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	7/19/17	10:00	4.00, 7.00, 10.00	4.00 7.03 10.02
Conductivity	7/19/17	10:00	1,413 µS/cm	1,415 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	20.67	ft-TOC
Total Well Depth:	35.00	ft-TOC
Height of Water Column:	14.33	feet
Screen Length:	25	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	2.3	gal
3 * Well Volume	7.0	gal
5 * Well Volume	11.7	gal

Well Purging Information

Purge Method:

 Purge Start Time:

 End Time:

Volume Purged: gal

 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
2.3	11:20	6.4	18.7	129	NA	None
2.3	11:25	6.2	17.9	128	NA	None
2.4	11:30	6.2	17.9	130	NA	None

Sample Method:

 Sample Start Time:

 End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/19/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 19, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	
Project Number:	4305-17-108	Sample Date:	July 19, 2017
Source Well:	MW-34	Sample Time:	
Locked?:		Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	7/19/17	10:00	4.00, 7.00, 10.00	4.00 7.03 10.02
Conductivity	7/19/17	10:00	1,413 µS/cm	1,415 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:		ft-TOC
Total Well Depth:	35.00	ft-TOC
Height of Water Column:	35.00	feet
Screen Length:	25	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	5.7	gal
3 * Well Volume	17.1	gal
5 * Well Volume	28.6	gal

Well Purging Information

Purge Method: Purge Start Time: End Time:

Volume Purged: gal Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH <input type="checkbox"/>	Temp <input type="checkbox"/>	Cond µS/cm	Turbidity <input type="checkbox"/>	Odors

Sample Method: Sample Start Time: End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/19/2017
(2) _____	_____	

Notes: Unable to find MW-34. Did not sample.

Environmental Field Report



Environmental Field Report	
Date: July 20, 2017	Job Number: 4305-17-108
Project Name: TF-6896 Star Flite 52	Weather/Temperature: Sunny 95°F
Project Location: 1904 St. Albans Dr. Raleigh, NC	
Notes By: <input checked="" type="checkbox"/>	Present at the Site: James Waters

Equipment Used
Water level meter Multipurpose meter

Purpose: Sample monitor wells.

0900- Arrive at site.

0910- Health and safety plan..

0920- Calibration of multipurpose meter. See attached field forms.

1015- Begin sampling monitor wells for the day on the main site. See the attached field forms.

1135- Field Blank is taken at after sampling MW-14. Continued sampling monitor wells.

1250- Cleaned up.

1300- Left site for the day.

Hours	Mileage	Signature of S&ME Personnel
4 on site	9	<i>James A. Waters</i>

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 20, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 20, 2017
Source Well:	MW-1	Sample Time:	12:15
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	7/20/17	09:20	4.00, 7.00, 10.00	4.02 7.00 10.00
Conductivity	7/20/17	09:20	1,413 µS/cm	1,411 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	18.12	ft-TOC
Total Well Depth:	25.00	ft-TOC
Height of Water Column:	6.88	feet
Screen Length:	15	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	1.1	gal
3 * Well Volume	3.4	gal
5 * Well Volume	5.6	gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
1.3	12:05	6.1	20.9	402	NA	None
1.3	12:10	5.5	19.5	416	NA	None
1.4	12:15	5.5	19.3	412	NA	None

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/20/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 20, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 20, 2017
Source Well:	MW-5	Sample Time:	12:40
Locked?:	No	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	7/20/17	09:20	4.00, 7.00, 10.00	4.02	7.00	10.00
Conductivity	7/20/17	09:20	1,413 µS/cm	1,411 µS/cm		

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	18.32	ft-TOC
Total Well Depth:	25.00	ft-TOC
Height of Water Column:	6.68	feet
Screen Length:	15	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	1.1	gal
3 * Well Volume	3.3	gal
5 * Well Volume	5.5	gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH (s.u.)	Temp (°C)	Cond µS/cm	Turbidity (NTU)	Odors
1.3	12:30	5.4	21.4	266	NA	None
1.3	12:35	5.2	20.2	263	NA	None
1.4	12:40	5.2	20.1	261	NA	None

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/20/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 20, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 20, 2017
Source Well:	MW-14	Sample Time:	11:25
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	7/20/17	09:20	4.00, 7.00, 10.00	4.02 7.00 10.00
Conductivity	7/20/17	09:20	1,413 µS/cm	1,411 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	28.37	ft-TOC
Total Well Depth:	35.00	ft-TOC
Height of Water Column:	6.63	feet
Screen Length:	20	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	1.1	gal
3 * Well Volume	3.2	gal
5 * Well Volume	5.4	gal

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
1.3	11:15	6.0	20.7	153	NA	None
1.3	11:20	5.8	20	154	NA	None
1.4	11:25	5.8	9.7	153	NA	None

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/20/2017
(2) _____	_____	

Notes: Field Blank 7-20-17 is sampled after sampling and at MW-14 location, at 1135.

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 20, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	
Project Number:	4305-17-108	Sample Date:	July 20, 2017
Source Well:	MW-17	Sample Time:	
Locked?:	No	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	7/20/17	09:20	4.00, 7.00, 10.00	4.02	7.00	10.00
Conductivity	7/20/17	09:20	1,413 µS/cm	1,411 µS/cm		

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	Dry	ft-TOC
Total Well Depth:	30.00	ft-TOC
Height of Water Column:	#VALUE!	feet
Screen Length:	20	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	#VALUE!	gal
3 * Well Volume	#VALUE!	gal
5 * Well Volume	#VALUE!	gal

Well Purging Information

Purge Method: Purge Start Time: End Time:

Volume Purged: gal Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors

Sample Method: Sample Start Time: End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/20/2017
(2) _____	_____	

Notes: No sample at MW-17. The well is dry.

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 20, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 20, 2017
Source Well:	MW-20	Sample Time:	10:45
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check
pH	7/20/17	09:20	4.00, 7.00, 10.00	4.02 7.00 10.00
Conductivity	7/20/17	09:20	1,413 µS/cm	1,411 µS/cm

Water Level & Well Data

Measuring Point:	Top of Casing	
Depth to Water:	24.05	ft-TOC
Total Well Depth:	44.00	ft-TOC
Height of Water Column:	19.95	feet
Screen Length:	25	feet
Stickup Height:	0	feet

Well Volume		
Well Diameter	2	inch
Well Volume	3.3	gal
3 * Well Volume	9.8	gal
5 * Well Volume	16.3	gal

Well Purging Information

Purge Method:

 Purge Start Time:

 End Time:

Volume Purged: gal

 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
3.3	10:35	6.2	20.2	172	NA	None
3.3	10:40	5.8	19.6	180	NA	None
3.4	10:45	5.8	19.5	178	NA	None

Sample Method:

 Sample Start Time:

 End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/20/2017
(2) _____	_____	

Notes:

Groundwater Sampling Field Form



Project Name:	TF-6896 Star Flite 52	Purge Date:	July 20, 2017
Project Location:	1904 St. Albans Dr.	Purge Time (Min.):	15
Project Number:	4305-17-108	Sample Date:	July 20, 2017
Source Well:	MW-30	Sample Time:	10:00
Locked?:	Yes	Weather:	Sunny
Sampled By:	James Waters	Air Temp:	95 ° F

Equipment Calibration Information:

Equipment	Date	Time	Calibration Solution	Calibration Check		
pH	7/20/17	09:20	4.00, 7.00, 10.00	4.02	7.00	10.00
Conductivity	7/20/17	09:20	1,413 µS/cm	1,411 µS/cm		

Water Level & Well Data

Measuring Point:			Well Volume		
Measuring Point:	Top of Casing		Well Diameter	2	inch
Depth to Water:	24.96	ft-TOC	Well Volume	3.3	gal
Total Well Depth:	45.00	ft-TOC	3 * Well Volume	9.8	gal
Height of Water Column:	20.04	feet	5 * Well Volume	16.4	gal
Screen Length:	30	feet			
Stickup Height:	0	feet			

Well Purging Information

Purge Method:
Purge Start Time:
End Time:

Volume Purged: gal
 Well Purged Dry?:

Field Parameters

Total Volume (Gal)	Time	pH □ (s.u.)	Temp □ (°C)	Cond µS/cm	Turbidity □ (NTU)	Odors
3.3	09:50	6.1	21.1	250	NA	Slight Petroleum
3.3	09:55	5.9	20.3	245	NA	None
3.4	10:00	6.0	20.1	241	NA	None

Sample Method:
Sample Start Time:
End Time:

Analytical Data

Method	Qty	Container	Pres.	Method	Qty	Container	Pres.
VOCs 6200	3	40mL VOAs	HCl				

Name	Signature	Date
(1) James Waters		7/20/2017
(2) _____	_____	

Notes:

**Appendix IV – Laboratory Analytical Reports and Chain of Custody
Forms**

June 30, 2017

Michael Pfeifer
S&ME, Inc - Raleigh, NC
3201 Spring Forest Rd.
Raleigh, NC 27616

Project Location: 1904 St. Albans Dr., Raleigh, NC
Client Job Number:
Project Number: 4305-17-082 TF 6896
Laboratory Work Order Number: 17F1347

Enclosed are results of analyses for samples received by the laboratory on June 22, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Kerry K. McGee". The signature is written in a cursive, flowing style.

Kerry K. McGee
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

S&ME, Inc - Raleigh, NC
 3201 Spring Forest Rd.
 Raleigh, NC 27616
 ATTN: Michael Pfeifer

REPORT DATE: 6/30/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 4305-17-082 TF 6896

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 17F1347

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 1904 St. Albans Dr., Raleigh, NC

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-11	17F1347-01	Ground Water		SM21-22 6200B	
MW-13	17F1347-02	Ground Water		SM21-22 6200B	
MW-15	17F1347-03	Ground Water		SM21-22 6200B	
MW-18	17F1347-04	Ground Water		SM21-22 6200B	
MW-21	17F1347-05	Ground Water		SM21-22 6200B	
Field Blank	17F1347-06	Field Blank		SM21-22 6200B	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

EXECUTIVE SUMMARY

Client ID: **Field Blank**

Lab ID: **17F1347-06**

No Results Detected

Con-Test does not accept liability for the consequences of any actions taken solely on the basis of the information provided in the Executive Summary section of this report. Users must review this report in its entirety to determine data usability and assessment.

EXECUTIVE SUMMARY

Client ID: **MW-11**

Lab ID: **17F1347-01**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	1.4	0.18	0.50	µg/L	SM21-22 6200B
Benzene	1.5	0.12	0.50	µg/L	SM21-22 6200B
Ethylbenzene	1.3	0.13	0.50	µg/L	SM21-22 6200B
m+p Xylene	0.62 J	0.26	1.0	µg/L	SM21-22 6200B
Methyl tert-Butyl Ether (MTBE)	0.22 J	0.090	0.50	µg/L	SM21-22 6200B
n-Propylbenzene	0.23 J	0.13	0.50	µg/L	SM21-22 6200B

Client ID: **MW-13**

Lab ID: **17F1347-02**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	440	9.0	25	µg/L	SM21-22 6200B
1,3,5-Trimethylbenzene	31	6.5	25	µg/L	SM21-22 6200B
Benzene	4900	6.0	25	µg/L	SM21-22 6200B
Diisopropyl Ether (DIPE)	100	9.0	25	µg/L	SM21-22 6200B
Ethylbenzene	1200	6.5	25	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	62	6.0	25	µg/L	SM21-22 6200B
m+p Xylene	840	13	50	µg/L	SM21-22 6200B
Methyl tert-Butyl Ether (MTBE)	6000	4.5	25	µg/L	SM21-22 6200B
Naphthalene	400	6.0	25	µg/L	SM21-22 6200B
n-Butylbenzene	16 J	7.5	25	µg/L	SM21-22 6200B
n-Propylbenzene	120	6.5	25	µg/L	SM21-22 6200B
o-Xylene	16 R-05, J	6.6	25	µg/L	SM21-22 6200B
p-Isopropyltoluene (p-Cymene)	36	7.5	25	µg/L	SM21-22 6200B
sec-Butylbenzene	12 J	6.5	25	µg/L	SM21-22 6200B
Toluene	60	8.5	25	µg/L	SM21-22 6200B

Client ID: **MW-15**

Lab ID: **17F1347-03**

Analyte	Results/Qual	DL	RL	Units	Method
1,3,5-Trimethylbenzene	1.9	0.13	0.50	µg/L	SM21-22 6200B
Benzene	17	0.12	0.50	µg/L	SM21-22 6200B
cis-1,2-Dichloroethylene	1.2	0.15	0.50	µg/L	SM21-22 6200B
Diisopropyl Ether (DIPE)	3.1	0.18	0.50	µg/L	SM21-22 6200B
Ethylbenzene	1.5	0.13	0.50	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	5.9	0.12	0.50	µg/L	SM21-22 6200B
m+p Xylene	1.1	0.26	1.0	µg/L	SM21-22 6200B
Methyl tert-Butyl Ether (MTBE)	10	0.090	0.50	µg/L	SM21-22 6200B
Naphthalene	15	0.12	0.50	µg/L	SM21-22 6200B
n-Butylbenzene	4.2	0.15	0.50	µg/L	SM21-22 6200B
n-Propylbenzene	0.47 J	0.13	0.50	µg/L	SM21-22 6200B
o-Xylene	10 R-05	0.13	0.50	µg/L	SM21-22 6200B
p-Isopropyltoluene (p-Cymene)	4.2	0.15	0.50	µg/L	SM21-22 6200B
sec-Butylbenzene	6.1	0.13	0.50	µg/L	SM21-22 6200B
Toluene	2.9	0.17	0.50	µg/L	SM21-22 6200B

Client ID: **MW-18**

Lab ID: **17F1347-04**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	140	0.90	2.5	µg/L	SM21-22 6200B
1,3,5-Trimethylbenzene	40	0.65	2.5	µg/L	SM21-22 6200B
Benzene	6.2	0.60	2.5	µg/L	SM21-22 6200B
Ethylbenzene	17	0.65	2.5	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	6.6	0.60	2.5	µg/L	SM21-22 6200B
m+p Xylene	80	1.3	5.0	µg/L	SM21-22 6200B
Naphthalene	63	0.60	2.5	µg/L	SM21-22 6200B
n-Butylbenzene	4.5	0.75	2.5	µg/L	SM21-22 6200B
n-Propylbenzene	7.6	0.65	2.5	µg/L	SM21-22 6200B
o-Xylene	33	R-05 0.66	2.5	µg/L	SM21-22 6200B
p-Isopropyltoluene (p-Cymene)	3.5	0.75	2.5	µg/L	SM21-22 6200B
sec-Butylbenzene	5.0	0.65	2.5	µg/L	SM21-22 6200B
Toluene	3.9	0.85	2.5	µg/L	SM21-22 6200B

Client ID: **MW-21**

Lab ID: **17F1347-05**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	1500	7.2	20	µg/L	SM21-22 6200B
1,3,5-Trimethylbenzene	450	5.2	20	µg/L	SM21-22 6200B
Benzene	250	4.8	20	µg/L	SM21-22 6200B
Ethylbenzene	870	5.2	20	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	76	4.8	20	µg/L	SM21-22 6200B
m+p Xylene	3100	10	40	µg/L	SM21-22 6200B
Methyl tert-Butyl Ether (MTBE)	6.8	J 3.6	20	µg/L	SM21-22 6200B
Naphthalene	410	4.8	20	µg/L	SM21-22 6200B
n-Butylbenzene	86	6.0	20	µg/L	SM21-22 6200B
n-Propylbenzene	200	5.2	20	µg/L	SM21-22 6200B
o-Xylene	840	R-05 5.2	20	µg/L	SM21-22 6200B
p-Isopropyltoluene (p-Cymene)	13	J 6.0	20	µg/L	SM21-22 6200B
sec-Butylbenzene	20	J 5.2	20	µg/L	SM21-22 6200B
Toluene	200	6.8	20	µg/L	SM21-22 6200B

Con-Test does not accept liability for the consequences of any actions taken solely on the basis of the information provided in the Executive Summary section of this report. Users must review this report in its entirety to determine data usability and assessment.

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

Elevated reporting limit for samples 17F1347-02,04,05 due to the high concentration of target compounds.

SM21-22 6200B**Qualifications:****L-02**

Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.

Analyte & Samples(s) Qualified:**1,2-Dichloroethane**

B180533-BS1, B180533-BSD1

Bromodichloromethane

B180533-BS1, B180533-BSD1

L-04

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:**Acetone**

17F1347-01[MW-11], 17F1347-02[MW-13], 17F1347-03[MW-15], 17F1347-04[MW-18], 17F1347-05[MW-21], 17F1347-06[Field Blank], B180533-BLK1, B180533-BS1, B180533-BSD1

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:**cis-1,3-Dichloropropene**

B180533-BSD1

trans-1,3-Dichloropropene

B180533-BSD1

L-07A

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:**1,1,2,2-Tetrachloroethane**

B180533-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:**1,1,2,2-Tetrachloroethane**

17F1347-01[MW-11], 17F1347-02[MW-13], 17F1347-03[MW-15], 17F1347-04[MW-18], 17F1347-05[MW-21], 17F1347-06[Field Blank], B180533-BLK1, B180533-BS1, B180533-BSD1

o-Xylene

17F1347-01[MW-11], 17F1347-02[MW-13], 17F1347-03[MW-15], 17F1347-04[MW-18], 17F1347-05[MW-21], 17F1347-06[Field Blank], B180533-BLK1, B180533-BS1, B180533-BSD1

Styrene

17F1347-01[MW-11], 17F1347-02[MW-13], 17F1347-03[MW-15], 17F1347-04[MW-18], 17F1347-05[MW-21], 17F1347-06[Field Blank], B180533-BLK1, B180533-BS1, B180533-BSD1

RL-11

Elevated reporting limit due to high concentration of target compounds.

Analyte & Samples(s) Qualified:

17F1347-02[MW-13], 17F1347-04[MW-18], 17F1347-05[MW-21]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Project Manager

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-11

Sampled: 6/21/2017 16:20

Sample ID: 17F1347-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1	L-04	SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Benzene	1.5	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
sec-Butylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Chloroethane	ND	0.50	0.28	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Chloromethane	ND	0.60	0.55	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
4-Chlorotoluene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Ethylbenzene	1.3	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Methyl tert-Butyl Ether (MTBE)	0.22	0.50	0.090	µg/L	1	J	SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-11

Sampled: 6/21/2017 16:20

Sample ID: 17F1347-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
n-Propylbenzene	0.23	0.50	0.13	µg/L	1	J	SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Styrene	ND	0.50	0.15	µg/L	1	R-05	SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	0.16	µg/L	1	R-05	SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,2,4-Trimethylbenzene	1.4	0.50	0.18	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
m+p Xylene	0.62	1.0	0.26	µg/L	1	J	SM21-22 6200B	6/29/17	6/30/17 6:10	MFF
o-Xylene	ND	0.50	0.13	µg/L	1	R-05	SM21-22 6200B	6/29/17	6/30/17 6:10	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	124	70-130	
Toluene-d8	107	70-130	
4-Bromofluorobenzene	94.2	70-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-13

Sampled: 6/21/2017 15:45

Sample ID: 17F1347-02

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	2500	240	µg/L	50	L-04	SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Benzene	4900	25	6.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Bromobenzene	ND	25	7.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Bromochloromethane	ND	25	11	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Bromodichloromethane	ND	25	15	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Bromoform	ND	25	10	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Bromomethane	ND	50	47	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
2-Butanone (MEK)	ND	250	120	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
n-Butylbenzene	16	25	7.5	µg/L	50	J	SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
sec-Butylbenzene	12	25	6.5	µg/L	50	J	SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
tert-Butylbenzene	ND	25	6.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Carbon Tetrachloride	ND	25	12	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Chlorobenzene	ND	25	8.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Ethanol	ND	2500	2300	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Chlorodibromomethane	ND	25	5.2	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Chloroethane	ND	25	14	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Chloroform	ND	25	11	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Chloromethane	ND	30	28	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
2-Chlorotoluene	ND	25	6.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
4-Chlorotoluene	ND	25	7.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,2-Dibromoethane (EDB)	ND	25	7.4	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,2-Dichlorobenzene	ND	25	8.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,3-Dichlorobenzene	ND	25	8.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,4-Dichlorobenzene	ND	25	7.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Dichlorodifluoromethane (Freon 12)	ND	25	14	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,1-Dichloroethane	ND	25	7.9	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,2-Dichloroethane	ND	25	9.7	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,1-Dichloroethylene	ND	25	10	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
cis-1,2-Dichloroethylene	ND	25	7.4	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
trans-1,2-Dichloroethylene	ND	25	7.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,2-Dichloropropane	ND	25	6.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,3-Dichloropropane	ND	25	6.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
2,2-Dichloropropane	ND	25	11	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,1-Dichloropropene	ND	25	6.4	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
cis-1,3-Dichloropropene	ND	25	6.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
trans-1,3-Dichloropropene	ND	25	5.6	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Diisopropyl Ether (DIPE)	100	25	9.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Ethylbenzene	1200	25	6.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
2-Hexanone (MBK)	ND	250	76	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Isopropylbenzene (Cumene)	62	25	6.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
p-Isopropyltoluene (p-Cymene)	36	25	7.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Methyl tert-Butyl Ether (MTBE)	6000	25	4.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Methylene Chloride	ND	250	160	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
4-Methyl-2-pentanone (MIBK)	ND	250	73	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-13

Sampled: 6/21/2017 15:45

Sample ID: 17F1347-02

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	400	25	6.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
n-Propylbenzene	120	25	6.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Styrene	ND	25	7.5	µg/L	50	R-05	SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,1,2,2-Tetrachloroethane	ND	25	8.0	µg/L	50	R-05	SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Tetrachloroethylene	ND	25	14	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Toluene	60	25	8.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,2,3-Trichlorobenzene	ND	25	7.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,2,4-Trichlorobenzene	ND	25	9.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,1,1-Trichloroethane	ND	25	6.6	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,1,2-Trichloroethane	ND	25	12	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Trichloroethylene	ND	25	10	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Trichlorofluoromethane (Freon 11)	ND	25	7.4	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,2,3-Trichloropropane	ND	25	11	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,2,4-Trimethylbenzene	440	25	9.0	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
1,3,5-Trimethylbenzene	31	25	6.5	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Vinyl Acetate	ND	250	72	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
Vinyl Chloride	ND	25	6.6	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
m+p Xylene	840	50	13	µg/L	50		SM21-22 6200B	6/29/17	6/30/17 2:52	MFF
o-Xylene	16	25	6.6	µg/L	50	R-05, J	SM21-22 6200B	6/29/17	6/30/17 2:52	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	126	70-130	
Toluene-d8	107	70-130	
4-Bromofluorobenzene	94.5	70-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-15

Sampled: 6/21/2017 15:20

Sample ID: 17F1347-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1	L-04	SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Benzene	17	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
n-Butylbenzene	4.2	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
sec-Butylbenzene	6.1	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Chloroethane	ND	0.50	0.28	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Chloromethane	ND	0.60	0.55	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
4-Chlorotoluene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
cis-1,2-Dichloroethylene	1.2	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Diisopropyl Ether (DIPE)	3.1	0.50	0.18	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Ethylbenzene	1.5	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Isopropylbenzene (Cumene)	5.9	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
p-Isopropyltoluene (p-Cymene)	4.2	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Methyl tert-Butyl Ether (MTBE)	10	0.50	0.090	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-15

Sampled: 6/21/2017 15:20

Sample ID: 17F1347-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	15	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
n-Propylbenzene	0.47	0.50	0.13	µg/L	1	J	SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Styrene	ND	0.50	0.15	µg/L	1	R-05	SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	0.16	µg/L	1	R-05	SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Toluene	2.9	0.50	0.17	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
1,3,5-Trimethylbenzene	1.9	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
m+p Xylene	1.1	1.0	0.26	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:51	MFF
o-Xylene	10	0.50	0.13	µg/L	1	R-05	SM21-22 6200B	6/29/17	6/30/17 1:51	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	127	70-130	
Toluene-d8	103	70-130	
4-Bromofluorobenzene	77.3	70-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-18

Sampled: 6/21/2017 14:50

Sample ID: 17F1347-04

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	250	24	µg/L	5	L-04	SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Benzene	6.2	2.5	0.60	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Bromobenzene	ND	2.5	0.75	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Bromochloromethane	ND	2.5	1.1	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Bromodichloromethane	ND	2.5	1.5	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Bromoform	ND	2.5	1.0	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Bromomethane	ND	5.0	4.7	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
2-Butanone (MEK)	ND	25	12	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
n-Butylbenzene	4.5	2.5	0.75	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
sec-Butylbenzene	5.0	2.5	0.65	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
tert-Butylbenzene	ND	2.5	0.60	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Carbon Tetrachloride	ND	2.5	1.2	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Chlorobenzene	ND	2.5	0.80	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Ethanol	ND	250	230	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Chlorodibromomethane	ND	2.5	0.52	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Chloroethane	ND	2.5	1.4	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Chloroform	ND	2.5	1.1	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Chloromethane	ND	3.0	2.8	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
2-Chlorotoluene	ND	2.5	0.60	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
4-Chlorotoluene	ND	2.5	0.70	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,2-Dibromoethane (EDB)	ND	2.5	0.74	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,2-Dichlorobenzene	ND	2.5	0.85	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,3-Dichlorobenzene	ND	2.5	0.85	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,4-Dichlorobenzene	ND	2.5	0.75	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Dichlorodifluoromethane (Freon 12)	ND	2.5	1.4	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,1-Dichloroethane	ND	2.5	0.79	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,2-Dichloroethane	ND	2.5	0.97	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,1-Dichloroethylene	ND	2.5	1.0	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
cis-1,2-Dichloroethylene	ND	2.5	0.74	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
trans-1,2-Dichloroethylene	ND	2.5	0.75	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,2-Dichloropropane	ND	2.5	0.65	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,3-Dichloropropane	ND	2.5	0.65	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
2,2-Dichloropropane	ND	2.5	1.1	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,1-Dichloropropene	ND	2.5	0.64	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
cis-1,3-Dichloropropene	ND	2.5	0.60	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
trans-1,3-Dichloropropene	ND	2.5	0.56	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Diisopropyl Ether (DIPE)	ND	2.5	0.90	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Ethylbenzene	17	2.5	0.65	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
2-Hexanone (MBK)	ND	25	7.6	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Isopropylbenzene (Cumene)	6.6	2.5	0.60	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
p-Isopropyltoluene (p-Cymene)	3.5	2.5	0.75	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Methyl tert-Butyl Ether (MTBE)	ND	2.5	0.45	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Methylene Chloride	ND	25	16	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
4-Methyl-2-pentanone (MIBK)	ND	25	7.3	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-18

Sampled: 6/21/2017 14:50

Sample ID: 17F1347-04

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	63	2.5	0.60	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
n-Propylbenzene	7.6	2.5	0.65	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Styrene	ND	2.5	0.75	µg/L	5	R-05	SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,1,2,2-Tetrachloroethane	ND	2.5	0.80	µg/L	5	R-05	SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Tetrachloroethylene	ND	2.5	1.4	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Toluene	3.9	2.5	0.85	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,2,3-Trichlorobenzene	ND	2.5	0.70	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,2,4-Trichlorobenzene	ND	2.5	0.95	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,1,1-Trichloroethane	ND	2.5	0.66	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,1,2-Trichloroethane	ND	2.5	1.2	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Trichloroethylene	ND	2.5	1.0	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Trichlorofluoromethane (Freon 11)	ND	2.5	0.74	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,2,3-Trichloropropane	ND	2.5	1.1	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,2,4-Trimethylbenzene	140	2.5	0.90	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
1,3,5-Trimethylbenzene	40	2.5	0.65	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Vinyl Acetate	ND	25	7.2	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
Vinyl Chloride	ND	2.5	0.66	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
m+p Xylene	80	5.0	1.3	µg/L	5		SM21-22 6200B	6/29/17	6/30/17 6:41	MFF
o-Xylene	33	2.5	0.66	µg/L	5	R-05	SM21-22 6200B	6/29/17	6/30/17 6:41	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	129	70-130	
Toluene-d8	105	70-130	
4-Bromofluorobenzene	99.2	70-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-21

Sampled: 6/21/2017 14:15

Sample ID: 17F1347-05

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	2000	190	µg/L	40	L-04	SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Benzene	250	20	4.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Bromobenzene	ND	20	6.0	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Bromochloromethane	ND	20	8.9	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Bromodichloromethane	ND	20	12	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Bromoform	ND	20	8.4	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Bromomethane	ND	40	38	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
2-Butanone (MEK)	ND	200	95	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
n-Butylbenzene	86	20	6.0	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
sec-Butylbenzene	20	20	5.2	µg/L	40	J	SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
tert-Butylbenzene	ND	20	4.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Carbon Tetrachloride	ND	20	9.9	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Chlorobenzene	ND	20	6.4	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Ethanol	ND	2000	1800	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Chlorodibromomethane	ND	20	4.2	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Chloroethane	ND	20	11	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Chloroform	ND	20	8.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Chloromethane	ND	24	22	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
2-Chlorotoluene	ND	20	4.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
4-Chlorotoluene	ND	20	5.6	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,2-Dibromoethane (EDB)	ND	20	5.9	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,2-Dichlorobenzene	ND	20	6.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,3-Dichlorobenzene	ND	20	6.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,4-Dichlorobenzene	ND	20	6.0	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Dichlorodifluoromethane (Freon 12)	ND	20	11	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,1-Dichloroethane	ND	20	6.3	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,2-Dichloroethane	ND	20	7.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,1-Dichloroethylene	ND	20	8.4	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
cis-1,2-Dichloroethylene	ND	20	5.9	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
trans-1,2-Dichloroethylene	ND	20	6.0	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,2-Dichloropropane	ND	20	5.2	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,3-Dichloropropane	ND	20	5.2	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
2,2-Dichloropropane	ND	20	8.5	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,1-Dichloropropene	ND	20	5.1	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
cis-1,3-Dichloropropene	ND	20	4.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
trans-1,3-Dichloropropene	ND	20	4.5	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Diisopropyl Ether (DIPE)	ND	20	7.2	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Ethylbenzene	870	20	5.2	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
2-Hexanone (MBK)	ND	200	61	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Isopropylbenzene (Cumene)	76	20	4.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
p-Isopropyltoluene (p-Cymene)	13	20	6.0	µg/L	40	J	SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Methyl tert-Butyl Ether (MTBE)	6.8	20	3.6	µg/L	40	J	SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Methylene Chloride	ND	200	130	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
4-Methyl-2-pentanone (MIBK)	ND	200	59	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: MW-21

Sampled: 6/21/2017 14:15

Sample ID: 17F1347-05

Sample Matrix: Ground Water

Sample Flags: RL-11

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	410	20	4.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
n-Propylbenzene	200	20	5.2	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Styrene	ND	20	6.0	µg/L	40	R-05	SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,1,2,2-Tetrachloroethane	ND	20	6.4	µg/L	40	R-05	SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Tetrachloroethylene	ND	20	11	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Toluene	200	20	6.8	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,2,3-Trichlorobenzene	ND	20	5.6	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,2,4-Trichlorobenzene	ND	20	7.6	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,1,1-Trichloroethane	ND	20	5.2	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,1,2-Trichloroethane	ND	20	9.4	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Trichloroethylene	ND	20	8.0	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Trichlorofluoromethane (Freon 11)	ND	20	5.9	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,2,3-Trichloropropane	ND	20	8.6	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,2,4-Trimethylbenzene	1500	20	7.2	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
1,3,5-Trimethylbenzene	450	20	5.2	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Vinyl Acetate	ND	200	58	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
Vinyl Chloride	ND	20	5.3	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
m+p Xylene	3100	40	10	µg/L	40		SM21-22 6200B	6/29/17	6/30/17 3:23	MFF
o-Xylene	840	20	5.2	µg/L	40	R-05	SM21-22 6200B	6/29/17	6/30/17 3:23	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	127	70-130	
Toluene-d8	107	70-130	
4-Bromofluorobenzene	95.4	70-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: Field Blank

Sampled: 6/21/2017 14:25

Sample ID: 17F1347-06

Sample Matrix: Field Blank

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1	L-04	SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
sec-Butylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Chloroethane	ND	0.50	0.28	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Chloromethane	ND	0.60	0.55	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
4-Chlorotoluene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 1904 St. Albans Dr., Raleigh, NC

Sample Description:

Work Order: 17F1347

Date Received: 6/22/2017

Field Sample #: Field Blank

Sampled: 6/21/2017 14:25

Sample ID: 17F1347-06

Sample Matrix: Field Blank

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
n-Propylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Styrene	ND	0.50	0.15	µg/L	1	R-05	SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,1,2,2-Tetrachloroethane	ND	0.50	0.16	µg/L	1	R-05	SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	6/29/17	6/30/17 1:20	MFF
o-Xylene	ND	0.50	0.13	µg/L	1	R-05	SM21-22 6200B	6/29/17	6/30/17 1:20	MFF

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	128	70-130	
Toluene-d8	105	70-130	
4-Bromofluorobenzene	79.6	70-130	

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Sample Extraction Data

Prep Method: SW-846 5030B-SM21-22 6200B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F1347-01 [MW-11]	B180533	5	5.00	06/29/17
17F1347-02 [MW-13]	B180533	0.1	5.00	06/29/17
17F1347-03 [MW-15]	B180533	5	5.00	06/29/17
17F1347-04 [MW-18]	B180533	1	5.00	06/29/17
17F1347-05 [MW-21]	B180533	0.125	5.00	06/29/17
17F1347-06 [Field Blank]	B180533	5	5.00	06/29/17

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B180533 - SW-846 5030B

Blank (B180533-BLK1)

Prepared: 06/29/17 Analyzed: 06/30/17

Acetone	ND	50	µg/L							L-04
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	1.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Ethanol	ND	50	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	0.60	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	0.50	µg/L							
n-Propylbenzene	ND	0.50	µg/L							
Styrene	ND	0.50	µg/L							R-05
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							R-05
Tetrachloroethylene	ND	0.50	µg/L							
Toluene	ND	0.50	µg/L							
1,2,3-Trichlorobenzene	ND	0.50	µg/L							
1,2,4-Trichlorobenzene	ND	0.50	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B180533 - SW-846 5030B

Blank (B180533-BLK1)

Prepared: 06/29/17 Analyzed: 06/30/17

1,1,1-Trichloroethane	ND	0.50	µg/L							
1,1,2-Trichloroethane	ND	0.50	µg/L							
Trichloroethylene	ND	0.50	µg/L							
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L							
1,2,3-Trichloropropane	ND	0.50	µg/L							
1,2,4-Trimethylbenzene	ND	0.50	µg/L							
1,3,5-Trimethylbenzene	ND	0.50	µg/L							
Vinyl Acetate	ND	5.0	µg/L							
Vinyl Chloride	ND	0.50	µg/L							
m+p Xylene	ND	1.0	µg/L							
o-Xylene	ND	0.50	µg/L							R-05
Surrogate: 1,2-Dichloroethane-d4	31.2		µg/L	25.0		125	70-130			
Surrogate: Toluene-d8	26.4		µg/L	25.0		106	70-130			
Surrogate: 4-Bromofluorobenzene	23.8		µg/L	25.0		95.1	70-130			

LCS (B180533-BS1)

Prepared & Analyzed: 06/29/17

Acetone	59.1	50	µg/L	100		59.1 *	70-130			L-04 †
Benzene	10.6	0.50	µg/L	10.0		106	70-130			
Bromobenzene	8.07	0.50	µg/L	10.0		80.7	70-130			
Bromochloromethane	10.7	0.50	µg/L	10.0		107	70-130			
Bromodichloromethane	13.4	0.50	µg/L	10.0		134 *	70-130			L-02
Bromoform	8.33	0.50	µg/L	10.0		83.3	70-130			
Bromomethane	7.51	1.0	µg/L	10.0		75.1	60-140			†
2-Butanone (MEK)	93.1	5.0	µg/L	100		93.1	70-130			†
n-Butylbenzene	12.9	0.50	µg/L	10.0		129	70-130			
sec-Butylbenzene	9.99	0.50	µg/L	10.0		99.9	70-130			
tert-Butylbenzene	9.34	0.50	µg/L	10.0		93.4	70-130			
Carbon Tetrachloride	12.6	0.50	µg/L	10.0		126	70-130			
Chlorobenzene	8.45	0.50	µg/L	10.0		84.5	70-130			
Ethanol	93.2	50	µg/L	100		93.2	70-130			
Chlorodibromomethane	10.8	0.50	µg/L	10.0		108	70-130			
Chloroethane	7.89	0.50	µg/L	10.0		78.9	60-140			
Chloroform	12.1	0.50	µg/L	10.0		121	70-130			
Chloromethane	9.49	0.60	µg/L	10.0		94.9	60-140			†
2-Chlorotoluene	8.31	0.50	µg/L	10.0		83.1	70-130			
4-Chlorotoluene	8.72	0.50	µg/L	10.0		87.2	70-130			
1,2-Dibromoethane (EDB)	9.95	0.50	µg/L	10.0		99.5	70-130			
1,2-Dichlorobenzene	11.3	0.50	µg/L	10.0		113	70-130			
1,3-Dichlorobenzene	9.38	0.50	µg/L	10.0		93.8	70-130			
1,4-Dichlorobenzene	9.55	0.50	µg/L	10.0		95.5	70-130			
Dichlorodifluoromethane (Freon 12)	12.3	0.50	µg/L	10.0		123	60-140			†
1,1-Dichloroethane	11.4	0.50	µg/L	10.0		114	70-130			
1,2-Dichloroethane	14.4	0.50	µg/L	10.0		144 *	70-130			L-02
1,1-Dichloroethylene	9.43	0.50	µg/L	10.0		94.3	70-130			
cis-1,2-Dichloroethylene	11.2	0.50	µg/L	10.0		112	70-130			
trans-1,2-Dichloroethylene	11.1	0.50	µg/L	10.0		111	70-130			
1,2-Dichloropropane	11.0	0.50	µg/L	10.0		110	70-130			
1,3-Dichloropropane	10.7	0.50	µg/L	10.0		107	70-130			
2,2-Dichloropropane	11.0	0.50	µg/L	10.0		110	70-130			†
1,1-Dichloropropene	12.0	0.50	µg/L	10.0		120	70-130			
cis-1,3-Dichloropropene	13.0	0.50	µg/L	10.0		130	70-130			
trans-1,3-Dichloropropene	12.6	0.50	µg/L	10.0		126	70-130			

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B180533 - SW-846 5030B										
LCS (B180533-BS1)										
Prepared & Analyzed: 06/29/17										
Diisopropyl Ether (DIPE)	9.99	0.50	µg/L	10.0		99.9	70-130			
Ethylbenzene	9.74	0.50	µg/L	10.0		97.4	70-130			
2-Hexanone (MBK)	98.5	5.0	µg/L	100		98.5	70-130			†
Isopropylbenzene (Cumene)	7.57	0.50	µg/L	10.0		75.7	70-130			
p-Isopropyltoluene (p-Cymene)	10.6	0.50	µg/L	10.0		106	70-130			
Methyl tert-Butyl Ether (MTBE)	12.5	0.50	µg/L	10.0		125	70-130			
Methylene Chloride	10.2	5.0	µg/L	10.0		102	70-130			
4-Methyl-2-pentanone (MIBK)	123	5.0	µg/L	100		123	70-130			†
Naphthalene	9.57	0.50	µg/L	10.0		95.7	70-130			†
n-Propylbenzene	7.83	0.50	µg/L	10.0		78.3	70-130			
Styrene	7.16	0.50	µg/L	10.0		71.6	70-130			R-05
1,1,2,2-Tetrachloroethane	6.91	0.50	µg/L	10.0		69.1 *	70-130			L-07A, R-05
Tetrachloroethylene	10.2	0.50	µg/L	10.0		102	70-130			
Toluene	11.5	0.50	µg/L	10.0		115	70-130			
1,2,3-Trichlorobenzene	11.4	0.50	µg/L	10.0		114	70-130			
1,2,4-Trichlorobenzene	12.0	0.50	µg/L	10.0		120	70-130			
1,1,1-Trichloroethane	12.9	0.50	µg/L	10.0		129	70-130			
1,1,2-Trichloroethane	10.1	0.50	µg/L	10.0		101	70-130			
Trichloroethylene	11.8	0.50	µg/L	10.0		118	70-130			
Trichlorofluoromethane (Freon 11)	11.6	0.50	µg/L	10.0		116	70-130			
1,2,3-Trichloropropane	7.96	0.50	µg/L	10.0		79.6	70-130			
1,2,4-Trimethylbenzene	10.5	0.50	µg/L	10.0		105	70-130			
1,3,5-Trimethylbenzene	8.08	0.50	µg/L	10.0		80.8	70-130			
Vinyl Acetate	105	5.0	µg/L	100		105	70-130			
Vinyl Chloride	10.4	0.50	µg/L	10.0		104	60-140			†
m+p Xylene	20.3	1.0	µg/L	20.0		101	70-130			
o-Xylene	7.57	0.50	µg/L	10.0		75.7	70-130			R-05
Surrogate: 1,2-Dichloroethane-d4	31.4		µg/L	25.0		126	70-130			
Surrogate: Toluene-d8	26.6		µg/L	25.0		107	70-130			
Surrogate: 4-Bromofluorobenzene	19.6		µg/L	25.0		78.4	70-130			
LCS Dup (B180533-BSD1)										
Prepared & Analyzed: 06/29/17										
Acetone	57.1	50	µg/L	100		57.1 *	70-130	3.42	25	L-04
Benzene	10.7	0.50	µg/L	10.0		107	70-130	0.656	25	
Bromobenzene	10.3	0.50	µg/L	10.0		103	70-130	23.9	25	
Bromochloromethane	10.3	0.50	µg/L	10.0		103	70-130	3.61	25	
Bromodichloromethane	14.8	0.50	µg/L	10.0		148 *	70-130	9.70	25	L-02
Bromoform	9.89	0.50	µg/L	10.0		98.9	70-130	17.1	25	
Bromomethane	8.37	1.0	µg/L	10.0		83.7	60-140	10.8	25	†
2-Butanone (MEK)	95.5	5.0	µg/L	100		95.5	70-130	2.56	25	†
n-Butylbenzene	10.8	0.50	µg/L	10.0		108	70-130	17.6	25	
sec-Butylbenzene	10.7	0.50	µg/L	10.0		107	70-130	6.77	25	
tert-Butylbenzene	9.32	0.50	µg/L	10.0		93.2	70-130	0.214	25	
Carbon Tetrachloride	12.6	0.50	µg/L	10.0		126	70-130	0.476	25	
Chlorobenzene	8.51	0.50	µg/L	10.0		85.1	70-130	0.708	25	
Ethanol	74.0	50	µg/L	100		74.0	70-130	23.0	25	
Chlorodibromomethane	12.6	0.50	µg/L	10.0		126	70-130	15.3	25	
Chloroethane	7.30	0.50	µg/L	10.0		73.0	60-140	7.77	25	
Chloroform	12.6	0.50	µg/L	10.0		126	70-130	4.38	25	
Chloromethane	9.69	0.60	µg/L	10.0		96.9	60-140	2.09	25	†
2-Chlorotoluene	10.4	0.50	µg/L	10.0		104	70-130	21.9	25	
4-Chlorotoluene	10.6	0.50	µg/L	10.0		106	70-130	19.6	25	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B180533 - SW-846 5030B										
LCS Dup (B180533-BSD1)										
Prepared & Analyzed: 06/29/17										
1,2-Dibromoethane (EDB)	11.8	0.50	µg/L	10.0		118	70-130	17.3	25	
1,2-Dichlorobenzene	9.13	0.50	µg/L	10.0		91.3	70-130	21.4	25	
1,3-Dichlorobenzene	9.21	0.50	µg/L	10.0		92.1	70-130	1.83	25	
1,4-Dichlorobenzene	9.54	0.50	µg/L	10.0		95.4	70-130	0.105	25	
Dichlorodifluoromethane (Freon 12)	12.8	0.50	µg/L	10.0		128	60-140	3.89	25	†
1,1-Dichloroethane	11.9	0.50	µg/L	10.0		119	70-130	4.29	25	
1,2-Dichloroethane	14.6	0.50	µg/L	10.0		146	* 70-130	1.93	25	L-02
1,1-Dichloroethylene	9.29	0.50	µg/L	10.0		92.9	70-130	1.50	25	
cis-1,2-Dichloroethylene	11.1	0.50	µg/L	10.0		111	70-130	0.269	25	
trans-1,2-Dichloroethylene	11.5	0.50	µg/L	10.0		115	70-130	3.19	25	
1,2-Dichloropropane	11.8	0.50	µg/L	10.0		118	70-130	6.59	25	
1,3-Dichloropropane	12.9	0.50	µg/L	10.0		129	70-130	18.6	25	
2,2-Dichloropropane	11.2	0.50	µg/L	10.0		112	70-130	1.44	25	†
1,1-Dichloropropene	12.2	0.50	µg/L	10.0		122	70-130	1.24	25	
cis-1,3-Dichloropropene	13.5	0.50	µg/L	10.0		135	* 70-130	3.32	25	L-07
trans-1,3-Dichloropropene	14.5	0.50	µg/L	10.0		145	* 70-130	14.1	25	L-07
Diisopropyl Ether (DIPE)	10.3	0.50	µg/L	10.0		103	70-130	2.67	25	
Ethylbenzene	10.1	0.50	µg/L	10.0		101	70-130	3.93	25	
2-Hexanone (MBK)	118	5.0	µg/L	100		118	70-130	17.9	25	†
Isopropylbenzene (Cumene)	9.71	0.50	µg/L	10.0		97.1	70-130	24.8	25	
p-Isopropyltoluene (p-Cymene)	10.2	0.50	µg/L	10.0		102	70-130	4.43	25	
Methyl tert-Butyl Ether (MTBE)	12.9	0.50	µg/L	10.0		129	70-130	2.68	25	
Methylene Chloride	10.4	5.0	µg/L	10.0		104	70-130	1.46	25	
4-Methyl-2-pentanone (MIBK)	128	5.0	µg/L	100		128	70-130	4.51	25	†
Naphthalene	7.51	0.50	µg/L	10.0		75.1	70-130	24.1	25	†
n-Propylbenzene	9.79	0.50	µg/L	10.0		97.9	70-130	22.2	25	
Styrene	9.38	0.50	µg/L	10.0		93.8	70-130	26.8	* 25	R-05
1,1,2,2-Tetrachloroethane	9.22	0.50	µg/L	10.0		92.2	70-130	28.6	* 25	R-05
Tetrachloroethylene	12.4	0.50	µg/L	10.0		124	70-130	19.5	25	
Toluene	12.2	0.50	µg/L	10.0		122	70-130	5.49	25	
1,2,3-Trichlorobenzene	10.5	0.50	µg/L	10.0		105	70-130	8.78	25	
1,2,4-Trichlorobenzene	10.3	0.50	µg/L	10.0		103	70-130	15.3	25	
1,1,1-Trichloroethane	13.0	0.50	µg/L	10.0		130	70-130	1.31	25	
1,1,2-Trichloroethane	11.8	0.50	µg/L	10.0		118	70-130	15.6	25	
Trichloroethylene	12.0	0.50	µg/L	10.0		120	70-130	1.85	25	
Trichlorofluoromethane (Freon 11)	10.9	0.50	µg/L	10.0		109	70-130	6.07	25	
1,2,3-Trichloropropane	10.1	0.50	µg/L	10.0		101	70-130	23.7	25	
1,2,4-Trimethylbenzene	11.4	0.50	µg/L	10.0		114	70-130	8.15	25	
1,3,5-Trimethylbenzene	9.96	0.50	µg/L	10.0		99.6	70-130	20.8	25	
Vinyl Acetate	108	5.0	µg/L	100		108	70-130	2.87	25	
Vinyl Chloride	10.7	0.50	µg/L	10.0		107	60-140	3.12	25	†
m+p Xylene	20.7	1.0	µg/L	20.0		103	70-130	2.00	25	
o-Xylene	9.96	0.50	µg/L	10.0		99.6	70-130	27.3	* 25	R-05
Surrogate: 1,2-Dichloroethane-d4	31.8		µg/L	25.0		127	70-130			
Surrogate: Toluene-d8	27.7		µg/L	25.0		111	70-130			
Surrogate: 4-Bromofluorobenzene	24.4		µg/L	25.0		97.8	70-130			

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FLAG/QUALIFIER SUMMARY

- * QC result is outside of established limits.
 - † Wide recovery limits established for difficult compound.
 - ‡ Wide RPD limits established for difficult compound.
 - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
No results have been blank subtracted unless specified in the case narrative section.
- J Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
 - L-02 Laboratory fortified blank/laboratory control sample recovery and duplicate recoveries outside of control limits. Data validation is not affected since all results are "not detected" for associated samples in this batch and bias is on the high side.
 - L-04 Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
 - L-07 Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
 - L-07A Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
 - R-05 Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
 - RL-11 Elevated reporting limit due to high concentration of target compounds.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SM21-22 6200B in Water</i>	
Acetone	NC
Benzene	NC
Bromobenzene	NC
Bromochloromethane	NC
Bromodichloromethane	NC
Bromoform	NC
Bromomethane	NC
2-Butanone (MEK)	NC
n-Butylbenzene	NC
sec-Butylbenzene	NC
tert-Butylbenzene	NC
Carbon Tetrachloride	NC
Chlorobenzene	NC
Ethanol	NC
Chlorodibromomethane	NC
Chloroethane	NC
Chloroform	NC
Chloromethane	NC
2-Chlorotoluene	NC
4-Chlorotoluene	NC
1,2-Dibromoethane (EDB)	NC
1,2-Dichlorobenzene	NC
1,3-Dichlorobenzene	NC
1,4-Dichlorobenzene	NC
Dichlorodifluoromethane (Freon 12)	NC
1,1-Dichloroethane	NC
1,2-Dichloroethane	NC
1,1-Dichloroethylene	NC
cis-1,2-Dichloroethylene	NC
trans-1,2-Dichloroethylene	NC
1,2-Dichloropropane	NC
1,3-Dichloropropane	NC
2,2-Dichloropropane	NC
1,1-Dichloropropene	NC
cis-1,3-Dichloropropene	NC
trans-1,3-Dichloropropene	NC
Diisopropyl Ether (DIPE)	NC
Ethylbenzene	NC
2-Hexanone (MBK)	NC
Isopropylbenzene (Cumene)	NC
p-Isopropyltoluene (p-Cymene)	NC
Methyl tert-Butyl Ether (MTBE)	NC
Methylene Chloride	NC
4-Methyl-2-pentanone (MIBK)	NC
Naphthalene	NC
n-Propylbenzene	NC
Styrene	NC

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SM21-22 6200B in Water</i>	
1,1,2,2-Tetrachloroethane	NC
Tetrachloroethylene	NC
Toluene	NC
1,2,3-Trichlorobenzene	NC
1,2,4-Trichlorobenzene	NC
1,1,1-Trichloroethane	NC
1,1,2-Trichloroethane	NC
Trichloroethylene	NC
Trichlorofluoromethane (Freon 11)	NC
1,2,3-Trichloropropane	NC
1,2,4-Trimethylbenzene	NC
1,3,5-Trimethylbenzene	NC
Vinyl Acetate	NC
Vinyl Chloride	NC
m+p Xylene	NC
o-Xylene	NC

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2017
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018

39 Spruce St.
 East Longmeadow, MA. 01028
 P: 413-525-2332
 F: 413-525-6405
 www.contestlabs.com



CON-TEST
 ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client St ME Inc
 Received By A.F. Date 06/23/17 Time 920
 How were the samples received? In Cooler T No Cooler F On Ice T No Ice F
 Direct From Sample _____ Ambient _____ Melted Ice _____
 Were samples within Temperature? 2-6°C T By Gun # _____ Actual Temp - 4.6
 By Blank # 2 Actual Temp - _____
 Was Custody Seal Intact? N/A Were Samples Tampered with? F
 Was COC Relinquished? T Does Chain Agree With Samples? T
 Are there broken/leaking/loose caps on any samples? T
 Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all Client? T Analysis? T Sampler Name? T
 pertinent Information? Project? T ID's? T Collection Dates/Times? T
 Are Sample labels filled out and legible? T
 Are there Lab to Filters? N/A Who was notified? _____
 Are there Rushes? N/A Who was notified? _____
 Are there Short Holds? N/A Who was notified? _____
 Is there enough Volume? T
 Is there Headspace where applicable? T MS/MSD? N/A
 Proper Media/Containers Used? T splitting samples require: N/A
 Were trip blanks receive N/A On COC? N/A
 Do All Samples Have the proper pH? N/A Acid _____ Base _____

Vol	#	Containers			
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-	<u>18</u>	500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vol	#	Containers			
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments:



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Ship date:

Thu 6/22/2017

Raleigh, NC US



Delivered

Signed for by: P.BLAKE

Actual delivery:

Fri 6/23/2017 9:20 am

EAST LONGMEADOW, MA US

Travel History

Date/Time	Activity	Location
- 6/23/2017 - Friday		
9:20 am	Delivered	EAST LONGMEADOW, MA
7:43 am	On FedEx vehicle for delivery	WINDSOR LOCKS, CT
7:38 am	At local FedEx facility	WINDSOR LOCKS, CT
6:20 am	At destination sort facility	EAST GRANBY, CT
4:49 am	Departed FedEx location	INDIANAPOLIS, IN
12:09 am	Arrived at FedEx location	INDIANAPOLIS, IN
- 6/22/2017 - Thursday		
8:45 pm	Left FedEx origin facility	DURHAM, NC
4:35 pm	Picked up	RALEIGH, NC
3:11 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	779472704729	Service	FedEx Priority Overnight
Weight	40.8 lbs / 18.51 kgs	Dimensions	24x14x14 in.
Delivered To	Shipping/Receiving	Total pieces	1
Total shipment weight	40.8 lbs / 18.51 kgs	Terms	Third Party
Shipper reference	80	Packaging	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge	Standard transit	6/23/2017 by 10:30 am



Search or tracking number

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July 31, 2017

Michael Pfeifer
S&ME, Inc - Raleigh, NC
3201 Spring Forest Rd.
Raleigh, NC 27616

Project Location: Star Flite 52 - 1904 St. Albans Dr., Raleigh, NC
Client Job Number:
Project Number: TF-6896 4305-17-108
Laboratory Work Order Number: 17G0878

Enclosed are results of analyses for samples received by the laboratory on July 20, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Kerry K. McGee". The signature is written in a cursive, flowing style.

Kerry K. McGee
Project Manager

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Chain of Custody/Sample Receipt

50

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

S&ME, Inc - Raleigh, NC
 3201 Spring Forest Rd.
 Raleigh, NC 27616
 ATTN: Michael Pfeifer

REPORT DATE: 7/31/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: TF-6896 4305-17-108

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 17G0878

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Star Flite 52 - 1904 St. Albans Dr., Raleigh, NC

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MW-22	17G0878-01	Ground Water		SM21-22 6200B	
MW-23	17G0878-02	Ground Water		SM21-22 6200B	
MW-24	17G0878-03	Ground Water		SM21-22 6200B	
MW-28	17G0878-04	Ground Water		SM21-22 6200B	
MW-29	17G0878-05	Ground Water		SM21-22 6200B	
MW-32D	17G0878-06	Ground Water		SM21-22 6200B	
MW-33	17G0878-07	Ground Water		SM21-22 6200B	
Field Blank 7-19-17	17G0878-08	Field Blank		SM21-22 6200B	
MW-1	17G0878-09	Ground Water		SM21-22 6200B	
MW-5	17G0878-10	Ground Water		SM21-22 6200B	
MW-14	17G0878-11	Ground Water		SM21-22 6200B	
MW-20	17G0878-12	Ground Water		SM21-22 6200B	
MW-30	17G0878-13	Ground Water		SM21-22 6200B	
Field Blank 7-20-17	17G0878-14	Field Blank		SM21-22 6200B	

EXECUTIVE SUMMARYClient ID: **MW-32D**Lab ID: **17G0878-06**

No Results Detected

Client ID: **MW-33**Lab ID: **17G0878-07**

No Results Detected

Client ID: **Field Blank 7-19-17**Lab ID: **17G0878-08**

No Results Detected

Client ID: **MW-1**Lab ID: **17G0878-09**

No Results Detected

Client ID: **MW-5**Lab ID: **17G0878-10**

No Results Detected

Client ID: **MW-20**Lab ID: **17G0878-12**

No Results Detected

Client ID: **Field Blank 7-20-17**Lab ID: **17G0878-14**

No Results Detected

EXECUTIVE SUMMARY

 Client ID: **MW-22**

 Lab ID: **17G0878-01**

Analyte	Results/Qual	DL	RL	Units	Method
Tetrachloroethylene	0.41 J	0.27	0.50	µg/L	SM21-22 6200B

 Client ID: **MW-23**

 Lab ID: **17G0878-02**

Analyte	Results/Qual	DL	RL	Units	Method
Toluene	0.25 J	0.17	0.50	µg/L	SM21-22 6200B

 Client ID: **MW-24**

 Lab ID: **17G0878-03**

Analyte	Results/Qual	DL	RL	Units	Method
Tetrachloroethylene	0.37 J	0.27	0.50	µg/L	SM21-22 6200B

 Client ID: **MW-28**

 Lab ID: **17G0878-04**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	2.1	0.18	0.50	µg/L	SM21-22 6200B
1,3,5-Trimethylbenzene	2.4	0.13	0.50	µg/L	SM21-22 6200B
2-Hexanone (MBK)	16	1.5	5.0	µg/L	SM21-22 6200B
Benzene	13	0.12	0.50	µg/L	SM21-22 6200B
Ethylbenzene	2.9	0.13	0.50	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	3.4	0.12	0.50	µg/L	SM21-22 6200B
m+p Xylene	2.6	0.26	1.0	µg/L	SM21-22 6200B
Naphthalene	11	0.12	0.50	µg/L	SM21-22 6200B
n-Butylbenzene	1.3	0.15	0.50	µg/L	SM21-22 6200B
n-Propylbenzene	2.5	0.13	1.0	µg/L	SM21-22 6200B
o-Xylene	1.4	0.13	0.50	µg/L	SM21-22 6200B
p-Isopropyltoluene (p-Cymene)	2.1	0.15	0.50	µg/L	SM21-22 6200B
sec-Butylbenzene	4.1	0.13	2.0	µg/L	SM21-22 6200B
tert-Butylbenzene	0.29 J	0.12	0.50	µg/L	SM21-22 6200B
Tetrachloroethylene	0.94	0.27	0.50	µg/L	SM21-22 6200B
Toluene	4.5	0.17	0.50	µg/L	SM21-22 6200B
Trichloroethylene	0.45 J	0.20	0.50	µg/L	SM21-22 6200B

 Client ID: **MW-29**

 Lab ID: **17G0878-05**

Analyte	Results/Qual	DL	RL	Units	Method
1,2,4-Trimethylbenzene	610	4.5	12	µg/L	SM21-22 6200B
1,3,5-Trimethylbenzene	66	0.13	0.50	µg/L	SM21-22 6200B
2-Butanone (MEK)	3.6 J	2.4	5.0	µg/L	SM21-22 6200B
Benzene	160	0.12	0.50	µg/L	SM21-22 6200B
Diisopropyl Ether (DIPE)	6.5	0.18	0.50	µg/L	SM21-22 6200B
Ethylbenzene	590	3.2	12	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	12	0.12	0.50	µg/L	SM21-22 6200B
m+p Xylene	1800	6.4	25	µg/L	SM21-22 6200B
Methyl tert-Butyl Ether (MTBE)	35	0.090	0.50	µg/L	SM21-22 6200B
Naphthalene	68	0.12	0.50	µg/L	SM21-22 6200B
n-Butylbenzene	7.5	0.15	0.50	µg/L	SM21-22 6200B
n-Propylbenzene	30	0.13	1.0	µg/L	SM21-22 6200B
o-Xylene	670	3.3	12	µg/L	SM21-22 6200B
p-Isopropyltoluene (p-Cymene)	2.0	0.15	0.50	µg/L	SM21-22 6200B
sec-Butylbenzene	2.7	0.13	2.0	µg/L	SM21-22 6200B
Tetrachloroethylene	0.61	0.27	0.50	µg/L	SM21-22 6200B
Toluene	6.9	0.17	0.50	µg/L	SM21-22 6200B
Trichloroethylene	0.32 J	0.20	0.50	µg/L	SM21-22 6200B

Client ID: **MW-14**

Lab ID: **17G0878-11**

Analyte	Results/Qual	DL	RL	Units	Method
Tetrachloroethylene	0.38 J	0.27	0.50	µg/L	SM21-22 6200B

Client ID: **MW-30**

Lab ID: **17G0878-13**

Analyte	Results/Qual	DL	RL	Units	Method
1,1,1-Trichloroethane	0.16 J	0.13	0.50	µg/L	SM21-22 6200B
1,2,4-Trimethylbenzene	2.4	0.18	0.50	µg/L	SM21-22 6200B
1,3,5-Trimethylbenzene	2.4	0.13	0.50	µg/L	SM21-22 6200B
Benzene	120	0.12	0.50	µg/L	SM21-22 6200B
Ethylbenzene	21	0.13	0.50	µg/L	SM21-22 6200B
Isopropylbenzene (Cumene)	9.1	0.12	0.50	µg/L	SM21-22 6200B
m+p Xylene	2.6	0.26	1.0	µg/L	SM21-22 6200B
Naphthalene	12	0.12	0.50	µg/L	SM21-22 6200B
n-Butylbenzene	3.6	0.15	0.50	µg/L	SM21-22 6200B
n-Propylbenzene	6.8	0.13	1.0	µg/L	SM21-22 6200B
o-Xylene	6.2	0.13	0.50	µg/L	SM21-22 6200B
sec-Butylbenzene	2.4	0.13	2.0	µg/L	SM21-22 6200B
Tetrachloroethylene	0.60	0.27	0.50	µg/L	SM21-22 6200B
Toluene	0.90	0.17	0.50	µg/L	SM21-22 6200B

Con-Test does not accept liability for the consequences of any actions taken solely on the basis of the information provided in the Executive Summary section of this report. Users must review this report in its entirety to determine data usability and assessment.

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SM21-22 6200B**Qualifications:****L-04**

Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:**Methyl tert-Butyl Ether (MTBE)**

17G0878-01[MW-22], 17G0878-06[MW-32D], 17G0878-07[MW-33], 17G0878-09[MW-1], B182437-BLK1, B182437-BS1, B182437-BSD1

trans-1,2-Dichloroethylene

17G0878-01[MW-22], 17G0878-06[MW-32D], 17G0878-07[MW-33], 17G0878-09[MW-1], B182437-BLK1, B182437-BS1, B182437-BSD1

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:**Naphthalene**

B182561-BSD1

L-07A

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:**Vinyl Acetate**

B182437-BS1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:**Vinyl Acetate**

17G0878-01[MW-22], 17G0878-06[MW-32D], 17G0878-07[MW-33], 17G0878-09[MW-1], B182437-BLK1, B182437-BSD1

V-34

Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:**Dichlorodifluoromethane (Freon 12)**

17G0878-02[MW-23], 17G0878-03[MW-24], 17G0878-04[MW-28], 17G0878-05[MW-29], 17G0878-08[Field Blank 7-19-17], 17G0878-10[MW-5], 17G0878-11[MW-14], 17G0878-12[MW-20], 17G0878-13[MW-30], 17G0878-14[Field Blank 7-20-17], B182561-BLK1, B182561-BS1, B182561-BSD1

V-36

Initial calibration verification (ICV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**Ethanol**

B182561-BS1, B182561-BSD1

Vinyl Acetate

B182561-BS1, B182561-BSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Lisa A. Worthington", is written over a light gray rectangular background.

Lisa A. Worthington
Project Manager

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-22

Sampled: 7/19/2017 16:25

Sample ID: 17G0878-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Bromoform	ND	2.0	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Bromomethane	ND	5.0	0.94	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
sec-Butylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Chlorodibromomethane	ND	2.0	0.10	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Chloroethane	ND	5.0	0.28	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
4-Chlorotoluene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,2-Dichloroethane	ND	2.0	0.19	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1	L-04	SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
2-Hexanone (MBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1	L-04	SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-22

Sampled: 7/19/2017 16:25

Sample ID: 17G0878-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	2.0	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
n-Propylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,1,2,2-Tetrachloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Tetrachloroethylene	0.41	0.50	0.27	µg/L	1	J	SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,2,4-Trichlorobenzene	ND	1.0	0.19	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1	R-05	SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 14:51	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	99.0	70-130	7/28/17 14:51
Toluene-d8	101	70-130	7/28/17 14:51
4-Bromofluorobenzene	94.8	70-130	7/28/17 14:51

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-23

Sampled: 7/19/2017 14:50

Sample ID: 17G0878-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
sec-Butylbenzene	ND	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-23

Sampled: 7/19/2017 14:50

Sample ID: 17G0878-02

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
n-Propylbenzene	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Toluene	0.25	0.50	0.17	µg/L	1	J	SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 5:55	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	122	70-130	7/27/17 5:55
Toluene-d8	95.8	70-130	7/27/17 5:55
4-Bromofluorobenzene	82.0	70-130	7/27/17 5:55

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-24

Sampled: 7/19/2017 15:20

Sample ID: 17G0878-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
sec-Butylbenzene	ND	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-24

Sampled: 7/19/2017 15:20

Sample ID: 17G0878-03

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
n-Propylbenzene	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Tetrachloroethylene	0.37	0.50	0.27	µg/L	1	J	SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:17	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	122	70-130	7/27/17 6:17
Toluene-d8	93.2	70-130	7/27/17 6:17
4-Bromofluorobenzene	81.8	70-130	7/27/17 6:17

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-28

Sampled: 7/19/2017 15:45

Sample ID: 17G0878-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Benzene	13	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
n-Butylbenzene	1.3	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
sec-Butylbenzene	4.1	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
tert-Butylbenzene	0.29	0.50	0.12	µg/L	1	J	SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Ethylbenzene	2.9	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
2-Hexanone (MBK)	16	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Isopropylbenzene (Cumene)	3.4	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
p-Isopropyltoluene (p-Cymene)	2.1	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-28

Sampled: 7/19/2017 15:45

Sample ID: 17G0878-04

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	11	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
n-Propylbenzene	2.5	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Tetrachloroethylene	0.94	0.50	0.27	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Toluene	4.5	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Trichloroethylene	0.45	0.50	0.20	µg/L	1	J	SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,2,4-Trimethylbenzene	2.1	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
1,3,5-Trimethylbenzene	2.4	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
m+p Xylene	2.6	1.0	0.26	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR
o-Xylene	1.4	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 6:39	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	99.2	70-130	
Toluene-d8	95.9	70-130	
4-Bromofluorobenzene	91.4	70-130	

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-29

Sampled: 7/19/2017 17:05

Sample ID: 17G0878-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Benzene	160	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
2-Butanone (MEK)	3.6	5.0	2.4	µg/L	1	J	SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
n-Butylbenzene	7.5	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
sec-Butylbenzene	2.7	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Diisopropyl Ether (DIPE)	6.5	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Ethylbenzene	590	12	3.2	µg/L	25		SM21-22 6200B	7/26/17	7/28/17 21:34	CMR
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Isopropylbenzene (Cumene)	12	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
p-Isopropyltoluene (p-Cymene)	2.0	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Methyl tert-Butyl Ether (MTBE)	35	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-29

Sampled: 7/19/2017 17:05

Sample ID: 17G0878-05

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	68	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
n-Propylbenzene	30	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Tetrachloroethylene	0.61	0.50	0.27	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Toluene	6.9	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Trichloroethylene	0.32	0.50	0.20	µg/L	1	J	SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
1,2,4-Trimethylbenzene	610	12	4.5	µg/L	25		SM21-22 6200B	7/26/17	7/28/17 21:34	CMR
1,3,5-Trimethylbenzene	66	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 7:46	CMR
m+p Xylene	1800	25	6.4	µg/L	25		SM21-22 6200B	7/26/17	7/28/17 21:34	CMR
o-Xylene	670	12	3.3	µg/L	25		SM21-22 6200B	7/26/17	7/28/17 21:34	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	98.4	70-130	7/28/17 21:34
1,2-Dichloroethane-d4	97.9	70-130	7/27/17 7:46
Toluene-d8	96.7	70-130	7/27/17 7:46
Toluene-d8	99.9	70-130	7/28/17 21:34
4-Bromofluorobenzene	96.5	70-130	7/28/17 21:34
4-Bromofluorobenzene	110	70-130	7/27/17 7:46

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-32D

Sampled: 7/19/2017 10:45

Sample ID: 17G0878-06

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Bromoform	ND	2.0	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Bromomethane	ND	5.0	0.94	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
sec-Butylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Chlorodibromomethane	ND	2.0	0.10	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Chloroethane	ND	5.0	0.28	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
4-Chlorotoluene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,2-Dichloroethane	ND	2.0	0.19	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1	L-04	SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
2-Hexanone (MBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1	L-04	SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-32D

Sampled: 7/19/2017 10:45

Sample ID: 17G0878-06

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	2.0	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
n-Propylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,1,2,2-Tetrachloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,2,4-Trichlorobenzene	ND	1.0	0.19	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1	R-05	SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:18	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	98.0	70-130	
Toluene-d8	101	70-130	
4-Bromofluorobenzene	94.0	70-130	

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-33

Sampled: 7/19/2017 11:30

Sample ID: 17G0878-07

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Bromoform	ND	2.0	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Bromomethane	ND	5.0	0.94	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
sec-Butylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Chlorodibromomethane	ND	2.0	0.10	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Chloroethane	ND	5.0	0.28	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
4-Chlorotoluene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,2-Dichloroethane	ND	2.0	0.19	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1	L-04	SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
2-Hexanone (MBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1	L-04	SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-33

Sampled: 7/19/2017 11:30

Sample ID: 17G0878-07

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	2.0	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
n-Propylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,1,2,2-Tetrachloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,2,4-Trichlorobenzene	ND	1.0	0.19	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1	R-05	SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 15:45	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	101	70-130	7/28/17 15:45
Toluene-d8	99.6	70-130	7/28/17 15:45
4-Bromofluorobenzene	92.4	70-130	7/28/17 15:45

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: Field Blank 7-19-17

Sampled: 7/19/2017 15:00

Sample ID: 17G0878-08

Sample Matrix: Field Blank

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
sec-Butylbenzene	ND	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: Field Blank 7-19-17

Sampled: 7/19/2017 15:00

Sample ID: 17G0878-08

Sample Matrix: Field Blank

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
n-Propylbenzene	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 1:50	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	121	70-130	7/27/17 1:50
Toluene-d8	92.2	70-130	7/27/17 1:50
4-Bromofluorobenzene	79.4	70-130	7/27/17 1:50

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-1

Sampled: 7/20/2017 12:15

Sample ID: 17G0878-09

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Bromoform	ND	2.0	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Bromomethane	ND	5.0	0.94	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
sec-Butylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Chlorodibromomethane	ND	2.0	0.10	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Chloroethane	ND	5.0	0.28	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
2-Chlorotoluene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
4-Chlorotoluene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,2-Dichloroethane	ND	2.0	0.19	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,1-Dichloroethylene	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
trans-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1	L-04	SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
2-Hexanone (MBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1	L-04	SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
4-Methyl-2-pentanone (MIBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-1

Sampled: 7/20/2017 12:15

Sample ID: 17G0878-09

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	2.0	0.12	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
n-Propylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,1,2,2-Tetrachloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,2,4-Trichlorobenzene	ND	1.0	0.19	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1	R-05	SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
Vinyl Chloride	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/27/17	7/28/17 16:12	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	101	70-130	
Toluene-d8	99.6	70-130	
4-Bromofluorobenzene	94.6	70-130	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-5

Sampled: 7/20/2017 12:40

Sample ID: 17G0878-10

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
sec-Butylbenzene	ND	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-5

Sampled: 7/20/2017 12:40

Sample ID: 17G0878-10

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
n-Propylbenzene	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:15	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	121	70-130	
Toluene-d8	91.0	70-130	
4-Bromofluorobenzene	83.3	70-130	

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-14

Sampled: 7/20/2017 11:25

Sample ID: 17G0878-11

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
sec-Butylbenzene	ND	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-14

Sampled: 7/20/2017 11:25

Sample ID: 17G0878-11

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
n-Propylbenzene	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Tetrachloroethylene	0.38	0.50	0.27	µg/L	1	J	SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 9:37	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	124	70-130	7/27/17 9:37
Toluene-d8	91.6	70-130	7/27/17 9:37
4-Bromofluorobenzene	82.2	70-130	7/27/17 9:37

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-20

Sampled: 7/20/2017 10:45

Sample ID: 17G0878-12

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
sec-Butylbenzene	ND	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-20

Sampled: 7/20/2017 10:45

Sample ID: 17G0878-12

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
n-Propylbenzene	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:00	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	122	70-130	7/27/17 10:00
Toluene-d8	92.4	70-130	7/27/17 10:00
4-Bromofluorobenzene	82.6	70-130	7/27/17 10:00

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-30

Sampled: 7/20/2017 10:00

Sample ID: 17G0878-13

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Benzene	120	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
n-Butylbenzene	3.6	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
sec-Butylbenzene	2.4	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Ethylbenzene	21	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Isopropylbenzene (Cumene)	9.1	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: MW-30

Sampled: 7/20/2017 10:00

Sample ID: 17G0878-13

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	12	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
n-Propylbenzene	6.8	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Tetrachloroethylene	0.60	0.50	0.27	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Toluene	0.90	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,1,1-Trichloroethane	0.16	0.50	0.13	µg/L	1	J	SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,2,4-Trimethylbenzene	2.4	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
1,3,5-Trimethylbenzene	2.4	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
m+p Xylene	2.6	1.0	0.26	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR
o-Xylene	6.2	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 10:22	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	110	70-130	7/27/17 10:22
Toluene-d8	93.4	70-130	7/27/17 10:22
4-Bromofluorobenzene	101	70-130	7/27/17 10:22

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: Field Blank 7-20-17

Sampled: 7/20/2017 11:35

Sample ID: 17G0878-14

Sample Matrix: Field Blank

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Benzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Bromobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Bromochloromethane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Bromodichloromethane	ND	0.50	0.30	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Bromoform	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Bromomethane	ND	1.0	0.94	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
2-Butanone (MEK)	ND	5.0	2.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
n-Butylbenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
sec-Butylbenzene	ND	2.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
tert-Butylbenzene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Carbon Tetrachloride	ND	0.50	0.25	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Chlorobenzene	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Ethanol	ND	50	45	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Chlorodibromomethane	ND	0.50	0.10	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Chloroethane	ND	1.0	0.28	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Chloroform	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Chloromethane	ND	5.0	0.55	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
2-Chlorotoluene	ND	1.0	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
4-Chlorotoluene	ND	2.0	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,2-Dibromoethane (EDB)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,2-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,3-Dichlorobenzene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,4-Dichlorobenzene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Dichlorodifluoromethane (Freon 12)	ND	0.50	0.28	µg/L	1	V-34	SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,1-Dichloroethane	ND	0.50	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,2-Dichloroethane	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,1-Dichloroethylene	ND	1.0	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
cis-1,2-Dichloroethylene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
trans-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,2-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,3-Dichloropropane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
2,2-Dichloropropane	ND	0.50	0.21	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,1-Dichloropropene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
cis-1,3-Dichloropropene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
trans-1,3-Dichloropropene	ND	0.50	0.11	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Diisopropyl Ether (DIPE)	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Ethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
2-Hexanone (MBK)	ND	5.0	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Isopropylbenzene (Cumene)	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
p-Isopropyltoluene (p-Cymene)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Methyl tert-Butyl Ether (MTBE)	ND	0.50	0.090	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
4-Methyl-2-pentanone (MIBK)	ND	10	1.5	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR

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Project Location: Star Flite 52 - 1904 St. Albans Dr

Sample Description:

Work Order: 17G0878

Date Received: 7/20/2017

Field Sample #: Field Blank 7-20-17

Sampled: 7/20/2017 11:35

Sample ID: 17G0878-14

Sample Matrix: Field Blank

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Naphthalene	ND	0.50	0.12	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
n-Propylbenzene	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Styrene	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,1,2,2-Tetrachloroethane	ND	1.0	0.16	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Tetrachloroethylene	ND	0.50	0.27	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Toluene	ND	0.50	0.17	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,2,3-Trichlorobenzene	ND	0.50	0.14	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,2,4-Trichlorobenzene	ND	0.50	0.19	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,1,1-Trichloroethane	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,1,2-Trichloroethane	ND	0.50	0.24	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Trichloroethylene	ND	0.50	0.20	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Trichlorofluoromethane (Freon 11)	ND	0.50	0.15	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,2,3-Trichloropropane	ND	0.50	0.22	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,2,4-Trimethylbenzene	ND	0.50	0.18	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
1,3,5-Trimethylbenzene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Vinyl Acetate	ND	5.0	1.4	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
Vinyl Chloride	ND	1.0	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
m+p Xylene	ND	1.0	0.26	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR
o-Xylene	ND	0.50	0.13	µg/L	1		SM21-22 6200B	7/26/17	7/27/17 2:12	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual
1,2-Dichloroethane-d4	120	70-130	
Toluene-d8	91.4	70-130	
4-Bromofluorobenzene	80.6	70-130	

Sample Extraction Data

Prep Method: SW-846 5030B-SM21-22 6200B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0878-01 [MW-22]	B182437	5	5.00	07/27/17
17G0878-05RE1 [MW-29]	B182437	0.2	5.00	07/26/17
17G0878-06 [MW-32D]	B182437	5	5.00	07/27/17
17G0878-07 [MW-33]	B182437	5	5.00	07/27/17
17G0878-09 [MW-1]	B182437	5	5.00	07/27/17

Prep Method: SW-846 5030B-SM21-22 6200B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17G0878-02 [MW-23]	B182561	5	5.00	07/26/17
17G0878-03 [MW-24]	B182561	5	5.00	07/26/17
17G0878-04 [MW-28]	B182561	5	5.00	07/26/17
17G0878-05 [MW-29]	B182561	5	5.00	07/26/17
17G0878-08 [Field Blank 7-19-17]	B182561	5	5.00	07/26/17
17G0878-10 [MW-5]	B182561	5	5.00	07/26/17
17G0878-11 [MW-14]	B182561	5	5.00	07/26/17
17G0878-12 [MW-20]	B182561	5	5.00	07/26/17
17G0878-13 [MW-30]	B182561	5	5.00	07/26/17
17G0878-14 [Field Blank 7-20-17]	B182561	5	5.00	07/26/17

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B182437 - SW-846 5030B

Blank (B182437-BLK1)

Prepared: 07/25/17 Analyzed: 07/28/17

Acetone	ND	50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	1.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Ethanol	ND	50	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	0.60	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							L-04
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							L-04
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	0.50	µg/L							
n-Propylbenzene	ND	0.50	µg/L							
Styrene	ND	0.50	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	0.50	µg/L							
Toluene	ND	0.50	µg/L							
1,2,3-Trichlorobenzene	ND	0.50	µg/L							
1,2,4-Trichlorobenzene	ND	0.50	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B182437 - SW-846 5030B										
Blank (B182437-BLK1)										
Prepared: 07/25/17 Analyzed: 07/28/17										
1,1,1-Trichloroethane	ND	0.50	µg/L							
1,1,2-Trichloroethane	ND	0.50	µg/L							
Trichloroethylene	ND	0.50	µg/L							
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L							
1,2,3-Trichloropropane	ND	0.50	µg/L							
1,2,4-Trimethylbenzene	ND	0.50	µg/L							
1,3,5-Trimethylbenzene	ND	0.50	µg/L							
Vinyl Acetate	ND	5.0	µg/L							R-05
Vinyl Chloride	ND	0.50	µg/L							
m+p Xylene	ND	1.0	µg/L							
o-Xylene	ND	0.50	µg/L							
Surrogate: 1,2-Dichloroethane-d4	24.3		µg/L	25.0		97.2	70-130			
Surrogate: Toluene-d8	24.7		µg/L	25.0		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	23.9		µg/L	25.0		95.4	70-130			
LCS (B182437-BS1)										
Prepared: 07/25/17 Analyzed: 07/28/17										
Acetone	78.2	50	µg/L	100		78.2	70-130			†
Benzene	9.57	0.50	µg/L	10.0		95.7	70-130			
Bromobenzene	8.93	0.50	µg/L	10.0		89.3	70-130			
Bromochloromethane	9.05	0.50	µg/L	10.0		90.5	70-130			
Bromodichloromethane	9.15	0.50	µg/L	10.0		91.5	70-130			
Bromoform	9.04	0.50	µg/L	10.0		90.4	70-130			
Bromomethane	9.06	1.0	µg/L	10.0		90.6	60-140			†
2-Butanone (MEK)	81.6	5.0	µg/L	100		81.6	70-130			†
n-Butylbenzene	9.45	0.50	µg/L	10.0		94.5	70-130			
sec-Butylbenzene	9.70	0.50	µg/L	10.0		97.0	70-130			
tert-Butylbenzene	10.0	0.50	µg/L	10.0		100	70-130			
Carbon Tetrachloride	10.1	0.50	µg/L	10.0		101	70-130			
Chlorobenzene	10.2	0.50	µg/L	10.0		102	70-130			
Ethanol	83.4	50	µg/L	100		83.4	70-130			
Chlorodibromomethane	9.18	0.50	µg/L	10.0		91.8	70-130			
Chloroethane	13.9	0.50	µg/L	10.0		139	60-140			
Chloroform	9.71	0.50	µg/L	10.0		97.1	70-130			
Chloromethane	12.3	0.60	µg/L	10.0		123	60-140			†
2-Chlorotoluene	7.81	0.50	µg/L	10.0		78.1	70-130			
4-Chlorotoluene	8.77	0.50	µg/L	10.0		87.7	70-130			
1,2-Dibromoethane (EDB)	9.56	0.50	µg/L	10.0		95.6	70-130			
1,2-Dichlorobenzene	9.16	0.50	µg/L	10.0		91.6	70-130			
1,3-Dichlorobenzene	9.19	0.50	µg/L	10.0		91.9	70-130			
1,4-Dichlorobenzene	9.23	0.50	µg/L	10.0		92.3	70-130			
Dichlorodifluoromethane (Freon 12)	11.6	0.50	µg/L	10.0		116	60-140			†
1,1-Dichloroethane	7.97	0.50	µg/L	10.0		79.7	70-130			
1,2-Dichloroethane	9.28	0.50	µg/L	10.0		92.8	70-130			
1,1-Dichloroethylene	9.43	0.50	µg/L	10.0		94.3	70-130			
cis-1,2-Dichloroethylene	9.57	0.50	µg/L	10.0		95.7	70-130			
trans-1,2-Dichloroethylene	5.98	0.50	µg/L	10.0		59.8 *	70-130			L-04
1,2-Dichloropropane	8.86	0.50	µg/L	10.0		88.6	70-130			
1,3-Dichloropropane	9.54	0.50	µg/L	10.0		95.4	70-130			
2,2-Dichloropropane	9.77	0.50	µg/L	10.0		97.7	70-130			†
1,1-Dichloropropene	9.94	0.50	µg/L	10.0		99.4	70-130			
cis-1,3-Dichloropropene	9.58	0.50	µg/L	10.0		95.8	70-130			
trans-1,3-Dichloropropene	8.01	0.50	µg/L	10.0		80.1	70-130			

QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B182437 - SW-846 5030B

LCS (B182437-BS1)

Prepared: 07/25/17 Analyzed: 07/28/17

Diisopropyl Ether (DIPE)	8.20	0.50	µg/L	10.0		82.0	70-130			
Ethylbenzene	10.4	0.50	µg/L	10.0		104	70-130			
2-Hexanone (MBK)	74.6	5.0	µg/L	100		74.6	70-130			†
Isopropylbenzene (Cumene)	10.0	0.50	µg/L	10.0		100	70-130			
p-Isopropyltoluene (p-Cymene)	9.68	0.50	µg/L	10.0		96.8	70-130			
Methyl tert-Butyl Ether (MTBE)	5.53	0.50	µg/L	10.0		55.3 *	70-130			L-04
Methylene Chloride	8.93	5.0	µg/L	10.0		89.3	70-130			
4-Methyl-2-pentanone (MIBK)	81.0	5.0	µg/L	100		81.0	70-130			†
Naphthalene	8.21	0.50	µg/L	10.0		82.1	70-130			†
n-Propylbenzene	10.3	0.50	µg/L	10.0		103	70-130			
Styrene	9.43	0.50	µg/L	10.0		94.3	70-130			
1,1,2,2-Tetrachloroethane	9.17	0.50	µg/L	10.0		91.7	70-130			
Tetrachloroethylene	10.3	0.50	µg/L	10.0		103	70-130			
Toluene	9.94	0.50	µg/L	10.0		99.4	70-130			
1,2,3-Trichlorobenzene	7.52	0.50	µg/L	10.0		75.2	70-130			
1,2,4-Trichlorobenzene	8.19	0.50	µg/L	10.0		81.9	70-130			
1,1,1-Trichloroethane	9.82	0.50	µg/L	10.0		98.2	70-130			
1,1,2-Trichloroethane	9.88	0.50	µg/L	10.0		98.8	70-130			
Trichloroethylene	10.4	0.50	µg/L	10.0		104	70-130			
Trichlorofluoromethane (Freon 11)	10.6	0.50	µg/L	10.0		106	70-130			
1,2,3-Trichloropropane	9.35	0.50	µg/L	10.0		93.5	70-130			
1,2,4-Trimethylbenzene	9.83	0.50	µg/L	10.0		98.3	70-130			
1,3,5-Trimethylbenzene	9.18	0.50	µg/L	10.0		91.8	70-130			
Vinyl Acetate	257	5.0	µg/L	100		257 *	70-130			L-07A
Vinyl Chloride	10.2	0.50	µg/L	10.0		102	60-140			†
m+p Xylene	20.6	1.0	µg/L	20.0		103	70-130			
o-Xylene	10.1	0.50	µg/L	10.0		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	23.7		µg/L	25.0		94.7	70-130			
Surrogate: Toluene-d8	24.8		µg/L	25.0		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	24.4		µg/L	25.0		97.4	70-130			

LCS Dup (B182437-BS1)

Prepared: 07/25/17 Analyzed: 07/28/17

Acetone	82.9	50	µg/L	100		82.9	70-130	5.81	25	†
Benzene	9.81	0.50	µg/L	10.0		98.1	70-130	2.48	25	
Bromobenzene	9.21	0.50	µg/L	10.0		92.1	70-130	3.09	25	
Bromochloromethane	9.15	0.50	µg/L	10.0		91.5	70-130	1.10	25	
Bromodichloromethane	9.55	0.50	µg/L	10.0		95.5	70-130	4.28	25	
Bromoform	9.23	0.50	µg/L	10.0		92.3	70-130	2.08	25	
Bromomethane	10.4	1.0	µg/L	10.0		104	60-140	13.6	25	†
2-Butanone (MEK)	80.0	5.0	µg/L	100		80.0	70-130	1.99	25	†
n-Butylbenzene	9.63	0.50	µg/L	10.0		96.3	70-130	1.89	25	
sec-Butylbenzene	9.69	0.50	µg/L	10.0		96.9	70-130	0.103	25	
tert-Butylbenzene	10.2	0.50	µg/L	10.0		102	70-130	2.18	25	
Carbon Tetrachloride	9.96	0.50	µg/L	10.0		99.6	70-130	1.20	25	
Chlorobenzene	10.3	0.50	µg/L	10.0		103	70-130	1.47	25	
Ethanol	75.6	50	µg/L	100		75.6	70-130	9.76	25	
Chlorodibromomethane	9.14	0.50	µg/L	10.0		91.4	70-130	0.437	25	
Chloroethane	14.0	0.50	µg/L	10.0		140	60-140	0.788	25	
Chloroform	9.73	0.50	µg/L	10.0		97.3	70-130	0.206	25	
Chloromethane	12.7	0.60	µg/L	10.0		127	60-140	3.04	25	†
2-Chlorotoluene	7.70	0.50	µg/L	10.0		77.0	70-130	1.42	25	
4-Chlorotoluene	8.98	0.50	µg/L	10.0		89.8	70-130	2.37	25	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B182437 - SW-846 5030B										
LCS Dup (B182437-BSD1)										
					Prepared: 07/25/17 Analyzed: 07/28/17					
1,2-Dibromoethane (EDB)	9.34	0.50	µg/L	10.0		93.4	70-130	2.33	25	
1,2-Dichlorobenzene	9.30	0.50	µg/L	10.0		93.0	70-130	1.52	25	
1,3-Dichlorobenzene	9.33	0.50	µg/L	10.0		93.3	70-130	1.51	25	
1,4-Dichlorobenzene	9.31	0.50	µg/L	10.0		93.1	70-130	0.863	25	
Dichlorodifluoromethane (Freon 12)	10.4	0.50	µg/L	10.0		104	60-140	10.7	25	†
1,1-Dichloroethane	8.19	0.50	µg/L	10.0		81.9	70-130	2.72	25	
1,2-Dichloroethane	9.60	0.50	µg/L	10.0		96.0	70-130	3.39	25	
1,1-Dichloroethylene	9.23	0.50	µg/L	10.0		92.3	70-130	2.14	25	
cis-1,2-Dichloroethylene	9.40	0.50	µg/L	10.0		94.0	70-130	1.79	25	
trans-1,2-Dichloroethylene	6.06	0.50	µg/L	10.0		60.6 *	70-130	1.33	25	L-04
1,2-Dichloropropane	9.37	0.50	µg/L	10.0		93.7	70-130	5.60	25	
1,3-Dichloropropane	9.17	0.50	µg/L	10.0		91.7	70-130	3.96	25	
2,2-Dichloropropane	9.94	0.50	µg/L	10.0		99.4	70-130	1.73	25	†
1,1-Dichloropropene	9.98	0.50	µg/L	10.0		99.8	70-130	0.402	25	
cis-1,3-Dichloropropene	9.02	0.50	µg/L	10.0		90.2	70-130	6.02	25	
trans-1,3-Dichloropropene	8.41	0.50	µg/L	10.0		84.1	70-130	4.87	25	
Diisopropyl Ether (DIPE)	8.35	0.50	µg/L	10.0		83.5	70-130	1.81	25	
Ethylbenzene	10.4	0.50	µg/L	10.0		104	70-130	0.0964	25	
2-Hexanone (MBK)	71.2	5.0	µg/L	100		71.2	70-130	4.68	25	†
Isopropylbenzene (Cumene)	10.3	0.50	µg/L	10.0		103	70-130	2.36	25	
p-Isopropyltoluene (p-Cymene)	9.84	0.50	µg/L	10.0		98.4	70-130	1.64	25	
Methyl tert-Butyl Ether (MTBE)	5.45	0.50	µg/L	10.0		54.5 *	70-130	1.46	25	L-04
Methylene Chloride	9.18	5.0	µg/L	10.0		91.8	70-130	2.76	25	
4-Methyl-2-pentanone (MIBK)	78.4	5.0	µg/L	100		78.4	70-130	3.35	25	†
Naphthalene	8.41	0.50	µg/L	10.0		84.1	70-130	2.41	25	†
n-Propylbenzene	10.4	0.50	µg/L	10.0		104	70-130	0.677	25	
Styrene	9.76	0.50	µg/L	10.0		97.6	70-130	3.44	25	
1,1,2,2-Tetrachloroethane	9.23	0.50	µg/L	10.0		92.3	70-130	0.652	25	
Tetrachloroethylene	10.2	0.50	µg/L	10.0		102	70-130	1.17	25	
Toluene	9.89	0.50	µg/L	10.0		98.9	70-130	0.504	25	
1,2,3-Trichlorobenzene	7.81	0.50	µg/L	10.0		78.1	70-130	3.78	25	
1,2,4-Trichlorobenzene	8.55	0.50	µg/L	10.0		85.5	70-130	4.30	25	
1,1,1-Trichloroethane	9.92	0.50	µg/L	10.0		99.2	70-130	1.01	25	
1,1,2-Trichloroethane	9.66	0.50	µg/L	10.0		96.6	70-130	2.25	25	
Trichloroethylene	10.6	0.50	µg/L	10.0		106	70-130	1.72	25	
Trichlorofluoromethane (Freon 11)	10.2	0.50	µg/L	10.0		102	70-130	3.86	25	
1,2,3-Trichloropropane	9.18	0.50	µg/L	10.0		91.8	70-130	1.83	25	
1,2,4-Trimethylbenzene	10.0	0.50	µg/L	10.0		100	70-130	1.71	25	
1,3,5-Trimethylbenzene	9.26	0.50	µg/L	10.0		92.6	70-130	0.868	25	
Vinyl Acetate	77.4	5.0	µg/L	100		77.4	70-130	108 *	25	R-05
Vinyl Chloride	9.51	0.50	µg/L	10.0		95.1	60-140	7.29	25	†
m+p Xylene	20.9	1.0	µg/L	20.0		104	70-130	1.35	25	
o-Xylene	10.3	0.50	µg/L	10.0		103	70-130	2.55	25	
Surrogate: 1,2-Dichloroethane-d4	23.1		µg/L	25.0		92.2	70-130			
Surrogate: Toluene-d8	25.0		µg/L	25.0		100	70-130			
Surrogate: 4-Bromofluorobenzene	24.8		µg/L	25.0		99.4	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B182561 - SW-846 5030B

Blank (B182561-BLK1)

Prepared: 07/26/17 Analyzed: 07/27/17

Acetone	ND	50	µg/L							
Benzene	ND	0.50	µg/L							
Bromobenzene	ND	0.50	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Bromodichloromethane	ND	0.50	µg/L							
Bromoform	ND	0.50	µg/L							
Bromomethane	ND	1.0	µg/L							
2-Butanone (MEK)	ND	5.0	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
tert-Butylbenzene	ND	0.50	µg/L							
Carbon Tetrachloride	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
Ethanol	ND	50	µg/L							
Chlorodibromomethane	ND	0.50	µg/L							
Chloroethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Chloromethane	ND	0.60	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
Dichlorodifluoromethane (Freon 12)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
1,2-Dichloroethane	ND	0.50	µg/L							
1,1-Dichloroethylene	ND	0.50	µg/L							
cis-1,2-Dichloroethylene	ND	0.50	µg/L							
trans-1,2-Dichloroethylene	ND	0.50	µg/L							
1,2-Dichloropropane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
2,2-Dichloropropane	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
cis-1,3-Dichloropropene	ND	0.50	µg/L							
trans-1,3-Dichloropropene	ND	0.50	µg/L							
Diisopropyl Ether (DIPE)	ND	0.50	µg/L							
Ethylbenzene	ND	0.50	µg/L							
2-Hexanone (MBK)	ND	5.0	µg/L							
Isopropylbenzene (Cumene)	ND	0.50	µg/L							
p-Isopropyltoluene (p-Cymene)	ND	0.50	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	0.50	µg/L							
Methylene Chloride	ND	5.0	µg/L							
4-Methyl-2-pentanone (MIBK)	ND	5.0	µg/L							
Naphthalene	ND	0.50	µg/L							
n-Propylbenzene	ND	0.50	µg/L							
Styrene	ND	0.50	µg/L							
1,1,2,2-Tetrachloroethane	ND	0.50	µg/L							
Tetrachloroethylene	ND	0.50	µg/L							
Toluene	ND	0.50	µg/L							
1,2,3-Trichlorobenzene	ND	0.50	µg/L							
1,2,4-Trichlorobenzene	ND	0.50	µg/L							

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B182561 - SW-846 5030B

Blank (B182561-BLK1)

Prepared: 07/26/17 Analyzed: 07/27/17

1,1,1-Trichloroethane	ND	0.50	µg/L							
1,1,2-Trichloroethane	ND	0.50	µg/L							
Trichloroethylene	ND	0.50	µg/L							
Trichlorofluoromethane (Freon 11)	ND	0.50	µg/L							
1,2,3-Trichloropropane	ND	0.50	µg/L							
1,2,4-Trimethylbenzene	ND	0.50	µg/L							
1,3,5-Trimethylbenzene	ND	0.50	µg/L							
Vinyl Acetate	ND	5.0	µg/L							
Vinyl Chloride	ND	0.50	µg/L							
m+p Xylene	ND	1.0	µg/L							
o-Xylene	ND	0.50	µg/L							
Surrogate: 1,2-Dichloroethane-d4	30.7		µg/L	25.0		123	70-130			
Surrogate: Toluene-d8	22.7		µg/L	25.0		90.7	70-130			
Surrogate: 4-Bromofluorobenzene	20.5		µg/L	25.0		82.0	70-130			

LCS (B182561-BS1)

Prepared & Analyzed: 07/26/17

Acetone	96.9	50	µg/L	100		96.9	70-130			†
Benzene	10.8	0.50	µg/L	10.0		108	70-130			
Bromobenzene	9.87	0.50	µg/L	10.0		98.7	70-130			
Bromochloromethane	10.1	0.50	µg/L	10.0		101	70-130			
Bromodichloromethane	9.54	0.50	µg/L	10.0		95.4	70-130			
Bromoform	8.90	0.50	µg/L	10.0		89.0	70-130			
Bromomethane	9.51	1.0	µg/L	10.0		95.1	60-140			†
2-Butanone (MEK)	105	5.0	µg/L	100		105	70-130			†
n-Butylbenzene	9.42	0.50	µg/L	10.0		94.2	70-130			
sec-Butylbenzene	9.67	0.50	µg/L	10.0		96.7	70-130			
tert-Butylbenzene	9.51	0.50	µg/L	10.0		95.1	70-130			
Carbon Tetrachloride	10.2	0.50	µg/L	10.0		102	70-130			
Chlorobenzene	9.77	0.50	µg/L	10.0		97.7	70-130			
Ethanol	94.3	50	µg/L	100		94.3	70-130			V-36
Chlorodibromomethane	9.58	0.50	µg/L	10.0		95.8	70-130			
Chloroethane	9.43	0.50	µg/L	10.0		94.3	60-140			
Chloroform	9.82	0.50	µg/L	10.0		98.2	70-130			
Chloromethane	10.9	0.60	µg/L	10.0		109	60-140			†
2-Chlorotoluene	9.79	0.50	µg/L	10.0		97.9	70-130			
4-Chlorotoluene	9.77	0.50	µg/L	10.0		97.7	70-130			
1,2-Dibromoethane (EDB)	9.34	0.50	µg/L	10.0		93.4	70-130			
1,2-Dichlorobenzene	9.57	0.50	µg/L	10.0		95.7	70-130			
1,3-Dichlorobenzene	9.86	0.50	µg/L	10.0		98.6	70-130			
1,4-Dichlorobenzene	9.96	0.50	µg/L	10.0		99.6	70-130			
Dichlorodifluoromethane (Freon 12)	9.21	0.50	µg/L	10.0		92.1	60-140			V-34 †
1,1-Dichloroethane	8.90	0.50	µg/L	10.0		89.0	70-130			
1,2-Dichloroethane	9.30	0.50	µg/L	10.0		93.0	70-130			
1,1-Dichloroethylene	10.3	0.50	µg/L	10.0		103	70-130			
cis-1,2-Dichloroethylene	9.60	0.50	µg/L	10.0		96.0	70-130			
trans-1,2-Dichloroethylene	9.69	0.50	µg/L	10.0		96.9	70-130			
1,2-Dichloropropane	9.71	0.50	µg/L	10.0		97.1	70-130			
1,3-Dichloropropane	9.54	0.50	µg/L	10.0		95.4	70-130			
2,2-Dichloropropane	8.60	0.50	µg/L	10.0		86.0	70-130			†
1,1-Dichloropropene	9.56	0.50	µg/L	10.0		95.6	70-130			
cis-1,3-Dichloropropene	8.98	0.50	µg/L	10.0		89.8	70-130			
trans-1,3-Dichloropropene	8.91	0.50	µg/L	10.0		89.1	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B182561 - SW-846 5030B

LCS (B182561-BS1)

Prepared & Analyzed: 07/26/17

Diisopropyl Ether (DIPE)	9.27	0.50	µg/L	10.0		92.7	70-130			
Ethylbenzene	9.66	0.50	µg/L	10.0		96.6	70-130			
2-Hexanone (MBK)	92.6	5.0	µg/L	100		92.6	70-130			†
Isopropylbenzene (Cumene)	8.39	0.50	µg/L	10.0		83.9	70-130			
p-Isopropyltoluene (p-Cymene)	8.68	0.50	µg/L	10.0		86.8	70-130			
Methyl tert-Butyl Ether (MTBE)	9.66	0.50	µg/L	10.0		96.6	70-130			
Methylene Chloride	11.3	5.0	µg/L	10.0		113	70-130			
4-Methyl-2-pentanone (MIBK)	92.7	5.0	µg/L	100		92.7	70-130			†
Naphthalene	7.37	0.50	µg/L	10.0		73.7	70-130			†
n-Propylbenzene	8.95	0.50	µg/L	10.0		89.5	70-130			
Styrene	7.91	0.50	µg/L	10.0		79.1	70-130			
1,1,2,2-Tetrachloroethane	11.0	0.50	µg/L	10.0		110	70-130			
Tetrachloroethylene	9.58	0.50	µg/L	10.0		95.8	70-130			
Toluene	9.81	0.50	µg/L	10.0		98.1	70-130			
1,2,3-Trichlorobenzene	8.72	0.50	µg/L	10.0		87.2	70-130			
1,2,4-Trichlorobenzene	8.16	0.50	µg/L	10.0		81.6	70-130			
1,1,1-Trichloroethane	10.0	0.50	µg/L	10.0		100	70-130			
1,1,2-Trichloroethane	9.51	0.50	µg/L	10.0		95.1	70-130			
Trichloroethylene	8.52	0.50	µg/L	10.0		85.2	70-130			
Trichlorofluoromethane (Freon 11)	9.66	0.50	µg/L	10.0		96.6	70-130			
1,2,3-Trichloropropane	9.36	0.50	µg/L	10.0		93.6	70-130			
1,2,4-Trimethylbenzene	8.94	0.50	µg/L	10.0		89.4	70-130			
1,3,5-Trimethylbenzene	8.56	0.50	µg/L	10.0		85.6	70-130			
Vinyl Acetate	88.8	5.0	µg/L	100		88.8	70-130			V-36
Vinyl Chloride	10.7	0.50	µg/L	10.0		107	60-140			†
m+p Xylene	18.1	1.0	µg/L	20.0		90.6	70-130			
o-Xylene	7.63	0.50	µg/L	10.0		76.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	26.0		µg/L	25.0		104	70-130			
Surrogate: Toluene-d8	26.1		µg/L	25.0		105	70-130			
Surrogate: 4-Bromofluorobenzene	25.8		µg/L	25.0		103	70-130			

LCS Dup (B182561-BS1)

Prepared & Analyzed: 07/26/17

Acetone	85.7	50	µg/L	100		85.7	70-130	12.2	25	†
Benzene	10.2	0.50	µg/L	10.0		102	70-130	5.44	25	
Bromobenzene	9.54	0.50	µg/L	10.0		95.4	70-130	3.40	25	
Bromochloromethane	9.71	0.50	µg/L	10.0		97.1	70-130	3.54	25	
Bromodichloromethane	9.37	0.50	µg/L	10.0		93.7	70-130	1.80	25	
Bromoform	8.51	0.50	µg/L	10.0		85.1	70-130	4.48	25	
Bromomethane	9.32	1.0	µg/L	10.0		93.2	60-140	2.02	25	†
2-Butanone (MEK)	99.5	5.0	µg/L	100		99.5	70-130	5.10	25	†
n-Butylbenzene	9.11	0.50	µg/L	10.0		91.1	70-130	3.35	25	
sec-Butylbenzene	9.29	0.50	µg/L	10.0		92.9	70-130	4.01	25	
tert-Butylbenzene	8.97	0.50	µg/L	10.0		89.7	70-130	5.84	25	
Carbon Tetrachloride	9.61	0.50	µg/L	10.0		96.1	70-130	6.25	25	
Chlorobenzene	9.32	0.50	µg/L	10.0		93.2	70-130	4.71	25	
Ethanol	90.8	50	µg/L	100		90.8	70-130	3.81	25	V-36
Chlorodibromomethane	9.38	0.50	µg/L	10.0		93.8	70-130	2.11	25	
Chloroethane	8.45	0.50	µg/L	10.0		84.5	60-140	11.0	25	
Chloroform	9.57	0.50	µg/L	10.0		95.7	70-130	2.58	25	
Chloromethane	10.4	0.60	µg/L	10.0		104	60-140	4.42	25	†
2-Chlorotoluene	9.35	0.50	µg/L	10.0		93.5	70-130	4.60	25	
4-Chlorotoluene	9.42	0.50	µg/L	10.0		94.2	70-130	3.65	25	

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B182561 - SW-846 5030B										
LCS Dup (B182561-BSD1)										
Prepared & Analyzed: 07/26/17										
1,2-Dibromoethane (EDB)	9.18	0.50	µg/L	10.0		91.8	70-130	1.73	25	
1,2-Dichlorobenzene	9.35	0.50	µg/L	10.0		93.5	70-130	2.33	25	
1,3-Dichlorobenzene	9.57	0.50	µg/L	10.0		95.7	70-130	2.99	25	
1,4-Dichlorobenzene	9.39	0.50	µg/L	10.0		93.9	70-130	5.89	25	
Dichlorodifluoromethane (Freon 12)	9.30	0.50	µg/L	10.0		93.0	60-140	0.972	25	V-34 †
1,1-Dichloroethane	8.53	0.50	µg/L	10.0		85.3	70-130	4.25	25	
1,2-Dichloroethane	9.49	0.50	µg/L	10.0		94.9	70-130	2.02	25	
1,1-Dichloroethylene	9.63	0.50	µg/L	10.0		96.3	70-130	6.63	25	
cis-1,2-Dichloroethylene	9.42	0.50	µg/L	10.0		94.2	70-130	1.89	25	
trans-1,2-Dichloroethylene	9.40	0.50	µg/L	10.0		94.0	70-130	3.04	25	
1,2-Dichloropropane	9.29	0.50	µg/L	10.0		92.9	70-130	4.42	25	
1,3-Dichloropropane	9.26	0.50	µg/L	10.0		92.6	70-130	2.98	25	
2,2-Dichloropropane	8.32	0.50	µg/L	10.0		83.2	70-130	3.31	25	†
1,1-Dichloropropene	9.26	0.50	µg/L	10.0		92.6	70-130	3.19	25	
cis-1,3-Dichloropropene	8.66	0.50	µg/L	10.0		86.6	70-130	3.63	25	
trans-1,3-Dichloropropene	8.70	0.50	µg/L	10.0		87.0	70-130	2.39	25	
Diisopropyl Ether (DIPE)	8.88	0.50	µg/L	10.0		88.8	70-130	4.30	25	
Ethylbenzene	9.38	0.50	µg/L	10.0		93.8	70-130	2.94	25	
2-Hexanone (MBK)	88.2	5.0	µg/L	100		88.2	70-130	4.91	25	†
Isopropylbenzene (Cumene)	8.00	0.50	µg/L	10.0		80.0	70-130	4.76	25	
p-Isopropyltoluene (p-Cymene)	8.28	0.50	µg/L	10.0		82.8	70-130	4.72	25	
Methyl tert-Butyl Ether (MTBE)	8.88	0.50	µg/L	10.0		88.8	70-130	8.41	25	
Methylene Chloride	10.4	5.0	µg/L	10.0		104	70-130	8.23	25	
4-Methyl-2-pentanone (MIBK)	89.4	5.0	µg/L	100		89.4	70-130	3.56	25	†
Naphthalene	6.92	0.50	µg/L	10.0		69.2 *	70-130	6.30	25	L-07 †
n-Propylbenzene	8.51	0.50	µg/L	10.0		85.1	70-130	5.04	25	
Styrene	7.55	0.50	µg/L	10.0		75.5	70-130	4.66	25	
1,1,2,2-Tetrachloroethane	10.2	0.50	µg/L	10.0		102	70-130	7.73	25	
Tetrachloroethylene	9.44	0.50	µg/L	10.0		94.4	70-130	1.47	25	
Toluene	9.80	0.50	µg/L	10.0		98.0	70-130	0.102	25	
1,2,3-Trichlorobenzene	8.27	0.50	µg/L	10.0		82.7	70-130	5.30	25	
1,2,4-Trichlorobenzene	7.90	0.50	µg/L	10.0		79.0	70-130	3.24	25	
1,1,1-Trichloroethane	9.46	0.50	µg/L	10.0		94.6	70-130	5.85	25	
1,1,2-Trichloroethane	9.27	0.50	µg/L	10.0		92.7	70-130	2.56	25	
Trichloroethylene	8.29	0.50	µg/L	10.0		82.9	70-130	2.74	25	
Trichlorofluoromethane (Freon 11)	9.12	0.50	µg/L	10.0		91.2	70-130	5.75	25	
1,2,3-Trichloropropane	8.73	0.50	µg/L	10.0		87.3	70-130	6.97	25	
1,2,4-Trimethylbenzene	8.60	0.50	µg/L	10.0		86.0	70-130	3.88	25	
1,3,5-Trimethylbenzene	8.22	0.50	µg/L	10.0		82.2	70-130	4.05	25	
Vinyl Acetate	82.6	5.0	µg/L	100		82.6	70-130	7.26	25	V-36
Vinyl Chloride	9.99	0.50	µg/L	10.0		99.9	60-140	6.96	25	†
m+p Xylene	17.2	1.0	µg/L	20.0		86.0	70-130	5.10	25	
o-Xylene	7.17	0.50	µg/L	10.0		71.7	70-130	6.22	25	
Surrogate: 1,2-Dichloroethane-d4	25.2		µg/L	25.0		101	70-130			
Surrogate: Toluene-d8	26.4		µg/L	25.0		105	70-130			
Surrogate: 4-Bromofluorobenzene	25.3		µg/L	25.0		101	70-130			

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

FLAG/QUALIFIER SUMMARY

- * QC result is outside of established limits.
 - † Wide recovery limits established for difficult compound.
 - ‡ Wide RPD limits established for difficult compound.
 - # Data exceeded client recommended or regulatory level
- Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
No results have been blank subtracted unless specified in the case narrative section.
- J Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
 - L-04 Laboratory fortified blank/laboratory control sample recovery and duplicate recovery are outside of control limits. Reported value for this compound is likely to be biased on the low side.
 - L-07 Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
 - L-07A Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
 - R-05 Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
 - V-34 Initial calibration verification (ICV) did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
 - V-36 Initial calibration verification (ICV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SM21-22 6200B in Water</i>	
Acetone	NC
Benzene	NC
Bromobenzene	NC
Bromochloromethane	NC
Bromodichloromethane	NC
Bromoform	NC
Bromomethane	NC
2-Butanone (MEK)	NC
n-Butylbenzene	NC
sec-Butylbenzene	NC
tert-Butylbenzene	NC
Carbon Tetrachloride	NC
Chlorobenzene	NC
Ethanol	NC
Chlorodibromomethane	NC
Chloroethane	NC
Chloroform	NC
Chloromethane	NC
2-Chlorotoluene	NC
4-Chlorotoluene	NC
1,2-Dibromoethane (EDB)	NC
1,2-Dichlorobenzene	NC
1,3-Dichlorobenzene	NC
1,4-Dichlorobenzene	NC
Dichlorodifluoromethane (Freon 12)	NC
1,1-Dichloroethane	NC
1,2-Dichloroethane	NC
1,1-Dichloroethylene	NC
cis-1,2-Dichloroethylene	NC
trans-1,2-Dichloroethylene	NC
1,2-Dichloropropane	NC
1,3-Dichloropropane	NC
2,2-Dichloropropane	NC
1,1-Dichloropropene	NC
cis-1,3-Dichloropropene	NC
trans-1,3-Dichloropropene	NC
Diisopropyl Ether (DIPE)	NC
Ethylbenzene	NC
2-Hexanone (MBK)	NC
Isopropylbenzene (Cumene)	NC
p-Isopropyltoluene (p-Cymene)	NC
Methyl tert-Butyl Ether (MTBE)	NC
Methylene Chloride	NC
4-Methyl-2-pentanone (MIBK)	NC
Naphthalene	NC
n-Propylbenzene	NC
Styrene	NC

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
<i>SM21-22 6200B in Water</i>	
1,1,2,2-Tetrachloroethane	NC
Tetrachloroethylene	NC
Toluene	NC
1,2,3-Trichlorobenzene	NC
1,2,4-Trichlorobenzene	NC
1,1,1-Trichloroethane	NC
1,1,2-Trichloroethane	NC
Trichloroethylene	NC
Trichlorofluoromethane (Freon 11)	NC
1,2,3-Trichloropropane	NC
1,2,4-Trimethylbenzene	NC
1,3,5-Trimethylbenzene	NC
Vinyl Acetate	NC
Vinyl Chloride	NC
m+p Xylene	NC
o-Xylene	NC

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Public Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Page 2 of 2

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
http://www.contestlabs.com



Company Name: SOME INC. Telephone: (919) 872-2660

Address: 3201 Spring Forest Rd. Raleigh NC 27616 Project # TF-6896 4305-17-108

Attention: Mike Pfeister Client PO# _____

Project Location: Star Flite 52 1904 St. Albans Dr. Raleigh, NC

Sampled By: James Waters Email: m.pfeister@someinc.com

Project Proposal Provided? (for billing purposes) Yes No

Format: PDF EXCEL OGIS OTHER

Collection "Enhanced Data Package"

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code
09	MW-1	7/20/17	1215		<input checked="" type="checkbox"/>	GW	V
10	MW-5		1240				
11	MW-14		1125				
12	MW-20		1045				
13	MW-30		1000				
14	Field Blank 7-20-17		1135				

Comments: _____

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature) James A. Waters Date/Time: 7/20/17 1457

Received by: (signature) Paul Pfeister Date/Time: 7/20/17 1451

Relinquished by: (signature) Paul Pfeister Date/Time: 7/20/17 1715

Received by: (signature) Paul Pfeister Date/Time: 7-21-17 9:21

Turnaround (business days) STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. THIS FORM IS NOT FILLED OUT COMPLETELY OR IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED.

Turnaround: 3.0 Requires Lab Approval

Analysis Requested

*****Container Code**
of Containers
** Preservation
*** Container Code

Dissolved Metals
 Field Filtered
 Lab to Filter

*****Cont. Code:**
A=amber glass
G=glass
P=plastic
ST=sterile
V=vial
S=summa can
T=tedlar bag
O=Other

****Preservation**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
X = Na hydroxide
T = Na thiosulfate
O = Other

***Matrix Code:**
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other DI water

Program Information
 DSCA IHSB Orphaned Landfill
 SWS Landfill UST REC
 Other: _____

Detection Limit Requirements
North Carolina
 2L GWPC SWSL OTHER

Turnaround
 5-Day 5-7-Day 10-Day RUSH 24-Hr r 48-Hr 72-Hr r 4-Day

NECAC
ACCEPTED IN ACCORDANCE WITH
NELAC & AIHA Certified
WBE/DBE Certified

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT



FedEx® Tracking

779699156905

Ship date:
Thu 7/20/2017
Raleigh, NC US



Delivered

Signed for by: P.BLAKE

Actual delivery:
Fri 7/21/2017 9:21 am
EAST LONGMEADOW, MA US

2 Piece shipment

Travel History

Date/Time	Activity	Location
- 7/21/2017 - Friday		
9:21 am	Delivered	EAST LONGMEADOW, MA
7:35 am	On FedEx vehicle for delivery	WINDSOR LOCKS, CT
7:29 am	At local FedEx facility	WINDSOR LOCKS, CT
6:14 am	At destination sort facility	EAST GRANBY, CT
4:39 am	Departed FedEx location	INDIANAPOLIS, IN
- 7/20/2017 - Thursday		
11:44 pm	Arrived at FedEx location	INDIANAPOLIS, IN
8:45 pm	Left FedEx origin facility	DURHAM, NC
5:40 pm	Picked up	RALEIGH, NC
4:20 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	779699156905	Service	FedEx Priority Overnight
Master tracking number	779699156905	Weight	15 lbs / 6.8 kgs
Dimensions	24x14x14 in.	Delivered To	Shipping/Receiving
Total pieces	2	Total shipment weight	47.2 lbs / 21.41 kgs
Terms	Third Party	Shipper reference	80
Packaging	Your Packaging	Special handling section	Deliver Weekday. Additional Handling Surcharge
Standard transit	7/21/2017 by 10:30 am		



Search or tracking number

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- Small Business Center
- Service Guide
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con-test[®]
 ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client S+ME
 Received By PB Date 7.21.17 Time 9:21

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
 Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 2 Actual Temp - 3.0
 By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? F
 Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T
 Did COC include all pertinent Information? Client T Analysis T Sampler Name T
 Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T
 Are there Lab to Filters? F Who was notified? _____
 Are there Rushes? F Who was notified? _____
 Are there Short Holds? F Who was notified? _____

Is there enough Volume? T
 Is there Headspace where applicable? F MS/MSD? NA
 Proper Media/Containers Used? T Is splitting samples required? F
 Were trip blanks received? F On COC? NA
 Do all samples have the proper pH? NA Acid _____ Base _____

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-	<u>42</u>	500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Unused Media

Vials	#	Containers:	#	#	#
Unp-		1 Liter Amb.		1 Liter Plastic	16 oz Amb.
HCL-		500 mL Amb.		500 mL Plastic	8oz Amb/Clear
Meoh-		250 mL Amb.		250 mL Plastic	4oz Amb/Clear
Bisulfate-		Col./Bacteria		Flashpoint	2oz Amb/Clear
DI-		Other Plastic		Other Glass	Encore
Thiosulfate-		SOC Kit		Plastic Bag	Frozen:
Sulfuric-		Perchlorate		Ziplock	

Comments: