Solutions-IES
Industrial & Environmental Services

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December 12, 2016

Mr. Terry Fox, L.G.
North Carolina Department of Transportation
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Reference: **Preliminary Site Assessment**
Edward Schantz Property (Parcel #139)
6006 Raeford Road
Fayetteville, Cumberland County, North Carolina
State Project: U-4405
WBS Element 39049.1.1
SIES Project No. 2016.0054.NDOT

Dear Mr. Fox:

Solutions-IES, Inc., (SIES) has completed the Preliminary Site Assessment conducted at the above-referenced property. The work was performed in accordance with the Technical and Cost proposal dated September 26, 2016, and the North Carolina Department of Transportation's (NCDOT's) Notice to Proceed dated September 26, 2016. Activities associated with the assessment consisted of conducting a geophysical investigation, collecting soil samples for analysis, and reviewing applicable North Carolina Department of Environmental Quality (NCDEQ) records. 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 Edward Schantz Property (Parcel #139) is located at 6006 Raeford Road in Fayetteville, Cumberland County, North Carolina. The property is situated on the north side of Raeford Road approximately 200 feet west of the intersection of Raeford Road and Skibo Road. Beaver Creek borders the property on the west side (**Figure 1**). The property consists of an active auto service, salvage, and body shop (Ed's Auto Service and Salvage/Cross Creek Body Shop). No visual evidence of underground storage tanks (USTs) was noted during the assessment activities.

A concrete parking area occupies the area in front of the building and salvage yard in the rear of the facility (**Figure 2**). The proposed easement had not been marked at the site at the time of the field work, but NCDOT plan sheets show that the easement will not affect the building.

The NCDOT requested a Preliminary Site Assessment for the right-of-way and proposed easement because the property contains an active automotive repair and salvage yard. 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 right-of-way/proposed easement. Because the property contains an automotive repair facility, the NCDOT directed SIES to evaluate the right-of-way/easement for the presence of solvents in addition to petroleum. An estimate of the quantity of impacted soil is to be provided, should impacted soils be encountered.

SIES reviewed the on-line NCDEQ Incident Management database and no incident number was assigned to the site. SIES also examined the UST registration database and found no tanks registered to the property address.

Geophysical Survey

Prior to SIES' mobilization to the site, Pyramid Environmental & Engineering of Greensboro, NC (Pyramid) conducted a geophysical survey in the right-of-way/proposed easement to determine if unknown USTs were present in that area. The geophysical survey consisted of an electromagnetic survey using a Geonics EM61 time-domain electromagnetic 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. The instruments were used specifically to locate USTs.

A survey grid was laid out along the right-of-way/proposed easement with the X-axis oriented approximately parallel to Raeford Road and the Y-axis oriented approximately perpendicular to Raeford Road. The grid was positioned to cover the entire right-of-way/proposed easement. The grid was positioned to cover the entire right-of-way/proposed easement, as shown on **Figure 2** of the geophysical survey report in **Attachment A**.

The survey lines were spaced five feet apart and magnetic data were collected continuously along each survey line with a data logger. After collection, the data were reviewed in the field with graphical computer software. Following the electromagnetic survey, a GPR survey was conducted to further evaluate any significant metallic anomalies.

Access was available to all areas of the property, and several anomalies were detected with the geophysical survey. The anomalies were attributed to visible cultural features, metallic debris, underground utilities, signage, or vehicles. Pyramid's detailed report of findings and interpretations is presented in **Attachment A**.

Site Assessment Activities

On October 27, 2016, SIES mobilized to the site to conduct a Geoprobe® direct-push investigation to evaluate subsurface soil conditions on the property to a depth of 10 feet below ground surface (ft bgs). Four direct-push holes (139-SB-1 through 139-SB-4) were advanced throughout the right-of-way/proposed easement (**Figure 2).** As shown on the figure, a northwest oriented easement is located on the west side of the building to an area behind a chain-link fence. SIES proposed one boring in that area; however, Hurricane Matthew caused Beaver Creek to flood and significantly undercut the concrete in the vicinity, creating an unsafe area from which to advance a soil boring. Therefore, no subsurface soil sampling was conducted behind the fence. The soil boring logs are included as **Attachment B**. Borings 139-SB-1 through 139-SB-4 were located to evaluate the subsurface conditions in the right-of-way/easement along Raeford Road (see photos in **Attachment C**).

Continuous sampling using a Geoprobe® resulted in generally good recovery of soil samples from the direct-push holes. Soil samples were collected and contained 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**).

Two samples per boring were submitted for analysis; the depth interval with the highest PID reading and one from the bottom (**Table 1**). The selected soil samples were submitted to an on-site mobile laboratory for analysis of total petroleum hydrocarbons (TPH) diesel range organics (DRO) and gasoline range organics (GRO) using ultraviolet fluorescence (UVF) methodology. To evaluate the property with respect to solvents, the soil sample with the highest DRO or GRO result from each boring was submitted to Pace Analytical in Huntersville, NC, for analysis of volatile organic compounds (VOCs) using Method 8260. Each boring was backfilled with bentonite and drill cuttings to the surface after completion.

The lithology encountered by the direct-push samples was generally consistent throughout the site. The ground surface was covered with about 0.5 feet of concrete. Below this surface cover was a light brown fine-grained sand. In borings 139-SB-1 through 139-SB-3, the sand is present to a depth ranging from six to eight ft bgs and is underlain by a mottled red and brown clayey sand. This clayey sand thins in the direction of Beaver Creek and is absent in boring 139-SB-4, which is closest to the creek. No bedrock or groundwater was noted in any of the borings.

According to the 1985 Geologic Map of North Carolina, the site is within of Coastal Plain Physiographic Province in North Carolina near the contact between the Cretaceous Black Creek and Middendorf

Formations. The strata of the Black Creek Formation consist of gray to black clay, thin lenses of fine-grained sand and thick lenses of cross-bedded sand. The lithology may also include glauconite and fossils. In comparison, the Middendorf Formation consists of sand, sandstone, and mudstone that are laterally discontinuous. The soils observed at the site are consistent with the MIddendorf Formation as the parent material.

Analytical Results

The laboratory data are summarized in **Table 1** and the complete report is presented in **Attachment D**. Eight soil samples were submitted for analysis (two samples per boring). Of these samples, four contained detectable GRO compounds ranging from 0.6 to 9.7 milligrams per kilogram (mg/kg). Six of the soil samples contained detectable DRO compounds ranging from 1.3 to 38 mg/kg. The action levels are 50 mg/kg for GRO and 100 mg/kg for DRO[1]. None of the soil samples analyzed for this site contained DRO or GRO concentrations above their respective action levels.

The soil sample with the highest UVF concentrations from each boring was submitted for VOC analysis using Method 8260. As shown on **Table 1** and presented in **Attachment D**, acetone was detected in three of the four soil samples analyzed at concentrations ranging from 0.12 to 0.16 mg/kg. Acetone is a common solvent used in various industries, including degreasers used in automotive repair shops and as a laboratory equipment cleaner. Its consistent presence throughout the investigation area suggests it may be a result of site activities rather than a laboratory artifact. Solvent releases are under the jurisdiction of the NCDEQ's Division of Waste Management Hazardous Waste Section. Action levels for compounds are given in that agency's Preliminary Soil Remediation Goals (PSRGs). The Protection of Groundwater PSRG, the most stringent action level, for acetone is 24 mg/kg. None of the concentrations detected in the soil from the site are above this action level.

Conclusions and Recommendations

A Preliminary Site Assessment was conducted to evaluate the Edward Schantz Property (Parcel #139) located at 6006 Raeford Road in Fayetteville, Cumberland County, North Carolina. A geophysical survey conducted at the site indicated that no metallic USTs were detected within then right-of-way/proposed easement on the site. Four soil borings were advanced to evaluate the subsurface soil conditions along the right-of-way/proposed easement. None of the eight soil samples analyzed had a GRO or DRO concentration above the action level. Analysis of four soil samples for VOCs indicated that acetone was present in three of the four samples, but the concentrations were below the applicable action level.

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

None of the soil samples had contaminant concentrations above applicable action levels (Table 1). Therefore, no estimate of the volume of soil requiring possible remediation was made.

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

Sincerely,

Michael W. Branson, P.G.
Project Manager

John Palmer, P.G.
Senior Hydrogeologist

Attachments

TABLE 1
SOIL FIELD SCREENING AND ANALYTICAL RESULTS
SHANTZ PROPERTY (PARCEL #139)
FAYETTEVILLE, CUMBERLAND COUNTY, NORTH CAROLINA
STATE PROJECT: U-4405
WBS ELEMENT 39049.1.1
SIES PROJECT NO. 2016.0054.NDOT

SAMPLE ID	DEPTH (ft)	PID READING (ppm)	SAMPLE ID	ANALYTICAL RESULTS (mg/kg)		
				UVF GRO	UVF DRO	Acetone
	Action Level (mg/kg)			50	100	24*
139-SB-1	0 - 2	0.6				
	2 - 4	0.4				
	4 - 6	0.6	139-SB-1-4-6	<0.59	<0.59	
	6 - 8	0.0				
	8 - 10	0.6	139-SB-1-8-10	<0.78	<0.78	<0.112
139-SB-2	0 - 2	0.3				
	2 - 4	0.3				
	4 - 6	1.8	139-SB-2-4-6	<0.67	**10.1**	**0.160**
	6 - 8	1.0				
	8 - 10	0.8	139-SB-2-8-10	**0.92**	**1.3**	
139-SB-3	0 - 2	0.6				
	2 - 4	0.5				
	4 - 6	0.9				
	6 - 8	1.1	139-SB-3-6-8	<0.67	**38**	**0.129**
	8 - 10	0.8	139-SB-3-8-10	**9.7**	**13.3**	
139-SB-4	0 - 2	0.3				
	2 - 4	0.3				
	4 - 6	0.3				
	6 - 8	0.4	139-SB-4-6-8	**6.2**	**21.6**	
	8 - 10	0.6	139-SB-4-8-10	**0.60**	**33.1**	**0.147**

1) ft - feet

2) ppm - parts per million.

3) PID - photoionization ionization detector

4) mg/kg - milligrams per kilogram.

5) UVF DRO - Diesel range organics by UVF.

6) UVF GRO - Gasoline range organics by UVF.

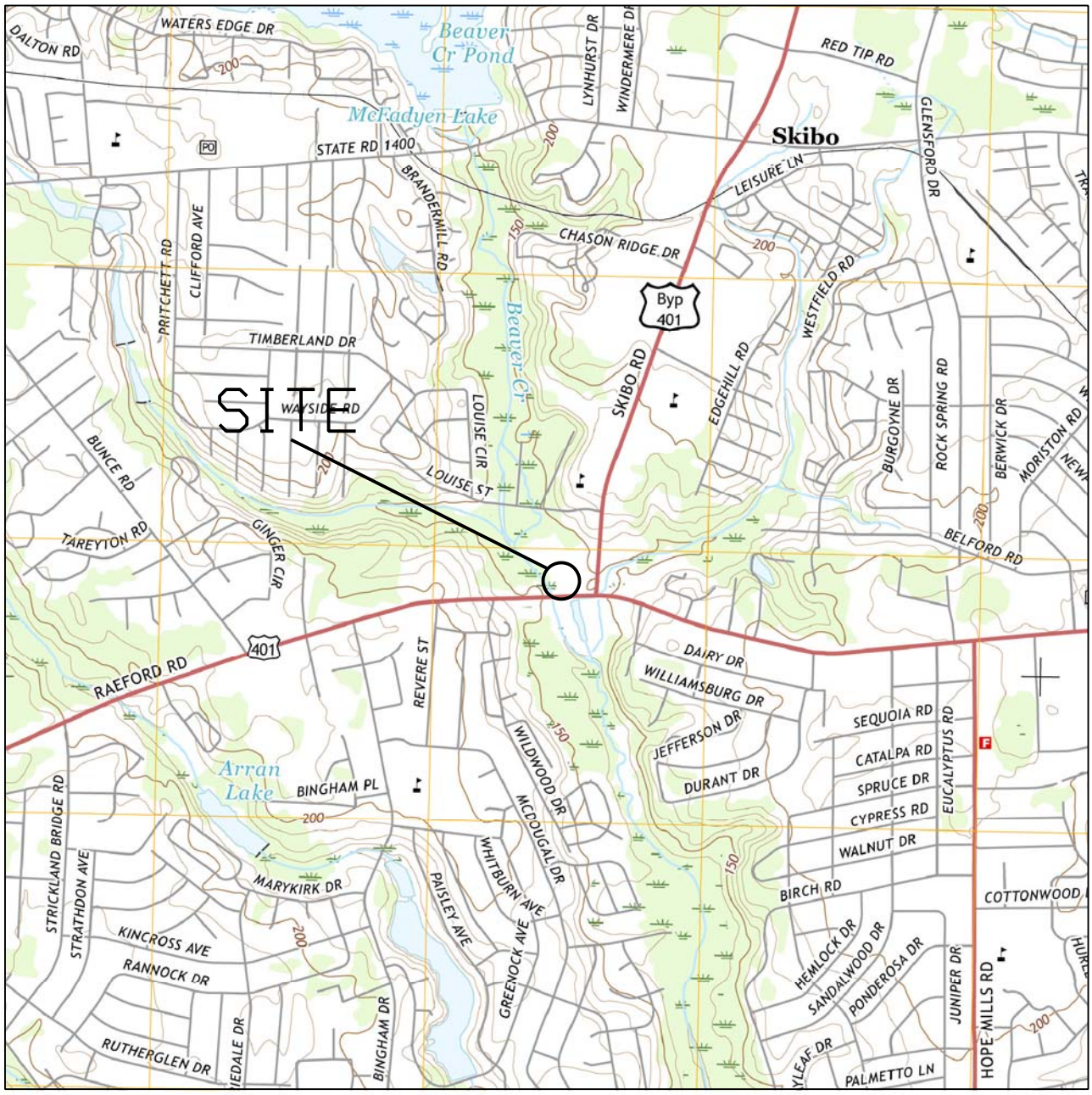
7) Action level based upon NCDEQ memo *Guidelines for North Carolina Action Limits for Total Petroleum Hydrocarbons* - July 29, 2016.

8) Soil samples were collected on October 27, 2016.

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

10) * - Soil-to-groundwater Maximum Soil Contaminant Concentration

FIGURES



SCALE 1:24,000

1 0 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

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

PROJECT NUMBER 2016.0054.NDOT
CHECKED BY JEP
PROJECT MANAGER MWB
DATE NOVEMBER 2016
FILE FAYETTEVILLE PSAS

Solutions-IES
Industrial & Environmental Services
1101 NOWELL ROAD
RALEIGH, NORTH CAROLINA 27607
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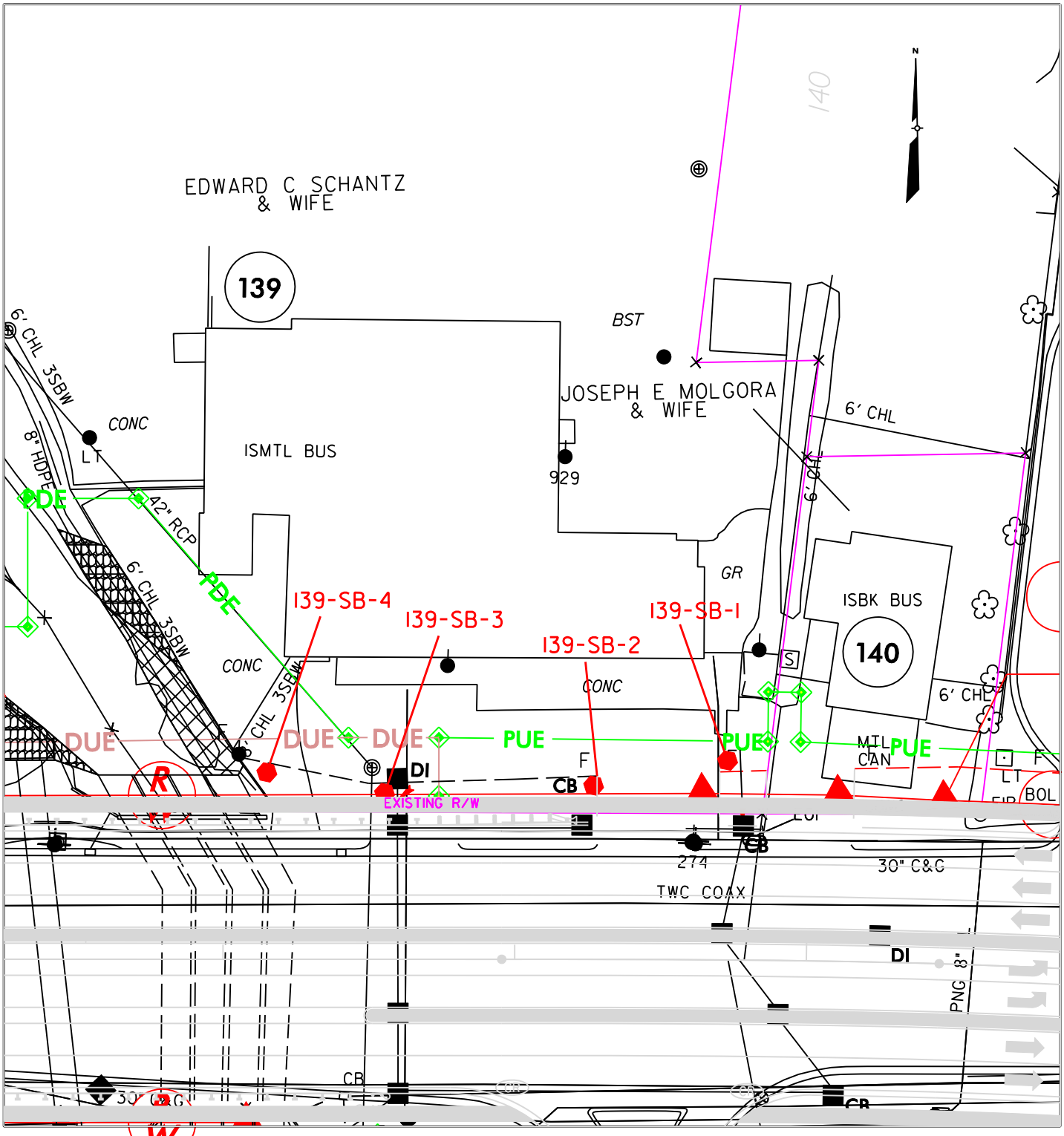
VICINITY MAP

SCHANTZ PROPERTY (PARCEL #139)
FAYETTEVILLE, CUMBERLAND COUNTY NORTH CAROLINA

FIGURE 1

PROJECT NUMBER 2016.0054.NDOT
DRAFTER MWB
CHECKED BY JEP
PROJECT MANAGER MWB
DATE NOVEMBER 2016
FAYETTEVILLE PSAS
FILE



LEGEND

139-SB-1

SOIL SAMPLE LOCATION AND IDENTIFICATION

0 25 50
GRAPHIC SCALE (FEET)

Solutions-IES
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1101 NOWELL ROAD
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SITE MAP

SCHANTZ PROPERTY (PARCEL #139)

FAYETTEVILLE, CUMBERLAND COUNTY, NORTH CAROLINA

FIGURE 2

...\reports\FIGURES\139.dgn 11/8/2016 2:52:08 PM

ATTACHMENT A

PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2016-265)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCEL 139 – EDWARD SCHANTZ NCDOT PROJECT U-4405

6006 RAEFORD RD., FAYETTEVILLE, CUMBERLAND COUNTY, NC

NOVEMBER 4, 2016

Report prepared for:

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Prepared by: _____

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GEOPHYSICAL INVESTIGATION REPORT
Parcel 139 – 6006 Raeford Road
Fayetteville, Cumberland County, North Carolina

Table of Contents

Figures

Appendices

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
SVE	Soil Vapor Extraction
UST	Underground Storage Tank

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for Solutions, IES (Solutions) at Parcel 139, located at 6006 Raeford Road, Fayetteville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-4405). Solutions directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to extend from the existing edge of pavement to the proposed ROW lines and/or easement lines within the property, whichever distance was greater. Conducted from October 12-17, 2016, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Geophysical Results: The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. Minor EM features on the east portion of the survey were suspected to be associated with buried metallic debris, and were investigated by GPR. The GPR scans revealed a suspected utility/conduit extending across the survey area from west to east. No additional structures were observed. Collectively, the geophysical data did not show any evidence of unknown metallic USTs at Parcel 139.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Solutions, IES (Solutions) at Parcel 139, located at 6006 Raeford Road, Fayetteville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-4405). Solutions directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to extend from the existing edge of pavement to the proposed ROW lines and/or easement lines within the property, whichever distance was greater. Conducted from October 12-17, 2016, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site included an automotive repair facility surrounded by concrete parking space. Aerial photographs 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 metal detector integrated with a Trimble AG-114 GPS antenna. 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 11.0 software programs.

GPR data were acquired across select EM anomalies on October 17, 2016, 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 4 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	Trailer	
2	Metal Pole	
3	Metal Debris	
4	Manhole	
5	Suspected Metallic Debris	☑
6	Vehicles	
7	Light Pole	
8	Rebar Piece	
9	Trash Can	

The majority of the EM anomalies recorded by the survey were directly attributed to visible cultural features such as a trailer, metal poles, a manhole, vehicles, a rebar piece and a trash can. Isolated minor EM anomalies on the east potion of the survey area (Anomaly 5) were suspected to be associated with minor buried debris, and were investigated further with 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 9 GPR transects were performed at the site across EM anomalies and other areas of interest. Transects 1-3 were performed across a suspected utility/conduit that was observed during reconnaissance GPR scans. This suspected conduit was not evident on the EM differential results contour map included in this report; however, review of the more sensitive bottom coil EM results did provide evidence of a linear feature extending across the property from west to east that was suggestive of a utility/conduit. These GPR transects recorded an isolated, discreet hyperbolic reflector that is consistent with a utility/conduit.

Transects 4-9 were performed across the area containing the minor EM features suspected to be associated with buried metallic debris (Anomaly 5). These transects did not record any significant reflector or disruptions in the data that would be suggestive of distinct objects. It is likely these EM features are associated with minor debris lacking any significant structure.

Collectively, the geophysical data did not show any evidence of unknown metallic USTs at Parcel 139.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 139 in Fayetteville, Cumberland County, 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. Minor EM features on the east portion of the survey were suspected to be associated with buried metallic debris, and were investigate by GPR.
- The GPR scans revealed a suspected utility/conduit extending across the survey area from west to east. No additional structures were observed.
- Collectively, the geophysical data did not show any evidence of unknown metallic USTs at Parcel 139.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Solutions, IES 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.

N↑

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA

View of Survey Area
(Facing Approximately North)

View of Survey Area
(Facing Approximately Northeast)

TITLE
PARCEL 139 - GEOPHYSICAL SURVEY
BOUNDARIES AND SITE PHOTOGRAPHS

PROJECT
6006 RAEFORD ROAD
FAYETTEVILLE, NORTH CAROLINA
NCDOT PROJECT U-4405

Pyramid Geophysics
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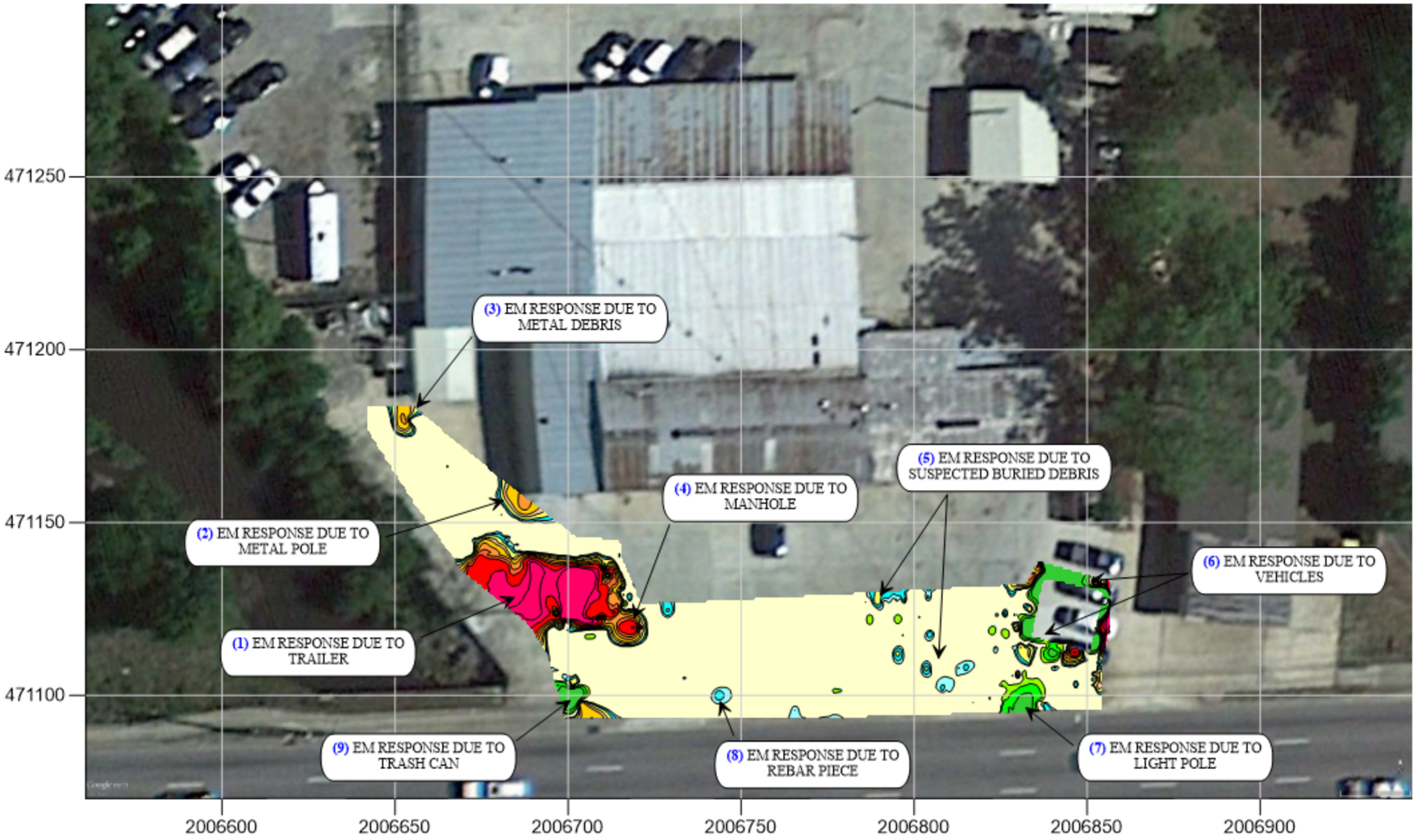
License # C1251 Eng. / License # C257 Geology

DATE 10/31/16	CLIENT SOLUTIONS, IES
PYRAMID PROJECT #: 2016-265	**FIGURE 1**

N↑

EM61 METAL DETECTION RESULTS



NUMBERS IN BLUE (x) CORRESPOND TO ANOMALY TABLE INCLUDED IN THE REPORT

NO EVIDENCE OF UNKNOWN METALLIC 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 October 13, 2016, using a Geonics EM61 instrument. GPR data were collected on October 14, 2016, using a GSSI UtilityScan DF unit with a dual frequency 300/800 MHz antenna.

EM61 Metal Detection Response (millivolts)

TITLE
PARCEL 139 - EM61 RESULTS
CONTOUR MAP

PROJECT
6006 RAEFORD ROAD
FAYETTEVILLE, NORTH CAROLINA
NCDOT PROJECT U-4405

Pyramid Geophysics
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License # C1251 Eng. / License # C257 Geology

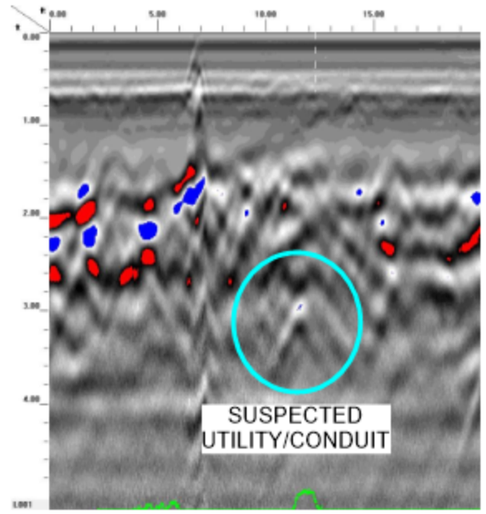
DATE 10/26/2016

CLIENT SOLUTIONS, IES

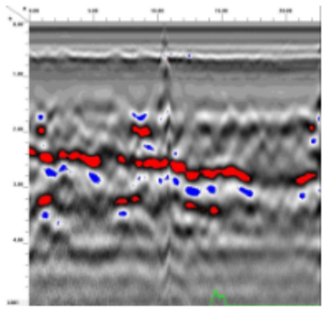
PYRAMID PROJECT #: 2016-265

FIGURE 2

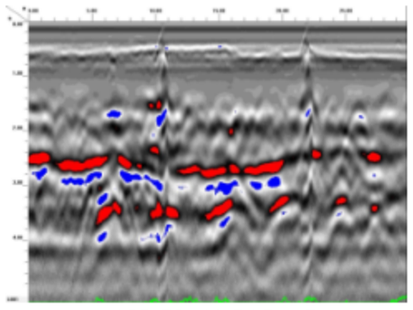
LOCATIONS OF GPR TRANSECTS



GPR TRANSECT 3 (T3)



GPR TRANSECT 4 (T4)



GPR TRANSECT 9 (T9)

TITLE
PARCEL 139 - GPR TRANSECT LOCATIONS AND SELECT IMAGES

PROJECT
6006 RAEFORD ROAD
FAYETTEVILLE, NORTH CAROLINA
NCDOT PROJECT U-4405

Pyramid Geophysics
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License # C1251 Eng. / License # C257 Geology

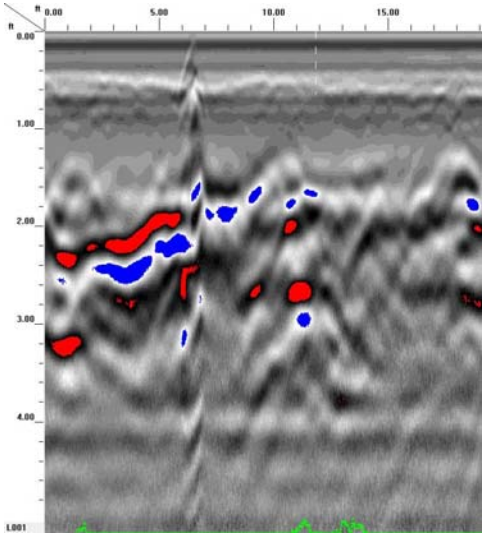
DATE 10/26/2016

CLIENT SOLUTIONS, IES

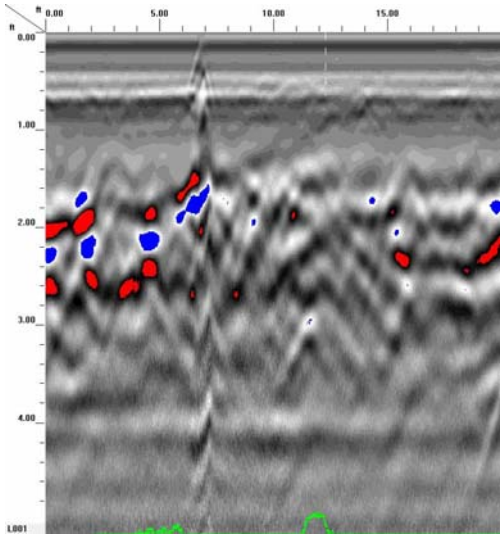
PYRAMID PROJECT #: 2016-265

FIGURE 3

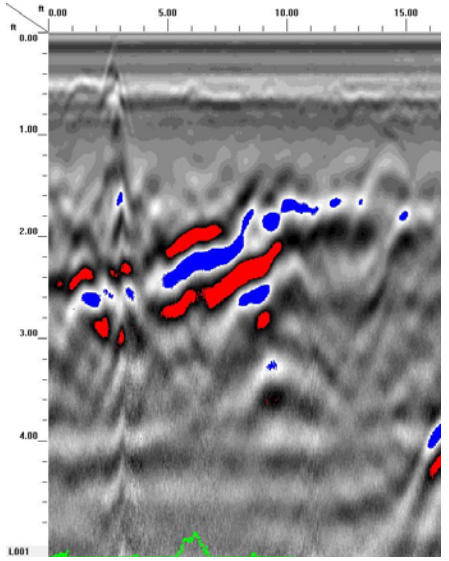
Appendix A – GPR Transect Images



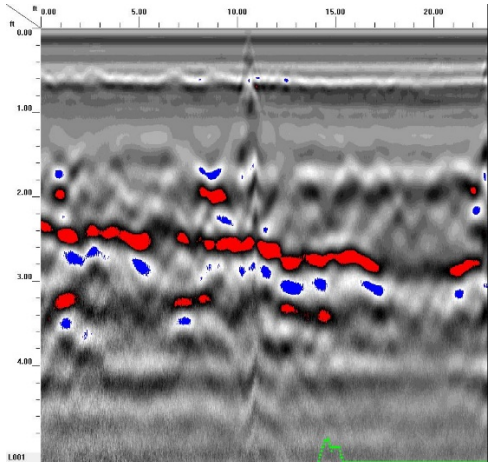
GPR TRANSECT 1



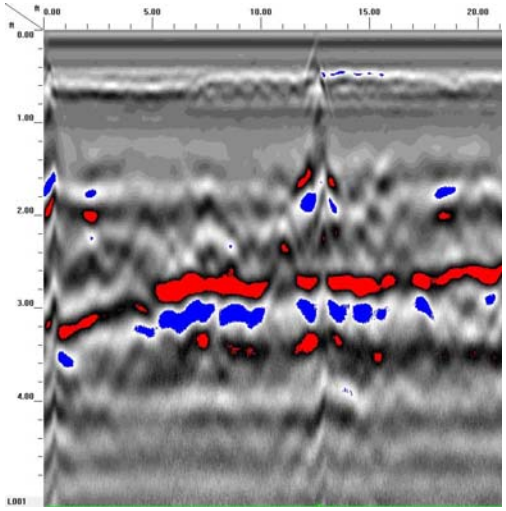
GPR TRANSECT 2



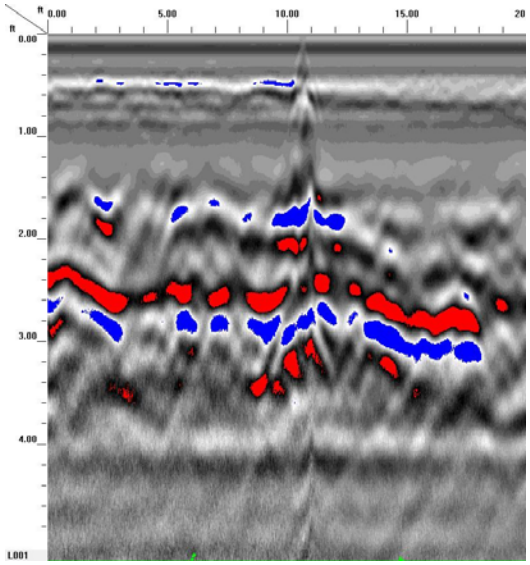
GPR TRANSECT 3



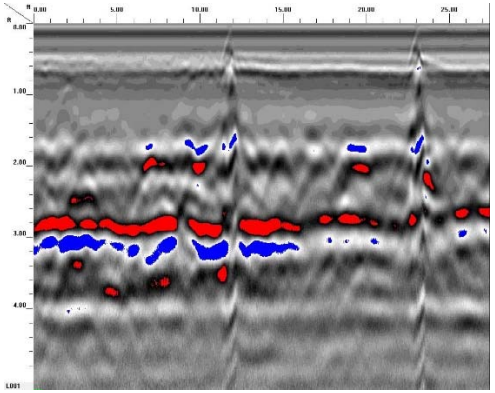
GPR TRANSECT 4



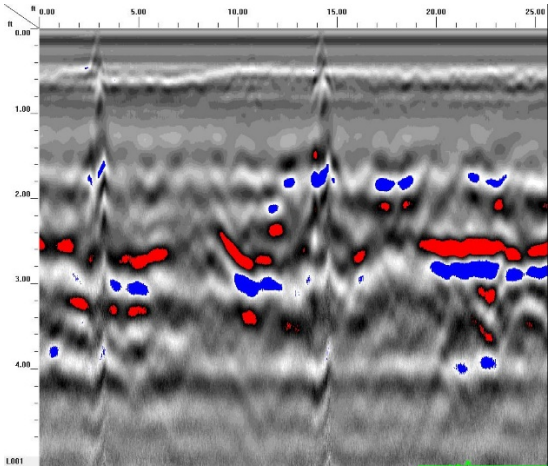
GPR TRANSECT 5



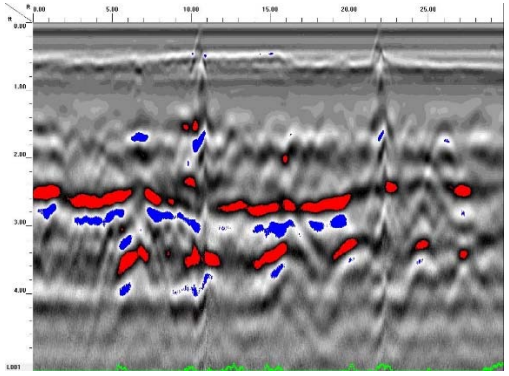
GPR TRANSECT 6



GPR TRANSECT 7



GPR TRANSECT 8



GPR TRANSECT 9

ATTACHMENT B

Solutions-IES
Industrial & Environmental Services

Log of Boring 139-SB-1

BORING LOCATION: Parcel #139, Fayetteville, NC	PROJECT NUMBER: 2016.0054.NDOT
DRILLING CONTRACTOR: Regional Probing Services	DATE STARTED: 10/27/2016 — DATE FINISHED: 10/27/2016
DRILLING METHOD: Direct Push — BOREHOLE DIAMETER: 2.25"	TOTAL DEPTH (ft bgs): 10 ft bgs — SCREEN INTERVAL (ft bgs): NA
DRILLING EQUIPMENT: Geoprobe 5410	NORTHING: NA — EASTING: NA
SAMPLING METHOD: Macro Core	INITIAL DTW: NA — FINAL DTW: NA
LOGGED BY: Samuel McIntyre — CHECKED BY:	

DEPTH (ft bgs)	SAMPLES: Sample ID and Interval	SAMPLES: Recovery	PID (ppm)	DESCRIPTION OF MATERIALS	DEPTH (ft bgs)
0				Concrete.	0
1		80%	0.6	Light brown fine sand. Dry.	1
2					2
3			0.4		3
4	139-SB-1-4-6				4
5		100%	0.6		5
6					6
7			0.0	Light brown and red mottled clayey sand. Dry.	7
8	139-SB-1-8-10				8
9		100%	0.6		9
10				End of Boring	10

Solutions-IES
Industrial & Environmental Services

Log of Boring 139-SB-2

BORING LOCATION: Parcel #139, Fayetteville, NC	PROJECT NUMBER: 2016.0054.NDOT
DRILLING CONTRACTOR: Regional Probing Services	DATE STARTED: 10/27/2016 — DATE FINISHED: 10/27/2016
DRILLING METHOD: Direct Push — BOREHOLE DIAMETER: 2.25"	TOTAL DEPTH (ft bgs): 10 ft bgs — SCREEN INTERVAL (ft bgs): NA
DRILLING EQUIPMENT: Geoprobe 5410	NORTHING: NA — EASTING: NA
SAMPLING METHOD: Macro Core	INITIAL DTW: NA — FINAL DTW: NA
LOGGED BY: Samuel McIntyre — CHECKED BY:	

DEPTH (ft bgs)	SAMPLES: Sample ID and Interval	SAMPLES: Recovery	PID (ppm)	DESCRIPTION OF MATERIALS	DEPTH (ft bgs)
0				Concrete.	0
1		75%	0.3		1
2					2
3			0.3		3
4	139-SB-2-4-6			Light brown fine sand. Dry.	4
5		100%	1.8		5
6					6
7			1.0		7
8	139-SB-2-8-10			Light brown and red mottled clayey sand. Dry.	8
9		100%	0.8		9
10					10

End of Boring

Solutions-IES
Industrial & Environmental Services

Log of Boring 139-SB-3

BORING LOCATION: Parcel #139, Fayetteville, NC	PROJECT NUMBER: 2016.0054.NDOT
DRILLING CONTRACTOR: Regional Probing Services	DATE STARTED: 10/27/2016 — DATE FINISHED: 10/27/2016
DRILLING METHOD: Direct Push — BOREHOLE DIAMETER: 2.25"	TOTAL DEPTH (ft bgs): 10 ft bgs — SCREEN INTERVAL (ft bgs): NA
DRILLING EQUIPMENT: Geoprobe 5410	NORTHING: NA — EASTING: NA
SAMPLING METHOD: Macro Core	INITIAL DTW: NA — FINAL DTW: NA
LOGGED BY: Samuel McIntyre — CHECKED BY:	

DEPTH (ft bgs)	SAMPLES: Sample ID and Interval	SAMPLES: Recovery	PID (ppm)	DESCRIPTION OF MATERIALS	DEPTH (ft bgs)
0				Concrete.	0
1		100%	0.6		1
2					2
3			0.5		3
4				Light brown fine sand. Dry.	4
5			0.9		5
6	139-SB-3-6-8	100%			6
7			1.1		7
8	139-SB-3-8-10				8
9		100%	0.8	Light brown and red mottled clayey sand. Dry.	9
10					10

End of Boring

Solutions-IES
Industrial & Environmental Services

Log of Boring 139-SB-4

BORING LOCATION: Parcel #139, Fayetteville, NC	PROJECT NUMBER: 2016.0054.NDOT
DRILLING CONTRACTOR: Regional Probing Services	DATE STARTED: 10/27/2016 — DATE FINISHED: 10/27/2016
DRILLING METHOD: Direct Push — BOREHOLE DIAMETER: 2.25"	TOTAL DEPTH (ft bgs): 10 ft bgs — SCREEN INTERVAL (ft bgs): NA
DRILLING EQUIPMENT: Geoprobe 5410	NORTHING: NA — EASTING: NA
SAMPLING METHOD: Macro Core	INITIAL DTW: NA — FINAL DTW: NA
LOGGED BY: Samuel McIntyre — CHECKED BY:	

DEPTH (ft bgs)	SAMPLES: Sample ID and Interval	SAMPLES: Recovery	PID (ppm)	DESCRIPTION OF MATERIALS	DEPTH (ft bgs)
0				Concrete.	0
1		100%	0.3		1
2					2
3			0.3		3
4					4
5		100%	0.3	Light brown fine sand. Dry.	5
6	139-SB-4-6-8				6
7			0.4		7
8	139-SB-4-8-10				8
9		100%	0.6		9
10				End of Boring	10

ATTACHMENT C

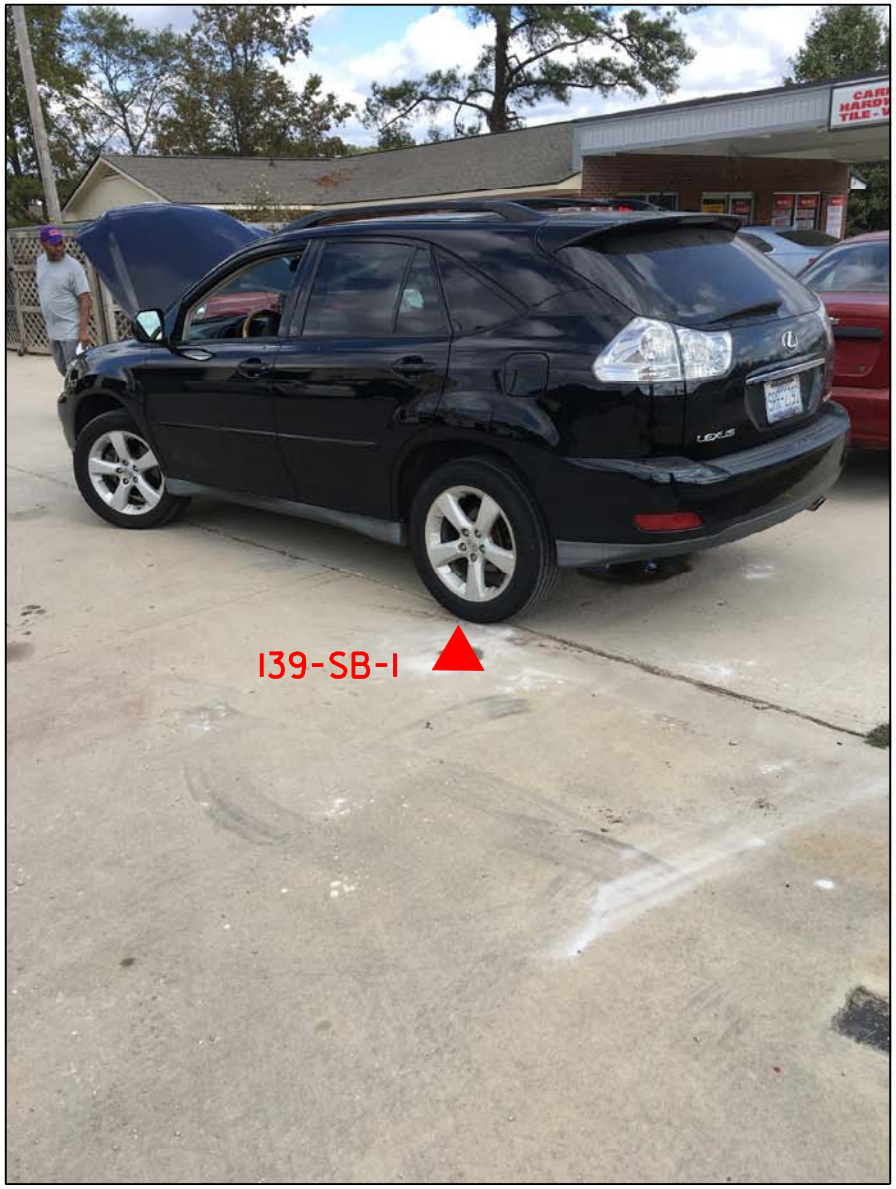


PHOTO 1
SOIL BORING LOOKING NORTHEAST

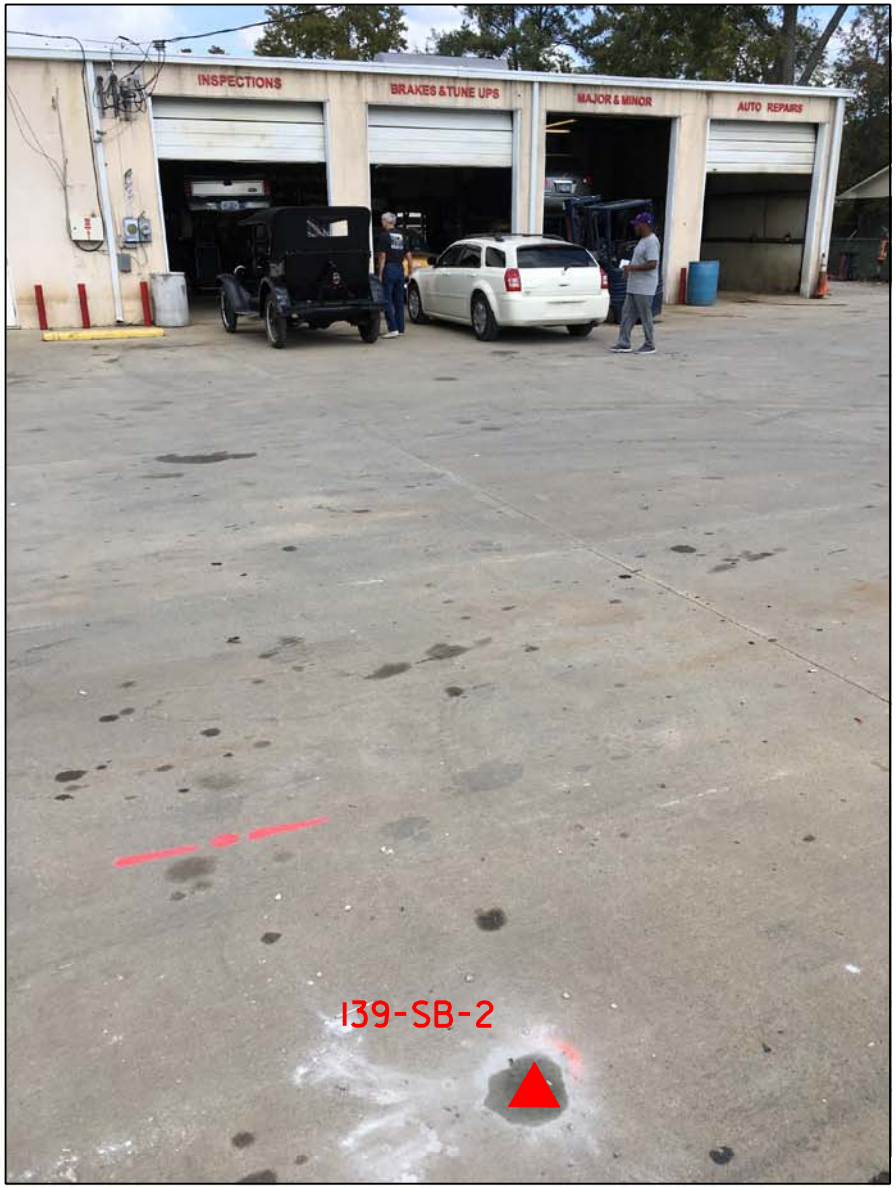


PHOTO 2
SOIL BORING LOOKING NORTH

PHOTO 3
SOIL BORING LOOKING NORTH

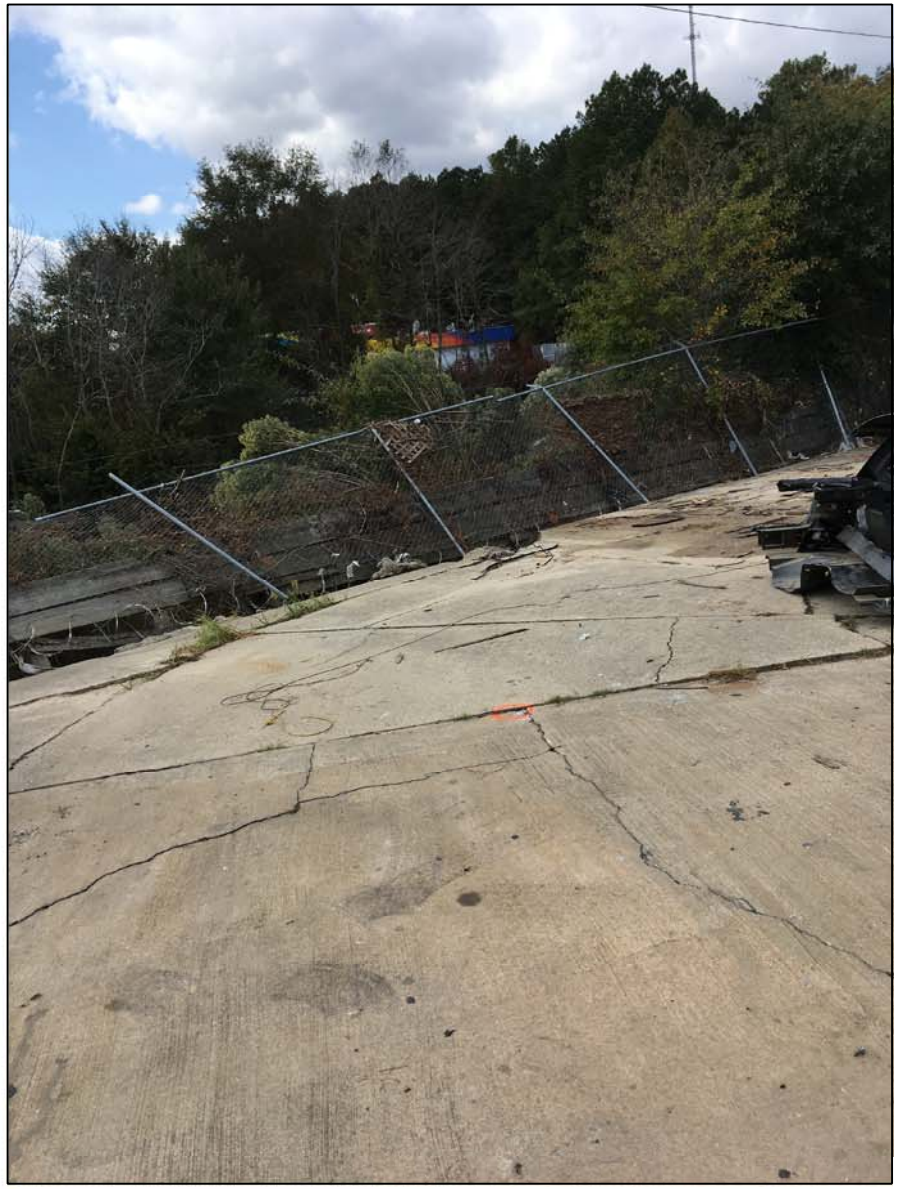


PHOTO 4
INVESTIGATION AREA DAMAGED BY HURRICANE MATTHEW

PHOTO 5

INVESTIGATION AREA DAMAGED BY HURRICANE MATTHEW

ATTACHMENT D

QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: NCDOT
Address: Parcel: 139 6006 Raeford Road
Fayetteville, NC

Contact:

Project: 2016.0054.NDOT

Samples taken 10/27/2016
Samples extracted 10/27/2016
Samples analysed 10/27/2016

Operator Candy Elliott

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
										% light	% mid	% heavy	
s	139-SB-1-4-6	23.5	<0.59	<0.59	<0.59	<0.59	<0.12	<0.02	<0.002	0	0	0	(P) (BO)
s	139-SB-1-8-10	31.1	<0.78	<0.78	<0.78	<0.78	<0.16	<0.02	<0.003	0	0	100	
s	139-SB-2-4-6	26.9	<0.67	<0.67	10.1	10.1	4.6	0.22	0.003	0	74.6	25.4	V.Deg.PHC (FCM) 63.1%
s	139-SB-2-8-10	26.7	<0.67	0.92	1.3	2.2	1.3	0.28	0.018	44.2	40.4	15.3	Pyrogenic HC (FCM) 67.9%
s	139-SB-3-6-8	26.9	<0.67	<0.67	38	38	20	0.92	0.009	0	82.4	17.6	V.Deg.PHC (FCM) 74.5%
s	139-SB-3-8-10	22.5	<0.56	9.7	13.3	23	3.9	0.16	0.002	73.2	21.3	5.5	V.Deg.Gas (FCM) (BO) 68.3%
s	139-SB-4-6-8	26.9	<0.67	6.2	21.6	27.8	8.5	0.38	0.005	44.3	44	11.7	Deg.Fuel (FCM) (BO) 80.7%
s	139-SB-4-8-10	24.1	<0.6	0.6	33.1	33.7	19.7	0.77	0.008	2.7	84	13.3	Deg.Fuel (FCM) (BO) 82%

Initial Calibrator QC check OK

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

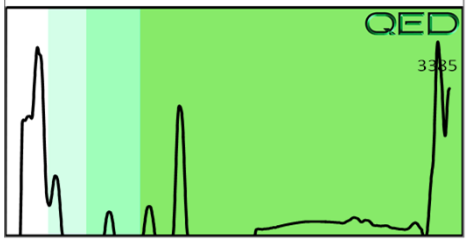
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

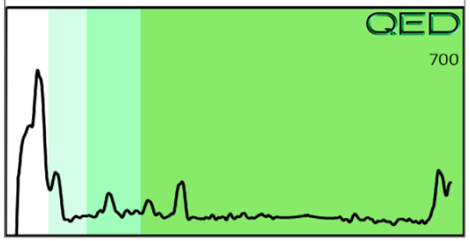
QED Hydrocarbon Fingerprints

Project: 2016.0054.NDOT 10/27/2016

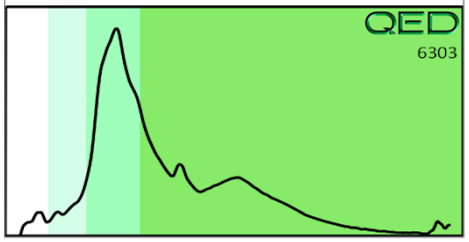
139-SB-1-4-6 : (P) (BO)



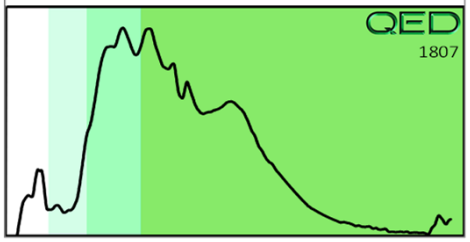
139-SB-1-8-10 :



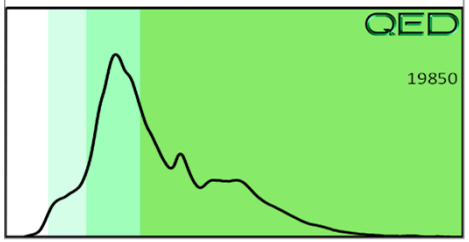
139-SB-2-4-6 : V.Deg.PHC (FCM) 63.1%



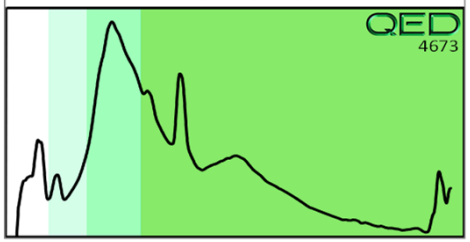
139-SB-2-8-10 : Pyrogenic HC (FCM) 67.9%



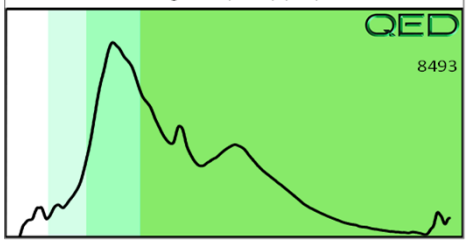
139-SB-3-6-8 : V.Deg.PHC (FCM) 74.5%



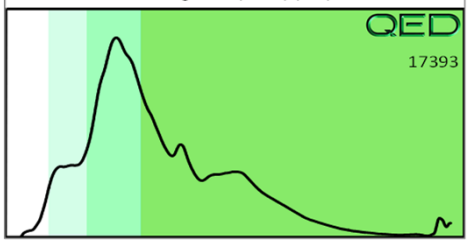
139-SB-3-8-10 : V.Deg.Gas (FCM) (BO) 68.3%



139-SB-4-6-8 : Deg.Fuel (FCM) (BO) 80.7%



139-SB-4-8-10 : Deg.Fuel (FCM) (BO) 82%



Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

November 03, 2016

Mike Branson
Solutions-IES
1101 Nowell Road
Raleigh, NC 27607

RE: Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Dear Mike Branson:
Enclosed are the analytical results for sample(s) received by the laboratory on October 31, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Taylor Ezell
taylor.ezell@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

CERTIFICATIONS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

SAMPLE ANALYTE COUNT

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92317871001	**139-SB-1-8-10**	EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92317871002	**139-SB-2-4-6**	EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92317871003	**139-SB-3-6-8**	EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92317871004	**139-SB-4-8-10**	EPA 8260	DLK	70	PASI-C
		ASTM D2974-87	KDF	1	PASI-C

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Sample: 139-SB-1-8-10 **Lab ID: 92317871001** Collected: 10/27/16 14:15 Received: 10/31/16 08:52 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	ND	ug/kg	112	1		11/01/16 16:11	67-64-1	
Benzene	ND	ug/kg	5.6	1		11/01/16 16:11	71-43-2	
Bromobenzene	ND	ug/kg	5.6	1		11/01/16 16:11	108-86-1	
Bromochloromethane	ND	ug/kg	5.6	1		11/01/16 16:11	74-97-5	
Bromodichloromethane	ND	ug/kg	5.6	1		11/01/16 16:11	75-27-4	
Bromoform	ND	ug/kg	5.6	1		11/01/16 16:11	75-25-2	
Bromomethane	ND	ug/kg	11.2	1		11/01/16 16:11	74-83-9	
2-Butanone (MEK)	ND	ug/kg	112	1		11/01/16 16:11	78-93-3	
n-Butylbenzene	ND	ug/kg	5.6	1		11/01/16 16:11	104-51-8	
sec-Butylbenzene	ND	ug/kg	5.6	1		11/01/16 16:11	135-98-8	
tert-Butylbenzene	ND	ug/kg	5.6	1		11/01/16 16:11	98-06-6	
Carbon tetrachloride	ND	ug/kg	5.6	1		11/01/16 16:11	56-23-5	
Chlorobenzene	ND	ug/kg	5.6	1		11/01/16 16:11	108-90-7	
Chloroethane	ND	ug/kg	11.2	1		11/01/16 16:11	75-00-3	
Chloroform	ND	ug/kg	5.6	1		11/01/16 16:11	67-66-3	
Chloromethane	ND	ug/kg	11.2	1		11/01/16 16:11	74-87-3	
2-Chlorotoluene	ND	ug/kg	5.6	1		11/01/16 16:11	95-49-8	
4-Chlorotoluene	ND	ug/kg	5.6	1		11/01/16 16:11	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.6	1		11/01/16 16:11	96-12-8	
Dibromochloromethane	ND	ug/kg	5.6	1		11/01/16 16:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.6	1		11/01/16 16:11	106-93-4	
Dibromomethane	ND	ug/kg	5.6	1		11/01/16 16:11	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	5.6	1		11/01/16 16:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	5.6	1		11/01/16 16:11	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	5.6	1		11/01/16 16:11	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	11.2	1		11/01/16 16:11	75-71-8	
1,1-Dichloroethane	ND	ug/kg	5.6	1		11/01/16 16:11	75-34-3	
1,2-Dichloroethane	ND	ug/kg	5.6	1		11/01/16 16:11	107-06-2	
1,1-Dichloroethene	ND	ug/kg	5.6	1		11/01/16 16:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	5.6	1		11/01/16 16:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	5.6	1		11/01/16 16:11	156-60-5	
1,2-Dichloropropane	ND	ug/kg	5.6	1		11/01/16 16:11	78-87-5	
1,3-Dichloropropane	ND	ug/kg	5.6	1		11/01/16 16:11	142-28-9	
2,2-Dichloropropane	ND	ug/kg	5.6	1		11/01/16 16:11	594-20-7	
1,1-Dichloropropene	ND	ug/kg	5.6	1		11/01/16 16:11	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	5.6	1		11/01/16 16:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	5.6	1		11/01/16 16:11	10061-02-6	
Diisopropyl ether	ND	ug/kg	5.6	1		11/01/16 16:11	108-20-3	
Ethylbenzene	ND	ug/kg	5.6	1		11/01/16 16:11	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	5.6	1		11/01/16 16:11	87-68-3	
2-Hexanone	ND	ug/kg	55.9	1		11/01/16 16:11	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	5.6	1		11/01/16 16:11	98-82-8	
p-Isopropyltoluene	ND	ug/kg	5.6	1		11/01/16 16:11	99-87-6	
Methylene Chloride	ND	ug/kg	22.4	1		11/01/16 16:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	55.9	1		11/01/16 16:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	5.6	1		11/01/16 16:11	1634-04-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Sample: 139-SB-1-8-10 **Lab ID: 92317871001** Collected: 10/27/16 14:15 Received: 10/31/16 08:52 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Naphthalene	ND	ug/kg	5.6	1		11/01/16 16:11	91-20-3	
n-Propylbenzene	ND	ug/kg	5.6	1		11/01/16 16:11	103-65-1	
Styrene	ND	ug/kg	5.6	1		11/01/16 16:11	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.6	1		11/01/16 16:11	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.6	1		11/01/16 16:11	79-34-5	
Tetrachloroethene	ND	ug/kg	5.6	1		11/01/16 16:11	127-18-4	
Toluene	ND	ug/kg	5.6	1		11/01/16 16:11	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	5.6	1		11/01/16 16:11	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	5.6	1		11/01/16 16:11	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	5.6	1		11/01/16 16:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	5.6	1		11/01/16 16:11	79-00-5	
Trichloroethene	ND	ug/kg	5.6	1		11/01/16 16:11	79-01-6	
Trichlorofluoromethane	ND	ug/kg	5.6	1		11/01/16 16:11	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	5.6	1		11/01/16 16:11	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	5.6	1		11/01/16 16:11	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	5.6	1		11/01/16 16:11	108-67-8	
Vinyl acetate	ND	ug/kg	55.9	1		11/01/16 16:11	108-05-4	
Vinyl chloride	ND	ug/kg	11.2	1		11/01/16 16:11	75-01-4	
Xylene (Total)	ND	ug/kg	11.2	1		11/01/16 16:11	1330-20-7	
m&p-Xylene	ND	ug/kg	11.2	1		11/01/16 16:11	179601-23-1	
o-Xylene	ND	ug/kg	5.6	1		11/01/16 16:11	95-47-6	
Surrogates								
Toluene-d8 (S)	102	%	70-130	1		11/01/16 16:11	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-130	1		11/01/16 16:11	460-00-4	
1,2-Dichloroethane-d4 (S)	123	%	70-132	1		11/01/16 16:11	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**13.5**	%	0.10	1		11/01/16 11:49		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Sample: 139-SB-2-4-6 **Lab ID: 92317871002** Collected: 10/27/16 14:20 Received: 10/31/16 08:52 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	**160**	ug/kg	137	1		11/01/16 16:30	67-64-1	
Benzene	ND	ug/kg	6.8	1		11/01/16 16:30	71-43-2	
Bromobenzene	ND	ug/kg	6.8	1		11/01/16 16:30	108-86-1	
Bromochloromethane	ND	ug/kg	6.8	1		11/01/16 16:30	74-97-5	
Bromodichloromethane	ND	ug/kg	6.8	1		11/01/16 16:30	75-27-4	
Bromoform	ND	ug/kg	6.8	1		11/01/16 16:30	75-25-2	
Bromomethane	ND	ug/kg	13.7	1		11/01/16 16:30	74-83-9	
2-Butanone (MEK)	ND	ug/kg	137	1		11/01/16 16:30	78-93-3	
n-Butylbenzene	ND	ug/kg	6.8	1		11/01/16 16:30	104-51-8	
sec-Butylbenzene	ND	ug/kg	6.8	1		11/01/16 16:30	135-98-8	
tert-Butylbenzene	ND	ug/kg	6.8	1		11/01/16 16:30	98-06-6	
Carbon tetrachloride	ND	ug/kg	6.8	1		11/01/16 16:30	56-23-5	
Chlorobenzene	ND	ug/kg	6.8	1		11/01/16 16:30	108-90-7	
Chloroethane	ND	ug/kg	13.7	1		11/01/16 16:30	75-00-3	
Chloroform	ND	ug/kg	6.8	1		11/01/16 16:30	67-66-3	
Chloromethane	ND	ug/kg	13.7	1		11/01/16 16:30	74-87-3	
2-Chlorotoluene	ND	ug/kg	6.8	1		11/01/16 16:30	95-49-8	
4-Chlorotoluene	ND	ug/kg	6.8	1		11/01/16 16:30	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.8	1		11/01/16 16:30	96-12-8	
Dibromochloromethane	ND	ug/kg	6.8	1		11/01/16 16:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	6.8	1		11/01/16 16:30	106-93-4	
Dibromomethane	ND	ug/kg	6.8	1		11/01/16 16:30	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	6.8	1		11/01/16 16:30	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	6.8	1		11/01/16 16:30	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	6.8	1		11/01/16 16:30	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	13.7	1		11/01/16 16:30	75-71-8	
1,1-Dichloroethane	ND	ug/kg	6.8	1		11/01/16 16:30	75-34-3	
1,2-Dichloroethane	ND	ug/kg	6.8	1		11/01/16 16:30	107-06-2	
1,1-Dichloroethene	ND	ug/kg	6.8	1		11/01/16 16:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	6.8	1		11/01/16 16:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	6.8	1		11/01/16 16:30	156-60-5	
1,2-Dichloropropane	ND	ug/kg	6.8	1		11/01/16 16:30	78-87-5	
1,3-Dichloropropane	ND	ug/kg	6.8	1		11/01/16 16:30	142-28-9	
2,2-Dichloropropane	ND	ug/kg	6.8	1		11/01/16 16:30	594-20-7	
1,1-Dichloropropene	ND	ug/kg	6.8	1		11/01/16 16:30	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	6.8	1		11/01/16 16:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	6.8	1		11/01/16 16:30	10061-02-6	
Diisopropyl ether	ND	ug/kg	6.8	1		11/01/16 16:30	108-20-3	
Ethylbenzene	ND	ug/kg	6.8	1		11/01/16 16:30	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	6.8	1		11/01/16 16:30	87-68-3	
2-Hexanone	ND	ug/kg	68.4	1		11/01/16 16:30	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	6.8	1		11/01/16 16:30	98-82-8	
p-Isopropyltoluene	ND	ug/kg	6.8	1		11/01/16 16:30	99-87-6	
Methylene Chloride	ND	ug/kg	27.4	1		11/01/16 16:30	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	68.4	1		11/01/16 16:30	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	6.8	1		11/01/16 16:30	1634-04-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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ANALYTICAL RESULTS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Sample: 139-SB-2-4-6 **Lab ID: 92317871002** Collected: 10/27/16 14:20 Received: 10/31/16 08:52 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Naphthalene	ND	ug/kg	6.8	1		11/01/16 16:30	91-20-3	
n-Propylbenzene	ND	ug/kg	6.8	1		11/01/16 16:30	103-65-1	
Styrene	ND	ug/kg	6.8	1		11/01/16 16:30	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	6.8	1		11/01/16 16:30	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.8	1		11/01/16 16:30	79-34-5	
Tetrachloroethene	ND	ug/kg	6.8	1		11/01/16 16:30	127-18-4	
Toluene	ND	ug/kg	6.8	1		11/01/16 16:30	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	6.8	1		11/01/16 16:30	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	6.8	1		11/01/16 16:30	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	6.8	1		11/01/16 16:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	6.8	1		11/01/16 16:30	79-00-5	
Trichloroethene	ND	ug/kg	6.8	1		11/01/16 16:30	79-01-6	
Trichlorofluoromethane	ND	ug/kg	6.8	1		11/01/16 16:30	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	6.8	1		11/01/16 16:30	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	6.8	1		11/01/16 16:30	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	6.8	1		11/01/16 16:30	108-67-8	
Vinyl acetate	ND	ug/kg	68.4	1		11/01/16 16:30	108-05-4	
Vinyl chloride	ND	ug/kg	13.7	1		11/01/16 16:30	75-01-4	
Xylene (Total)	ND	ug/kg	13.7	1		11/01/16 16:30	1330-20-7	
m&p-Xylene	ND	ug/kg	13.7	1		11/01/16 16:30	179601-23-1	
o-Xylene	ND	ug/kg	6.8	1		11/01/16 16:30	95-47-6	
Surrogates								
Toluene-d8 (S)	102	%	70-130	1		11/01/16 16:30	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-130	1		11/01/16 16:30	460-00-4	
1,2-Dichloroethane-d4 (S)	120	%	70-132	1		11/01/16 16:30	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**14.2**	%	0.10	1		11/01/16 11:49		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
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(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Sample: 139-SB-3-6-8 **Lab ID: 92317871003** Collected: 10/27/16 14:25 Received: 10/31/16 08:52 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	**129**	ug/kg	106	1		11/01/16 16:50	67-64-1	
Benzene	ND	ug/kg	5.3	1		11/01/16 16:50	71-43-2	
Bromobenzene	ND	ug/kg	5.3	1		11/01/16 16:50	108-86-1	
Bromochloromethane	ND	ug/kg	5.3	1		11/01/16 16:50	74-97-5	
Bromodichloromethane	ND	ug/kg	5.3	1		11/01/16 16:50	75-27-4	
Bromoform	ND	ug/kg	5.3	1		11/01/16 16:50	75-25-2	
Bromomethane	ND	ug/kg	10.6	1		11/01/16 16:50	74-83-9	
2-Butanone (MEK)	ND	ug/kg	106	1		11/01/16 16:50	78-93-3	
n-Butylbenzene	ND	ug/kg	5.3	1		11/01/16 16:50	104-51-8	
sec-Butylbenzene	ND	ug/kg	5.3	1		11/01/16 16:50	135-98-8	
tert-Butylbenzene	ND	ug/kg	5.3	1		11/01/16 16:50	98-06-6	
Carbon tetrachloride	ND	ug/kg	5.3	1		11/01/16 16:50	56-23-5	
Chlorobenzene	ND	ug/kg	5.3	1		11/01/16 16:50	108-90-7	
Chloroethane	ND	ug/kg	10.6	1		11/01/16 16:50	75-00-3	
Chloroform	ND	ug/kg	5.3	1		11/01/16 16:50	67-66-3	
Chloromethane	ND	ug/kg	10.6	1		11/01/16 16:50	74-87-3	
2-Chlorotoluene	ND	ug/kg	5.3	1		11/01/16 16:50	95-49-8	
4-Chlorotoluene	ND	ug/kg	5.3	1		11/01/16 16:50	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.3	1		11/01/16 16:50	96-12-8	
Dibromochloromethane	ND	ug/kg	5.3	1		11/01/16 16:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.3	1		11/01/16 16:50	106-93-4	
Dibromomethane	ND	ug/kg	5.3	1		11/01/16 16:50	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	5.3	1		11/01/16 16:50	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	5.3	1		11/01/16 16:50	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	5.3	1		11/01/16 16:50	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	10.6	1		11/01/16 16:50	75-71-8	
1,1-Dichloroethane	ND	ug/kg	5.3	1		11/01/16 16:50	75-34-3	
1,2-Dichloroethane	ND	ug/kg	5.3	1		11/01/16 16:50	107-06-2	
1,1-Dichloroethene	ND	ug/kg	5.3	1		11/01/16 16:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	5.3	1		11/01/16 16:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	5.3	1		11/01/16 16:50	156-60-5	
1,2-Dichloropropane	ND	ug/kg	5.3	1		11/01/16 16:50	78-87-5	
1,3-Dichloropropane	ND	ug/kg	5.3	1		11/01/16 16:50	142-28-9	
2,2-Dichloropropane	ND	ug/kg	5.3	1		11/01/16 16:50	594-20-7	
1,1-Dichloropropene	ND	ug/kg	5.3	1		11/01/16 16:50	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	5.3	1		11/01/16 16:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	5.3	1		11/01/16 16:50	10061-02-6	
Diisopropyl ether	ND	ug/kg	5.3	1		11/01/16 16:50	108-20-3	
Ethylbenzene	ND	ug/kg	5.3	1		11/01/16 16:50	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	5.3	1		11/01/16 16:50	87-68-3	
2-Hexanone	ND	ug/kg	53.2	1		11/01/16 16:50	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	5.3	1		11/01/16 16:50	98-82-8	
p-Isopropyltoluene	ND	ug/kg	5.3	1		11/01/16 16:50	99-87-6	
Methylene Chloride	ND	ug/kg	21.3	1		11/01/16 16:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	53.2	1		11/01/16 16:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	5.3	1		11/01/16 16:50	1634-04-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Sample: 139-SB-3-6-8 **Lab ID: 92317871003** Collected: 10/27/16 14:25 Received: 10/31/16 08:52 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Naphthalene	ND	ug/kg	5.3	1		11/01/16 16:50	91-20-3	
n-Propylbenzene	ND	ug/kg	5.3	1		11/01/16 16:50	103-65-1	
Styrene	ND	ug/kg	5.3	1		11/01/16 16:50	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.3	1		11/01/16 16:50	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.3	1		11/01/16 16:50	79-34-5	
Tetrachloroethene	ND	ug/kg	5.3	1		11/01/16 16:50	127-18-4	
Toluene	ND	ug/kg	5.3	1		11/01/16 16:50	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	5.3	1		11/01/16 16:50	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	5.3	1		11/01/16 16:50	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	5.3	1		11/01/16 16:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	5.3	1		11/01/16 16:50	79-00-5	
Trichloroethene	ND	ug/kg	5.3	1		11/01/16 16:50	79-01-6	
Trichlorofluoromethane	ND	ug/kg	5.3	1		11/01/16 16:50	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	5.3	1		11/01/16 16:50	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	5.3	1		11/01/16 16:50	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	5.3	1		11/01/16 16:50	108-67-8	
Vinyl acetate	ND	ug/kg	53.2	1		11/01/16 16:50	108-05-4	
Vinyl chloride	ND	ug/kg	10.6	1		11/01/16 16:50	75-01-4	
Xylene (Total)	ND	ug/kg	10.6	1		11/01/16 16:50	1330-20-7	
m&p-Xylene	ND	ug/kg	10.6	1		11/01/16 16:50	179601-23-1	
o-Xylene	ND	ug/kg	5.3	1		11/01/16 16:50	95-47-6	
Surrogates								
Toluene-d8 (S)	101	%	70-130	1		11/01/16 16:50	2037-26-5	
4-Bromofluorobenzene (S)	92	%	70-130	1		11/01/16 16:50	460-00-4	
1,2-Dichloroethane-d4 (S)	123	%	70-132	1		11/01/16 16:50	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**8.7**	%	0.10	1		11/01/16 11:49		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Sample: 139-SB-4-8-10 **Lab ID: 92317871004** Collected: 10/27/16 14:30 Received: 10/31/16 08:52 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Acetone	**147**	ug/kg	121	1		11/01/16 17:10	67-64-1	
Benzene	ND	ug/kg	6.1	1		11/01/16 17:10	71-43-2	
Bromobenzene	ND	ug/kg	6.1	1		11/01/16 17:10	108-86-1	
Bromochloromethane	ND	ug/kg	6.1	1		11/01/16 17:10	74-97-5	
Bromodichloromethane	ND	ug/kg	6.1	1		11/01/16 17:10	75-27-4	
Bromoform	ND	ug/kg	6.1	1		11/01/16 17:10	75-25-2	
Bromomethane	ND	ug/kg	12.1	1		11/01/16 17:10	74-83-9	
2-Butanone (MEK)	ND	ug/kg	121	1		11/01/16 17:10	78-93-3	
n-Butylbenzene	ND	ug/kg	6.1	1		11/01/16 17:10	104-51-8	
sec-Butylbenzene	ND	ug/kg	6.1	1		11/01/16 17:10	135-98-8	
tert-Butylbenzene	ND	ug/kg	6.1	1		11/01/16 17:10	98-06-6	
Carbon tetrachloride	ND	ug/kg	6.1	1		11/01/16 17:10	56-23-5	
Chlorobenzene	ND	ug/kg	6.1	1		11/01/16 17:10	108-90-7	
Chloroethane	ND	ug/kg	12.1	1		11/01/16 17:10	75-00-3	
Chloroform	ND	ug/kg	6.1	1		11/01/16 17:10	67-66-3	
Chloromethane	ND	ug/kg	12.1	1		11/01/16 17:10	74-87-3	
2-Chlorotoluene	ND	ug/kg	6.1	1		11/01/16 17:10	95-49-8	
4-Chlorotoluene	ND	ug/kg	6.1	1		11/01/16 17:10	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/kg	6.1	1		11/01/16 17:10	96-12-8	
Dibromochloromethane	ND	ug/kg	6.1	1		11/01/16 17:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/kg	6.1	1		11/01/16 17:10	106-93-4	
Dibromomethane	ND	ug/kg	6.1	1		11/01/16 17:10	74-95-3	
1,2-Dichlorobenzene	ND	ug/kg	6.1	1		11/01/16 17:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/kg	6.1	1		11/01/16 17:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/kg	6.1	1		11/01/16 17:10	106-46-7	
Dichlorodifluoromethane	ND	ug/kg	12.1	1		11/01/16 17:10	75-71-8	
1,1-Dichloroethane	ND	ug/kg	6.1	1		11/01/16 17:10	75-34-3	
1,2-Dichloroethane	ND	ug/kg	6.1	1		11/01/16 17:10	107-06-2	
1,1-Dichloroethene	ND	ug/kg	6.1	1		11/01/16 17:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/kg	6.1	1		11/01/16 17:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/kg	6.1	1		11/01/16 17:10	156-60-5	
1,2-Dichloropropane	ND	ug/kg	6.1	1		11/01/16 17:10	78-87-5	
1,3-Dichloropropane	ND	ug/kg	6.1	1		11/01/16 17:10	142-28-9	
2,2-Dichloropropane	ND	ug/kg	6.1	1		11/01/16 17:10	594-20-7	
1,1-Dichloropropene	ND	ug/kg	6.1	1		11/01/16 17:10	563-58-6	
cis-1,3-Dichloropropene	ND	ug/kg	6.1	1		11/01/16 17:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/kg	6.1	1		11/01/16 17:10	10061-02-6	
Diisopropyl ether	ND	ug/kg	6.1	1		11/01/16 17:10	108-20-3	
Ethylbenzene	ND	ug/kg	6.1	1		11/01/16 17:10	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/kg	6.1	1		11/01/16 17:10	87-68-3	
2-Hexanone	ND	ug/kg	60.7	1		11/01/16 17:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/kg	6.1	1		11/01/16 17:10	98-82-8	
p-Isopropyltoluene	ND	ug/kg	6.1	1		11/01/16 17:10	99-87-6	
Methylene Chloride	ND	ug/kg	24.3	1		11/01/16 17:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	60.7	1		11/01/16 17:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/kg	6.1	1		11/01/16 17:10	1634-04-4	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Sample: 139-SB-4-8-10 **Lab ID: 92317871004** Collected: 10/27/16 14:30 Received: 10/31/16 08:52 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A Volatile Organics	Analytical Method: EPA 8260							
Naphthalene	ND	ug/kg	6.1	1		11/01/16 17:10	91-20-3	
n-Propylbenzene	ND	ug/kg	6.1	1		11/01/16 17:10	103-65-1	
Styrene	ND	ug/kg	6.1	1		11/01/16 17:10	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/kg	6.1	1		11/01/16 17:10	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/kg	6.1	1		11/01/16 17:10	79-34-5	
Tetrachloroethene	ND	ug/kg	6.1	1		11/01/16 17:10	127-18-4	
Toluene	ND	ug/kg	6.1	1		11/01/16 17:10	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/kg	6.1	1		11/01/16 17:10	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/kg	6.1	1		11/01/16 17:10	120-82-1	
1,1,1-Trichloroethane	ND	ug/kg	6.1	1		11/01/16 17:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/kg	6.1	1		11/01/16 17:10	79-00-5	
Trichloroethene	ND	ug/kg	6.1	1		11/01/16 17:10	79-01-6	
Trichlorofluoromethane	ND	ug/kg	6.1	1		11/01/16 17:10	75-69-4	
1,2,3-Trichloropropane	ND	ug/kg	6.1	1		11/01/16 17:10	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/kg	6.1	1		11/01/16 17:10	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/kg	6.1	1		11/01/16 17:10	108-67-8	
Vinyl acetate	ND	ug/kg	60.7	1		11/01/16 17:10	108-05-4	
Vinyl chloride	ND	ug/kg	12.1	1		11/01/16 17:10	75-01-4	
Xylene (Total)	ND	ug/kg	12.1	1		11/01/16 17:10	1330-20-7	
m&p-Xylene	ND	ug/kg	12.1	1		11/01/16 17:10	179601-23-1	
o-Xylene	ND	ug/kg	6.1	1		11/01/16 17:10	95-47-6	
Surrogates								
Toluene-d8 (S)	100	%	70-130	1		11/01/16 17:10	2037-26-5	
4-Bromofluorobenzene (S)	87	%	70-130	1		11/01/16 17:10	460-00-4	
1,2-Dichloroethane-d4 (S)	124	%	70-132	1		11/01/16 17:10	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**27.1**	%	0.10	1		11/01/16 11:49		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

QC Batch: 335217 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 92317871001, 92317871002, 92317871003, 92317871004

METHOD BLANK: 1858123 Matrix: Solid
Associated Lab Samples: 92317871001, 92317871002, 92317871003, 92317871004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	5.1	11/01/16 11:53	
1,1,1-Trichloroethane	ug/kg	ND	5.1	11/01/16 11:53	
1,1,2,2-Tetrachloroethane	ug/kg	ND	5.1	11/01/16 11:53	
1,1,2-Trichloroethane	ug/kg	ND	5.1	11/01/16 11:53	
1,1-Dichloroethane	ug/kg	ND	5.1	11/01/16 11:53	
1,1-Dichloroethene	ug/kg	ND	5.1	11/01/16 11:53	
1,1-Dichloropropene	ug/kg	ND	5.1	11/01/16 11:53	
1,2,3-Trichlorobenzene	ug/kg	ND	5.1	11/01/16 11:53	
1,2,3-Trichloropropane	ug/kg	ND	5.1	11/01/16 11:53	
1,2,4-Trichlorobenzene	ug/kg	ND	5.1	11/01/16 11:53	
1,2,4-Trimethylbenzene	ug/kg	ND	5.1	11/01/16 11:53	
1,2-Dibromo-3-chloropropane	ug/kg	ND	5.1	11/01/16 11:53	
1,2-Dibromoethane (EDB)	ug/kg	ND	5.1	11/01/16 11:53	
1,2-Dichlorobenzene	ug/kg	ND	5.1	11/01/16 11:53	
1,2-Dichloroethane	ug/kg	ND	5.1	11/01/16 11:53	
1,2-Dichloropropane	ug/kg	ND	5.1	11/01/16 11:53	
1,3,5-Trimethylbenzene	ug/kg	ND	5.1	11/01/16 11:53	
1,3-Dichlorobenzene	ug/kg	ND	5.1	11/01/16 11:53	
1,3-Dichloropropane	ug/kg	ND	5.1	11/01/16 11:53	
1,4-Dichlorobenzene	ug/kg	ND	5.1	11/01/16 11:53	
2,2-Dichloropropane	ug/kg	ND	5.1	11/01/16 11:53	
2-Butanone (MEK)	ug/kg	ND	102	11/01/16 11:53	
2-Chlorotoluene	ug/kg	ND	5.1	11/01/16 11:53	
2-Hexanone	ug/kg	ND	51.1	11/01/16 11:53	
4-Chlorotoluene	ug/kg	ND	5.1	11/01/16 11:53	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	51.1	11/01/16 11:53	
Acetone	ug/kg	ND	102	11/01/16 11:53	
Benzene	ug/kg	ND	5.1	11/01/16 11:53	
Bromobenzene	ug/kg	ND	5.1	11/01/16 11:53	
Bromochloromethane	ug/kg	ND	5.1	11/01/16 11:53	
Bromodichloromethane	ug/kg	ND	5.1	11/01/16 11:53	
Bromoform	ug/kg	ND	5.1	11/01/16 11:53	
Bromomethane	ug/kg	ND	10.2	11/01/16 11:53	
Carbon tetrachloride	ug/kg	ND	5.1	11/01/16 11:53	
Chlorobenzene	ug/kg	ND	5.1	11/01/16 11:53	
Chloroethane	ug/kg	ND	10.2	11/01/16 11:53	
Chloroform	ug/kg	ND	5.1	11/01/16 11:53	
Chloromethane	ug/kg	ND	10.2	11/01/16 11:53	
cis-1,2-Dichloroethene	ug/kg	ND	5.1	11/01/16 11:53	
cis-1,3-Dichloropropene	ug/kg	ND	5.1	11/01/16 11:53	
Dibromochloromethane	ug/kg	ND	5.1	11/01/16 11:53	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

METHOD BLANK: 1858123 Matrix: Solid
Associated Lab Samples: 92317871001, 92317871002, 92317871003, 92317871004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	ug/kg	ND	5.1	11/01/16 11:53	
Dichlorodifluoromethane	ug/kg	ND	10.2	11/01/16 11:53	
Diisopropyl ether	ug/kg	ND	5.1	11/01/16 11:53	
Ethylbenzene	ug/kg	ND	5.1	11/01/16 11:53	
Hexachloro-1,3-butadiene	ug/kg	ND	5.1	11/01/16 11:53	
Isopropylbenzene (Cumene)	ug/kg	ND	5.1	11/01/16 11:53	
m&p-Xylene	ug/kg	ND	10.2	11/01/16 11:53	
Methyl-tert-butyl ether	ug/kg	ND	5.1	11/01/16 11:53	
Methylene Chloride	ug/kg	ND	20.4	11/01/16 11:53	
n-Butylbenzene	ug/kg	ND	5.1	11/01/16 11:53	
n-Propylbenzene	ug/kg	ND	5.1	11/01/16 11:53	
Naphthalene	ug/kg	ND	5.1	11/01/16 11:53	
o-Xylene	ug/kg	ND	5.1	11/01/16 11:53	
p-Isopropyltoluene	ug/kg	ND	5.1	11/01/16 11:53	
sec-Butylbenzene	ug/kg	ND	5.1	11/01/16 11:53	
Styrene	ug/kg	ND	5.1	11/01/16 11:53	
tert-Butylbenzene	ug/kg	ND	5.1	11/01/16 11:53	
Tetrachloroethene	ug/kg	ND	5.1	11/01/16 11:53	
Toluene	ug/kg	ND	5.1	11/01/16 11:53	
trans-1,2-Dichloroethene	ug/kg	ND	5.1	11/01/16 11:53	
trans-1,3-Dichloropropene	ug/kg	ND	5.1	11/01/16 11:53	
Trichloroethene	ug/kg	ND	5.1	11/01/16 11:53	
Trichlorofluoromethane	ug/kg	ND	5.1	11/01/16 11:53	
Vinyl acetate	ug/kg	ND	51.1	11/01/16 11:53	
Vinyl chloride	ug/kg	ND	10.2	11/01/16 11:53	
Xylene (Total)	ug/kg	ND	10.2	11/01/16 11:53	
1,2-Dichloroethane-d4 (S)	%	125	70-132	11/01/16 11:53	
4-Bromofluorobenzene (S)	%	95	70-130	11/01/16 11:53	
Toluene-d8 (S)	%	102	70-130	11/01/16 11:53	

LABORATORY CONTROL SAMPLE: 1858124

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	54.2	59.3	109	74-137	
1,1,1-Trichloroethane	ug/kg	54.2	60.8	112	67-140	
1,1,2,2-Tetrachloroethane	ug/kg	54.2	59.6	110	72-141	
1,1,2-Trichloroethane	ug/kg	54.2	63.7	117	78-138	
1,1-Dichloroethane	ug/kg	54.2	61.4	113	69-134	
1,1-Dichloroethene	ug/kg	54.2	62.2	115	67-138	
1,1-Dichloropropene	ug/kg	54.2	59.5	110	69-139	
1,2,3-Trichlorobenzene	ug/kg	54.2	63.7	118	70-146	
1,2,3-Trichloropropane	ug/kg	54.2	66.4	122	69-144	
1,2,4-Trichlorobenzene	ug/kg	54.2	60.1	111	68-148	
1,2,4-Trimethylbenzene	ug/kg	54.2	59.8	110	74-137	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

LABORATORY CONTROL SAMPLE: 1858124

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromo-3-chloropropane	ug/kg	54.2	69.7	129	65-140	
1,2-Dibromoethane (EDB)	ug/kg	54.2	63.8	118	77-135	
1,2-Dichlorobenzene	ug/kg	54.2	62.6	115	77-141	
1,2-Dichloroethane	ug/kg	54.2	65.5	121	65-137	
1,2-Dichloropropane	ug/kg	54.2	59.8	110	72-136	
1,3,5-Trimethylbenzene	ug/kg	54.2	58.5	108	76-133	
1,3-Dichlorobenzene	ug/kg	54.2	60.2	111	74-138	
1,3-Dichloropropane	ug/kg	54.2	60.7	112	71-139	
1,4-Dichlorobenzene	ug/kg	54.2	59.8	110	76-138	
2,2-Dichloropropane	ug/kg	54.2	63.0	116	68-137	
2-Butanone (MEK)	ug/kg	108	138	127	58-147	
2-Chlorotoluene	ug/kg	54.2	61.1	113	73-139	
2-Hexanone	ug/kg	108	140	129	62-145	
4-Chlorotoluene	ug/kg	54.2	59.7	110	76-141	
4-Methyl-2-pentanone (MIBK)	ug/kg	108	146	135	64-149	
Acetone	ug/kg	108	150	138	53-153	
Benzene	ug/kg	54.2	61.3	113	73-135	
Bromobenzene	ug/kg	54.2	61.5	113	75-133	
Bromochloromethane	ug/kg	54.2	67.2	124	73-134	
Bromodichloromethane	ug/kg	54.2	64.1	118	71-135	
Bromoform	ug/kg	54.2	61.7	114	66-141	
Bromomethane	ug/kg	54.2	63.2	116	53-160	
Carbon tetrachloride	ug/kg	54.2	59.1	109	60-145	
Chlorobenzene	ug/kg	54.2	58.0	107	78-130	
Chloroethane	ug/kg	54.2	62.4	115	64-149	
Chloroform	ug/kg	54.2	63.4	117	70-134	
Chloromethane	ug/kg	54.2	65.4	121	52-150	
cis-1,2-Dichloroethene	ug/kg	54.2	67.2	124	70-133	
cis-1,3-Dichloropropene	ug/kg	54.2	61.6	114	68-134	
Dibromochloromethane	ug/kg	54.2	64.8	120	71-138	
Dibromomethane	ug/kg	54.2	61.8	114	74-130	
Dichlorodifluoromethane	ug/kg	54.2	65.0	120	40-160	
Diisopropyl ether	ug/kg	54.2	67.5	124	69-141	
Ethylbenzene	ug/kg	54.2	58.1	107	75-133	
Hexachloro-1,3-butadiene	ug/kg	54.2	56.2	104	68-143	
Isopropylbenzene (Cumene)	ug/kg	54.2	58.2	107	76-143	
m&p-Xylene	ug/kg	108	119	110	75-136	
Methyl-tert-butyl ether	ug/kg	54.2	66.5	123	68-144	
Methylene Chloride	ug/kg	54.2	68.5	126	45-154	
n-Butylbenzene	ug/kg	54.2	59.0	109	72-137	
n-Propylbenzene	ug/kg	54.2	58.5	108	76-136	
Naphthalene	ug/kg	54.2	67.0	124	68-151	
o-Xylene	ug/kg	54.2	59.2	109	76-141	
p-Isopropyltoluene	ug/kg	54.2	58.2	107	76-140	
sec-Butylbenzene	ug/kg	54.2	58.5	108	79-139	
Styrene	ug/kg	54.2	59.3	109	79-137	
tert-Butylbenzene	ug/kg	54.2	52.8	97	74-143	

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REPORT OF LABORATORY ANALYSIS

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(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

LABORATORY CONTROL SAMPLE: 1858124

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tetrachloroethene	ug/kg	54.2	49.5	91	71-138	
Toluene	ug/kg	54.2	59.8	110	74-131	
trans-1,2-Dichloroethene	ug/kg	54.2	61.3	113	67-135	
trans-1,3-Dichloropropene	ug/kg	54.2	62.8	116	65-146	
Trichloroethene	ug/kg	54.2	61.2	113	67-135	
Trichlorofluoromethane	ug/kg	54.2	63.4	117	59-144	
Vinyl acetate	ug/kg	108	103	95	40-160	
Vinyl chloride	ug/kg	54.2	59.0	109	56-141	
Xylene (Total)	ug/kg	163	178	110	76-137	
1,2-Dichloroethane-d4 (S)	%			118	70-132	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE SAMPLE: 1858924

Parameter	Units	92317912001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	18.6	15.8	85	70-130	
1,1,1-Trichloroethane	ug/kg	ND	18.6	18.1	98	70-130	
1,1,2,2-Tetrachloroethane	ug/kg	ND	18.6	16.9	91	70-130	
1,1,2-Trichloroethane	ug/kg	ND	18.6	17.4	94	70-130	
1,1-Dichloroethane	ug/kg	ND	18.6	18.7	101	70-130	
1,1-Dichloroethene	ug/kg	ND	18.6	19.5	105	49-180	
1,1-Dichloropropene	ug/kg	ND	18.6	18.0	97	70-130	
1,2,3-Trichlorobenzene	ug/kg	ND	18.6	14.4	78	70-130	
1,2,3-Trichloropropane	ug/kg	ND	18.6	18.0	97	70-130	
1,2,4-Trichlorobenzene	ug/kg	ND	18.6	14.2	77	70-130	
1,2,4-Trimethylbenzene	ug/kg	ND	18.6	17.8	96	70-130	
1,2-Dibromo-3-chloropropane	ug/kg	ND	18.6	15.2	82	70-130	
1,2-Dibromoethane (EDB)	ug/kg	ND	18.6	17.9	97	70-130	
1,2-Dichlorobenzene	ug/kg	ND	18.6	17.3	93	70-130	
1,2-Dichloroethane	ug/kg	ND	18.6	19.5	105	70-130	
1,2-Dichloropropane	ug/kg	ND	18.6	17.1	92	70-130	
1,3,5-Trimethylbenzene	ug/kg	ND	18.6	17.8	96	70-130	
1,3-Dichlorobenzene	ug/kg	ND	18.6	16.5	89	70-130	
1,3-Dichloropropane	ug/kg	ND	18.6	17.0	92	70-130	
1,4-Dichlorobenzene	ug/kg	ND	18.6	16.5	89	70-130	
2,2-Dichloropropane	ug/kg	ND	18.6	18.3	99	70-130	
2-Butanone (MEK)	ug/kg	ND	37.1	38.2J	103	70-130	
2-Chlorotoluene	ug/kg	ND	18.6	16.5	89	70-130	
2-Hexanone	ug/kg	ND	37.1	32.1J	86	70-130	
4-Chlorotoluene	ug/kg	ND	18.6	17.4	94	70-130	
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	37.1	36.6J	99	70-130	
Acetone	ug/kg	ND	37.1	40.4J	109	70-130	
Benzene	ug/kg	ND	18.6	18.5	100	50-166	
Bromobenzene	ug/kg	ND	18.6	18.0	97	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

MATRIX SPIKE SAMPLE: 1858924

Parameter	Units	92317912001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromochloromethane	ug/kg	ND	18.6	19.5	105	70-130	
Bromodichloromethane	ug/kg	ND	18.6	17.8	96	70-130	
Bromoform	ug/kg	ND	18.6	14.1	76	70-130	
Bromomethane	ug/kg	ND	18.6	17.1	92	70-130	
Carbon tetrachloride	ug/kg	ND	18.6	17.0	92	70-130	
Chlorobenzene	ug/kg	ND	18.6	17.2	93	43-169	
Chloroethane	ug/kg	ND	18.6	20.4	110	70-130	
Chloroform	ug/kg	ND	18.6	18.8	102	70-130	
Chloromethane	ug/kg	ND	18.6	19.5	105	70-130	
cis-1,2-Dichloroethene	ug/kg	ND	18.6	18.3	99	70-130	
cis-1,3-Dichloropropene	ug/kg	ND	18.6	16.5	89	70-130	
Dibromochloromethane	ug/kg	ND	18.6	16.6	90	70-130	
Dibromomethane	ug/kg	ND	18.6	18.1	97	70-130	
Dichlorodifluoromethane	ug/kg	ND	18.6	21.2	114	70-130	
Diisopropyl ether	ug/kg	ND	18.6	20.3	109	70-130	
Ethylbenzene	ug/kg	ND	18.6	18.0	97	70-130	
Hexachloro-1,3-butadiene	ug/kg	ND	18.6	14.1	76	70-130	
Isopropylbenzene (Cumene)	ug/kg	ND	18.6	17.8	96	70-130	
m&p-Xylene	ug/kg	ND	37.1	36.2	98	70-130	
Methyl-tert-butyl ether	ug/kg	ND	18.6	20.0	108	70-130	
Methylene Chloride	ug/kg	ND	18.6	23.6	69	70-130	M1
n-Butylbenzene	ug/kg	ND	18.6	17.3	93	70-130	
n-Propylbenzene	ug/kg	ND	18.6	18.4	99	70-130	
Naphthalene	ug/kg	ND	18.6	16.4	88	70-130	
o-Xylene	ug/kg	ND	18.6	17.7	95	70-130	
p-Isopropyltoluene	ug/kg	ND	18.6	17.4	94	70-130	
sec-Butylbenzene	ug/kg	ND	18.6	18.2	98	70-130	
Styrene	ug/kg	ND	18.6	17.3	93	70-130	
tert-Butylbenzene	ug/kg	ND	18.6	16.3	88	70-130	
Tetrachloroethene	ug/kg	ND	18.6	14.9	81	70-130	
Toluene	ug/kg	ND	18.6	18.4	99	52-163	
trans-1,2-Dichloroethene	ug/kg	ND	18.6	19.4	104	70-130	
trans-1,3-Dichloropropene	ug/kg	ND	18.6	15.9	86	70-130	
Trichloroethene	ug/kg	ND	18.6	16.9	91	49-167	
Trichlorofluoromethane	ug/kg	ND	18.6	20.9	113	70-130	
Vinyl acetate	ug/kg	ND	37.1	20.9J	56	70-130	M1
Vinyl chloride	ug/kg	ND	18.6	18.9	102	70-130	
1,2-Dichloroethane-d4 (S)	%				114	70-132	
4-Bromofluorobenzene (S)	%				98	70-130	
Toluene-d8 (S)	%				100	70-130	

SAMPLE DUPLICATE: 1858923

Parameter	Units	92317874002 Result	Dup Result	RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/kg	ND	ND		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

SAMPLE DUPLICATE: 1858923

Parameter	Units	92317874002 Result	Dup Result	RPD	Qualifiers
1,1,1-Trichloroethane	ug/kg	ND	ND		
1,1,2,2-Tetrachloroethane	ug/kg	ND	ND		
1,1,2-Trichloroethane	ug/kg	ND	ND		
1,1-Dichloroethane	ug/kg	ND	ND		
1,1-Dichloroethene	ug/kg	ND	ND		
1,1-Dichloropropene	ug/kg	ND	ND		
1,2,3-Trichlorobenzene	ug/kg	ND	ND		
1,2,3-Trichloropropane	ug/kg	ND	ND		
1,2,4-Trichlorobenzene	ug/kg	ND	ND		
1,2,4-Trimethylbenzene	ug/kg	ND	ND		
1,2-Dibromo-3-chloropropane	ug/kg	ND	ND		
1,2-Dibromoethane (EDB)	ug/kg	ND	ND		
1,2-Dichlorobenzene	ug/kg	ND	ND		
1,2-Dichloroethane	ug/kg	ND	ND		
1,2-Dichloropropane	ug/kg	ND	ND		
1,3,5-Trimethylbenzene	ug/kg	ND	ND		
1,3-Dichlorobenzene	ug/kg	ND	ND		
1,3-Dichloropropane	ug/kg	ND	ND		
1,4-Dichlorobenzene	ug/kg	ND	ND		
2,2-Dichloropropane	ug/kg	ND	ND		
2-Butanone (MEK)	ug/kg	ND	ND		
2-Chlorotoluene	ug/kg	ND	ND		
2-Hexanone	ug/kg	ND	ND		
4-Chlorotoluene	ug/kg	ND	ND		
4-Methyl-2-pentanone (MIBK)	ug/kg	ND	ND		
Acetone	ug/kg	ND	ND		
Benzene	ug/kg	ND	ND		
Bromobenzene	ug/kg	ND	ND		
Bromochloromethane	ug/kg	ND	ND		
Bromodichloromethane	ug/kg	ND	ND		
Bromoform	ug/kg	ND	ND		
Bromomethane	ug/kg	ND	ND		
Carbon tetrachloride	ug/kg	ND	ND		
Chlorobenzene	ug/kg	ND	ND		
Chloroethane	ug/kg	ND	ND		
Chloroform	ug/kg	ND	ND		
Chloromethane	ug/kg	ND	ND		
cis-1,2-Dichloroethene	ug/kg	ND	ND		
cis-1,3-Dichloropropene	ug/kg	ND	ND		
Dibromochloromethane	ug/kg	ND	ND		
Dibromomethane	ug/kg	ND	ND		
Dichlorodifluoromethane	ug/kg	ND	ND		
Diisopropyl ether	ug/kg	ND	ND		
Ethylbenzene	ug/kg	ND	ND		
Hexachloro-1,3-butadiene	ug/kg	ND	ND		
Isopropylbenzene (Cumene)	ug/kg	ND	ND		
m&p-Xylene	ug/kg	ND	ND		

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

SAMPLE DUPLICATE: 1858923

Parameter	Units	92317874002 Result	Dup Result	RPD	Qualifiers
Methyl-tert-butyl ether	ug/kg	ND	ND		
Methylene Chloride	ug/kg	ND	ND		
n-Butylbenzene	ug/kg	ND	ND		
n-Propylbenzene	ug/kg	ND	ND		
Naphthalene	ug/kg	ND	ND		
o-Xylene	ug/kg	ND	ND		
p-Isopropyltoluene	ug/kg	ND	ND		
sec-Butylbenzene	ug/kg	ND	ND		
Styrene	ug/kg	ND	ND		
tert-Butylbenzene	ug/kg	ND	ND		
Tetrachloroethene	ug/kg	ND	ND		
Toluene	ug/kg	ND	ND		
trans-1,2-Dichloroethene	ug/kg	ND	ND		
trans-1,3-Dichloropropene	ug/kg	ND	ND		
Trichloroethene	ug/kg	ND	ND		
Trichlorofluoromethane	ug/kg	ND	ND		
Vinyl acetate	ug/kg	ND	ND		
Vinyl chloride	ug/kg	ND	ND		
Xylene (Total)	ug/kg	ND	ND		
1,2-Dichloroethane-d4 (S)	%	117	110	26	
4-Bromofluorobenzene (S)	%	96	95	20	
Toluene-d8 (S)	%	103	101	22	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

QC Batch: 335136 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92317871001, 92317871002, 92317871003, 92317871004

SAMPLE DUPLICATE: 1857839

Parameter	Units	92317879001 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	14.4	15.2	5	

SAMPLE DUPLICATE: 1857840

Parameter	Units	92317874003 Result	Dup Result	RPD	Qualifiers
Percent Moisture	%	17.6	18.0	2	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NCDOT FAYETTVILLE:PARCEL 139
Pace Project No.: 92317871

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92317871001	**139-SB-1-8-10**	EPA 8260	335217		
92317871002	**139-SB-2-4-6**	EPA 8260	335217		
92317871003	**139-SB-3-6-8**	EPA 8260	335217		
92317871004	**139-SB-4-8-10**	EPA 8260	335217		
92317871001	**139-SB-1-8-10**	ASTM D2974-87	335136		
92317871002	**139-SB-2-4-6**	ASTM D2974-87	335136		
92317871003	**139-SB-3-6-8**	ASTM D2974-87	335136		
92317871004	**139-SB-4-8-10**	ASTM D2974-87	335136		

Pace Analytical®	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: Sept. 21, 2016 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.01	Issuing Authority: Pace Quality Office

Laboratory receiving samples:

Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☒ Raleigh ☐ Mechanicsville ☐

Sample Condition Upon Receipt

Client Name: Solutions IES **Project #:**

WO# : 92317871

92317871

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☒ Pace ☐ Other:____

Custody Seal Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Date/Initials Person Examining Contents: RP 10/31/16

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other:____

Thermometer: ☑ IR Gun ID: T1505 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Correction Factor: **Cooler Temp Corrected (°C):** 4.2°C **Biological Tissue Frozen?** ☐ Yes ☒ No ☐ N/A

Temp should be above freezing to 6°C

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

				Comments/Discrepancy:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☒ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	4.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	7.
Samples Field Filtered?	☐ Yes	☒ No	☐ N/A	8. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	☒ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: Soil				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☒ No	☐ N/A	10.
Trip Blank Present?	☐ Yes	☒ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☒ No	☐ N/A	

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Sample Discrepancy: _____

Project Manager SCURF Review: TC **Date:** 10/31/16

Project Manager SRF Review: TC **Date:** 10/31/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers)

*Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.

**Bottom half of box is to list number of bottles

Project WO#: 92317871

PM: PTE Due Date: 11/09/16

CLIENT: 92-SOLUTIONS

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP3S-250 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP3Z-250 mL Plastic ZN Acetate & NaOH (>9)	BP3C-250 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	Cubitainer	VSGU-20 mL Scintillation vials (N/A)	GN
1	\				\	\	\	\			\		\	\	\						6				\	\			
2	\				\	\	\	\			\		\	\	\						6				\	\			
3	\				\	\	\	\			\		\	\	\						6				\	\			
4	\				\	\	\	\			\		\	\	\						6				\	\			
5	\				\	\	\	\			\		\	\	\										\	\			
6	\				\	\	\	\			\		\	\	\										\	\			
7	\				\	\	\	\			\		\	\	\										\	\			
8	\				\	\	\	\			\		\	\	\										\	\			
9	\				\	\	\	\			\		\	\	\										\	\			
10	\				\	\	\	\			\		\	\	\										\	\			
11	\				\	\	\	\			\		\	\	\										\	\			
12	\				\	\	\	\			\		\	\	\										\	\			

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

2035091

Section A
Required Client Information:

Company: SOLUTIONS-IES
Address: 1101 NOWELL RD
RALEIGH NC 27607
Email To: MBRANSON@SOLUTIONS-IES
Phone: 919-873-1060 Fax:
Requested Due Date/TAT: STD

Section B
Required Project Information:

Report To: MIKE BRANSON
Copy To:
Purchase Order No.:
Project Name: NCDOT FAYETTEVILLE: PARCEL 139
Project Number: 2016.0054.NDOT

Section C
Invoice Information:

Attention: NCDOT WBS: 39049.1.1
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: TAYLOR EZELL
Pace Profile #:

REGULATORY AGENCY
NPDES | GROUND WATER | DRINKING WATER
UST | RCRA | OTHER ______

Site Location STATE: NC

Section D
Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N)

Preservatives: Unpreserved, H_2SO_4, HNO_3, HCl, NaOH, $Na_2S_2O_3$, Methanol, Other: DI H_2O / NaHSO4

Pace Project No./ Lab I.D.: 92317971

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N Analysis Test	VOCS 8260	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	139-SB-1-8-10	SL	G			10/27/16	1415		6	X						X	X		X		001
2	139-SB-2-4-6						1420		6	X						X	X		X		002
3	139-SB-3-6-8						1425		6	X						X	X		X		003
4	139-SB-4-8-10						1430		6	X						X	X		X		004
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature] / SIES	10/27		[signature] Pace	10/31/16	0852		Y	N	Y
	[signature]	10/31/2016		[signature] Pace	10/31/16	01100				
	[signature] Pace	10/31/2016	1500	RP Pace HVL	10/31/16	1500	4.2	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: SAMUEL MCINTYRE
SIGNATURE of SAMPLER: [signature]
DATE Signed (MM/DD/YY): 10/31/2016

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Solutions-IES
Industrial & Environmental Services

1101 Nowell Rd. ■ Raleigh, NC 27607
(919) 873-1060 ■ Fax (919) 873-1074
www.solutions-ies.com

December 12, 2016

Mr. Terry Fox, L.G.
North Carolina Department of Transportation
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Reference: **Preliminary Site Assessment**
Joseph Molgora Property (Parcel #140)
6002 Raeford Road
Fayetteville, Cumberland County, North Carolina
State Project: U-4405
WBS Element 39049.1.1
SIES Project No. 2016.0054.NDOT

Dear Mr. Fox:

Solutions-IES, Inc., (SIES) has completed the Preliminary Site Assessment conducted at the above-referenced property. The work was performed in accordance with the Technical and Cost proposal dated September 26, 2016, and the North Carolina Department of Transportation's (NCDOT's) Notice to Proceed dated September 26, 2016. Activities associated with the assessment consisted of conducting a geophysical investigation, collecting soil samples for analysis, and reviewing applicable North Carolina Department of Environmental Quality (NCDEQ) records. The purpose of this report is to document the field activities, present the laboratory analytical results, and provide recommendations regarding the property.

Location and Description

The Joseph Molgora Property (Parcel #140) is located at 6002 Raeford Road in Fayetteville, Cumberland County, North Carolina. The property is located on the north side of Raeford Road, approximately 150 feet west of the intersection of Raeford Road and Skibo Road (**Figure 1**). The property consists of a former gas station and convenience store, and as of the date of the field work, a computer repair shop (We Fix It) occupied the building. The NCDOT information indicated that two underground storage tanks (USTs) were located under the edge of the building. A review of on-line UST registry information indicated that no USTs are registered at the site. According to the *UST Closure Report* (Environmental Hydrogeological Consultants, Inc., dated November 22, 2004), two 3,000-gallon gasoline USTs and one 500-gallon kerosene UST were installed in the 1960's and were taken out of service in the 1970's or early 1980's.

A concrete parking area occupies the area in front of the building. An attached canopy in front of the building may have covered a dispenser island and two UST fill ports were observed near the east side of the canopy (**Figure 2**). The proposed easement had not been marked at the site on the date of the geophysical field work, but NCDOT plan sheets show that the easement will affect the canopy, but not the building.

NCDOT requested a Preliminary Site Assessment for the right-of-way and proposed easement because of the previous site use as a gas station. The scope of work 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 to assess where contamination exists on the right-of-way/proposed easement. An estimate of the quantity of impacted soil was to be provided, should impacted soils be encountered.

SIES reviewed the on-line NCDEQ Incident Management database and Incident Number FA-2945 was assigned to the site. A further review of files regarding the incident from the NCDEQ Fayetteville Regional Office indicated that in November 2004, the landowner at that time, Ms. Carol Rhyner, closed three USTs at the site, two 3,000-gallon gasoline USTs and one 550-gallon kerosene UST. The tanks were closed in-place and soil samples collected from six soil borings around the USTs. One sample detected contamination at 12 milligrams per kilogram (mg/kg) diesel range organics (DRO) total petroleum hydrocarbons (TPH). No other soil contamination was detected.

Following the UST closure, S&ME conducted soil and groundwater sampling to further evaluate the site. Five soil samples were collected and analyzed for TPH DRO and GRO. The sample collected from the boring at the kerosene UST (located between the canopy and the road) contained GRO at a concentration of 1,100 mg/kg and DRO at a concentration of 3,400 mg/kg. These concentrations were above the 2004 action level of 10 mg/kg. No other soil contamination was detected. One groundwater sample from the kerosene UST area and one from the gasoline UST area were collected and analyzed for volatile petroleum constituents. The analytical results indicated the presence of MTBE at concentrations of 8.7 and 33 micrograms per liter (µg/L), which were below the 2004 groundwater quality standard of 200 µg/L.

No additional reports were available in the NCDEQ files. A No Further Action Letter was issued to the landowner on January 26, 2006. The letter references a report received by the NCDEQ in January 2006 that implies additional work was conducted at the site, but no documentation is available for review. The USTs and soil contamination appear to be located within the existing and proposed NCDOT right-of-way/easement. As a convenience to the reader, relevant excerpts from the file documents are presented in **Attachment A** and the complete file reports are added to the end of this report.

SIES also examined the UST registration database to obtain UST ownership information and found that no USTs have been registered for the property.

Geophysical Survey

Pyramid Environmental & Engineering of Greensboro, NC (Pyramid) conducted a geophysical survey to confirm the presence of the known USTs in the right-of-way/proposed easement and determine if additional USTs were present in that area. The geophysical survey consisted of time-domain electromagnetics (TDEM) and ground penetrating radar. A Geonics EM61 TDEM induction meter was used to locate buried metallic objects, specifically USTs. The GPR data were collected with a Geophysical Survey Systems, Inc. Utility Scan DF unit equipped with dual frequency 300/800 MHz antennae.

A survey grid was laid out along the right-of-way/proposed easement with the X-axis oriented approximately parallel to Raeford Road and the Y-axis oriented approximately perpendicular to Raeford Road. The grid was positioned to cover the entire right-of-way/proposed easement. The survey lines were spaced approximately five feet apart and magnetic data were collected continuously along each survey line with a data logger. After collection, the data were reviewed in the field with graphical computer software.

During the course of the survey, Pyramid was interrupted from completing the work by a representative of the landowner. Access to complete the survey was denied and the survey was not completed. However, prior to the interruption of the geophysical survey, electromagnetic data were collected and a preliminary GPR survey was conducted, although data were not recorded. Several anomalies were detected, but were generally attributed to reinforced concrete, underground utilities, signage, or USTs. Two anomalies were detected under the canopy that Pyramid interpreted as probable USTs, based on the NCDOT criteria. Because of the terminated survey, no measurements could be taken to calculate the UST sizes. Pyramid's detailed report of findings and interpretations is presented in **Attachment B**.

Following the interruption in the geophysical survey, SIES discussed the situation with the NCDOT. The NDOT contacted the landowner representative and attempted to gain access for further work. No response was received from the representative. Based on the unresponsiveness of the landowner and their representative, the NCDOT directed SIES to discontinue our efforts to collect data from this site and submit the geophysical survey.

SIES appreciates the opportunity to work with the NCDOT on this project. If you have any questions, please contact us at (919) 873-1060.

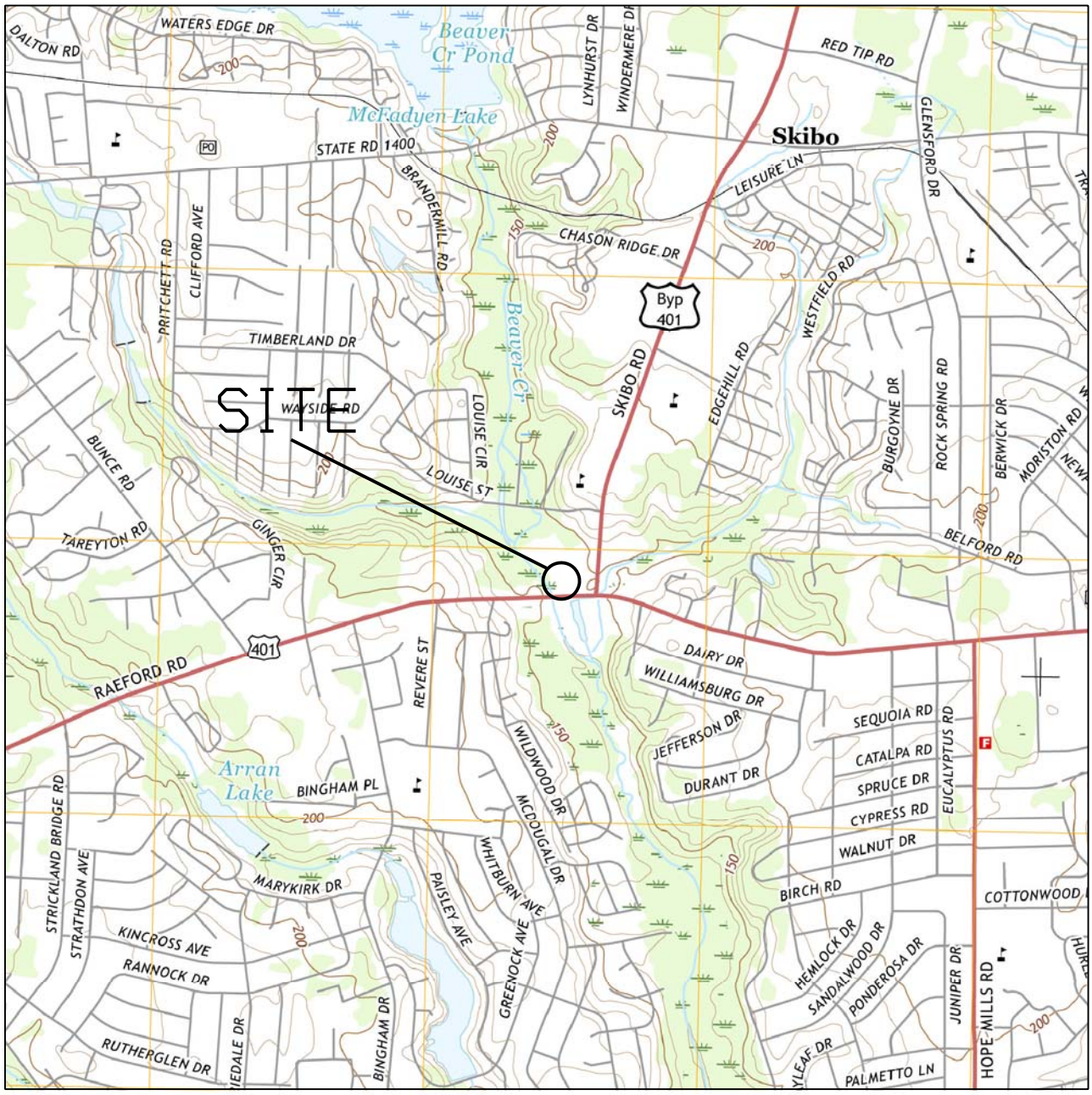
Sincerely,

Michael W. Branson, P.G.
Project Manager

John Palmer, P.G.
Senior Hydrogeologist

Attachments

FIGURES



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

PROJECT NUMBER 2016.0054.NDOT
CHECKED BY JEP
PROJECT MANAGER MWB
DATE NOVEMBER 2016
FILE FAYETTEVILLE PSAS

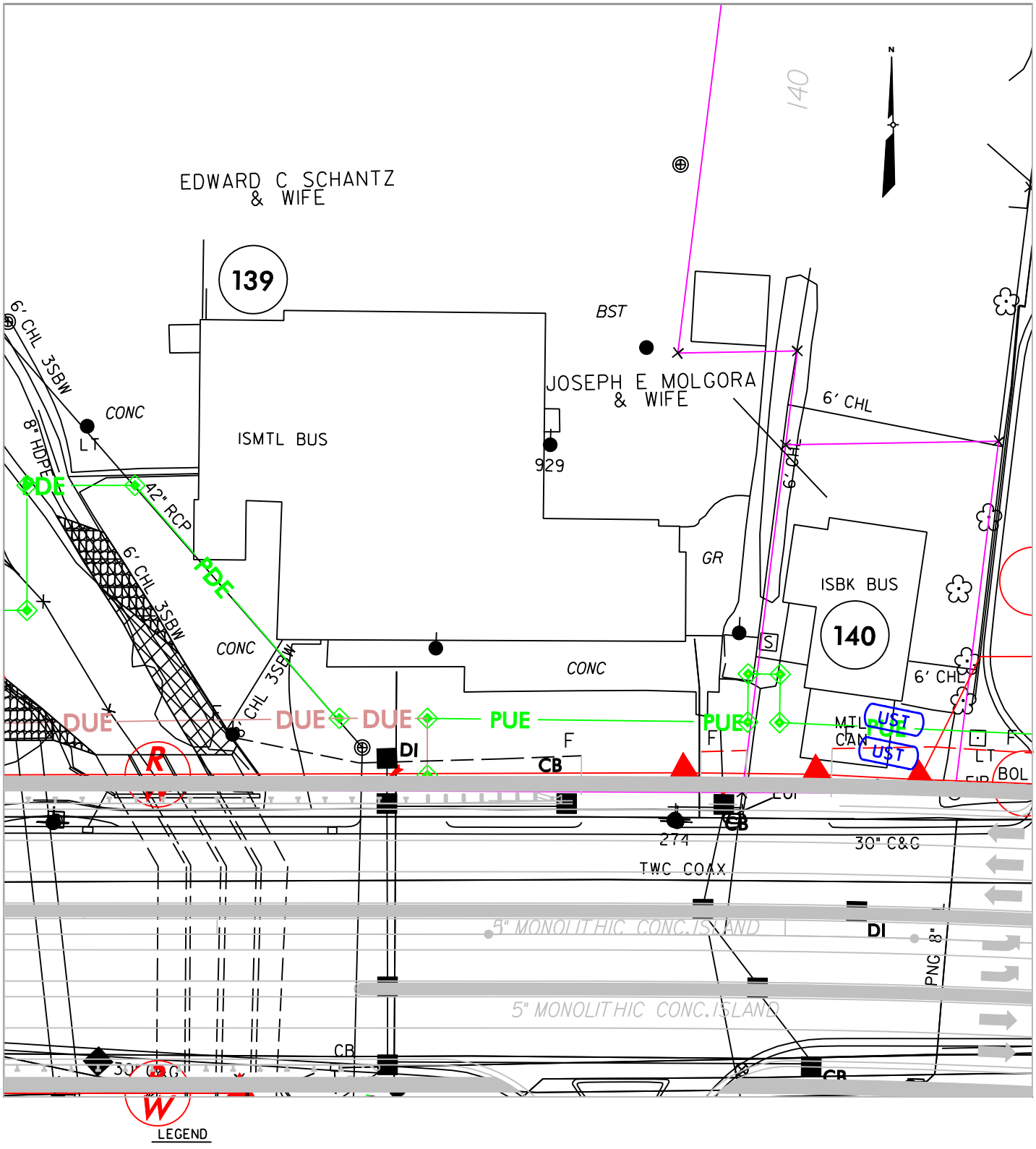
Solutions-IES
Industrial & Environmental Services
1101 NOWELL ROAD
RALEIGH, NORTH CAROLINA 27607
TEL: (919) 873-1060 FAX: (919) 873-1074

VICINITY MAP

MOLGORA PROPERTY (PARCEL #140)
FAYETTEVILLE, CUMBERLAND COUNTY NORTH CAROLINA

FIGURE 1

PROJECT NUMBER 2016.0054.NDOT
DRAFTER MWB
CHECKED BY JEP
PROJECT MANAGER MWB
DATE NOVEMBER 2016
FAYETTEVILLE PSAS
FILE



LEGEND

UST PROBABLE UST FROM GEOPHYSICAL SURVEY

0 25 50
GRAPHIC SCALE (FEET)

Solutions-IES
Industrial & Environmental Services
1101 NOWELL ROAD
RALEIGH, NORTH CAROLINA 27607
TEL: (919) 873-1060 FAX: (919) 873-1074

SITE MAP

MOLGORA PROPERTY (PARCEL #140)

FAYETTEVILLE, CUMBERLAND COUNTY, NORTH CAROLINA

FIGURE 2

...\reports\FIGURES\140.dgn 11/18/2016 11:11:53 AM

ATTACHMENT A

UNDERGROUND STORAGE TANK CLOSURE REPORT

11-22-04

I. General Information

A. Ownership of UST(s)

1. Name of UST owner:
   Ms. Carol Rhyner
2. Owner address & telephone number
   7802 West Hazzlewood St.
   Phoenix, AZ 85033
   623-631-3435

B. Facility Information

1. Facility name:
   Unknown
2. Facility ID #:
   Unknown
3. Facility address, telephone number & county:
   6002 Raeford Rd
   Fayetteville, NC
   Unknown/unoccupied

C. Contacts

1. Name, address, telephone number & job title of primary contact person:
   Ms. Carol Rhyner - Owner
   7802 West Hazzlewood St.
   Phoenix, AZ 85033
   623-631-3435
2. Name, address & telephone number of closure contractor:
   Environmental Hydrogeological Consultants, Inc.
   P.O. Box 902 / 207 West 4th Avenue
   Red Springs, North Carolina 28377
   (910) 843-4456
3. Name, address & telephone number of primary consultant:
   Environmental Hydrogeological Consultants, Inc.
   P.O. Box 902 / 207 West 4th Avenue
   Red Springs, North Carolina 28377
   (910) 843-4456
4. Name, address, telephone number & State certification number of laboratory:
   Environmental Science Corp.
   12065 Lebanon Road
   Mt. Juliet, Tennessee 37122
   (615) 758-5858
   NC State Certification #ENV375,DW21704

D. UST Information:

Tank #	Installation Date	Size in Gallons	Tank Dimensions	Last Contents	Previous Contents (if any)
1	**1960's ?**	**3,000**	**5' 4" x 18'**	**Gasoline**	
2	**1960's ?**	**3,000**	**5' 4" x 18'**	**Gasoline**	
3	**1960's ?**	**550**	**4' X 6'**	**Kerosene**	

E. Site Characteristics:

1. Describe any past releases at this site:
   None known

2. Is the facility active or inactive? If inactive, note the last time USTs were in operation:
   Inactive, since about late 1970's or early 1980's.

3. Describe surrounding property use (residential, commercial, farming, etc.):
   Commercial (Hardee's Fast Food, Auto Repair Shop, Gas Stations, etc.)

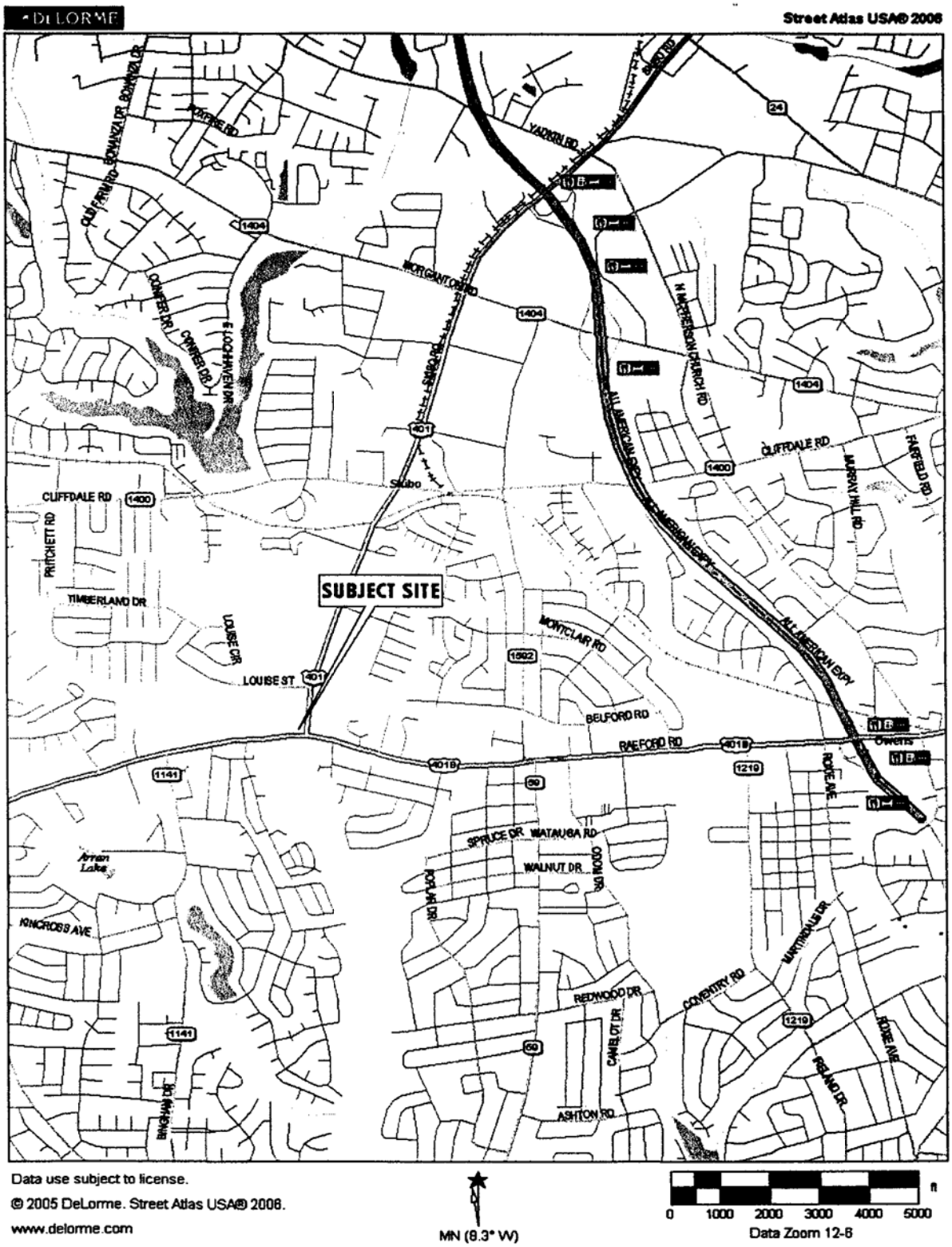
4. Describe site geology/hydrogeology:
   Tan/brown sandy clay material. Ground water was not encountered during soil borings.

II. Closure Procedures

A. Describe preparations for closure including the steps taken to notify authorities, permits obtained & the steps taken to clean & purge the tank(s):
Notified UST Section, USTs pumped out of remaining fuel/water and inerted with F-500.

B. Note the amount of residual material pumped from the tank(s):
Total of 150 gallons of water/fuel pumped from all three tanks

C. Describe the storage, sampling & disposal of the residual material:
EHC, Inc. personnel utilizing DOT 407/412 Vacuum Trailer pumped and transported to facility in Red Springs, NC under non-hazardous materials manifest.(see attached manifest).

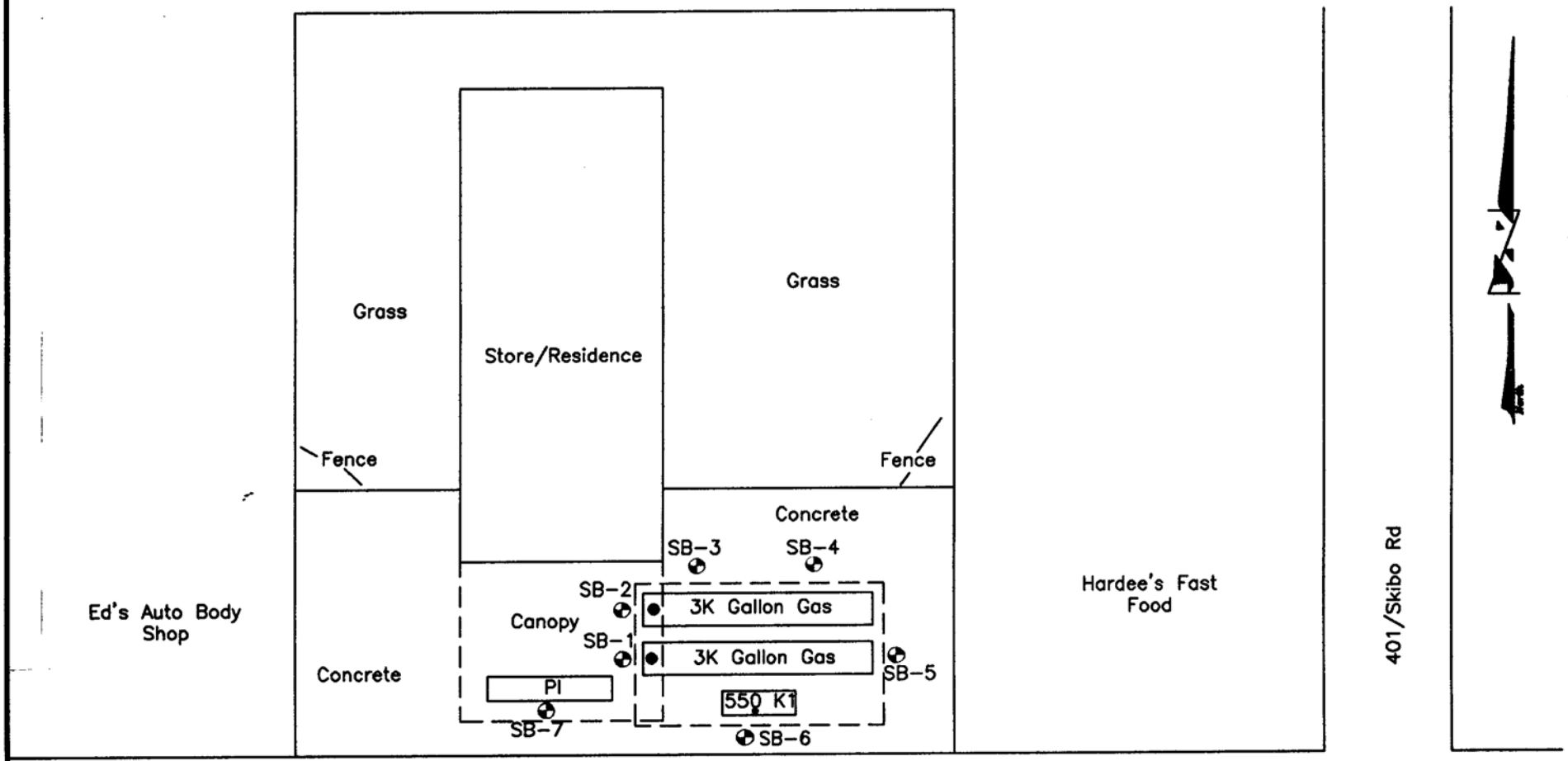


DELORME® Street Atlas USA
Version 6.0

FIGURE 1
AREA MAP

Site Location: 6002 Raeford Rd
Fayetteville, North Carolina

EHC
ENVIRONMENTAL HYDROGEOLOGICAL CONSULTANTS
HYDROLOGY • GEOLOGY • EXPLORATION • ANALYTICAL



EHC

ENVIRONMENTAL HYDROGEOLOGICAL CONSULTANTS
HYDROLOGY • GEOLOGY • EXPLORATION • ANALYTICAL

LEGEND

- Soil Boring Location
- Fill Pipe Location

Date: 11/29/05

PROJECT NO.: 05-UT1108-1

Drawn By: KAM

FIGURE 2

Site Map

6002 Raeford Rd.

Fayetteville, NC

FA-2945

Recd
Feb 09 2005

S&ME

December 27, 2004

Carol Rhyner
7802 West Hazelwood Street
Phoenix, Arizona 85033

Attention: Ms. Carol Rhyner

Reference: **SOIL AND GROUNDWATER SAMPLING SERVICES**
6002 Raeford Road
Fayetteville, North Carolina
Job No. 1034-04-049

Dear Ms. Rhyner:

S&ME, Inc. (S&ME) is pleased to present the findings of our soil and groundwater sampling services conducted on the above referenced property in accordance with our Proposal No EPRO-04-11-06 dated November 22, 2004.

PROJECT INFORMATION

Based on our November 19, 2004 telephone conversation, we understand that the subject property is a former store, which operated an underground storage tank (UST) system. According to you, at least two tanks, which contained gasoline and kerosene, are located on the property. Two former gasoline dispensers were located in front of the building and one former kerosene dispenser was located at the southeast corner of the building. To the best of your knowledge, the UST system has not been operated since at least the late 1970s or early 1980s.

On November 19, 2004, Mr. Jamie T. Honeycutt with S&ME visited the subject property (Figure 1). Three fill ports and vent pipes associated with three USTs and three former fuel dispenser locations were observed on the property. No other visual signs of fill ports or vent pipes associated with USTs or former fuel dispenser locations were observed on the property. According to you, no other USTs are located on the property.

S&ME, Inc.
409 Chicago Drive, Suite 116
Fayetteville, North Carolina 28306

(910) 323-1091
(910) 323-3499 fax
www.smeinc.com

Table 2

Summary of Soil Analytical Data
Soil and Groundwater Sampling Services

6002 Raeford Road
Fayetteville, North Carolina
S&ME Job No. 1034-04-049

Analysis Compound	Test Probe # 1 Southwest former gasoline dispenser	Test Probe # 2 Southeast former gasoline dispenser	Test Probe #3 (GW-1) Near former gasoline tanks	Test Probe #4 (GW-2) Near former kerosene tank	Test Probe # 5 Former kerosene dispenser	Reportable Concentration
	4'	4'	12'	12'	4'	
EPA Method 5030 Gasoline Range Organics	7.9	BDL	BDL	**1,100**	BDL	**10**
EPA Method 3550 Diesel Range Organics	NA	NA	NA	**3,400**	BDL	**10**

All quantities expressed in mg/Kg milligrams per kilograms (parts per million)
BDL: below method detection limits
NA: not analyzed
Constituents not listed were below the detection limit of the analytical method.
Regulatory standards as set forth in "Guidelines for Assessment and Corrective Action, North Carolina Underground Storage Tank Section"
Analytical results greater than applicable standards are given in bold print.

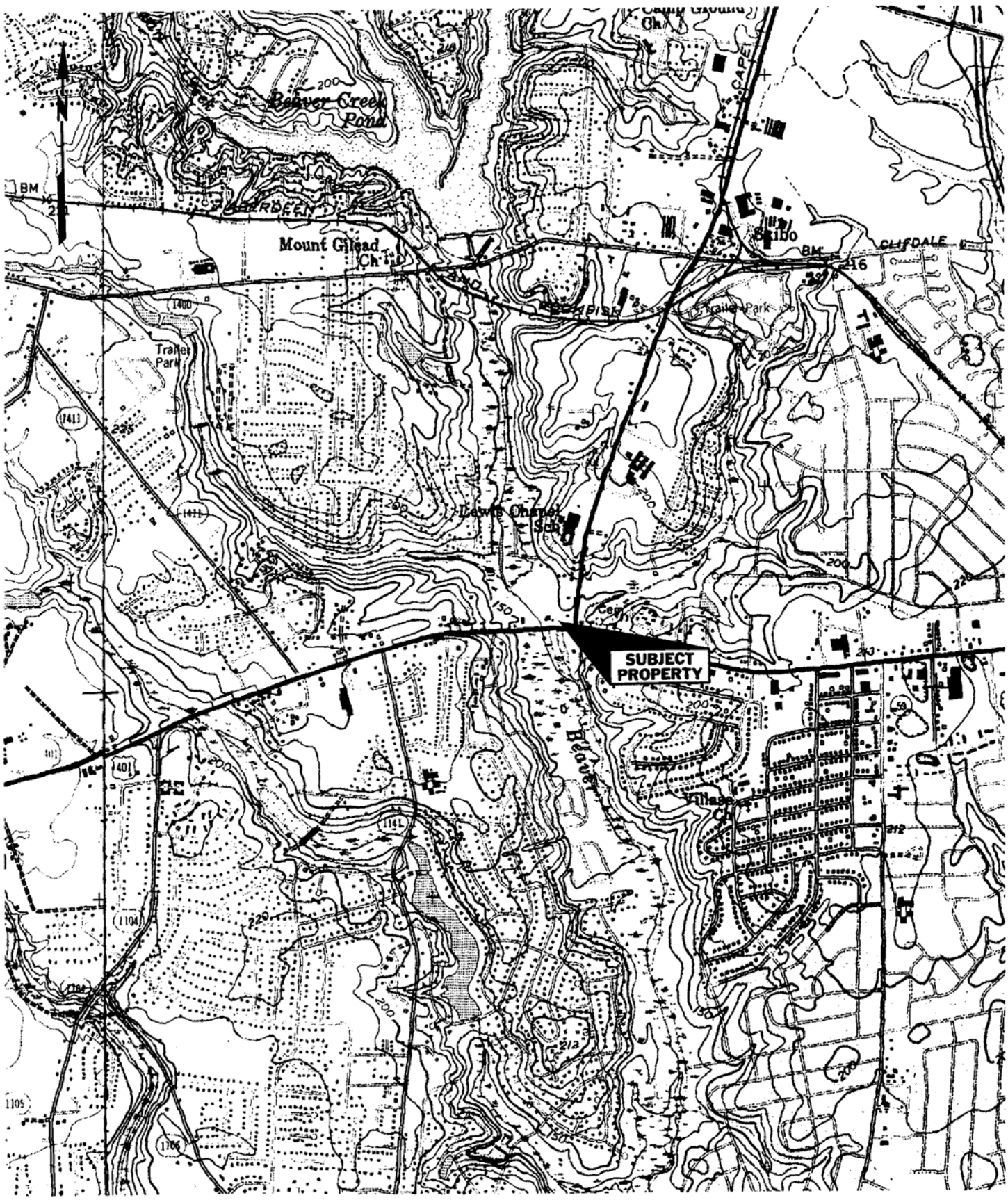
Table 3

Summary of Groundwater Quality Data
Soil and Groundwater Sampling Services

6002 Raeford Road
Fayetteville, North Carolina
S&ME Job No. 1034-04-049

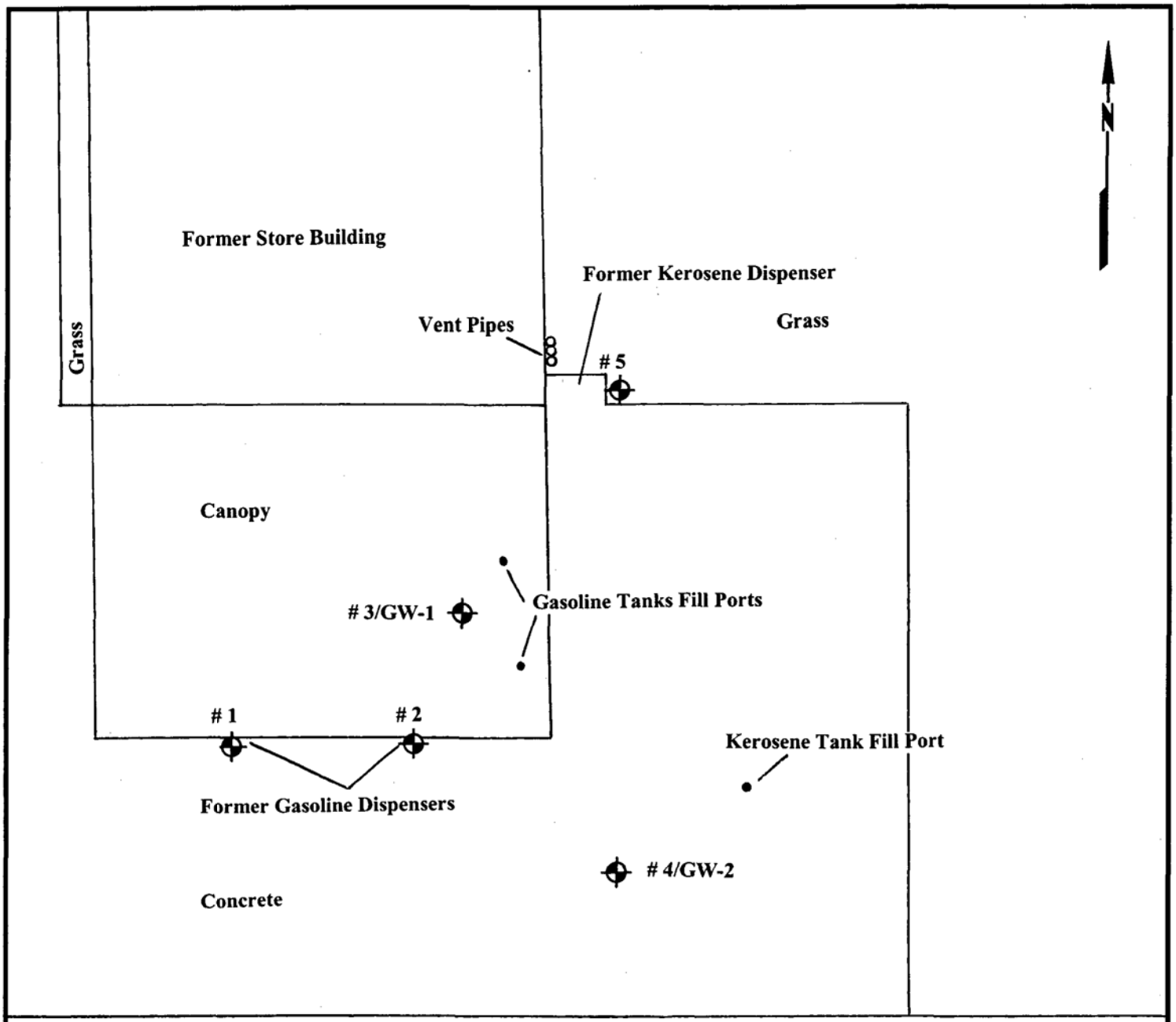
Analysis Compound	Test Probe # 3 (GW-1) Near former gasoline tanks	Test Probe # 4 (GW-2) Near former kerosene tank	2L Regulatory Standards
Method 624			
MTBE	8.7	33	200
Benzene	BDL	BDL	
Toluene	BDL	BDL	
Ethylbenzene	BDL	BDL	
Xylenes	BDL	BDL	
Isopropyl Ether	BDL	BDL	
Naphthalene	BDL	BDL	

Groundwater samples were not collected at any other location
All quantities expressed in ug/L micrograms per liter (parts per billion)
BDL: below method detection limits
Regulatory standards as set forth in 15A NCAC 2L, "Classifications and Standards Applicable to the Groundwaters of North Carolina" or in guidance documents issued by the NCDENR.
Analytical results greater than applicable standards are given in bold print.



Scale 1" = 2,000'

Job No : 1034-04-049	S&ME	**SITE VICINITY MAP**	Figure No:
Date: 12/23/04		6002 Raeford Road Fayetteville, North Carolina	1
Ref: Fayetteville Quadrangle			



Approximate sample location

Approximate Scale 1" = 10'

Job No : 1034-04-049 Date: 12/23/04 Ref:	S&ME	SAMPLE LOCATION MAP 6002 Raeford Road Fayetteville, North Carolina	Figure No: 2

NCDENR
North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

January 26, 2006

Carol Rhyner
7802 West Hazzlewood Street
Phoenix, AZ 85033

Re: Notice of No Further Action
15A NCAC 2L .0115(h)
Risk-based Assessment and Corrective Action
for Petroleum Underground Storage Tanks

Rhyner Property
6002 Raeford Road
Cumberland County
FA-2945
Risk Classification: Low
Ranking: L0R

Dear Ms. Rhyner:

The Underground Storage Tank (UST) Closure Report or Soil Contamination Report received by the Underground Storage Tank (UST) Section, Fayetteville Regional Office on January 26, 2006, has been reviewed. The review indicates that after tank closure or soil excavation soil contamination does not exceed the lower of the soil-to-groundwater or residential maximum soil contaminant concentrations (MSCCs), established in Title 15A NCAC 2L .0115(m).

The UST Section determines that no further action is warranted for this incident. This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0115(e) you have a continuing obligation to notify the Department of any changes that might affect the risk or land use classifications that have been assigned.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,

James W. Brown
Hydrogeologist II
Fayetteville Regional Office

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 **(828) 296-4500**

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 **(910) 486-1541**

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 **(704) 663-1699**

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 (919) **791-4200**

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 **(252) 946-6481**

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 **(910) 796-7215**

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 **(336) 771-4600**

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, **(336) 641-3771**

FTP: NFA closure NOR1005.dot

ATTACHMENT B

PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2016-265)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCEL 140 – JOSEPH E. MOLGORA NCDOT PROJECT U-4405

6002 RAEFORD RD., FAYETTEVILLE, CUMBERLAND COUNTY, NC

NOVEMBER 4, 2016

Report prepared for: Mike Branson
Solutions, IES
1101 Nowell Road
Raleigh, North Carolina 27607

Prepared by: _____
Eric C. Cross, P.G.
NC License #2181

Reviewed by: _____
Douglas A. Canavello, P.G.
NC License #1066

503 INDUSTRIAL AVENUE, GREENSBORO, NC 27406
P: 336.335.3174 F: 336.691.0648
C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 140 – 6002 Raeford Road
Fayetteville, Cumberland County, North Carolina

Table of Contents

Figures

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
SVE	Soil Vapor Extraction
UST	Underground Storage Tank

EXECUTIVE SUMMARY

Project Description: Pyramid Environmental conducted a geophysical investigation for Solutions, IES (Solutions) at Parcel 140, located at 6002 Raeford Road, Fayetteville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-4405). Solutions directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to extend from the existing edge of pavement to the proposed ROW lines and/or easement lines within the property, whichever distance was greater. Conducted from October 12-17, 2016, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area. It should be noted that Pyramid's survey was interrupted by the tenant/property owner, who prevented access during the investigation, impeding Pyramid's ability to complete the survey.

Geophysical Results: Widespread EM interference was observed across the survey area due to metal-reinforced concrete. Reconnaissance GPR scans showed evidence of two probable metallic USTs oriented lengthwise from west to east on the east side of the canopy located on the property. The tenant/property owner requested that Pyramid terminate the survey prior to formal GPR data being saved and measurement of the tanks being taken. Collectively, the geophysical data showed evidence of two probable metallic USTs at Parcel 140. The tenant/property owner prevented Pyramid from completing the survey.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Solutions, IES (Solutions) at Parcel 140, located at 6002 Raeford Road, Fayetteville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-4405). Solutions directed Pyramid as to the geophysical survey boundaries at the project site, which were designed to extend from the existing edge of pavement to the proposed ROW lines and/or easement lines within the property, whichever distance was greater. Conducted from October 12-17, 2016, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area. It should be noted that Pyramid's survey was interrupted by the tenant/property owner, who prevented access during the investigation, impeding Pyramid's ability to complete the survey

The site included a commercial building with a canopy surrounded by concrete parking space. Two possible fill ports were observed in the concrete at the east edge of the canopy. Aerial photographs showing the survey area boundaries and a ground-level photograph 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 metal detector integrated with a Trimble AG-114 GPS antenna. 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 11.0 software programs.

Initial reconnaissance ground penetrating radar (GPR) scans were performed at the site; however, during this reconnaissance the tenant/property owner asked Pyramid to vacate the property, thereby preventing any data from being saved or the survey from being completed. The reconnaissance GPR was performed 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. A general discussion of what was observed is presented in the Discussion of Results below.

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	Widespread Reinforced Concrete	
2	Vehicles	
3	2 Probable USTs and Reinforced Concrete	☑

Widespread interference was observed across the property due to the presence of metal reinforcement within the majority of the concrete in the survey area. Additionally, EM anomalies were observed on the west side of the survey area (Anomaly 2) that were associated with parked vehicles. Two suspected fill ports were observed on the east side of the canopy at the property, and a high amplitude EM signal was observed at this location. Pyramid performed reconnaissance GPR in this area to investigate for suspected USTs; however, no formal GPR data were saved due to the tenant/property owner preventing further access to the site.

Discussion of GPR Results

As mentioned above, Pyramid performed reconnaissance GPR across the location where two fill ports were observed adjacent to the canopy. The reconnaissance GPR recorded two distinct hyperbolic reflectors and two discreet lateral reflectors that provided evidence of two probable metallic USTs at the property. The two USTs were oriented lengthwise from west to east. Pyramid was prevented access to the property before being able to

determine accurate sizes and depths, take photographs, or save any formal GPR files associated with the tanks. The USTs were partially marked with marking paint in the field. Although the survey was not complete, the reconnaissance scans were consistent with two probable USTs.

Collectively, the geophysical data showed evidence of two probable metallic USTs at Parcel 140. The tenant/property owner prevented Pyramid from completing the survey.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 data collected and GPR reconnaissance scans performed at Parcel 140 in Fayetteville, Cumberland County, North Carolina, provides the following summary and conclusions:

- The EM61 survey provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- Widespread EM interference was observed across the survey area due to metal-reinforced concrete.
- Reconnaissance GPR scans showed evidence of two probable metallic USTs oriented lengthwise from west to east on the east side of the canopy.
- The tenant/property owner requested that Pyramid terminate the survey prior to formal GPR data being saved and measurement of the tanks being taken.
- Collectively, the geophysical data showed evidence of two probable metallic USTs at Parcel 140. The tenant/property owner prevented Pyramid from completing the survey.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Solutions, IES 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.

N↑

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA

View of Survey Area
(Facing Approximately North.
Additional Photos Not Available
Due to Lack of Access)

TITLE
PARCEL 140 - GEOPHYSICAL SURVEY
BOUNDARIES AND SITE PHOTOGRAPHS

PROJECT
6002 RAEFORD ROAD
FAYETTEVILLE, NORTH CAROLINA
NCDOT PROJECT U-4405

Pyramid Geophysics
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27460
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

DATE 11/02/16	CLIENT SOLUTIONS, IES
PYRAMID PROJECT #: 2016-265	**FIGURE 1**

N↑

EM61 METAL DETECTION RESULTS

NUMBERS IN BLUE (x) CORRESPOND TO ANOMALY TABLE INCLUDED IN THE REPORT

EVIDENCE OF 2 PROBABLE METALLIC 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 October 13, 2016, using a Geonics EM61 instrument. Initial reconnaissance GPR verified the presence of 2 probable metallic USTs at the location indicated in the figure. Prior to finalizing and saving GPR data, the tenant/owner prevented further access to the property. No GPR data were saved. Approximately 75% of the outlines of the USTs were marked in the field with marking paint.

EM61 Metal Detection Response (millivolts)

TITLE	PARCEL 140 - EM61 RESULTS CONTOUR MAP
PROJECT	6002 RAEFORD ROAD FAYETTEVILLE, NORTH CAROLINA NCDOT PROJECT U-4405
Pyramid Geophysics	503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology
DATE 11/02/16	CLIENT SOLUTIONS, IES
PYRAMID PROJECT #: 2016-265	**FIGURE 2**

File Review Reports
Joseph Molgora Property (Parcel #140)
6002 Raeford Road
Fayetteville, Cumberland County, North Carolina
State Project: U-4405
WBS Element 39049.1.1

UNDERGROUND STORAGE TANK CLOSURE REPORT

11-22-04

I. General Information

A. Ownership of UST(s)

1. Name of UST owner:
   Ms. Carol Rhyner
2. Owner address & telephone number
   7802 West Hazzlewood St.
   Phoenix, AZ 85033
   623-631-3435

B. Facility Information

1. Facility name:
   Unknown
2. Facility ID #:
   Unknown
3. Facility address, telephone number & county:
   6002 Raeford Rd
   Fayetteville, NC
   Unknown/unoccupied

C. Contacts

1. Name, address, telephone number & job title of primary contact person:
   Ms. Carol Rhyner - Owner
   7802 West Hazzlewood St.
   Phoenix, AZ 85033
   623-631-3435
2. Name, address & telephone number of closure contractor:
   Environmental Hydrogeological Consultants, Inc.
   P.O. Box 902 / 207 West 4th Avenue
   Red Springs, North Carolina 28377
   (910) 843-4456
3. Name, address & telephone number of primary consultant:
   Environmental Hydrogeological Consultants, Inc.
   P.O. Box 902 / 207 West 4th Avenue
   Red Springs, North Carolina 28377
   (910) 843-4456
4. Name, address, telephone number & State certification number of laboratory:
   Environmental Science Corp.
   12065 Lebanon Road
   Mt. Juliet, Tennessee 37122
   (615) 758-5858
   NC State Certification #ENV375,DW21704

D. UST Information:

Tank #	Installation Date	Size in Gallons	Tank Dimensions	Last Contents	Previous Contents (if any)
1	**1960's ?**	**3,000**	**5' 4" x 18'**	**Gasoline**	
2	**1960's ?**	**3,000**	**5' 4" x 18'**	**Gasoline**	
3	**1960's ?**	**550**	**4' X 6'**	**Kerosene**	

E. Site Characteristics:

1. Describe any past releases at this site:
   None known

2. Is the facility active or inactive? If inactive, note the last time USTs were in operation:
   Inactive, since about late 1970's or early 1980's.

3. Describe surrounding property use (residential, commercial, farming, etc.):
   Commercial (Hardee's Fast Food, Auto Repair Shop, Gas Stations, etc.)

4. Describe site geology/hydrogeology:
   Tan/brown sandy clay material. Ground water was not encountered during soil borings.

II. Closure Procedures

A. Describe preparations for closure including the steps taken to notify authorities, permits obtained & the steps taken to clean & purge the tank(s):
Notified UST Section, USTs pumped out of remaining fuel/water and inerted with F-500.

B. Note the amount of residual material pumped from the tank(s):
Total of 150 gallons of water/fuel pumped from all three tanks

C. Describe the storage, sampling & disposal of the residual material:
EHC, Inc. personnel utilizing DOT 407/412 Vacuum Trailer pumped and transported to facility in Red Springs, NC under non-hazardous materials manifest.(see attached manifest).

D. Excavation:

1. Describe excavation procedures noting the condition of the soils and the dimensions of the
1. Describe excavation procedures noting the condition of the soils and the dimensions of the
UST was abandoned in place.

2. Note the depth of tank burial(s)(from top of tank):
USTs were approximately 2 feet below land surface

3. Quantity of soil removed:
None.

4. Describe soil type(s):
N/A

5. Type and source of backfill used:
N/A

E. Contaminated Soil:

1. Describe how it was determined to what extent to excavate the soil:
N/A

2. Describe method of temporary storage, sampling & treatment/disposal of soil:
NA

III. Site Investigation

A. Provide information on field screening & observations, include methods used to calibrate field screening instrument(s):
Field screening via Olfactory Method.

B. Describe soil sampling points & sampling procedures used:
Stainless steel hand auger was used to collect soil boring samples. Five soil samples were collectedfrom around the Gasoline USTs at approx. 10 ft below land surface. One soil sample was collected beside the K-1 UST at apprx. 8 ft below land surface. One soil sample was collected at the pump island at approximately 3 ft below land surface. SB 1 - SB 5 and SB 7 were submitted for laboratory analysis for Total Petroleum Hydrocarbons(TPH) 5030(Gasoline Range Organics). SB 6 was analyzed by 5030 and 3550(Diesel Range Organics). Please see attached site map for soil boring locations.

C. Describe groundwater or surface water sampling procedures used:
Ground water was not encountered.

D. Quality Control Measures:

On November 10, 2005 seven soil samples (SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, & SB-7) were collected from the site by EHC personnel. The samples were placed in laboratory provided containers, packed in a cooler, iced, transported to EHC, Inc. and picked up by Federal Express on 11/11/05 for next day delivery to Environmental Science Corp. in Mt. Juliet, TN.

E. Investigation Results:

Laboratory results indicate TPH results are BDL (Below Detectable Limits) or below state action levels for SB 1, SB 2, SB 3, SB 4, SB 5, and SB 7. TPH results are only slightly above state action levels in SB 6 at 12 mg/kg via EPA 3550 analysis.

IV. Conclusions & Recommendations

Based on all of the available data including the soil chemistry results, it is our opinion no further action is required.

V. Signature of Professional Engineer or Licensed Geologist

SEAL

☐ **Professional Engineer Registration #:** _____

☐ **Licensed Geologist License #:** _____

PE / PG: _____

Project Manager: _____

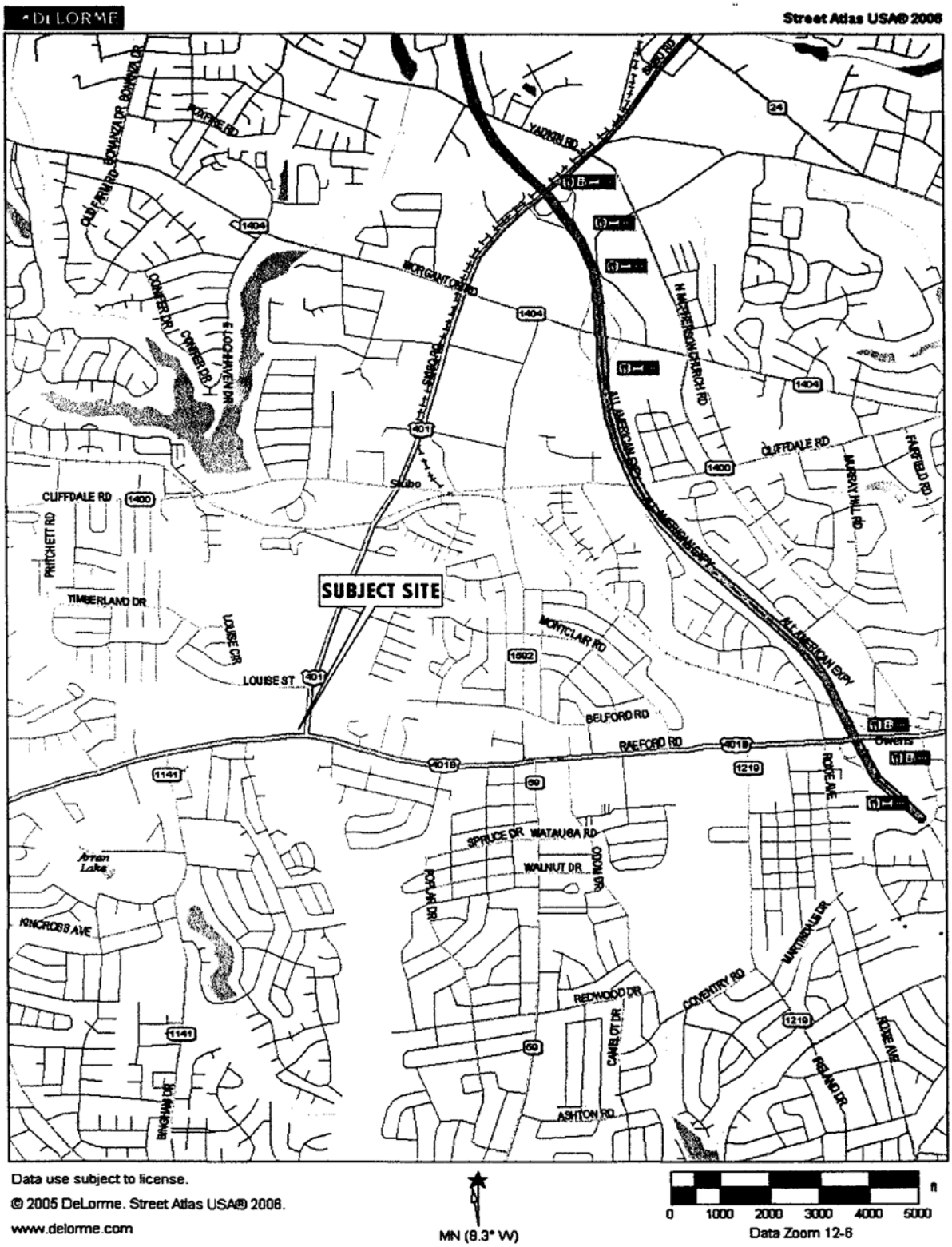
VI. Enclosures

A. Figures

1. Area Map
2. Site Map
   - Buildings
   - Underground utilities such as sewer lines & other conduits
   - Orientation of UST(s), pumps & product lines
   - Length, diameter & volume of UST(s)
   - Type of material(s) stored in UST(s) (currently & previously)
   - Sample location(s) (identified by letter or number)
   - Final limits of excavation
   - Scale
   - North arrow

B. Appendices

Appendix A: Notification of Intent to Close (GW/UST-3)
Appendix B: Site Investigation Report for Permanent Closure or Change-in-Service of UST (GW/UST-2)
Appendix C: Certificate of Tank Disposal
Appendix D: Soil, Water, Sludge Disposal Manifests
Appendix E: Laboratory Analytical Results
Appendix F: Chain-of-Custody Records
Appendix G: Site Sensitivity Evaluation (SSE) (if applicable)

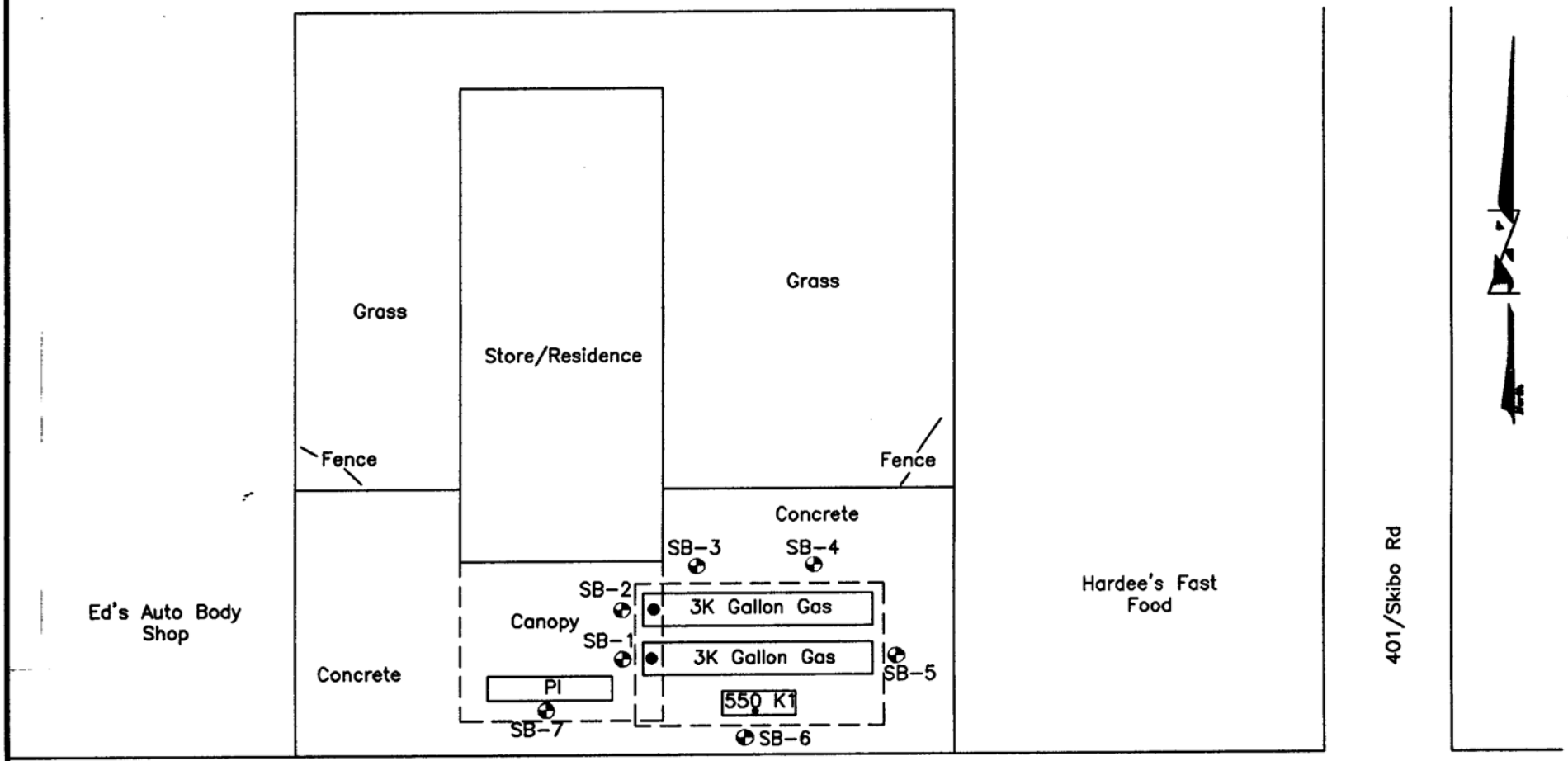


DELORME® Street Atlas USA
Version 6.0

FIGURE 1
AREA MAP

Site Location: 6002 Raeford Rd
Fayetteville, North Carolina

EHC
ENVIRONMENTAL HYDROGEOLOGICAL CONSULTANTS
HYDROLOGY • GEOLOGY • EXPLORATION • ANALYTICAL



EHC

ENVIRONMENTAL HYDROGEOLOGICAL CONSULTANTS
HYDROLOGY • GEOLOGY • EXPLORATION • ANALYTICAL

LEGEND

- Soil Boring Location
- Fill Pipe Location

Date: 11/29/05

PROJECT NO.: 05-UT1108-1

Drawn By: KAM

FIGURE 2

Site Map

6002 Raeford Rd.

Fayetteville, NC

NON-HAZARDOUS WASTE MANIFEST

EMERGENCY PHONE NO.
910-843-4456

EHC, INC.

Environmental Hydrogeological Consultants, Inc.
P.O. Box 902 • 207 W. Fourth Avenue
Red Springs, North Carolina 28377
Telephone: (910) 843-4456 • Fax: (910) 843-5376
www.environmentalnc.com

Manifest Document No.	
Page	of
EHC Project #	

GENERATOR INFORMATION

Name		US EPA ID No.
Street Address: 6002 RAEFORD RD FAYETEVILLE	Mailing Address	Phone No.
		Contact

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class or Div.	UN / NA ID No.	Packing Group	Containers Qty.	Containers Type	Total Quantity	Unit Wt./Vol.
a.		Gasoline mix with water.	III	1203	III	1	TT	150	G
b.									
c.									

ADDITIONAL INFORMATION		ERG. No.	Profile Code	Facility Use
a.		128		
b.				
c.				

GENERATOR'S CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed / Typed Name	Signature	Mo. / Day / Yr.

TRANSPORTER INFORMATION

Transporter
Environmental Hydrogeological Consultants, Inc.

Address
P.O. Box 902 • 207 W. Fourth Avenue
Red Springs, NC 28377

Transporter or EPA ID No. **NCR 000136671** | Unit No.

Phone **(910) 843-4456**

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature Brian Longley 6-21-05 Shipment Date

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature Brian Longley 6-21-05 Delivery Date

FACILITY INFORMATION

Facility
Environmental Hydrogeological Consultants, Inc.

Address
P.O. Box 902 • 207 W. Fourth Avenue
Red Springs, NC 28377

Facility or EPA ID No. **NCR 000136671**

Phone **(910) 843-4456**

Contact **Thomas Ammons**

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature Receipt Date

Discrepancies / Routing Codes / Handling Methods

a.

b.

c.

WHITE: Generator CANARY: Transporter #1 PINK: Transporter #2 GOLD: Generator

ENVIRONMENTAL
SCIENCE CORP.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Thomas Ammons
EHC, Inc.
PO Box 902
Red Springs, NC 28377

November 17,2005

ESC Sample # : L222287-01

Date Received : November 12, 2005
Description : 6002 Raeford Rd

Site ID :

Sample ID : SB-1 10 FT

Project # : 05-UT1108-1

Collected By : Allen McColl
Collection Date : 11/10/05 11:30

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	93.6		%	2540G	11/16/05	1
TPH (GC/FID) Low Fraction	8.7	5.9	mg/kg	5030	11/15/05	55.5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	96.		% Rec.	5030	11/15/05	55.5

Cheli Boucher, ESC Representative

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Reported: 11/17/05 14:29 Printed: 11/17/05 14:29

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Est. 1970

REPORT OF ANALYSIS

Mr. Thomas Ammons
EHC, Inc.
PO Box 902
Red Springs, NC 28377

November 17,2005

ESC Sample # : L222287-02

Date Received : November 12, 2005
Description : 6002 Raeford Rd

Site ID :

Sample ID : SB-2 10 FT

Project # : 05-UT1108-1

Collected By : Allen McColl
Collection Date : 11/10/05 12:00

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	95.5		%	2540G	11/16/05	1
TPH (GC/FID) Low Fraction	6.0	5.8	mg/kg	5030	11/15/05	55.5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	96.		% Rec.	5030	11/15/05	55.5

Cheli Boucher, ESC Representative

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Reported: 11/17/05 14:29 Printed: 11/17/05 14:29

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Thomas Ammons
EHC, Inc.
PO Box 902
Red Springs, NC 28377

November 17,2005

ESC Sample # : L222287-03

Date Received : November 12, 2005
Description : 6002 Raeford Rd

Site ID :

Sample ID : SB-3 10 FT

Project # : 05-UT1108-1

Collected By : Allen McColl
Collection Date : 11/10/05 13:15

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	90.1		%	2540G	11/16/05	1
TPH (GC/FID) Low Fraction	BDL	5.3	mg/kg	5030	11/15/05	47.5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	95.		% Rec.	5030	11/15/05	47.5

Cheli Boucher, ESC Representative

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Reported: 11/17/05 14:29 Printed: 11/17/05 14:29

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Est. 1970

REPORT OF ANALYSIS

Mr. Thomas Ammons
EHC, Inc.
PO Box 902
Red Springs, NC 28377

November 17,2005

ESC Sample # : L222287-04

Date Received : November 12, 2005
Description : 6002 Raeford Rd

Site ID :

Sample ID : SB-4 10 FT

Project # : 05-UT1108-1

Collected By : Allen McColl
Collection Date : 11/10/05 14:00

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	84.8		%	2540G	11/16/05	1
TPH (GC/FID) Low Fraction	5.0	4.9	mg/kg	5030	11/15/05	41.5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	96.		% Rec.	5030	11/15/05	41.5

Cheli Boucher, ESC Representative

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Reported: 11/17/05 14:29 Printed: 11/17/05 14:29

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Thomas Ammons
EHC, Inc.
PO Box 902
Red Springs, NC 28377

November 17,2005

ESC Sample # : L222287-05

Date Received : November 12, 2005
Description : 6002 Raeford Rd

Site ID :

Sample ID : SB-5 10 FT

Project # : 05-UT1108-1

Collected By : Allen McColl
Collection Date : 11/10/05 14:30

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	94.2		%	2540G	11/16/05	1
TPH (GC/FID) Low Fraction	BDL	5.5	mg/kg	5030	11/15/05	52
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	96.		% Rec.	5030	11/15/05	52

Cheli Boucher, ESC Representative

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
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AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Reported: 11/17/05 14:29 Printed: 11/17/05 14:30

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Thomas Ammons
EHC, Inc.
PO Box 902
Red Springs, NC 28377

November 17,2005

ESC Sample # : L222287-06

Site ID :

Project # : 05-UT1108-1

Date Received : November 12, 2005
Description : 6002 Raeford Rd

Sample ID : SB-6 8 FT

Collected By : Allen McColl
Collection Date : 11/10/05 15:00

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	86.5		%	2540G	11/16/05	1
TPH (GC/FID) Low Fraction	6.1	5.5	mg/kg	5030	11/15/05	47.5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	96.		% Rec.	5030	11/15/05	47.5
TPH (GC/FID) High Fraction	12.	4.6	mg/kg	DRO	11/16/05	1
Surrogate Recovery (50-150)						
o-Terphenyl	76.		% Rec.	DRO	11/16/05	1

Cheli Boucher, ESC Representative

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Reported: 11/17/05 14:29 Printed: 11/17/05 14:30

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SCIENCE CORP.

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Mt. Juliet, TN 37122
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Thomas Ammons
EHC, Inc.
PO Box 902
Red Springs, NC 28377

November 17,2005

ESC Sample # : L222287-07

Date Received : November 12, 2005
Description : 6002 Raeford Rd

Site ID :

Sample ID : SB-7 3 FT

Project # : 05-UT1108-1

Collected By : Allen McColl
Collection Date : 11/10/05 15:30

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	90.0		%	2540G	11/16/05	1
TPH (GC/FID) Low Fraction	BDL	5.0	mg/kg	5030	11/15/05	45.5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	96.		% Rec.	5030	11/15/05	45.5

Cheli Boucher, ESC Representative

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Reported: 11/17/05 14:29 Printed: 11/17/05 14:30

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Mr. Thomas Ammons
EHC, Inc.
PO Box 902
Red Springs, NC 28377

November 17,2005

ESC Sample # : L222287-08

Date Received : November 12, 2005
Description : 6002 Raeford Rd

Site ID :

Sample ID : TRIP BLANK

Project # : 05-UT1108-1

Collected By : Allen McColl
Collection Date : 11/10/05 00:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	100	ug/l	5030	11/16/05	1
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene	97.		% Rec.	5030	11/16/05	1

Cb

Cheli Boucher, ESC Representative

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)

Laboratory Certification Numbers:
AIHA - 100789, AL - 40660, CA - I-2327, CT- PH-0197, FL - E87487, GA - 923, IN - C-TN-01
KY - 90010, KYUST - 0016, NC - ENV375,DW21704, ND - R-140, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ -0612, MN - 047-999-395, NY - 11742, NJ - 81002, WI - 998093910

Note:
The reported analytical results relate only to the sample submitted.

Reported: 11/17/05 14:29 Printed: 11/17/05 14:30

Company Name/Address:
EHC, Inc.

PO Box 902
Red Springs,NC 28377

Alternate billing information:

Report to: Thomas Ammons

Email to:

Project Description: 6002 Raeford Rd.

City/State Collected: Fayetteville, NC

Phone: (910) 843-4456
FAX: (910) 843-5376

Client Project #: 05-UT1108-1

ESC Key:

Collected by: Allen McColl

Site/Facility ID#:

P.O.#:

Collected by (signature): Allen McColl

Packed on Ice N (Y)

Rush? (Lab MUST Be Notified)
____ Same Day.....200%
____ Next Day.....100%
____ Two Day.....50%

Date Results Needed: normal

Email? X No__Yes
FAX? X No__Yes

Analysis/Container/Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	5030 - GRO	3550 - DRO/5030 - GRO						Remarks/Contaminant	Sample # (lab only)
SB-1	Grab	SS	10'	11/10/05	11:30am	2	X								L222287-01
SB-2					12:00pm	2	X								-02
SB-3					1:15pm	2	X								-03
SB-4					2:00pm	2	X								-04
SB-5			↓		2:30pm	2	X								-05
SB-6			8'		3:00pm	2		X							-06
SB-7	↓	↓	3'	↓	3:30pm	2	X								-07
Trip Blank						1									-08

Chain of Custody Page 1 of 1

Prepared by:

ENVIRONMENTAL SCIENCE CORP.
12065 Lebanon Road
Mt. Juliet, TN 37122
Phone (615) 758-5858
Phone (800) 767-5859
FAX (615) 758-5859

CoCode: ENVHYD (lab use only)
Template/Prelogin
Shipped Via:

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

pH _____ Temp _____

Remarks: 7907 0981 85133

Flow _____ Other _____

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐	Condition: (lab use only)
Allen McColl	11/11/05				OK
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.6°C / Bottles Received: 14 / TB	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/12/05 / Time: 945	pH Checked: / NCF:

FA-2945

Recd
Feb 09 2005

S&ME

December 27, 2004

Carol Rhyner
7802 West Hazelwood Street
Phoenix, Arizona 85033

Attention: Ms. Carol Rhyner

Reference: **SOIL AND GROUNDWATER SAMPLING SERVICES**
6002 Raeford Road
Fayetteville, North Carolina
Job No. 1034-04-049

Dear Ms. Rhyner:

S&ME, Inc. (S&ME) is pleased to present the findings of our soil and groundwater sampling services conducted on the above referenced property in accordance with our Proposal No EPRO-04-11-06 dated November 22, 2004.

PROJECT INFORMATION

Based on our November 19, 2004 telephone conversation, we understand that the subject property is a former store, which operated an underground storage tank (UST) system. According to you, at least two tanks, which contained gasoline and kerosene, are located on the property. Two former gasoline dispensers were located in front of the building and one former kerosene dispenser was located at the southeast corner of the building. To the best of your knowledge, the UST system has not been operated since at least the late 1970s or early 1980s.

On November 19, 2004, Mr. Jamie T. Honeycutt with S&ME visited the subject property (Figure 1). Three fill ports and vent pipes associated with three USTs and three former fuel dispenser locations were observed on the property. No other visual signs of fill ports or vent pipes associated with USTs or former fuel dispenser locations were observed on the property. According to you, no other USTs are located on the property.

S&ME, Inc.
409 Chicago Drive, Suite 116
Fayetteville, North Carolina 28306

(910) 323-1091
(910) 323-3499 fax
www.smeinc.com

The following services were provided by S&ME for the purpose of screening the site for potential impacts stemming from the former UST system at the subject property.

SUBSURFACE INVESTIGATION

On December 1, 2004, S&ME personnel observed three fill ports and vent pipes, associated with three USTs located at the front southeastern side of the building. S&ME personnel opened the fill ports for the tanks. The depth to the bottom of the tanks measured approximately 8 feet below land surface (bls). Approximately one to two inches of water with an odor similar to gasoline were observed in two tanks located next to each other, which are partially located under the front canopy of the building. Approximately two inches of water with an odor similar to kerosene were observed in the tank located southeast of the first two tanks.

Two former fuel dispenser locations were observed in front of the building. One former fuel dispenser location was observed at the southeast corner of the building.

S&ME advanced five Geoprobe test probes (#1 through #5) on the subject property. The approximate locations of the test probes are shown in Figure 2. Test probes #1, #2 and #5 were located at the former fuel dispenser locations. Test probe #3 (GW-1) was located near the fill ports for the two former gasoline tanks partially located under the front canopy of the building. Test probe #4 (GW-2) was originally located near the fill port for the former kerosene tank. An obstruction was encountered at this location and test probe #4 (GW-2) was offset further away from the fill port.

Soil samples were collected from each location at two-foot depth intervals. The soil samples were visually classified and field scanned with an Organic Vapor Analyzer (OVA) for the presence of volatile organic compounds (VOCs).

The soils encountered at the test probe locations primarily consisted of sand, clayey sand and sandy clay to a depth of approximately 12 feet bls. Pieces of concrete and asphalt were also encountered at the test probe locations. Groundwater was encountered at a depth of approximately 14 feet bls.

One soil sample was selected from each test probe location and forwarded to Enco Laboratories in Cary, North Carolina. The soil samples collected from test probes #1 and #2 located at the former gasoline dispenser locations at the front of the building and the soil sample collected from test probe #3 (GW-1) located near the fill ports for the former gasoline tanks were analyzed for Gasoline Range Organics by EPA Method 5030. The soil samples collected from test probe #5 located at the former kerosene fuel dispenser location at the southeast corner of the building and test probe #4 (GW-2) located near the former kerosene tank were analyzed for Gasoline Range Organics and Diesel Range Organics by EPA Methods 5030/3550.

The Geoprobe was used to advance test probes #3 (GW-1) and #4 (GW-2) into the groundwater. A groundwater sample was collected using the Geoprobe at each of these two test probe locations from a depth interval of approximately 14 to 18 feet bls. The groundwater samples were also forwarded to Enco Laboratories in Cary, North Carolina. The groundwater samples were analyzed for volatile organics by EPA Method 624. After the sampling had been completed, the test probe and soil boring locations were backfilled with bentonite pellets and soil cuttings.

LABORATORY ANALYTICAL RESULTS

Soil Screening

A review of the soil field screening data shows that no measurable OVA readings were observed in any of the selected soil samples except for test probe #4 (GW-2) located near the former kerosene tank. A strong petroleum odor was observed at test probe #4 (GW-2) starting at a depth of approximately 8 bls. Table 1 summarizes the soil field screening data for the collected soil samples.

Laboratory results for the collected soil samples show that Gasoline Range Organics were detected at test probe #1, which was located at the southwest former gasoline dispenser location. At a depth of approximately 4 feet bls in test probe #1, a concentration of 7.9 milligrams per kilogram (mg/Kg), was reported, which is below the North Carolina Reportable Concentration level of 10 mg/Kg. Gasoline Range Organics and Diesel Range Organics were detected at test probe #4 (GW-2), which was located near the former kerosene tank, at a depth of approximately 12 feet bls at a concentration of 1,100 mg/Kg and 3,400 mg/Kg, respectively, which are above the North Carolina Reportable Concentration level of 10 mg/Kg. All other soil samples were below the method detection limits. Table 2 summarizes the laboratory analytical results for soil samples collected at the subject property.

Groundwater Quality

Methy tert-butyl ether (MTBE) was detected at test probes #3 (GW-1) and #4 (GW-2) at a concentration of 8.7 and 33 micrograms per liter (ug/L) respectively, which are below the North Carolina Groundwater Quality Standard of 200 ug/L for MTBE. No other analyzed volatile organic compounds were detected in any of the collected groundwater samples at the subject property. Table 3 summarizes the laboratory analytical results for the collected groundwater samples. Copies of the laboratory reports are included in Appendix I.

CONCLUSION

Based on the laboratory results, it appears that a release has occurred at the USTs located on the subject property at a concentration which exceeds the North Carolina Reportable Concentration level. However, no petroleum constituents were detected in the groundwater samples collected on the subject property at a concentration, which exceed the North Carolina Groundwater Quality Standards.

Based on these findings, we understand that a copy of this report should be forwarded to the North Carolina Department of Environment and Natural Resources (NCDENR) by the property owner.

The purpose of this soil and groundwater sampling program was to screen the immediate areas of the identified USTs and dispensers for petroleum fuel product constituents. No data was collected nor is any representation made regarding areas of the site other than the specific sampling locations or for other contaminants.

S&ME appreciates having the opportunity to provide our services to you. Should you have any questions, please do not hesitate to contact us at your convenience.

Very truly yours,

S&ME, INC.

Jamie T. Honeycutt
Environmental Staff Professional

Senior Review by:

Ernest F. Parker, Jr. P.E., P.G.
Senior Environmental Consultant

Table 1

OVA Readings
Soil and Groundwater Sampling Services

6002 Raeford Road
Fayetteville, North Carolina
S&ME Job No. 1034-04-049

Location	Depth (ft.)	OVA Reading (ppm)
Test Probe # 1 (Southwest former gasoline dispenser)	0 - 4	0
Test Probe # 2 (Southeast former gasoline dispenser)	0 - 4	0
Test Probe # 3 (GW-1) (Near former gasoline tanks)	0-12	0
Test Probe # 4 (GW-2) (Near former kerosene tank)	0-6 8 10 12	0 12 160 + 1000
Test Probe # 5 (Former kerosene dispenser)	0-4	0

Notes:
ppm = parts per million
ft.: feet

Table 2

Summary of Soil Analytical Data
Soil and Groundwater Sampling Services

6002 Raeford Road
Fayetteville, North Carolina
S&ME Job No. 1034-04-049

Analysis Compound	Test Probe # 1 Southwest former gasoline dispenser	Test Probe # 2 Southeast former gasoline dispenser	Test Probe #3 (GW-1) Near former gasoline tanks	Test Probe #4 (GW-2) Near former kerosene tank	Test Probe # 5 Former kerosene dispenser	Reportable Concentration
	4'	4'	12'	12'	4'	
EPA Method 5030 Gasoline Range Organics	7.9	BDL	BDL	**1,100**	BDL	**10**
EPA Method 3550 Diesel Range Organics	NA	NA	NA	**3,400**	BDL	**10**

All quantities expressed in mg/Kg milligrams per kilograms (parts per million)
BDL: below method detection limits
NA: not analyzed
Constituents not listed were below the detection limit of the analytical method.
Regulatory standards as set forth in "Guidelines for Assessment and Corrective Action, North Carolina Underground Storage Tank Section"
Analytical results greater than applicable standards are given in bold print.

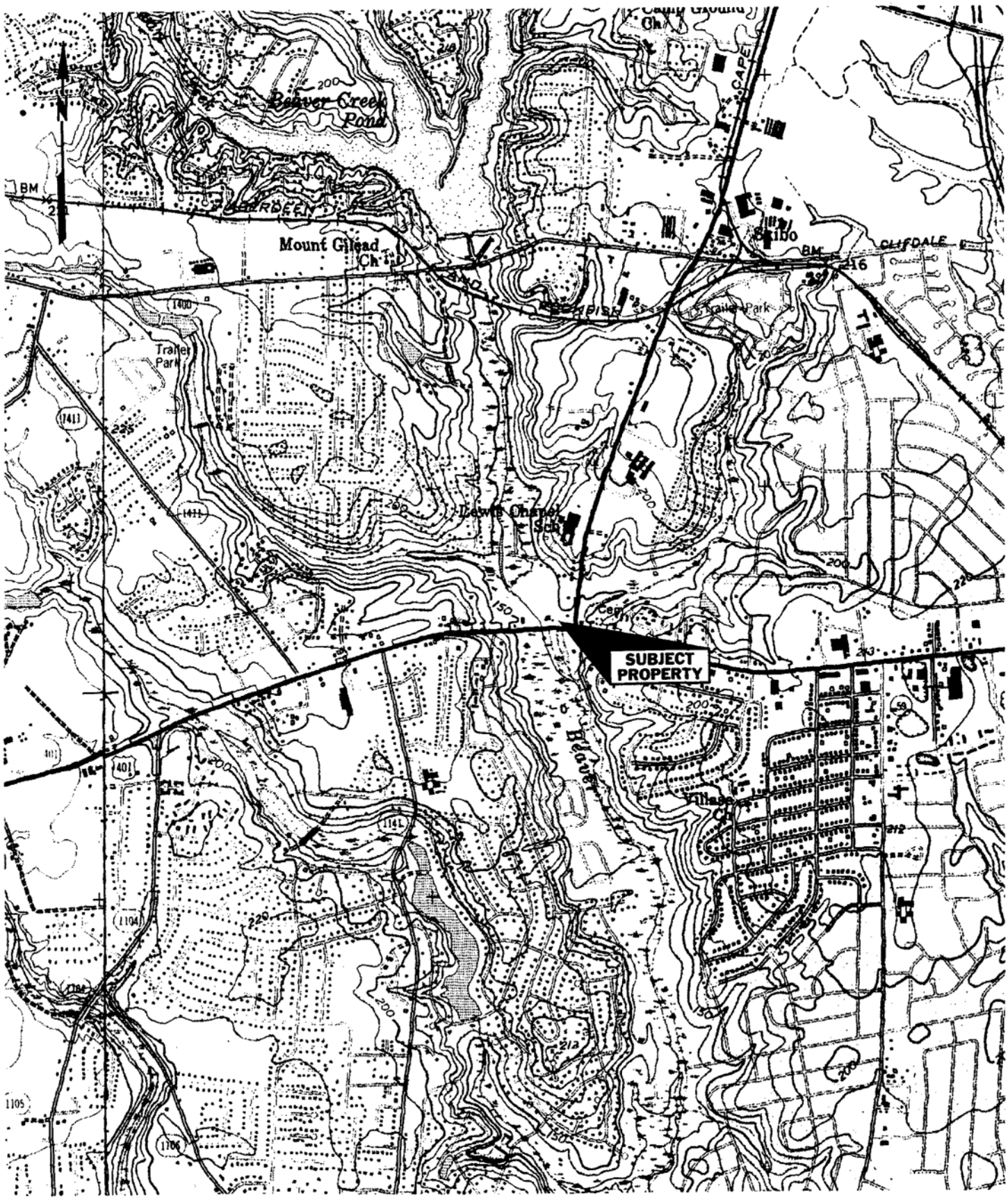
Table 3

Summary of Groundwater Quality Data
Soil and Groundwater Sampling Services

6002 Raeford Road
Fayetteville, North Carolina
S&ME Job No. 1034-04-049

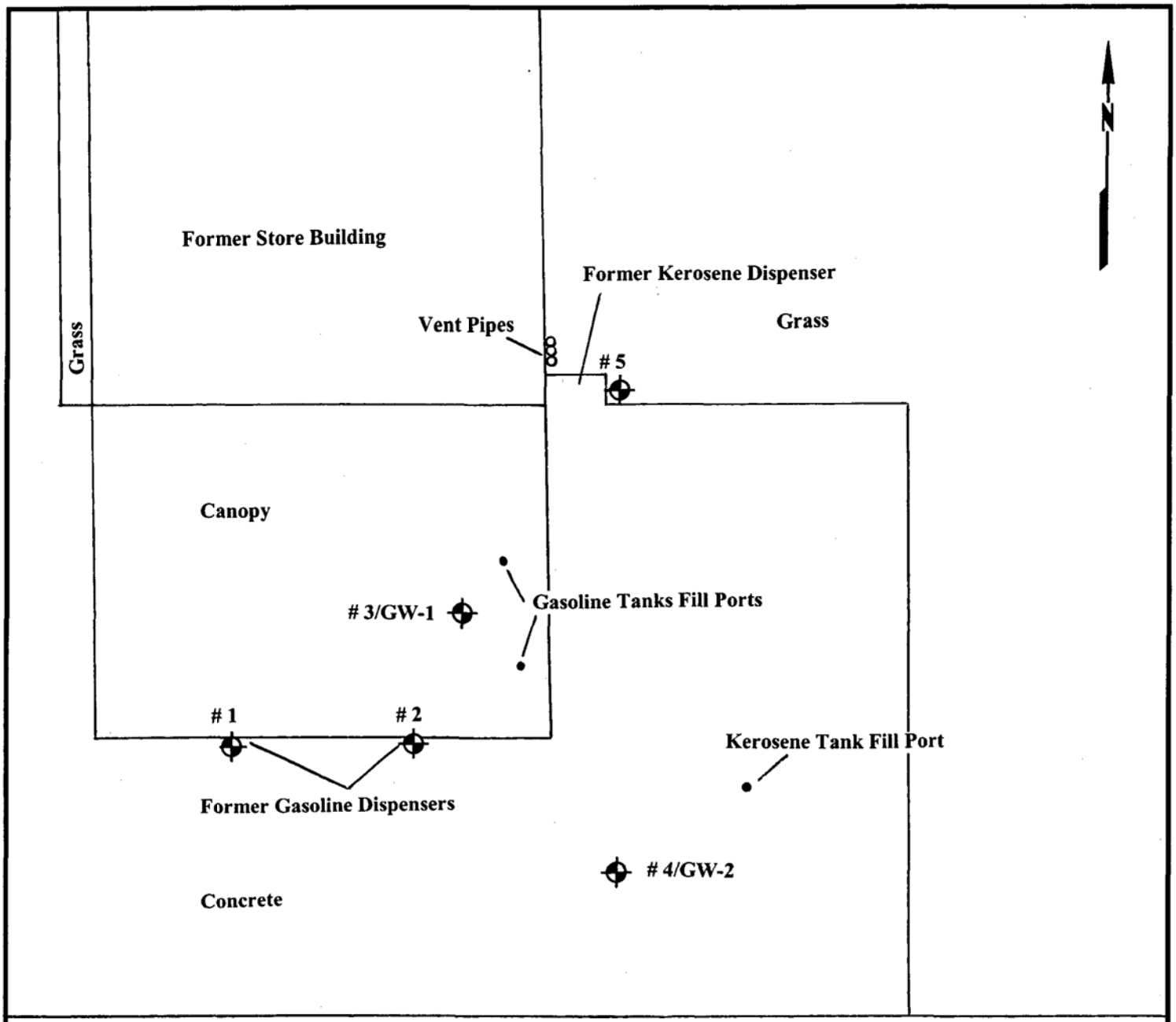
Analysis Compound	Test Probe # 3 (GW-1) Near former gasoline tanks	Test Probe # 4 (GW-2) Near former kerosene tank	2L Regulatory Standards
Method 624			
MTBE	8.7	33	200
Benzene	BDL	BDL	
Toluene	BDL	BDL	
Ethylbenzene	BDL	BDL	
Xylenes	BDL	BDL	
Isopropyl Ether	BDL	BDL	
Naphthalene	BDL	BDL	

Groundwater samples were not collected at any other location
All quantities expressed in ug/L micrograms per liter (parts per billion)
BDL: below method detection limits
Regulatory standards as set forth in 15A NCAC 2L, "Classifications and Standards Applicable to the Groundwaters of North Carolina" or in guidance documents issued by the NCDENR.
Analytical results greater than applicable standards are given in bold print.



Scale 1" = 2,000'

Job No : 1034-04-049	S&ME	**SITE VICINITY MAP**	Figure No:
Date: 12/23/04		6002 Raeford Road Fayetteville, North Carolina	1
Ref: Fayetteville Quadrangle			



Approximate sample location

Approximate Scale 1" = 10'

Job No : 1034-04-049 Date: 12/23/04 Ref:	S&ME	SAMPLE LOCATION MAP 6002 Raeford Road Fayetteville, North Carolina	Figure No: 2

Environmental Conservation Laboratories, Inc.
1015 Passport Way
Cary, North Carolina 27513-2042
919 / 677-1669
Fax 919 / 677-9846
www.encolabs.com

ENCO Laboratories

CLIENT : S&ME, Inc.
ADDRESS: 409 Chicago Dr.
Suite 116
Fayetteville, NC 28306

REPORT # : CRY17023
DATE SUBMITTED: December 2, 2004
DATE REPORTED : December 8, 2004

ATTENTION: Mr. Jamie Honeycutt

SAMPLE IDENTIFICATION

Samples submitted and
identified by client as:

REFERENCE: 1034-04-049

Raeford Rd.

12/01/04

CRY17023-1	: #1	@ 13:00
CRY17023-2	: #2	@ 13:30
CRY17023-3	: #3	@ 13:40
CRY17023-4	: #4	@ 15:00
CRY17023-5	: #5	@ 15:30
CRY17023-6	: GW-1	@ 16:00
CRY17023-7	: GW-2	@ 15:15

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. This data has been produced in accordance with NELAC Standards (July, 2002). This report shall not be reproduced except in full, without the written approval of the laboratory. Results for these procedures apply only to the samples as submitted.

Note: Analytical values are reported on a dry weight basis.

PROJECT MANAGER Chuck Smith
Chuck Smith

RESULTS OF ANALYSIS

EPA METHOD 8015 MODIFIED - GASOLINE RANGE ORGANICS	#1	#2	Units
GRO (C6-C10)	7.9 D1	4.7 U D2	mg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
2,5-Dibromotoluene	100	88	59-168
Date Analyzed	12/06/04 18:21	12/06/04 18:52	

MISCELLANEOUS	METHOD	#1	#2	Units
Percent Solids	ENCO WETS 72	91	90	%
Date Analyzed		12/03/04 10:30	12/03/04 10:30	

U = Compound was analyzed for but not detected to the level shown.
D1 = Analyte value determined from a 1:117 dilution.
D2 = Analyte value determined from a 1:85 dilution.

RESULTS OF ANALYSIS

EPA METHOD 8015 MODIFIED - DIESEL RANGE ORGANICS	#3	#4	Units
DRO (C10-C24)	NR	**3400** D3	mg/Kg
Surrogate:		**% RECOV**	**LIMITS**
o-Terphenyl		88	34-140
Date Prepared		12/02/04 09:00	
Date Analyzed		12/02/04 18:25	

EPA METHOD 8015 MODIFIED - GASOLINE RANGE ORGANICS	#3	#4	Units
GRO (C6-C10)	5.8 U D4	**1100** D5	mg/Kg
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
2,5-Dibromotoluene	80	*	59-168
Date Analyzed	12/06/04 19:23	12/06/04 20:24	

MISCELLANEOUS	METHOD	#3	#4	Units
Percent Solids	ENCO WETS 72	**88**	**93**	%
Date Analyzed		12/03/04 10:30	12/03/04 10:30	

* = Recovery unavailable due to high concentration of target analyte.
NR = Analysis not requested for this sample.
U = Compound was analyzed for but not detected to the level shown.
D3 = Analyte value determined from a 1:20 dilution.
D4 = Analyte value determined from a 1:103 dilution.
D5 = Analyte value determined from a 1:100 dilution.

RESULTS OF ANALYSIS

EPA METHOD 624 - VOLATILE ORGANICS	#5	GW-1	Units
Methyl tert-butyl ether	NR	**8.7**	ug/L
Benzene	NR	1.0 U	ug/L
Toluene	NR	1.0 U	ug/L
Ethylbenzene	NR	1.0 U	ug/L
m-Xylene & p-Xylene	NR	2.0 U	ug/L
o-Xylene	NR	1.0 U	ug/L
Isopropyl Ether	NR	1.0 U	ug/L
Naphthalene	NR	2.0 U	ug/L
Surrogate:		**% RECOV**	**LIMITS**
Dibromofluoromethane		90	73-138
D8-Toluene		93	77-118
Bromofluorobenzene		91	70-130
Date Analyzed		12/03/04 18:53	

EPA METHOD 8015 MODIFIED - DIESEL RANGE ORGANICS	#5	GW-1	Units
DRO (C10-C24)	3.6 U	NR	mg/Kg
Surrogate:	**% RECOV**		**LIMITS**
o-Terphenyl	87		34-140
Date Prepared	12/02/04 09:00		
Date Analyzed	12/02/04 15:01		

NR = Analysis not requested for this sample.
U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD 8015 MODIFIED - GASOLINE RANGE ORGANICS	#5	GW-1	Units
GRO (C6-C10)	5.0 U D6	NR	mg/Kg
Surrogate:	**% RECOV**		**LIMITS**
2,5-Dibromotoluene	81		59-168
Date Analyzed	12/06/04 19:53		

MISCELLANEOUS	METHOD	#5	GW-1	Units
Percent Solids	ENCO WETS 72	**91**	NR	%
Date Analyzed		12/03/04 10:30		

NR = Analysis not requested for this sample.
U = Compound was analyzed for but not detected to the level shown.
D6 = Analyte value determined from a 1:92 dilution.

RESULTS OF ANALYSIS

EPA METHOD 624 - VOLATILE ORGANICS	GW-2	LAB BLANK	Units
Methyl tert-butyl ether	33	1.0 U	ug/L
Benzene	1.0 U	1.0 U	ug/L
Toluene	1.0 U	1.0 U	ug/L
Ethylbenzene	1.0 U	1.0 U	ug/L
m-Xylene & p-Xylene	2.0 U	2.0 U	ug/L
o-Xylene	1.0 U	1.0 U	ug/L
Isopropyl Ether	1.0 U	1.0 U	ug/L
Naphthalene	2.0 U	2.0 U	ug/L
Surrogate:	**% RECOV**	**% RECOV**	**LIMITS**
Dibromofluoromethane	90	95	73-138
D8-Toluene	95	98	77-118
Bromofluorobenzene	93	96	70-130
Date Analyzed	12/03/04 19:19	12/03/04 08:52	

EPA METHOD 8015 MODIFIED - DIESEL RANGE ORGANICS	GW-2	LAB BLANK	Units
DRO (C10-C24)	NR	3.3 U	mg/Kg
Surrogate:		**% RECOV**	**LIMITS**
o-Terphenyl		83	34-140
Date Prepared		12/02/04 09:00	
Date Analyzed		12/02/04 12:18	

NR = Analysis not requested for this sample.
U = Compound was analyzed for but not detected to the level shown.

RESULTS OF ANALYSIS

EPA METHOD 8015 MODIFIED - GASOLINE RANGE ORGANICS	GW-2	LAB BLANK	Units
GRO (C6-C10)	NR	5.0 U D5	mg/Kg
Surrogate:		**% RECOV**	**LIMITS**
2,5-Dibromotoluene		100	59-168
Date Analyzed		12/06/04 11:52	

NR = Analysis not requested for this sample.
U = Compound was analyzed for but not detected to the level shown.
D5 = Analyte value determined from a 1:100 dilution.

LABORATORY CERTIFICATIONS

Laboratory Certification: NCDENR:591

All analyses reported with this project were analyzed by the facility indicated unless identified below.

QUALITY CONTROL DATA

Parameter	% RECOVERY LCS/MS/MSD	LCS LIMITS	MS/MSD LIMITS	RPD MS/MSD	RPD LIMITS
EPA Method 624					
1,1-Dichloroethene	98/ 97/ 98	64-139	36-177	1	30
Benzene	102/ 99/101	69-115	53-150	2	23
Trichloroethene	95/ 97/ 97	74-118	64-124	<1	25
Toluene	89/ 92/ 90	77-117	40-161	2	23
Chlorobenzene	92/ 94/ 94	76-118	44-128	<1	22
EPA Method 8015 MODIFIED					
DRO (C10-C24)	70/ 72/ 72	49-102	14-162	<1	31
EPA Method 8015 MODIFIED					
GRO (C6-C10)	90/ 85/ 87	51-115	45-162	2	24

< = Less Than
MS = Matrix Spike
MSD = Matrix Spike Duplicate
LCS = Laboratory Control Standard
RPD = Relative Percent Difference

CHAIN OF CUSTODY RECORD

S&ME
ENVIRONMENTAL SERVICES
ENGINEERING • TESTING

P.O. No.: _____
Branch: _____
Department: _____

S&ME Job No.	Project Name
1034 04-049	6002 Raeford Rd

Samplers: (signature) James T Honeycutt

Station No.	Date	Time	Comp.	Grab		Number of Containers	GRO	GRO/DRO	BTEX MTBE-IPE + Naphthalene				REMARKS
	12-1	1:00		✓	#1			✓					
		1:30		✓	#2			✓					
		1:40		✓	#3			✓					
		3:00		✓	#4				✓				
		3:30		✓	#5				✓				
		2:00		✓	GW-1					✓			
		3:15		✓	GW-2					✓			

Relinquished by: (signature)	Date:	Time:	Received by: (signature)	Relinquished by: (signature)	Date:	Time:	Received by: (signature)
James T Honeycutt	12.1.04	6:00 PM					
Relinquished by: (signature)	Date:	Time:	Received by: (signature)	Relinquished by: (signature)	Date:	Time:	Received by: (signature)
					12/2/04	10:46	
Relinquished by: (signature)	Date:	Time:	Received by: (Signature)	Remarks			
				CA 17023			

NCDENR
North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

January 26, 2006

Carol Rhyner
7802 West Hazzlewood Street
Phoenix, AZ 85033

Re: Notice of No Further Action
15A NCAC 2L .0115(h)
Risk-based Assessment and Corrective Action
for Petroleum Underground Storage Tanks

Rhyner Property
6002 Raeford Road
Cumberland County
FA-2945
Risk Classification: Low
Ranking: L0R

Dear Ms. Rhyner:

The Underground Storage Tank (UST) Closure Report or Soil Contamination Report received by the Underground Storage Tank (UST) Section, Fayetteville Regional Office on January 26, 2006, has been reviewed. The review indicates that after tank closure or soil excavation soil contamination does not exceed the lower of the soil-to-groundwater or residential maximum soil contaminant concentrations (MSCCs), established in Title 15A NCAC 2L .0115(m).

The UST Section determines that no further action is warranted for this incident. This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0115(e) you have a continuing obligation to notify the Department of any changes that might affect the risk or land use classifications that have been assigned.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,

James W. Brown
Hydrogeologist II
Fayetteville Regional Office

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 **(828) 296-4500**

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 **(910) 486-1541**

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 **(704) 663-1699**

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 (919) **791-4200**

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 **(252) 946-6481**

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 **(910) 796-7215**

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 **(336) 771-4600**

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, **(336) 641-3771**

FTP: NFA closure NOR1005.dot