ENGINEERS PLANNERS SURVEYORS SCIENTISTS

CHARLOTTE, NC

COLUMBIA, SC

www.ces-group.net

July 1, 2022

TRANSMITTED VIA EMAIL

Craig Haden
GeoEnvironmental Project Engineer
Geotechnical Engineering Unit
North Carolina Department of Transportation
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: Phase II Investigation
Richard Stimson Property – Parcel # 36
6321 Shallowford Road, Lewisville, Forsyth County, NC
NCDOT TIP Number: U-5536
NCDOT WBS Number: 44108.1.2
CES Project Number: 7893.0422E

Dear Mr. Haden:

Please find attached an electronic copy of the Phase II Investigation Report for the Richard Stimson Property, identified as Parcel # 36, located at 6321 Lewisville Road, Lewisville, Forsyth County, North Carolina. This Phase II Investigation was performed in accordance with our Technical and Cost Proposal, dated April 7, 2022, and was initiated by a Notice to Proceed (NTP), issued by NCDOT on April 12, 2022, under our GeoEnvironmental Contract, No.: 7000020453, dated April 20, 2020.

Upon your review, please return via DocuSign for final signatures.

Should you have any questions in regards to this Phase II Investigation, please do not hesitate to contact me at (704) 325-5408.

Regards,

CES Group Engineers, LLP.

Greg Hans, PMP
Environmental Project Manager/
Environmental Division Manager

Charles Heleine, PE, REPA
Senior Environmental Engineer

Enclosures: Phase II Investigation Report

ENGINEERS PLANNERS SURVEYORS SCIENTISTS

PHASE II INVESTIGATION

NCDOT TIP Number: U-5536
NCDOT WBS Number: 44108.1.2
Richard Stimson Property: Parcel # 36
6321 Shallowford Road
Lewisville, Forsyth County, North Carolina

Prepared for:

North Carolina Department of Transportation
Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, North Carolina 27610

Prepared by:

CES Group Engineers, LLP
3525 Whitehall Park Drive, Suite 150
Charlotte, North Carolina 28273

CES Project No.: 7893.0422E

July 1, 2022

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FIGURES

APPENDICES

1.0 INTRODUCTION

CES Group Engineers, LLP (CES) has prepared this Phase II Investigation Report documenting the performance of field assessment activities on the western portion of the Richard Stimson property, further identified as North Carolina Department of Transportation (NCDOT) Parcel 36, which is located at 6321 Shallowford Road, Lewisville, Forsyth County, North Carolina (the subject site). This Phase II Investigation was performed in accordance with our Technical Cost Proposal dated April 7, 2022, and was initiated by a Notice to Proceed (NTP), issued by NCDOT on April 12, 2022, under our GeoEnvironmental Contract No. 7000020453, dated April 20, 2020.

The scope of work performed by CES for this Phase II Investigation included a geophysical survey to locate all known, possible and probable underground storage tanks (USTs), followed by a subsurface soil investigation that included the installation of three soil borings to evaluate the potential for contamination to exist within the right-of-way and construction and/or utility easement located at 6321 Shallowford Road.

A Site Location Map is included as Figure 1.

1.1 Site History and Description

The subject site is located at 6321 Shallowford Road, Lewisville, Forsyth County, North Carolina. The property is utilized for commercial purposes and is identified as Colts Cooling. The subject site primarily consists of one single story building structure with an attached rear loading dock. The gradient of the subject site slopes north-northwest toward the primary structure, with the assessed area under this Phase II Investigation located immediately west of the onsite structure in the asphalt-paved parking area. According to the aerial images observed utilizing Historic Aerials and Google Earth, structures were observed to be present at the site from the approximate year 1966 to present day. Nearby and surrounding properties were observed to be utilized for commercial, residential and institutional purposes.

A review of the North Carolina Department of Environmental Quality (NCDEQ) Division of Waste Management GIS Site Locator Tool resulted in finding the subject site was not listed in the online databases associated with debris, USTs, dry cleaning solvents, hazardous waste, inactive hazardous wastes, landfills or brownfields. However, according to available historical online records, a dry-cleaning facility, identified as Yadkinville Cleaners, previously occupied the onsite structure.

2.0 PHASE II FIELD ACTIVITIES

2.1 Geophysical Survey

On May 10 and May 11, 2022, Pyramid Environmental & Engineering, PC (Pyramid) of Greensboro, North Carolina, conducted a geophysical survey to locate all known, possible or probable USTs within the subject site by performing electromagnetic (EM) and ground penetrating radar (GPR) surveys. The EM survey data was collected using a Geonics EM61-MK2 (EM61) metal detector integrated with a Geode External GPS/GLONASS receiver. The GPR survey data was collected using a Geophysical Survey Systems, Inc. (GSSI) SIR 4000 control unit coupled to a 350 MHz HS antenna.

The results of the collected geophysical (EM and GPR) data recorded no evidence of metallic USTs at Parcel 36. During the geophysical survey, three anomalies were identified by the EM survey, and were attributed to visible cultural features at the ground surface.

Pyramid's geophysical survey report, including site map(s) depicting the survey area and results in attached as Appendix A.

2.2 Soil Boring Investigation

On May 17, 2022, Carolina Soil Investigations, LLC (CSI) of Olin, North Carolina, under direction of an onsite CES Environmental Scientist, installed three soil borings P36-SB14 through P36-SB16A to a maximum of ten feet below surface grade (bsg), utilizing a track mounted geoprobe rig, Model 6712DT**,** to evaluate the potential for contamination to exist within right-of-way and construction and/or utility easement located at 6321 Shallowford Road. Prior to the installation of the three soil borings, on May 2, 2022, CES utilized a Trimble R8s GNSS/GPS unit to pre-mark each boring in exact locations proposed on NCDOT provided plan sheets (PSH 7), and then collected GPS coordinates. In addition, underground utilities were cleared through the NC 811 public locating service, and by Pyramid during the GPR portion of the geophysical survey. Due to the presence of marked underground utilities, specifically a natural gas line on the western portion of the site, as located by NC 811 and Pyramid, soil borings P34-SB15 and P34-SB16 were moved approximately three feet to the west and north, and identified as P34-SB15A and P34-SB16A, respectively, to avoid the underground utility conflict on May 17, 2022.

During the advancement of the three soil borings, the CES Environmental Scientist field screened encountered soils with a MiniRAE 3000 Photoionization Detector (PID), calibrated by Eastern Solutions LLC on May 10, 2022, for the presence of volatile organic compounds (VOCs), to facilitate the selection of one soil sample from each boring for subsequent laboratory analysis. PID measurements below the detection limit of 5 ppmv were identified as non-detect (ND). Groundwater was not encountered during the installation of the three soil borings. No existing groundwater monitoring wells were observed at 6321 Shallowford Road.

Based on field screening data collected, the PID measurements from soil borings P36-SB14 through P34-SB16A. were reported as ND. No petroleum odors or stained soils were observed in any of the soil samples collected from the three soil borings.

Upon completion of the three soil borings, each boring was backfilled to grade with generated drill cuttings and an Asphalt Hole Plug, by CSI.

.

Figure 2 depicts the locations of soil borings P36-SB14 through P36-SB16A. GPS coordinates and PID measurements for each soil boring are included on Table 1 and Table 2, respectively. Soil boring logs are provided in Appendix B.

2.3 Soil Sampling and Laboratory Analytical Results

Upon completion of each boring, the soil sample exhibiting the highest PID measurement, or the soil sample from zero to five feet bsg or five to ten feet bsg if the PID measurements were reported as ND, was collected in laboratory provided vials containing 20 mL methanol and stored on ice. The samples were shipped at the close of soil sampling activities on Thursday May 19, 2022 under chain-of-custody (COC) procedures to Red Lab, LLC of Wilmington, North Carolina, for laboratory analysis of petroleum hydrocarbons via the QED Ultraviolet Fluorescence (UVF) methodology, which includes BTEX, GRO, DRO, TPH, Total Aromatics, 16 EPA PAHs, BaP, and identification of specific hydrocarbons (HC).

It should be noted that collected soil samples from Parcel 36 were also planned for laboratory analysis of chlorinated solvents via Standard GC methodologies due to the reported presence of the former dry-cleaning facility. However, due to a field related error, no soil samples were collected for chlorinated solvent analysis. Further discussions with NCDOT Project Manager, Craig Haden, indicated that the proposed right-of-way on Parcel 36 is in a fill section, and the collection of soil samples for chlorinated solvent analysis is not required at this time.

Laboratory analytical results indicated that concentrations of DRO and/or GRO were reported above laboratory detection limits, but below NCDEQ Action Levels, in soil boring P36-SB14 through P36-SB16A. The maximum reported DRO and GRO concentrations were reported as follows:

- DRO at 3.5 mg/kg from a soil sample collected from soil boring P36-SB16A, at a depth of approximately 3 feet bsg; and
- GRO at 1.5 mg/kg from a soil sample collected from soil boring P36-SB16A, at a depth of approximately 3 feet bsg.

Figure 2 depicts the location of soil borings P36-SB14 through P36-SB16A, with soil analytical results and depth of collected samples depicted on Figure 3. Table 2 summarizes soil laboratory analytical results including the depth of each collected soil sample with corresponding PID measurements. The Red Lab, LLC soil laboratory analytical reports are included in Appendix C. A photographic log depicting site and soil boring locations is included in Appendix D.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

The results of the collected geophysical (EM and GPR) data recorded no evidence of metallic USTs at Parcel 36.

Laboratory analytical results indicated that concentrations of DRO and/or GRO were reported above laboratory detection limits, but below NCDEQ Action Levels, in soil boring P36-SB14 through P36-SB16A. The maximum reported DRO and GRO concentrations were reported as follows:

- DRO at 3.5 mg/kg from a soil sample collected from soil boring P36-SB16A, at a depth of approximately 3 feet bsg; and
- GRO at 1.5 mg/kg from a soil sample collected from soil boring P36-SB16A, at a depth of approximately 3 feet bsg.
- .

This Phase II Investigation concluded that minor petroleum related impacts to soils are present on Parcel 36 at levels well below NCDEQ Action Levels. This conclusion was based on laboratory analytical results reporting concentrations of DRO and GRO above the laboratory detection limits (but below NCDEQ Action Levels) in soil borings P36-SB14 through P36-SB16A.

3.2 Recommendations

During planning of construction activities in work areas generally located near soil borings P36-SB14 through P36-SB16A, and potentially in other unexplored areas of Parcel 36, as depicted on the provided NCDOT preliminary plan sheets, it is recommended that encountered soil impacted with petroleum constituents be properly handled and managed in the field, and disposed of by contractors in accordance with applicable state regulations.

4.0 SIGNATURE PAGES

This Phase II Investigation Report was prepared by:

DocuSigned by:
BE8ABC48C6D1471...

07/12/2022

Dawn F. Crowell, MELP, CMCSI
Environmental Scientist/Project Manager
CES Group Engineers, LLP

This Phase II Investigation Report was reviewed by:

DocuSigned by:
Greg Hans
17CA85CB2CDF4C7...

07/12/2022

Greg Hans, PMP
Environmental Division Manager
CES Group Engineers, LLP

This Phase II Investigation Report was reviewed and approved by:

DocuSigned by:
Charles Heleine
0E4F07A7BE324CD...

07/13/2022

Charles Heleine, PE, REPA
Senior Environmental Engineer
CES Group Engineers, LLP.

Electronic Seal/Signature

TABLES

Table 1
Soil Boring GPS Coordinate Data
NCDOT TIP Number: U-5536
NCDOT WBS Numberl 44108.1.2
Richard Stimson Property: Parcel #36
6321 Shallowford Road
Lewisville, Forsyth County, North Carolina

Sample ID	Date Collected (m/dd/yy)	Latitude	Longitude
P36-SB14	5/17/2022	36.0992165	-80.4157092
P36-SB15A *	5/17/2022	36.09929	-80.41586
P36-SB16A *	5/17/2022	36.09936	-80.41594

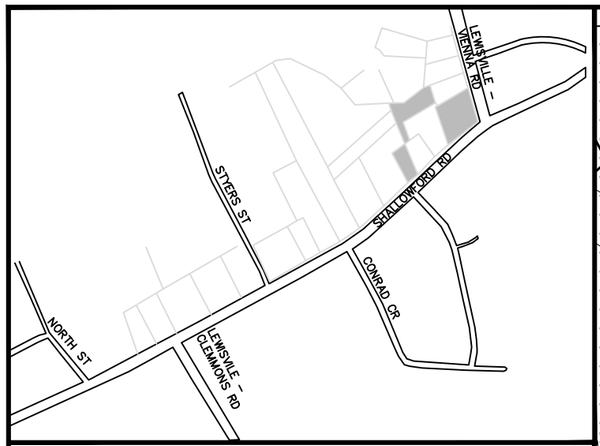
* Approximate GPS coordinates as boring moved in field due to U/G conflicts

Table 2
Summary of Soil Analytical Results
NCDOT TIP Number: U-5536
NCDOT WBS Numberl 44108.1.2
Richard Stimson Property **: Parcel #36**
6321 Shallowford Road
Lewisville, Forsyth County, North Carolina

				Analytical Method	**UVF**	**UVF**	**UVF**
				COC	**TPH-DRO**	**TPH-GRO**	**HC Fingerprints**
Sample ID	**Date Collected (m/dd/yy)**	**Sample Area**	**Sample Depth**	**PID (ppmv)**	**mg/kg**	**mg/kg**	
P36-SB14	5/17/2022	Front of property	10	1.2 at 5-ft / 1.3 at 8-ft	0.77	<0.42	V.Deg.Diesel 75.6%
P36-SB15A	5/17/2022	Adjacent to building	8	0.7 at 2-ft / 1.2 at 7-ft	3.3	0.81	Deg Fuel 72.9%
P36-SB16A	5/17/2022	Rear of building	3	0.0 at 3-ft / 0.0 at 8-ft	3.5	1.5	Deg Fuel 77.4%
				Initial NCDEQ Action Levels for Contamination (mg/kg)	100	50	N/A

P#-SB# = Parcel Number - Soil Boring Number
mg/kg = miligrams per kilogram
PID = photoionization detector
ppmv = parts per million per volume
N/A = not applicable
Soil anlaysis performed by Red Lab, LLC of Wilmington, NC with results generated by a QED HC-1 analyzer

FIGURES



VICINITY MAP
(NOT TO SCALE)

LEGEND:

- BORING LOCATION
- PARCEL BOUNDARY
- MTW – EXISTING MONITOR WELL

SAMPLE–PARCEL – BORING–ID
SAMPLE DEPTH – BORING DEPTH
DRO – CONCENTRATION
GRO – CONSTITUENT

** – BORING SAMPLE LOCATION MOVED PER PROPERTY OWNER OR DUE TO UTILITY CONFLICT.

Sample: P34–SB12
Sample Depth 2'
DRO: 0.62
DRP: <0.36

Sample: P31–SB8
Sample Depth 4'
DRO: 46.1
DRP: 0.55

Sample: P31–SB7**
Sample Depth 8.5'
DRO: 1.61
DRP: 0.38

Sample: P36–SB16A
Sample Depth 3'
DRO: 3.5
DRP: 1.5

Sample: P36–SB15A
Sample Depth 8'
DRO: 3.3
DRP: 0.81

Sample: P36–SB14
Sample Depth 10'
DRO: 0.77
DRP: <0.42

THIS DRAWING IS FOR EXHIBIT PURPOSES ONLY. IT IS TO SHOW RELATIVE LOCATIONS OF SOIL SAMPLE LOCATIONS AS SHOWN HEREON. IT IS NOT MEANT FOR CONVEYANCES, SALES OR RECORDING. NO BOUNDARY WORK, RESEARCH OR UTILITY LOCATIONS WERE DONE WITHIN THE SCOPE OF THIS EXHIBIT. ALL LOCATIONS AND PARCEL LINES ARE APPROXIMATE AND NOT TO SCALE.

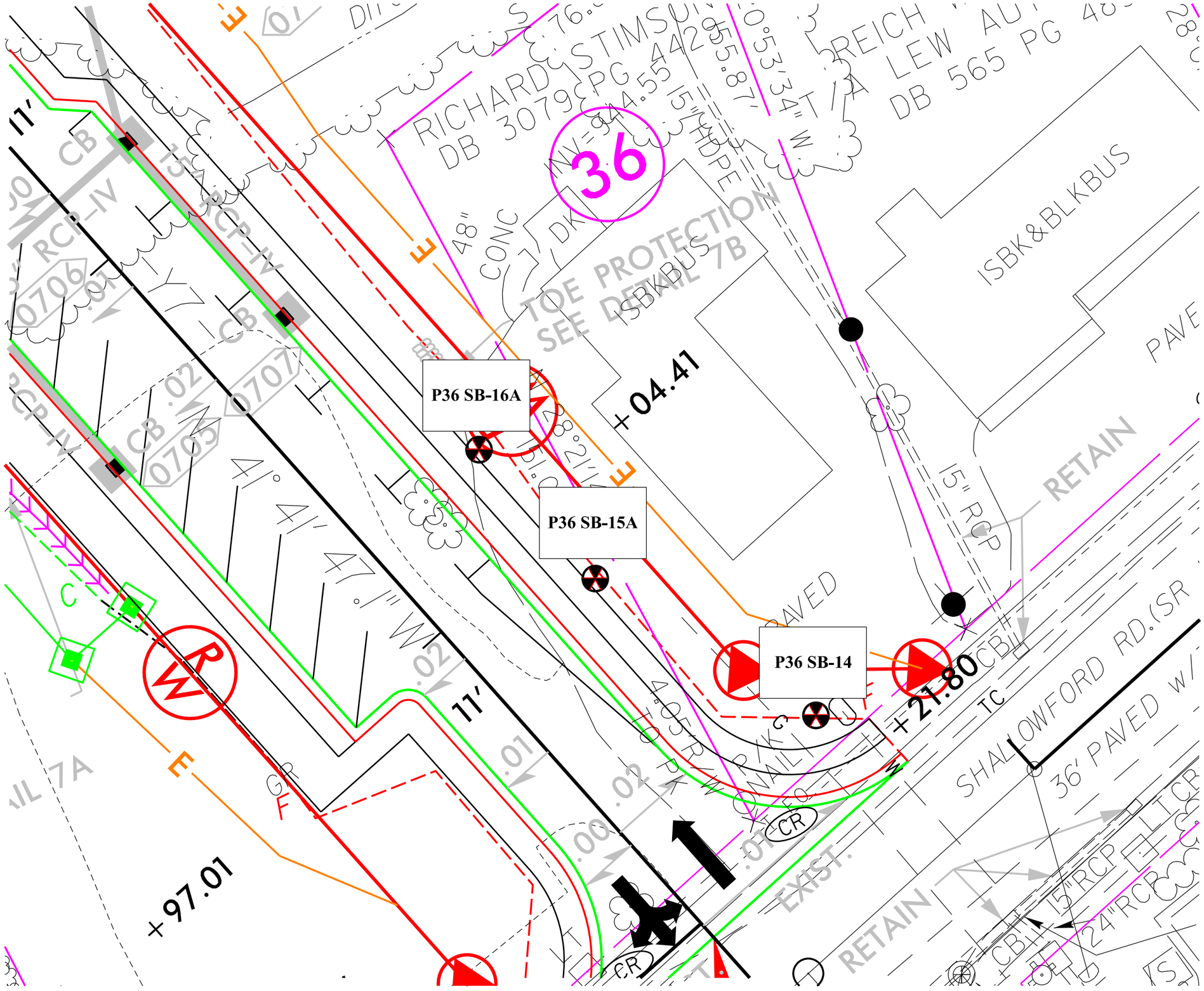
OWNER/PREPARED FOR:
NCDOT

CES GROUP
ENGINEERS, LLP
NC FIRM LICENSE# F-1240
3525 WHITEHALL PARK DRIVE,
SUITE 150
CHARLOTTE, NC 28273
T 704.489.1500
www.ces-group.net

EXHIBIT SURVEY
PARCEL NO. 36
ENVIRONMENTAL
SAMPLE LOCATIONS
U-5536

DRAWN BY:	JES
CHECKED BY:	JES
PROJECT NUMBER:	7893
SCALE:	1" = 40'
DATE:	5/31/2022
TAX PARCEL:	5885-18-7054.00
DRAWING:	7893-EXHIBITS.dwg

SHEET: 1



LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- E — TEMPORARY CONSTRUCTION EASEMENT
- PDE — PROPOSED DRAINAGE EASEMENT
- SOIL BORING LOCATION

N

0 10 20
FEET

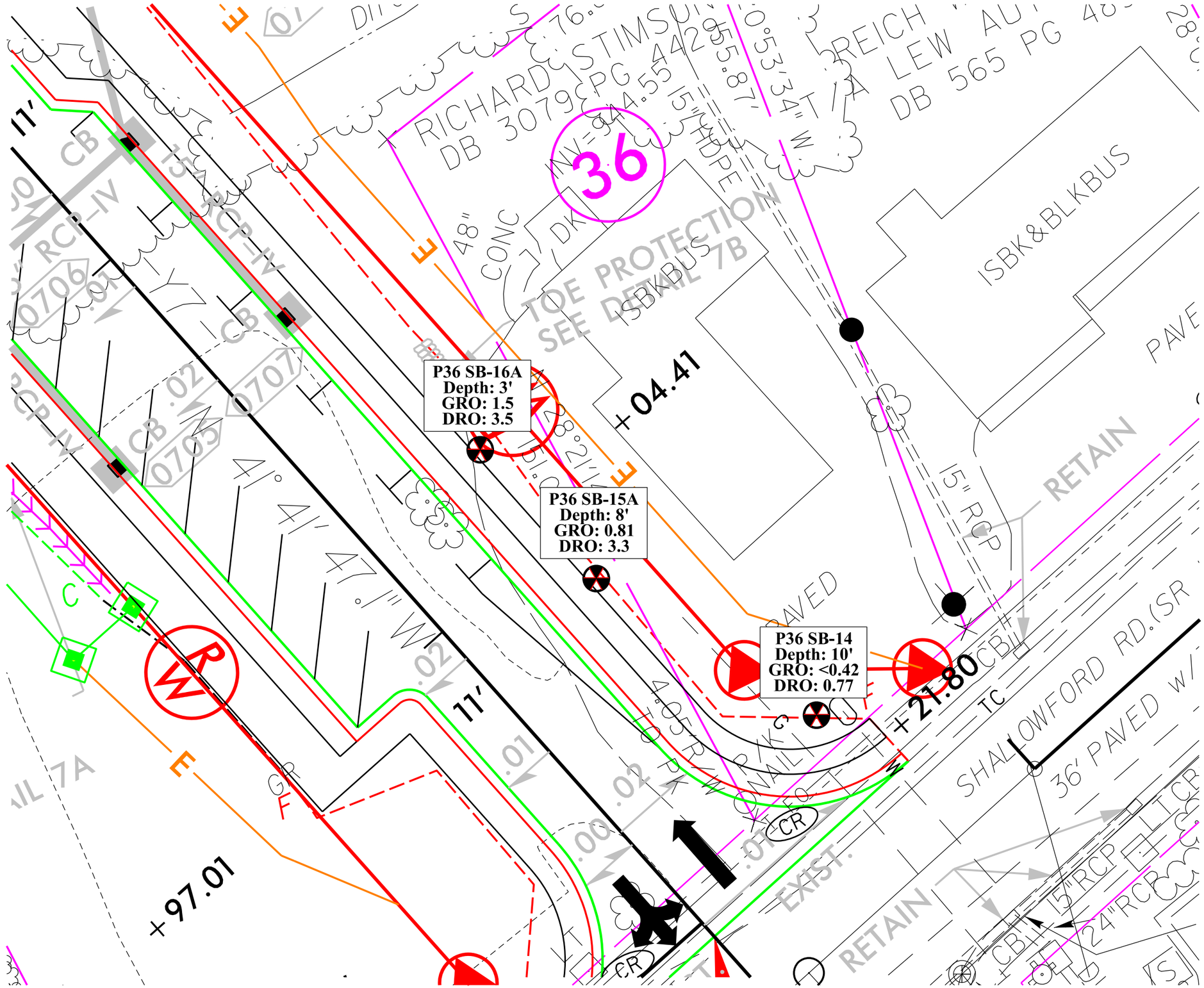
TITLE
SITE MAP

PROJECT
PARCEL 36
LEWISVILLE, NORTH CAROLINA
NCDOT PROJECT U-5536

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
336.335.3174 (p) 336.691.0648 (f)
License # C1251 Eng. / #C257 Geology

DATE: 6-22-2022 | REVISION NO. 0

FIGURE NO. 2



LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- E — TEMPORARY CONSTRUCTION EASEMENT
- PDE — PROPOSED DRAINAGE EASEMENT
- SOIL BORING LOCATION

PX(Y) PARCEL#(BORING#)
DRO DIESEL RANGE ORGANICS*
GRO GASOLINE RANGE ORGANICS*
*ALL CONCENTRATIONS PRESENTED IN mg/kg

0 10 20
FEET

N

TITLE
SOIL ANALYTICAL MAP

PROJECT
PARCEL 36
LEWISVILLE, NORTH CAROLINA
NCDOT PROJECT U-5536

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
336.335.3174 (p) 336.691.0648 (f)
License # C1251 Eng. / #C257 Geology

DATE: 6-22-2022
REVISION NO. 0
FIGURE NO. 3

APPENDIX A

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

GEOPHYSICAL SURVEY REPORT

PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2022-108)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION:
PARCEL 36
NCDOT PROJECT U-5536 (44108.1.2)

6321 SHALLOWFORD ROAD, LEWISVILLE, NC

May 17, 2022

Report prepared for: **Greg Hans, PMP**
CES Group Engineers, LLP
274 North Highway 16 Business, Suite 300
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Prepared by: _____
Eric C. Cross, P.G.
NC License #2181

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C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 36 – 6321 Shallowford Road
Lewisville, Forsyth 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
UST .....Underground Storage Tank

EXECUTIVE SUMMARY

Project Description: Pyramid Geophysical Services (Pyramid), a department within Pyramid Environmental & Engineering, P.C., conducted a geophysical investigation for CES Group Engineers, LLP (CES) at Parcel 36, located at 6321 Shallowford Road, in Lewisville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5536). The survey was designed to extend across all accessible portions of the parcel indicated to Pyramid by CES. Conducted from May 10-11, 2022, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Geophysical Results: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of three EM anomalies were identified. All of the EM anomalies were directly attributed to visible cultural features at the ground surface. GPR was performed around all sources of significant metallic interference to confirm that the interference did not obscure any significant structures such as USTs. The geophysical survey identified evidence of utilities and/or buried debris. Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 36.

INTRODUCTION

Pyramid Geophysical Services (Pyramid), a department within Pyramid Environmental & Engineering, P.C., conducted a geophysical investigation for CES at Parcel 36, located at 6321 Shallowford Road, in Lewisville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5536). The survey was designed to extend across all accessible portions of the parcel indicated to Pyramid by CES. Conducted from May 10-11, 2022, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site consisted of one building surrounded by asphalt surfaces. An aerial photograph showing the survey area boundaries and ground-level photographs is shown in **Figure 1**.

FIELD METHODOLOGY

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

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

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

GPR data were acquired across select EM anomalies on May 11, 2022, using a Geophysical Survey Systems, Inc. (GSSI) SIR 4000 control unit coupled to a 350 MHz HS antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the SIR 4000 unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the SIR 4000 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	Vehicle	✓
2	Dumpster	
3	Water Meter	

All of the EM anomalies were directly attributed to visible cultural features at the ground surface, including a vehicle, a dumpster, and a water meter. GPR was performed around areas of significant metallic interference caused by the vehicle to confirm that the metallic interference did not obscure any significant structures such as USTs.

Discussion of GPR Results

Figure 3 presents the locations of the formal GPR transects performed at the property as well as the transect images. A total of four formal GPR transects were performed at the site.

GPR Transects 1-4 were performed around the vehicle. These transects showed shallow reflectors consistent with possible buried utilities and/or debris. No evidence of significant structures such as USTs was observed.

Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 36. **Figure 4** provides an overlay of the metal detection results onto the NCDOT Engineering plans.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 36 in Lewisville, 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.
- All of the EM anomalies were directly attributed to visible cultural features at the

ground surface.

- GPR was performed around all sources of significant metallic interference to confirm that the interference did not obscure any significant structures such as USTs.
- The geophysical survey identified evidence of utilities and/or buried debris.
- Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 36.

LIMITATIONS

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

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA

View of Survey Area (Facing Approximately North)

View of Survey Area (Facing Approximately Northwest)

N

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License # C1251 Eng. / License # C257 Geology

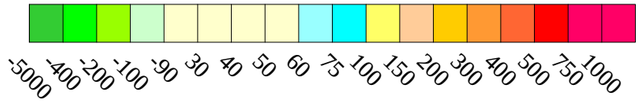
PROJECT	PARCEL 36 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536
TITLE	PARCEL 36 - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS
DATE	5/11/2022
PYRAMID PROJECT #:	2022-108
CLIENT	CES GROUP ENGINEERS
	FIGURE 1

EM61 METAL DETECTION RESULTS

NO EVIDENCE OF METALLIC USTs WAS 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 EM data were collected on May 10, 2022, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI SIR 4000 instrument with a 350 MHz HS antenna on May 11, 2022.

EM61 Metal Detection Response (millivolts)



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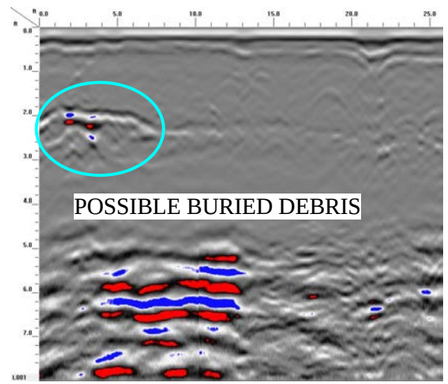
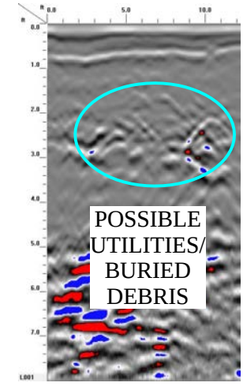
PROJECT	PARCEL 36 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536
TITLE	PARCEL 36 - EM61 METAL DETECTION CONTOUR MAP
DATE	5/11/2022
PYRAMID PROJECT #:	2022-108
CLIENT	CES GROUP ENGINEERS
	FIGURE 2

GPR TRANSECT LOCATIONS



GPR TRANSECT 1 (T1)



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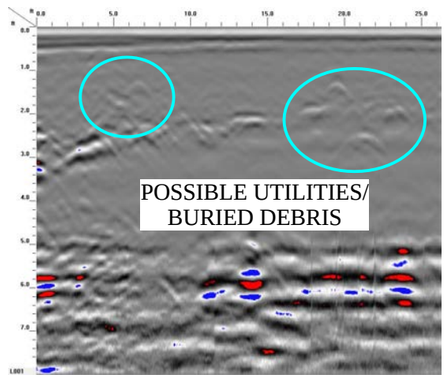

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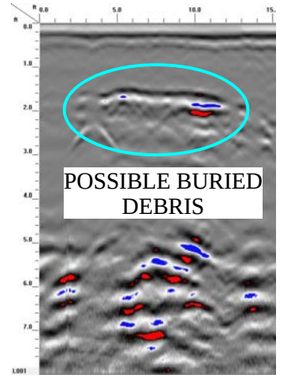
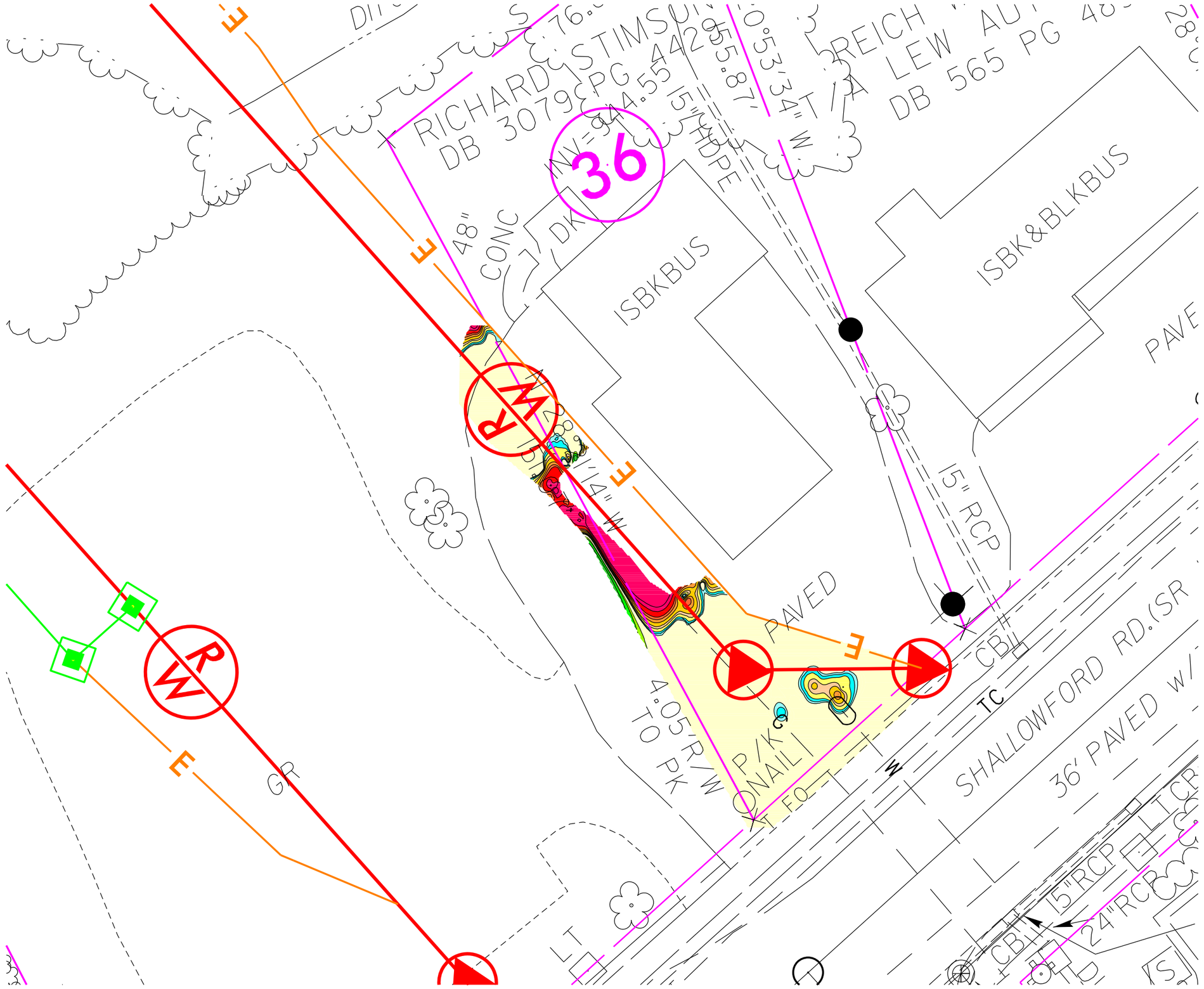


GPR TRANSECT 4 (T4)

N

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
(336) 335-3174 (p) (336) 691-0648 (f)
License # C1251 Eng. / License # C257 Geology

PROJECT	PARCEL 36 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536	TITLE	PARCEL 36 - GPR TRANSECT LOCATIONS AND IMAGES	DATE	5/11/2022
				PYRAMID PROJECT #:	2022-108
CLIENT	CES GROUP ENGINEERS				**FIGURE 3**



LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- E — TEMPORARY CONSTRUCTION EASEMENT
- PUE — PROPOSED PERMANENT UTILITY
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE

EM61 Metal Detection Response
(millivolts)

1000 750 500 400 300 200 150 100 75 60 50 40 30 -90 -100 -200 -400 -5000

0 10 20
FEET

N

TITLE
OVERLAY OF METAL DETECTION RESULTS
ON NCDOT ENGINEERING PLANS

PROJECT
PARCEL 36
LEWISVILLE, NORTH CAROLINA
NCDOT PROJECT U-5536

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
336.335.3174 (p) 336.691.0648 (f)
License # C1251 Eng. / #C257 Geology

DATE: 5-16-2022	REVISION NO. 0
PYRAMID PROJECT NO. 2022-108	FIGURE NO. 4

APPENDIX B

SOIL BORING LOGS

	Client: NC DOT	**BORING LOG**
	Project: Parcel 36 - Lewisville, NC	**Boring No.** P36-SB14
	Address: 6321 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

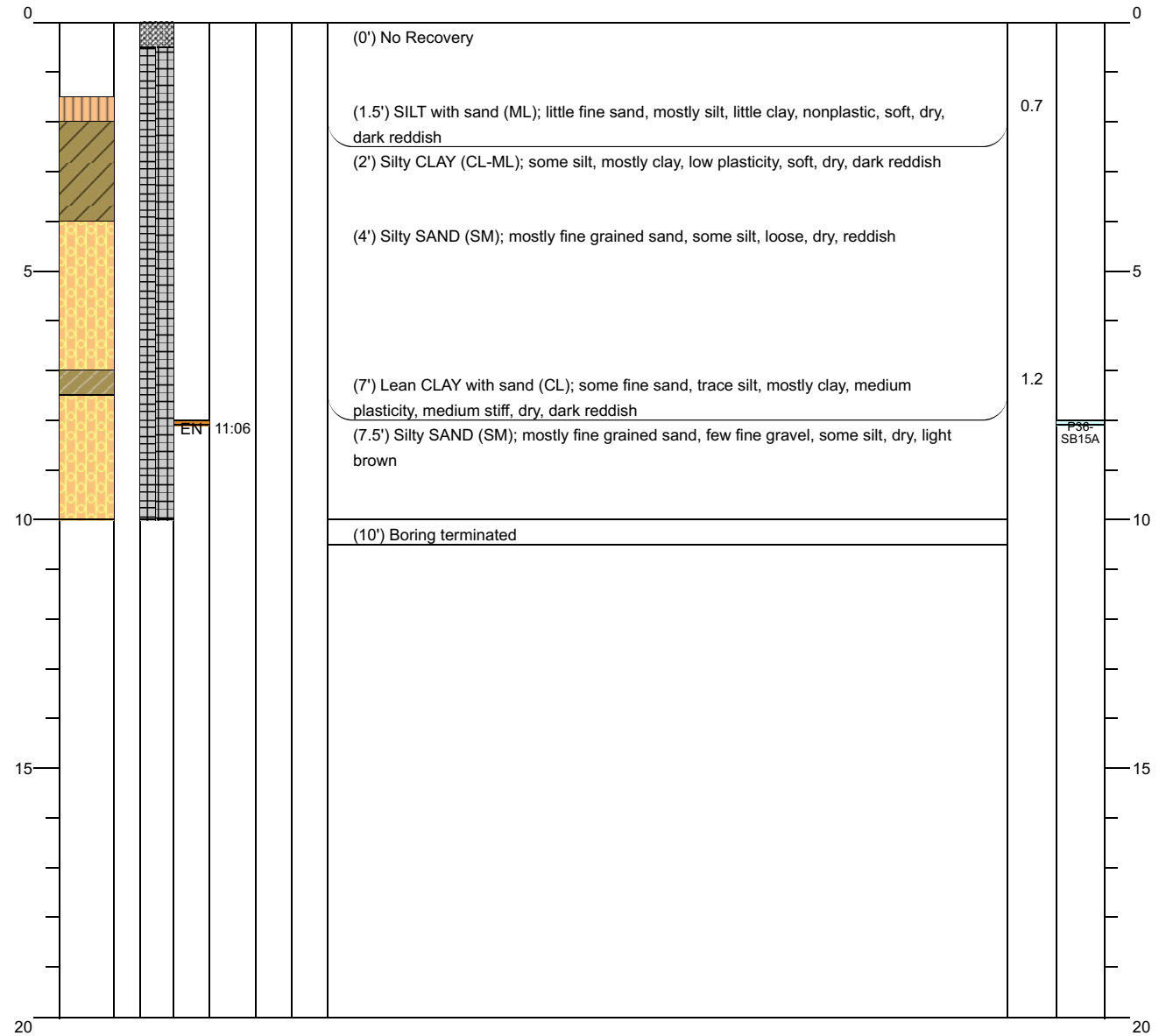
Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') No Recovery (0.5') Asphalt			0
								(1.5') SILT with sand (ML); some fine sand, mostly silt, some clay, low plasticity, soft, dry, reddish			
5								(5') As Above: with weathered rock and gravel	1.2 1.3		5
10				EN	11:25			(10') Boring terminated		P36-SB14	10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 36 - Lewisville, NC	**Boring No.** P36-SB15A
	Address: 6321 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

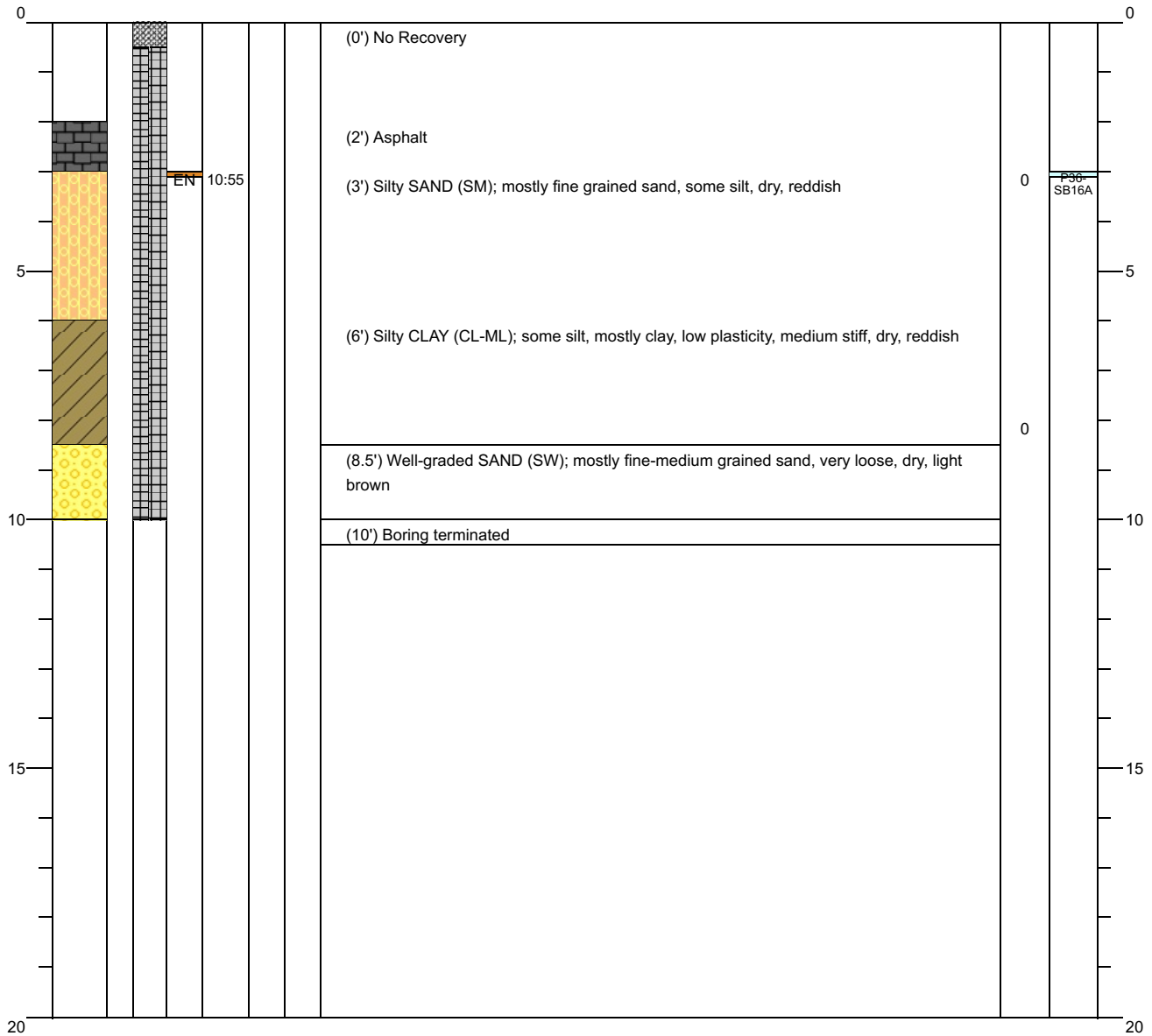
Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**



NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 36 - Lewisville, NC	**Boring No.** P36-SB16A
	Address: 6321 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**



NOTES:

APPENDIX C

RED LAB, LLC

LABORATORY ANALYTICAL REPORT

QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: CES
Address: 3525 WHITEHALL PARK DR.
CHARLOTTE, NC

Samples taken Tuesday, May 17, 2022
Samples extracted Tuesday, May 17, 2022
Samples analysed Friday, May 20, 2022

Contact: GREG HANS

Operator TORI KELLY

Project: 6321 SHALLOW FORD RD

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	P36-SB14	16.9	<0.42	<0.42	0.77	0.77	0.27	<0.14	<0.017	0	78.8	21.2	V.Deg.Diesel 75.6%,(FCM),(P)
s	P36-SB15 A	14.8	<0.37	0.81	3.3	4.1	2.6	<0.12	<0.015	32.1	57.6	10.2	Deg Fuel 72.9%,(FCM)
s	P36-SB16 A	16.6	<0.41	1.5	3.5	5	2.8	<0.13	<0.017	46.4	44.6	9	Deg Fuel 77.4%,(FCM)

Initial Calibrator QC check OK

Final FCM QC Check OK 102.3 %

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

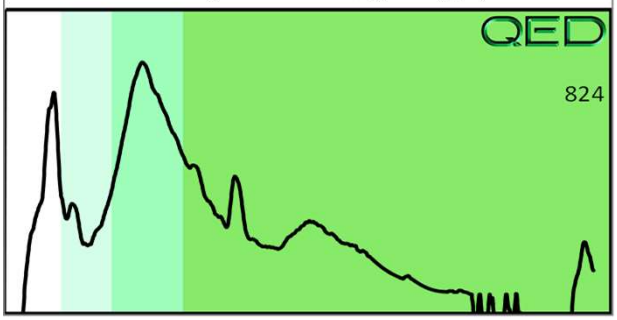
(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

QED Hydrocarbon Fingerprints

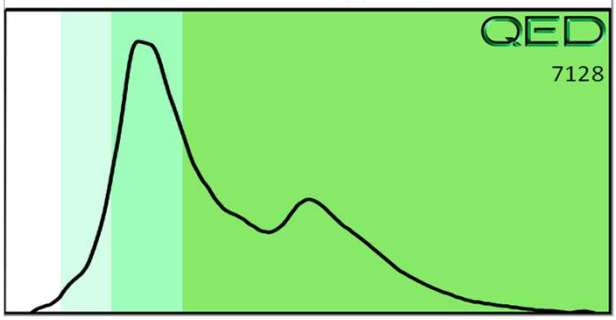
Project: 6321 SHALLOW FORB RD

Friday, May 20, 2022

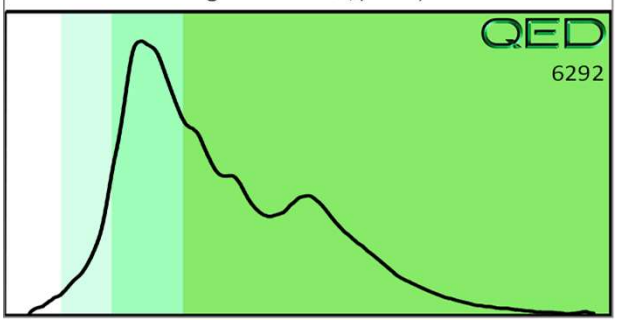
P36-SB14 : V.Deg.Diesel 75.6%,(FCM),(P)



P36-SB15 A : Deg Fuel 72.9%,(FCM)



P36-SB16 A : Deg Fuel 77.4%,(FCM)



Client Name:	NCDOT / CES
Address:	3525 Whitehall Park Dr. Charlotte, NC
Contact:	Greg Hans
Project Ref.:	(a321 Shawford Rd
Email:	ghans@ces-group.net
Phone #:	
Collected by:	Dawn Crowell

REDLAB™
RAPID ENVIRONMENTAL DIAGNOSTICS

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

RED Lab, LLC
5598 Marvin K Moss Lane
MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.

Sample Collection	TAT Requested		Analysis Type		Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
Date/Time	24 Hour	48 Hour	UVF	GC					
5-17-22 / 1125		✓	✓		DFC	P36-SB14	59.5	44.1	15.4
5-17-22 / 1106		✓	✓		DFC	P36-SB15A	61.6	44.0	17.6
5-17-22 / 1055		✓	✓		DFC	P36-SB16A	59.2	43.5	15.7

COMMENTS/REQUESTS:

TARGET GC/UVF ANALYTES:

Relinquished by		Accepted by	Date/Time
	5/19/22		
Relinquished by		Accepted by	Date/Time
		ECN 5/20/2022 11:47 AM	

RED Lab USE ONLY

(3)

Ref. No S-2022-3

APPENDIX D

PHOTOGRAPHIC LOG

Figure 1 Parcel 36, NC 811 and Pyramid utility mark outs. Northern view of main entrance and western portion of the property.

Figure 2 Parcel 36, NC 811 and Pyramid utility mark outs. Western most portion of the property.

Figure 3 Parcel 36, NC 811 utility mark out SB16 and SB16A. SB16a is the alternate to SB16 which was initially along the gas line easement.

ENGINEERS PLANNERS SURVEYORS SCIENTISTS

CHARLOTTE, NC

COLUMBIA, SC

www.ces-group.net

July 1, 2022

TRANSMITTED VIA EMAIL

Craig Haden
GeoEnvironmental Project Engineer
Geotechnical Engineering Unit
North Carolina Department of Transportation
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: Phase II Investigation
Michael & Julie Collins Property – Parcel # 37
116 Lewisville-Vienna Road, Lewisville, Forsyth County, NC
NCDOT TIP Number: U-5536
NCDOT WBS Number: 44108.1.2
CES Project Number: 7893.0422E

Dear Mr. Haden:

Please find attached an electronic copy of the Phase II Investigation Report for the Michael & Julie Collins Property, identified as Parcel # 37, located at 116 Lewisville-Vienna Road, Lewisville, Forsyth County, North Carolina. This Phase II Investigation was performed in accordance with our Technical and Cost Proposal, dated April 7, 2022, and was initiated by a Notice to Proceed (NTP), issued by NCDOT on April 12, 2022, under our GeoEnvironmental Contract, No.: 7000020453, dated April 20, 2020.

Upon your review, please return via DocuSign for final signatures.

Should you have any questions in regards to this Phase II Investigation, please do not hesitate to contact me at (704) 325-5408.

Regards,

CES Group Engineers, LLP.

Greg Hans, PMP
Environmental Project Manager/
Environmental Division Manager

Charles Heleine, PE, REPA
Senior Environmental Engineer

Enclosures: Phase II Investigation Report

ENGINEERS PLANNERS SURVEYORS SCIENTISTS

PHASE II INVESTIGATION

NCDOT TIP Number: U-5536
NCDOT WBS Number: 44108.1.2
Michael & Julie Collins Property: Parcel # 37
116 Lewisville-Vienna Road
Lewisville, Forsyth County, North Carolina

Prepared for:

North Carolina Department of Transportation
Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, North Carolina 27610

Prepared by:

CES Group Engineers, LLP
3525 Whitehall Park Drive, Suite 150
Charlotte, North Carolina 28273

CES Project No.: 7893.0422E

July 1, 2022

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

CES Group Engineers, LLP (CES) has prepared this Phase II Investigation Report documenting the performance of field assessment activities on the Michael & Julie Collins property, further identified as North Carolina Department of Transportation (NCDOT) Parcel 37, which is located at 116 Lewisville-Vienna Road, Lewisville, Forsyth County, North Carolina (the subject site). This Phase II Investigation was performed in accordance with our Technical Cost Proposal dated April 7, 2022, and was initiated by a Notice to Proceed (NTP), issued by NCDOT on April 12, 2022, under our GeoEnvironmental Contract No. 7000020453, dated April 20, 2020.

The scope of work performed by CES for this Phase II Investigation included a geophysical survey to locate all known, possible and probable underground storage tanks (USTs), followed by a subsurface soil investigation that included the installation of ten soil borings to evaluate the potential for contamination to exist within the construction limits, right-of-way, drainage ditch, and construction and/or utility easements located at 116 Lewisville-Vienna Road.

A Site Location Map is included as Figure 1.

1.1 Site History and Description

The subject site is located at 116 Lewisville-Vienna Road, Lewisville, Forsyth County, North Carolina. The property is utilized for commercial purposes and is identified as Collins Petroleum & Electrical, Inc. The subject site primarily consists of one single story building with a service bay and concrete pad. The gradient of the subject site is primarily flat, with a gentle slope northwesterly toward the primary structure. According to the aerial images observed utilizing Historic Aerials and Google Earth, structures were observed to be present at the site from the approximate year 1955 to present day.

A review of the North Carolina Department of Environmental Quality (NCDEQ) Division of Waste Management GIS Site Locator Tool resulted in finding that the subject site was not listed in online databases associated with debris, USTs, dry cleaning solvents, hazardous wastes, inactive hazardous wastes, landfills or brownfields. However, an Incident Number (No. 14432; Facility ID No.: 00-0-0000032484) is listed in the state database for the adjoining property to the south of the site, the Former Lewisville Volunteer Fire Department, from an apparent release condition in 1991, with a current status of this site being accepted into the NCDEQ State-Lead Acceptance program in May 2022, and with no further information available for review.

2.0 PHASE II FIELD ACTIVITIES

2.1 Geophysical Survey

On May 10 and May 11, 2022, Pyramid Environmental & Environmental, PC (Pyramid) of Greensboro, North Carolina, conducted a geophysical survey to locate all known, possible or probable USTs within the subject site by performing electromagnetic (EM) and ground penetrating radar (GPR) surveys. The EM survey data was collected using a Geonics EM61-MK2 (EM61) metal detector integrated with a Geode External GPS/GLONASS receiver. The GPR survey data was collected using a Geophysical Survey Systems, Inc. (GSSI) SIR 4000 control unit coupled to a 350 MHz HS antenna.

The results of the collected geophysical (EM and GPR) data recorded no evidence of metallic USTs at Parcel 37. During the geophysical survey, four anomalies were identified by the EM survey attributed to visible cultural features at the ground surface. One septic tank at the western portion of the property was also identified during the geophysical survey.

Pyramid's geophysical survey report, including site map(s) depicting the survey area and results is attached as Appendix A.

2.2 Soil Boring Investigation

On May 17, 2022 Carolina Soil Investigations, LLC (CSI) of Olin, North Carolina, under direction of an onsite CES Environmental Scientist, installed ten soil borings P37-SB17 through P37-SB26 to a maximum of ten feet below surface grade (bsg), utilizing a track mounted geoprobe rig, Model 6712DT, to evaluate the potential for contamination to exist within the construction limits, right-of-way, drainage ditch, and construction and/or utility easements at 116 Lewisville-Vienna Road. Prior to the installation of the ten soil borings, on May 2, 2022, CES utilized a Trimble R8s GNSS/GPS unit to pre-mark each boring in exact locations proposed on NCDOT provided plan sheets (PSH 7), and then collected GPS coordinates. In addition, underground utilities were cleared through the NC 811 public locating service, and by Pyramid during the GPR portion of the geophysical survey.

During the advancement of the ten soil borings, the CES Environmental Scientist field screened encountered soils with a MiniRAE 3000 Photoionization Detector (PID), calibrated by Eastern Solutions LLC on May 10, 2022, for the presence of volatile organic compounds (VOCs) to facilitate the selection of one soil sample from each boring for subsequent laboratory analysis. PID measurements below the detection limit of 5 ppmv were identified as non-detect (ND). Groundwater was not encountered during the installation of the ten soil borings. A total of three groundwater monitoring wells were observed onsite, with two of the monitoring wells located along the southern property boundary and adjacent to the Former Lewisville Volunteer Fire Department, and one monitoring well located on the west-northwestern portion of the site

Based on field screening data collected, the PID measurements from soil borings P37-SB17 through P37-SB26 were reported as ND. No petroleum odors or stained soils were observed in any of the soil samples collected from the ten soil borings.

Upon completion of the ten soil borings, each boring was backfilled to grade with generated drill cuttings and a sand Hole Plug or an Asphalt Hole Plug, by CSI.

Figure 2 depicts the locations of the soil borings P37-SB17 through P37-SB26. GPS coordinates and PID measurements for each soil boring are included on Table 1 and Table 2, respectively. Soil boring logs are provided in Appendix B.

2.3 Soil Sampling and Laboratory Analytical Results

Upon completion of each boring, the soil sample exhibiting the highest PID measurement, or the soil sample from zero to five feet bsg or five to ten feet bsg if the PID measurements were reported as ND, was collected in laboratory provided vials containing 20 mL methanol and stored on ice. The samples were shipped at the close of soil sampling activities on Thursday May 19, 2022 under chain-of-custody (COC) procedures to Red Lab, LLC of Wilmington, North Carolina, for laboratory analysis of petroleum hydrocarbons via the QED Ultraviolet Fluorescence (UVF) methodology, which includes BTEX, GRO, DRO, TPH, Total Aromatics, 16 EPA PAHs, BaP, and identification of specific hydrocarbons (HC).

Laboratory analytical results indicated that concentrations of DRO and/or GRO were reported above laboratory detection limits, but below NCDEQ Action Levels, in soil borings P37-SB17, P37-SB18, P37-SB19, P37-SB21, P37-SB22 and P37-SB25. The maximum reported DRO and GRO concentrations were reported as follows:

- DRO at 29.8 mg/kg from a soil sample collected from soil boring P37-SB19, at a depth of approximately 6 feet bsg; and
- GRO at 1.9 mg/kg from a soil sample collected from soil boring P37-SB17, at a depth of approximately 3 feet bsg.

Figure 2 depicts the location of soil borings P37-SB17 through P37-SB26, with soil analytical results included for each boring. Table 2 summarizes soil laboratory analytical results including the depth of each collected soil sample with corresponding PID measurements. The Red Lab, LLC soil laboratory analytical reports are included in Appendix C. A photographic log depicting site and soil boring locations is included in Appendix D.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

The results of the collected geophysical (EM and GPR) data recorded no evidence of metallic USTs at Parcel 37.

Laboratory analytical results indicated that concentrations of DRO and/or GRO were reported above laboratory detection limits, but below NCDEQ Action Levels, in soil boring P37-SB17, P37-SB18, P37-SB19, P37-SB21, P37-SB22 and P37-SB25. The maximum reported DRO and GRO concentrations were reported as follows:

- DRO at 29.8 mg/kg from a soil sample collected from soil boring P37-SB19, at a depth of approximately 6 feet bsg; and
- GRO at 1.9 mg/kg from a soil sample collected from soil boring P37-SB17, at a depth of approximately 3 feet bsg.

This Phase II Investigation concluded that soils impacted with petroleum constituents are present on Parcel 37 at levels below NCDEQ Action Levels. This conclusion was based on laboratory analytical results reporting concentrations of DRO and GRO above the laboratory detection limits (but below NCDEQ Action Levels) in soil borings P37-SB17, P37-SB18, P37-SB19, P37-SB21, P37-SB22 and P37-SB25.

3.2 Recommendations

During planning of construction activities in work areas generally near soil borings P37-SB17, P37-SB18, P37-SB19, P37-SB21, P37-SB22 and P37-SB25, and potentially in other unexplored areas of Parcel 37, as depicted on the provided NCDOT preliminary plan sheets, it is recommended that encountered soil impacted with petroleum constituents be properly handled and managed in the field, and disposed of by contractors in accordance with applicable state regulations.

4.0 SIGNATURE PAGES

This Phase II Investigation Report was prepared by:

DocuSigned by:
BE8ABC48C6D1471...

07/12/2022

Dawn F. Crowell, MELP, CMCSI
Environmental Scientist/Project Manager
CES Group Engineers, LLP

This Phase II Investigation Report was reviewed by:

DocuSigned by:
Greg Hans
17CA85CB2CDF4C7...

07/12/2022

Greg Hans, PMP
Environmental Division Manager
CES Group Engineers, LLP

This Phase II Investigation Report was reviewed and approved by:

DocuSigned by:
Charles Heleine
0E4F07A7BE324CD...

07/13/2022

Charles Heleine, PE, REPA
Senior Environmental Engineer
CES Group Engineers, LLP.

Electronic Seal/Signature

TABLES

Table 1
Soil Boring GPS Coordinate Data
NCDOT TIP Number: U-5536
NCDOT WBS Numberl 44108.1.2
Michael Julie Collins Property: Parcel #37
116 Lewisville Vienna Road
Lewisville, Forsyth County, North Carolina

Sample ID	Date Collected (m/dd/yy)	Latitude	Longitude
P37 - SB17	5/17/2022	36.0999426	-80.4158399
P37 - SB18	5/17/2022	36.0999851	-80.415888
P37 - SB19	5/17/2022	36.1000671	-80.4158897
P37 - SB20	5/17/2022	36.1000074	-80.4157668
P37 - SB21	5/17/2022	36.1000831	-80.4156822
P37 - SB22	5/17/2022	36.1000517	-80.4155969
P37 - SB23	5/17/2022	36.1001479	-80.4154819
P37 - SB24	5/17/2022	36.1003299	-80.4154531
P37 - SB25	5/17/2022	36.1001632	-80.4155999
P37 - SB26	5/17/2022	36.1002042	-80.4156343

Table2
Summary of Soil Analytical Results
NCDOT TIP Number: U-5536
NCDOT WBS Numberl 44108.1.2
Michael & Julie Collins Property**: Parcel #37**
116 Lewisville Vienna Road
Lewisville, Forsyth County, North Carolina

				Analytical Method	**UVF**	**UVF**	**UVF**
				COC	**TPH-DRO**	**TPH-GRO**	**HC Fingerprints**
Sample ID	**Date Collected (m/dd/yy)**	**Sample Area**	**Sample Depth**	**PID (ppmv)**	**mg/kg**	**mg/kg**	
P37 - SB17	5/17/2022	Along tree line	3	0.0 at 3-ft / 0.0 at 8.5-ft	22.8	1.9	V.Deg.PHC 94.6%
P37 - SB18	5/17/2022	Along tree line	5	0.0 at 5-ft / 0.0 at 8-ft	5.3	0.5	Deg.PHC 77.9%
P37 - SB19	5/17/2022	Along tree line	6	0.0 at 1-ft / 0.0 at 9-ft	29.8	<0.3	V.Deg.PHC 76.8%
P37 - SB20	5/17/2022	South of septic tank	8	0.3 at 3-ft / 1.0 at 8-ft	<0.36	<0.36	Residual HC
P37 - SB21	5/17/2022	Paved surface	10	0.0 at 4-ft / 0.6 at 8-ft	2.4	1.1	Deg.PHC 78.6%
P37 - SB22	5/17/2022	Paved surface	2	1.0 at 1.5-ft / 0.4 at 8-ft	0.54	<0.27	Deg.PHC 55.4%
P37 - SB23	5/17/2022	Paved surface	4	0.9 at 4.5 / 0.6 at 7-ft	<0.37	<0.37	Residual HC
P37 - SB24	5/17/2022	Rear of building	8.5	1.0 at 3.5-ft / 0.6 at 7-ft	<0.23	<0.23	Residual HC
P37 - SB25	5/17/2022	At service bay	6	0.8 at 2-ft / 0.4 at 9-ft	0.4	<0.4	Residual HC
P37 - SB26	5/17/2022	Rear of building	10	0.4 at 2-ft / 0.6 at 6.5-ft	<0.22	<0.22	PHC not detected
				Initial NCDEQ Action Levels for Contamination (mg/kg)	100	50	N/A

P#-SB# = Parcel Number - Soil Boring Number
mg/kg = miligrams per kilogram
PID = photoionization detector
ppmv = parts per million per volume
N/A = not applicable
Soil anlaysis performed by Red Lab, LLC of Wilmington, NC with results generated by a QED HC-1 analyzer

FIGURES

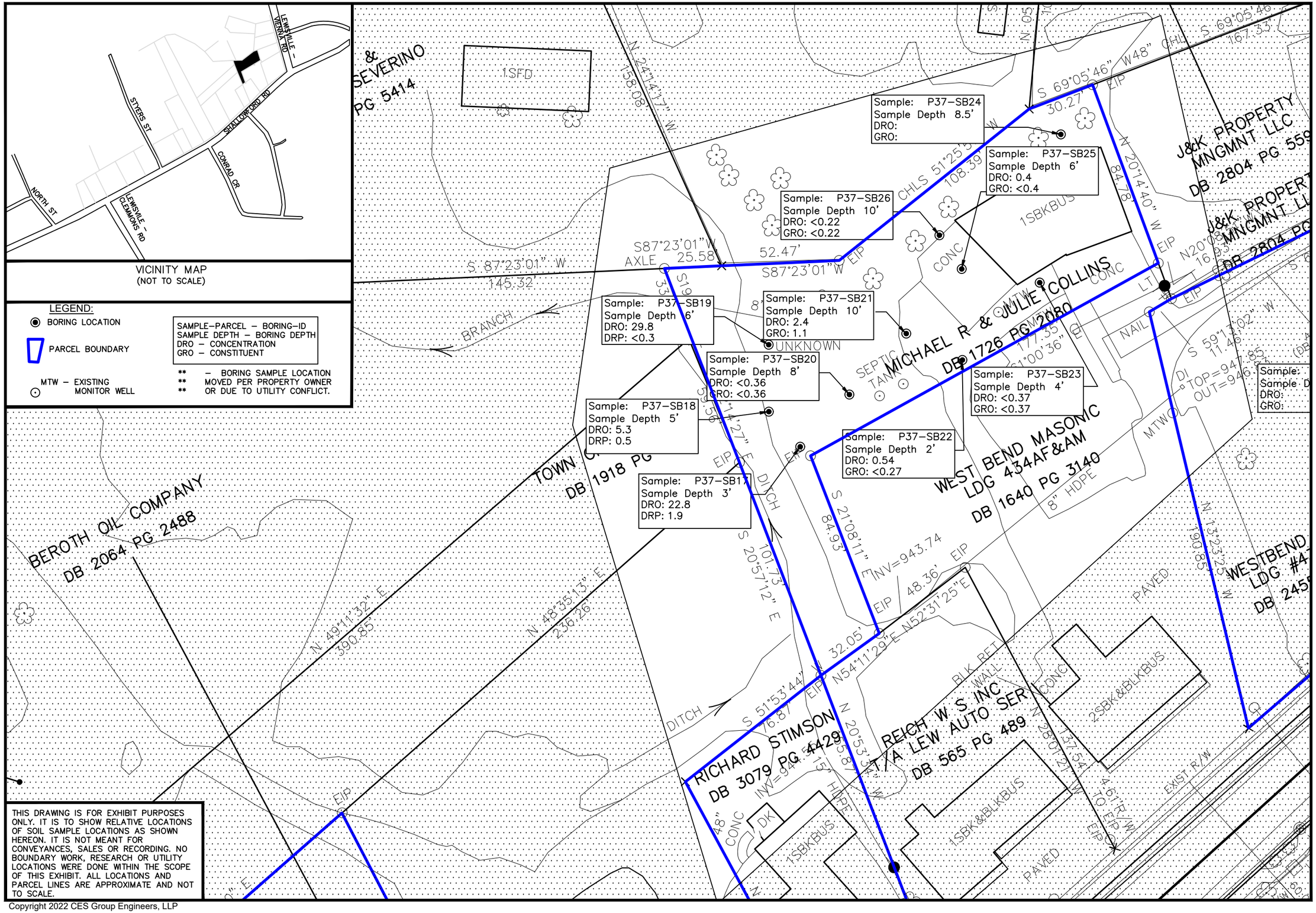
VICINITY MAP
(NOT TO SCALE)

LEGEND:

- BORING LOCATION
- PARCEL BOUNDARY
- MTW – EXISTING MONITOR WELL

SAMPLE–PARCEL – BORING–ID
SAMPLE DEPTH – BORING DEPTH
DRO – CONCENTRATION
GRO – CONSTITUENT

** – BORING SAMPLE LOCATION
** MOVED PER PROPERTY OWNER
** OR DUE TO UTILITY CONFLICT.



THIS DRAWING IS FOR EXHIBIT PURPOSES ONLY. IT IS TO SHOW RELATIVE LOCATIONS OF SOIL SAMPLE LOCATIONS AS SHOWN HEREON. IT IS NOT MEANT FOR CONVEYANCES, SALES OR RECORDING. NO BOUNDARY WORK, RESEARCH OR UTILITY LOCATIONS WERE DONE WITHIN THE SCOPE OF THIS EXHIBIT. ALL LOCATIONS AND PARCEL LINES ARE APPROXIMATE AND NOT TO SCALE.

OWNER/PREPARED FOR:

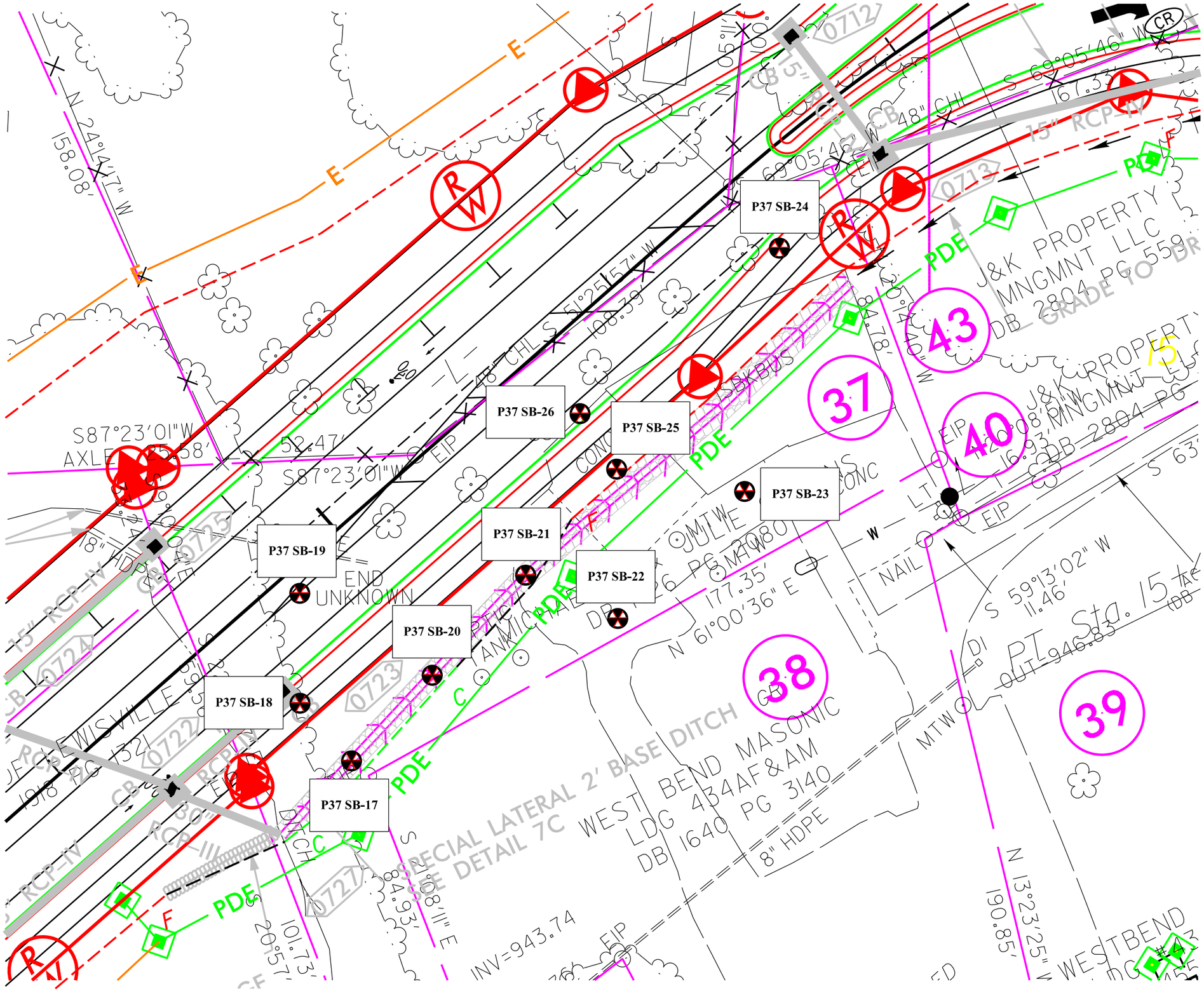
NCDOT

CES GROUP
ENGINEERS, LLP
NC FIRM LICENSE# F-1240
3525 WHITEHALL PARK DRIVE,
SUITE 150
CHARLOTTE, NC 28273
T 704.489.1500
www.ces-group.net

EXHIBIT SURVEY
PARCEL NO. 37
ENVIRONMENTAL
SAMPLE LOCATIONS
U-5536

DRAWN BY:	JES
CHECKED BY:	JES
PROJECT NUMBER:	7893
SCALE:	1" = 40'
DATE:	5/31/2022
TAX PARCEL:	5885-18-7352.00
DRAWING:	7893-EXHIBITS.dwg

SHEET: 1



LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- E — TEMPORARY CONSTRUCTION EASEMENT
- PDE — PROPOSED DRAINAGE EASEMENT
- SOIL BORING LOCATION

TITLE

SITE MAP

PROJECT

PARCEL 37
LEWISVILLE, NORTH CAROLINA
NCDOT PROJECT U-5536

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GREENSBORO, NC 27406
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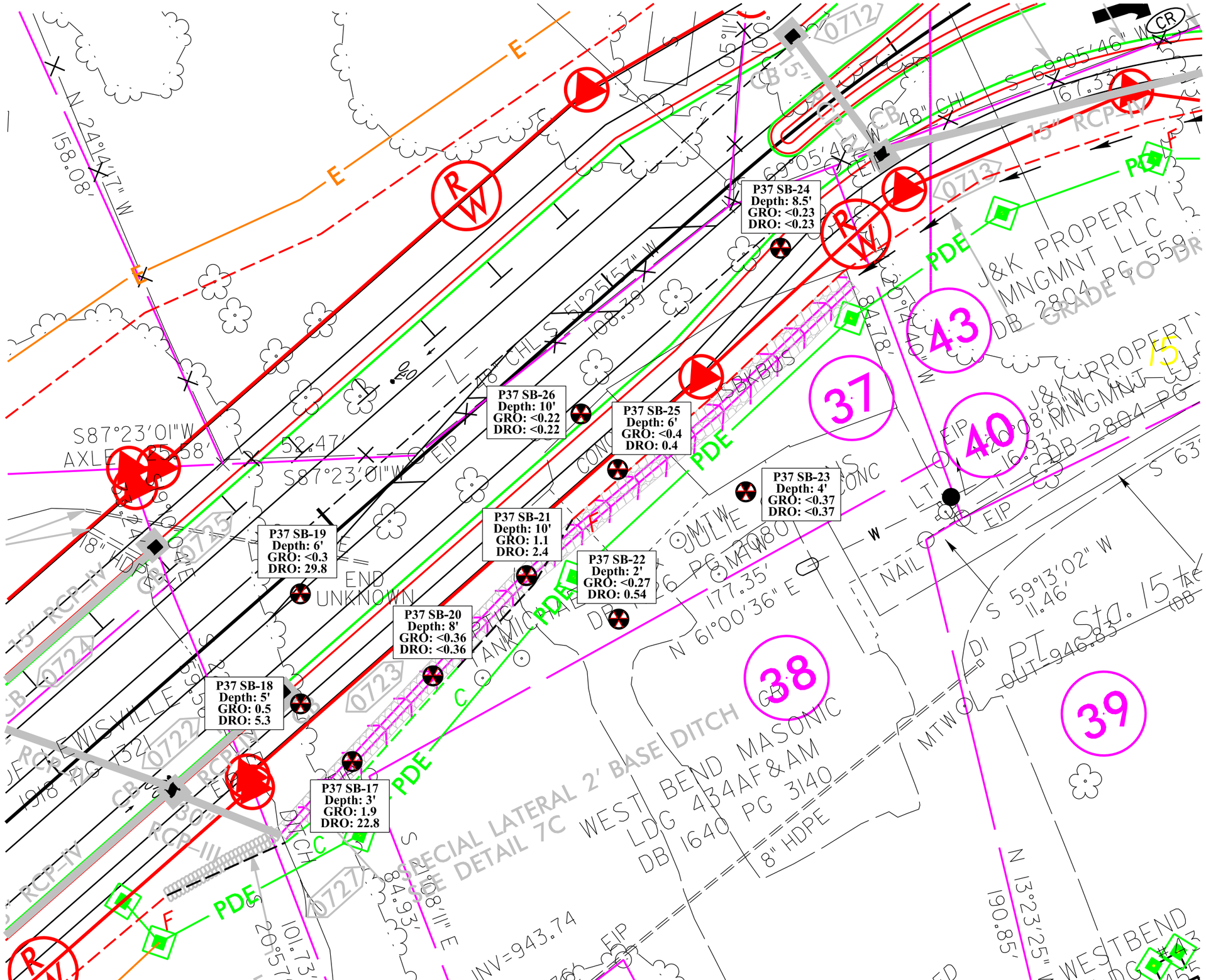
License # C1251 Eng. / #C257 Geology

DATE: 6-22-2022

REVISION NO. 0

FIGURE NO. 2



LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- E — TEMPORARY CONSTRUCTION EASEMENT
- PDE — PROPOSED DRAINAGE EASEMENT
- SOIL BORING LOCATION

PX(Y) PARCEL#(BORING#)
DRO DIESEL RANGE ORGANICS*
GRO GASOLINE RANGE ORGANICS*
*ALL CONCENTRATIONS PRESENTED IN mg/kg

TITLE
SOIL ANALYTICAL MAP

PROJECT
PARCEL 37
LEWISVILLE, NORTH CAROLINA
NCDOT PROJECT U-5536

PYRAMID GEOPHYSICS
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DATE: 6-22-2022
REVISION NO. 0
FIGURE NO. 3

APPENDIX A

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

GEOPHYSICAL SURVEY REPORT

PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2022-108)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION:
PARCEL 37
NCDOT PROJECT U-5536 (44108.1.2)

116 LEWISVILLE-VIENNA ROAD, LEWISVILLE, NC

May 17, 2022

Report prepared for: **Greg Hans, PMP**
CES Group Engineers, LLP
274 North Highway 16 Business, Suite 300
Denver, NC 28037

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

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

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C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 37 – 116 Lewisville-Vienna Road
Lewisville, Forsyth 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
UST .....Underground Storage Tank

EXECUTIVE SUMMARY

Project Description: Pyramid Geophysical Services (Pyramid), a department within Pyramid Environmental & Engineering, P.C., conducted a geophysical investigation for CES Group Engineers, LLP (CES) at Parcel 37, located at 116 Lewisville-Vienna Road, in Lewisville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5536). The survey was designed to extend across all accessible portions of the parcel indicated to Pyramid by CES. Conducted from May 10-11, 2022, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Geophysical Results: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of four EM anomalies were identified. All of the EM anomalies were directly attributed to visible cultural features at the ground surface. GPR was performed around all sources of significant metallic interference to confirm that the interference did not obscure any significant structures such as USTs. The geophysical survey identified evidence of utilities and/or buried debris.

A septic tank was identified during the utility locating performed subsequent to the geophysical survey. Septic Tank #1 is approximately 10 feet long by 5 feet wide and is located between to concrete pillars on the western portion of the property. Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 37.

INTRODUCTION

Pyramid Geophysical Services (Pyramid), a department within Pyramid Environmental & Engineering, P.C., conducted a geophysical investigation for CES at Parcel 37, located at 116 Lewisville-Vienna Road, in Lewisville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5536). The survey was designed to extend across all accessible portions of the parcel indicated to Pyramid by CES. Conducted from May 10-11, 2022, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site consisted of one building surrounded by grass and concrete surfaces. An aerial photograph showing the survey area boundaries and ground-level photographs is shown in **Figure 1**.

FIELD METHODOLOGY

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

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

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

GPR data were acquired across select EM anomalies on May 11, 2022, using a Geophysical Survey Systems, Inc. (GSSI) SIR 4000 control unit coupled to a 350 MHz HS antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the SIR 4000 unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the SIR 4000 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	Fence	
2	Building	✓
3	Reinforced Concrete	✓
4	Metallic Objects on Ground Surface	✓

All of the EM anomalies were directly attributed to visible cultural features at the ground surface, including a fence, a building, reinforced concrete, and metallic objects on the ground surface. GPR was performed around areas of significant metallic interference to confirm that the metallic interference did not obscure any significant structures such as USTs. GPR was also performed across the reinforced concrete to confirm the presence of reinforcement within the slab.

Discussion of GPR Results

Figure 3 presents the locations of the formal GPR transects performed at the property as well as select transect images. All of the transect images are included in **Appendix A**. A total of twenty-six formal GPR transects were performed at the site.

GPR Transects 1-25 were performed across areas of metallic interference. These transects showed shallow reflectors consistent with possible buried utilities and/or debris and verified the presence of reinforcement in the concrete slab. No evidence of significant structures such as USTs was observed.

GPR Transect 26 was performed during utility locating subsequent to the geophysical survey. GPR Transect 26 was performed across a known septic tank and showed a high-amplitude lateral reflector consistent with a septic tank. Septic Tank #1 is approximately 10 feet long by 5 feet wide. **Figure 4** provides the location and size of the septic tank, overlain on an aerial, along with a ground-level photograph.

Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 37. **Figure 5** provides an overlay of the metal detection results and the septic tank onto the NCDOT Engineering plans.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 37 in Lewisville, 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.
- All of the EM anomalies were directly attributed to visible cultural features at the ground surface.
- GPR was performed around all sources of significant metallic interference to confirm that the interference did not obscure any significant structures such as USTs.
- The geophysical survey identified evidence of utilities and/or buried debris.
- A septic tank was identified during the utility locating performed subsequent to the geophysical survey. Septic Tank #1 is approximately 10 feet long by 5 feet wide and is located between to concrete pillars on the western portion of the property.
- Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 37.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for CES Group Engineers, LLP in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined the definitive presence or absence of metallic USTs, but the evidence collected is sufficient to result in the conclusions made in this report. Additionally, it should be understood that areas containing

extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA

View of Survey Area (Facing Approximately North)

View of Survey Area (Facing Approximately Northwest)

N

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PROJECT	PARCEL 37 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536	TITLE	PARCEL 37 - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	DATE 5/11/2022 PYRAMID PROJECT #: 2022-108	CLIENT CES GROUP ENGINEERS **FIGURE 1**

EM61 METAL DETECTION RESULTS

NO EVIDENCE OF METALLIC USTs WAS OBSERVED. ONE SEPTIC TANK WAS IDENTIFIED.

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 EM data were collected on May 10, 2022, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI SIR 4000 instrument with a 350 MHz HS antenna on May 11, 2022.

EM61 Metal Detection Response (millivolts)

N

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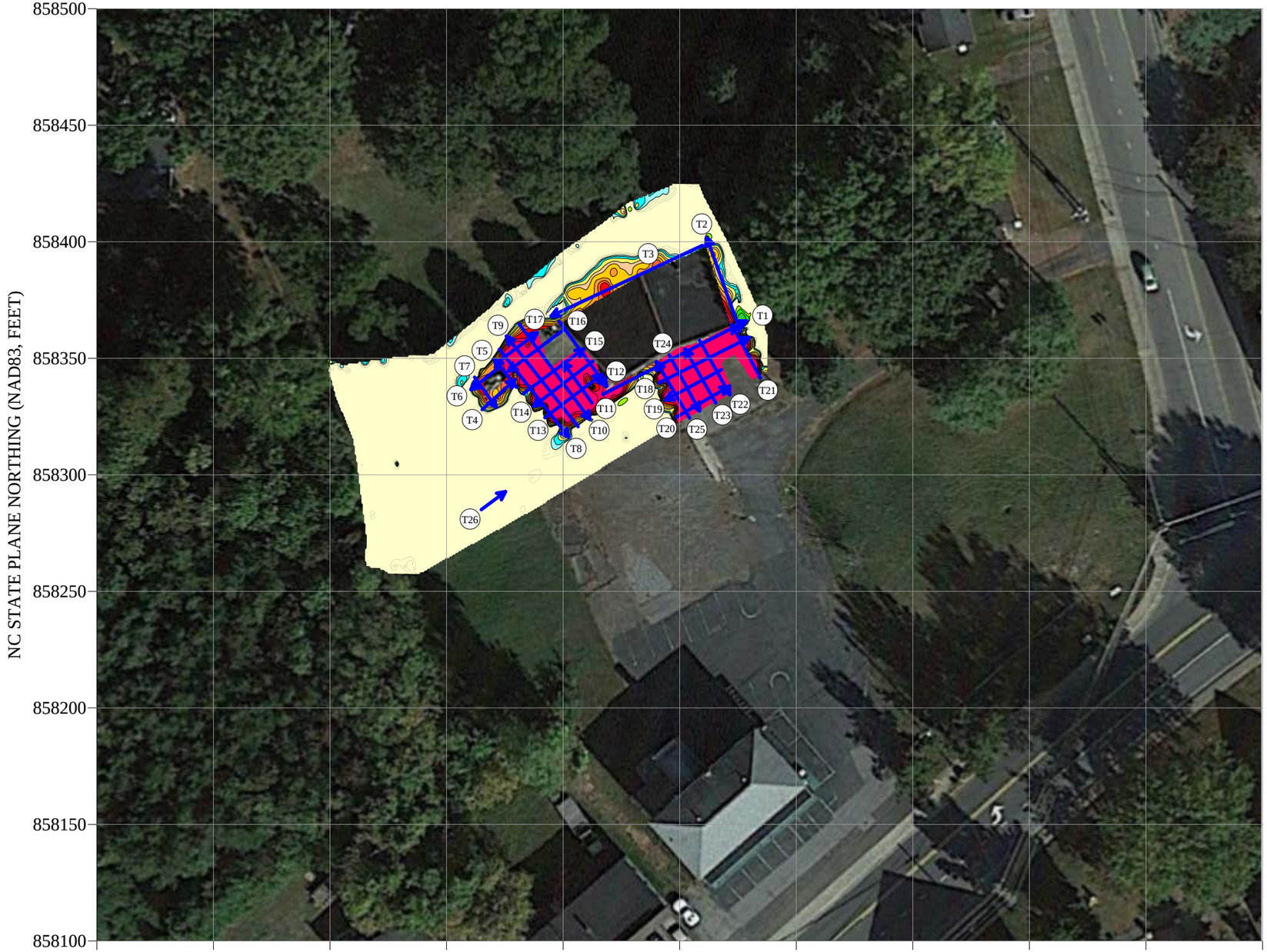
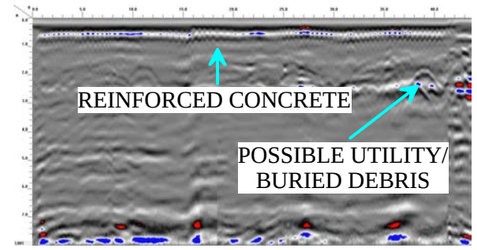
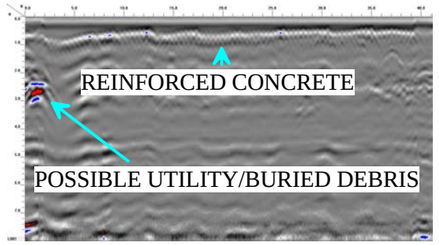
PROJECT	PARCEL 37 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536
TITLE	PARCEL 37 - EM61 METAL DETECTION CONTOUR MAP
DATE	5/11/2022
PYRAMID PROJECT #:	2022-108
CLIENT	CES GROUP ENGINEERS
	FIGURE 2

GPR TRANSECT LOCATIONS





GPR TRANSECT 10 (T10)



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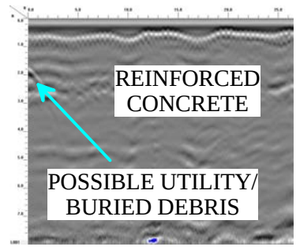

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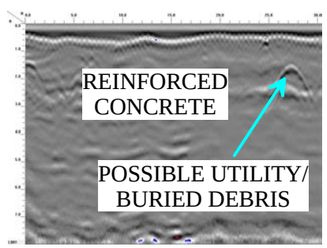

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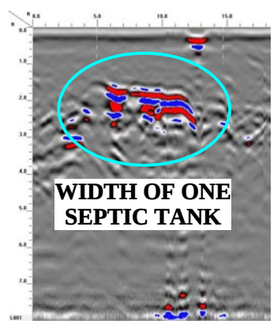

GPR TRANSECT 26 (T26)

N

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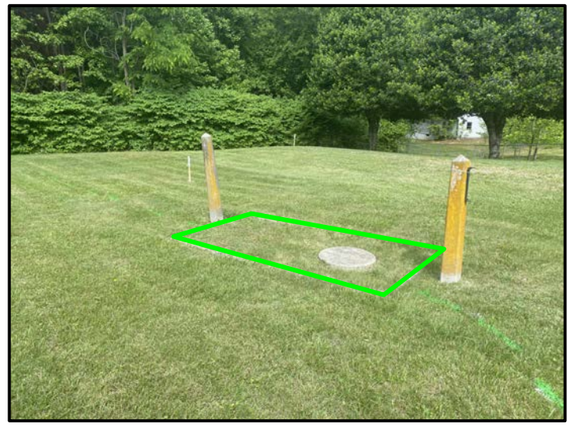
PROJECT	PARCEL 37 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536	DATE	5/11/2022
TITLE	PARCEL 37 - GPR TRANSECT LOCATIONS AND SELECT IMAGES	PYRAMID PROJECT #:	2022-108
CLIENT	CES GROUP ENGINEERS		**FIGURE 3**

LOCATION OF ONE SEPTIC TANK



View of Septic Tank #1
(Facing Approximately Northwest)

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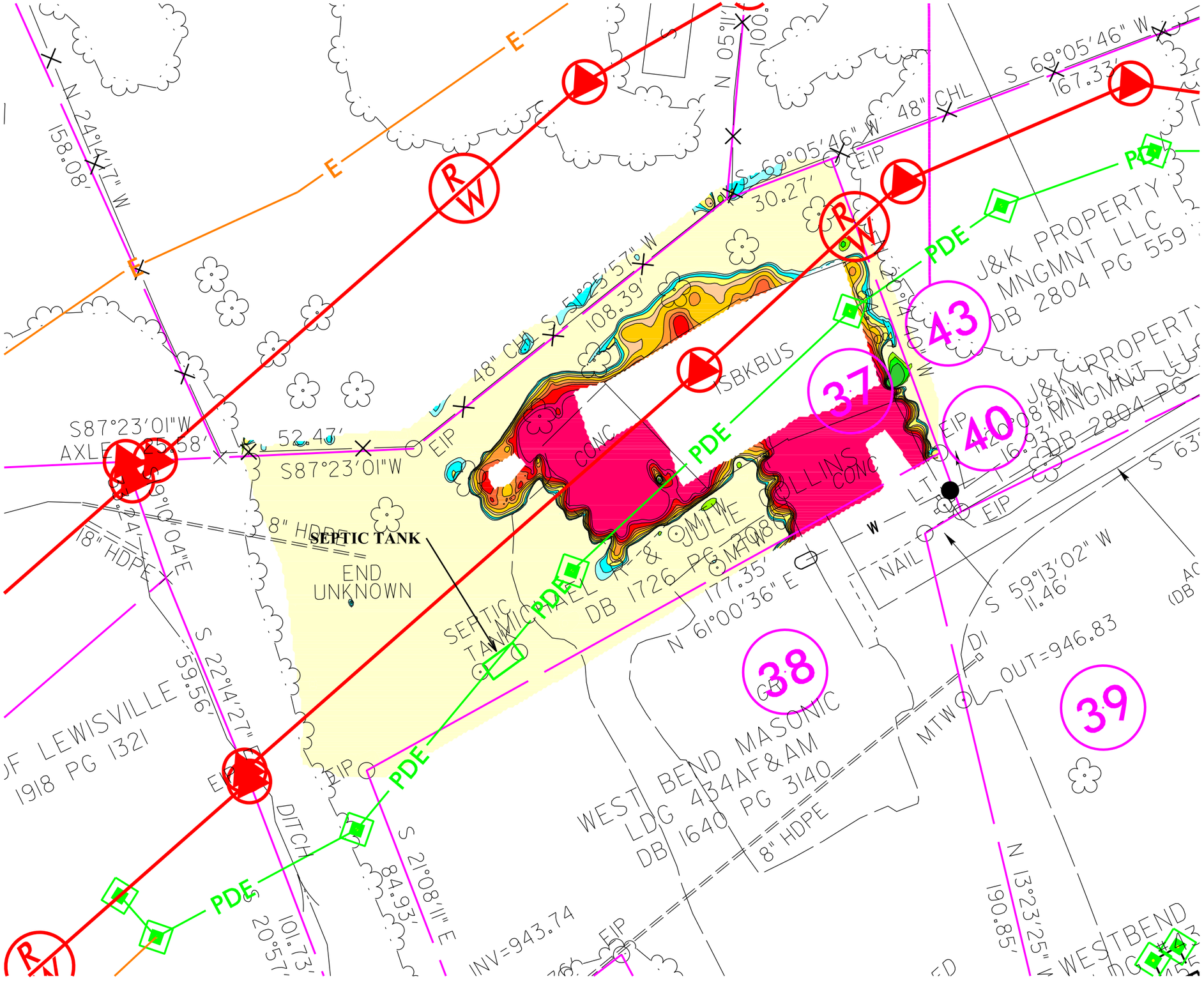
PROJECT: PARCEL 37 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536	TITLE: PARCEL 37 LOCATION AND SIZE OF ONE SEPTIC TANK	DATE: 5/11/2022 PYRAMID PROJECT #: 2022-108	CLIENT: CES GROUP ENGINEERS **FIGURE 4**



LEGEND

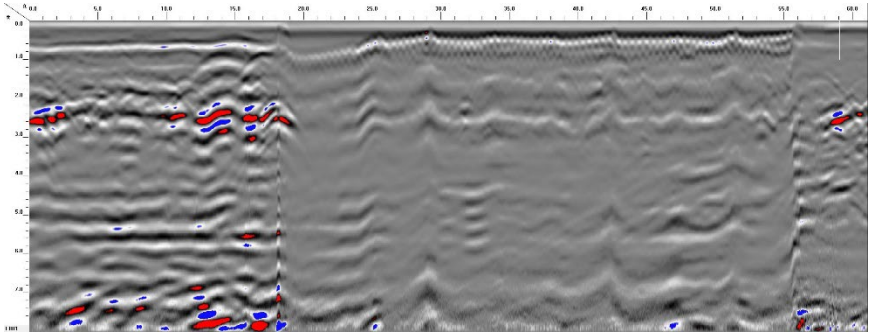
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED PERMANENT UTILITY
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- SEPTIC TANK

EM61 Metal Detection Response (millivolts)

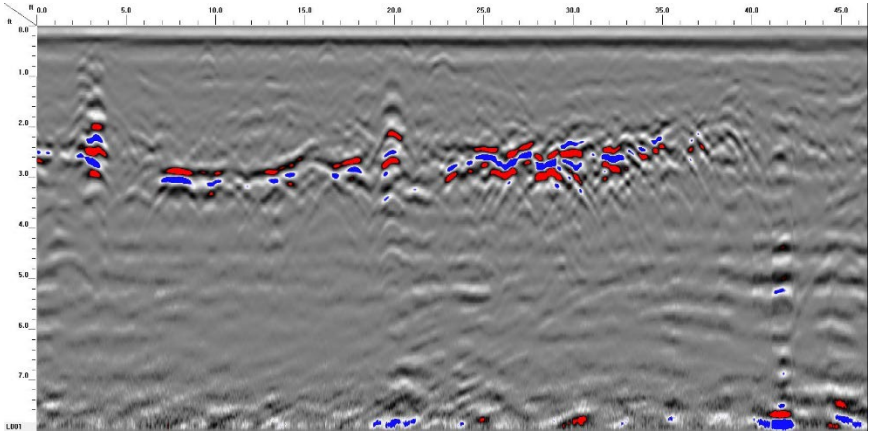
1000 750 500 400 300 200 150 100 75 60 50 40 30 -90 -100 -200 -400 -5000

TITLE	OVERLAY OF METAL DETECTION RESULTS AND ONE SEPTIC TANK ON NCDOT ENGINEERING PLANS
PROJECT	PARCEL 37 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536
PYRAMID GEOPHYSICS	503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology
DATE: 5-16-2022	REVISION NO. 0
PYRAMID PROJECT NO. 2022-108	FIGURE NO. 5

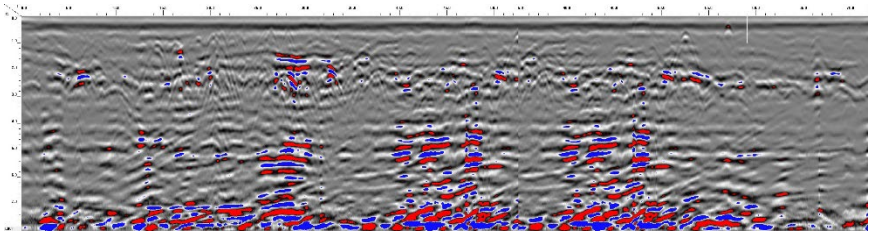
Appendix A – GPR Transect Images



GPR TRANSECT 1



GPR TRANSECT 2



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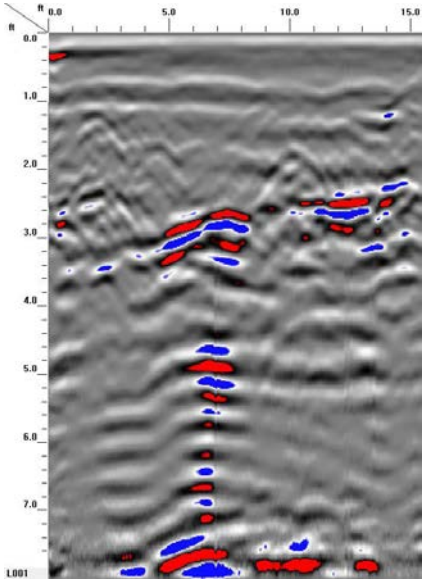

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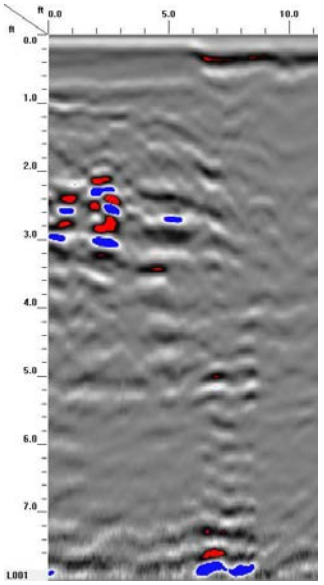
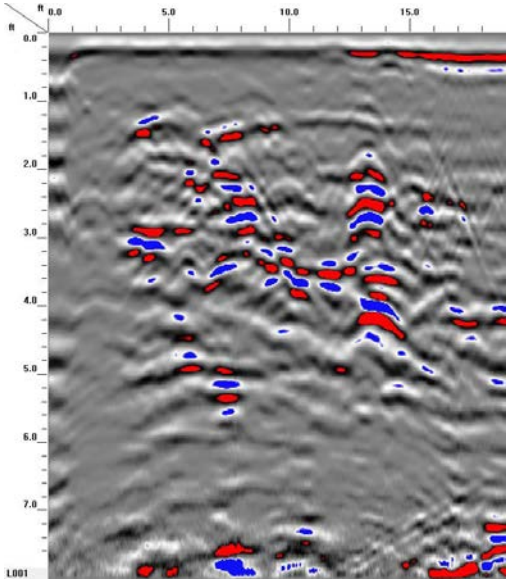
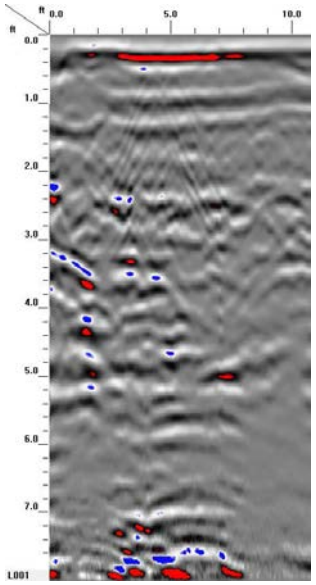


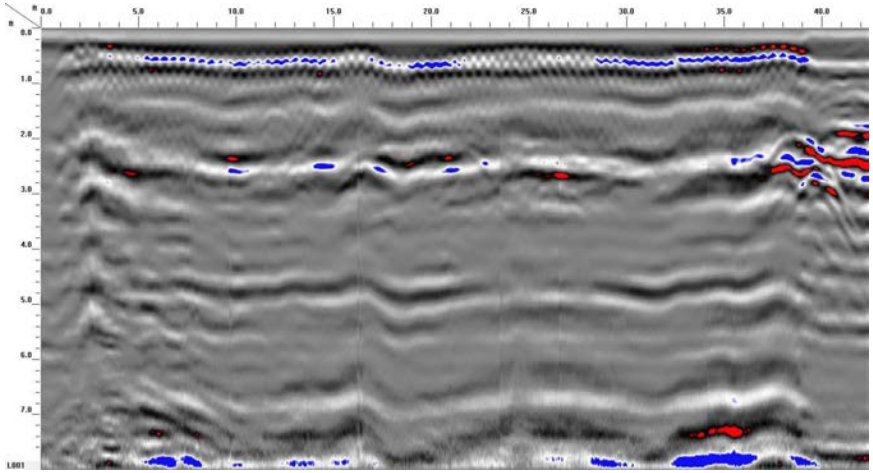
GPR TRANSECT 5



GPR TRANSECT 6



GPR TRANSECT 7



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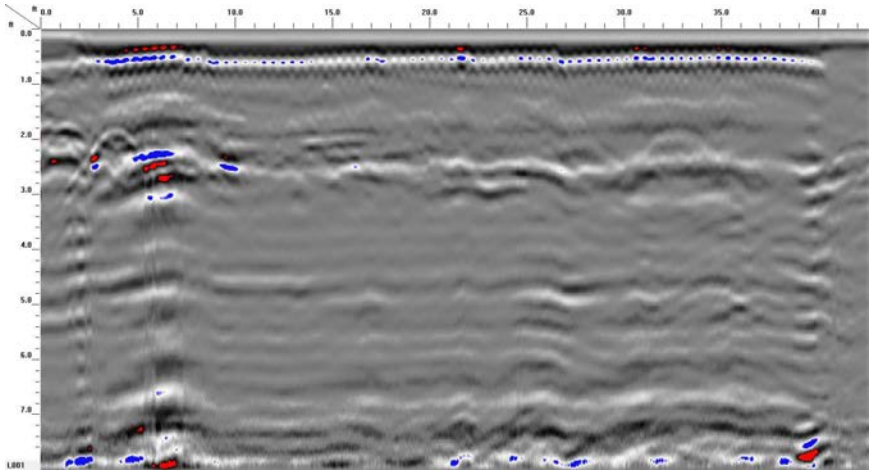
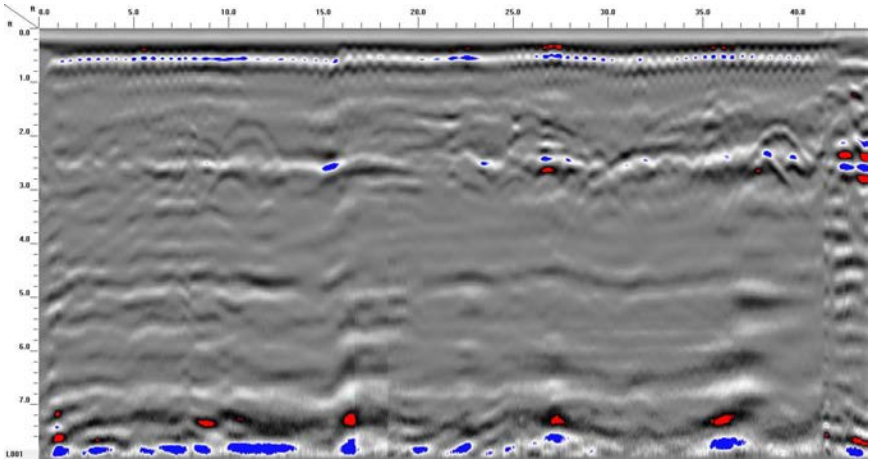


GPR TRANSECT 9



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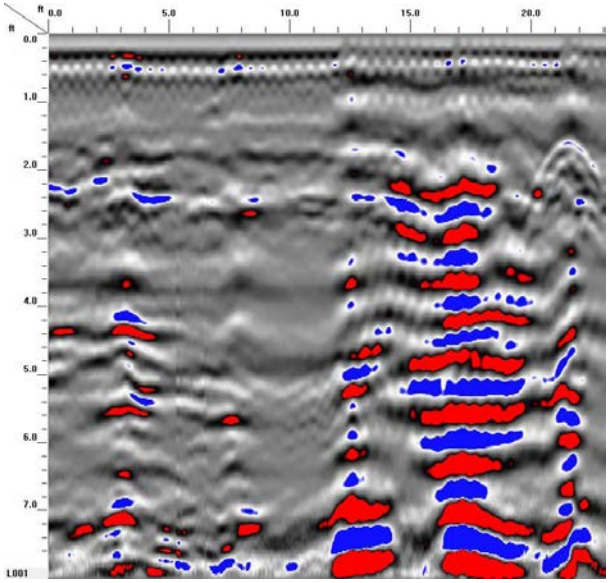

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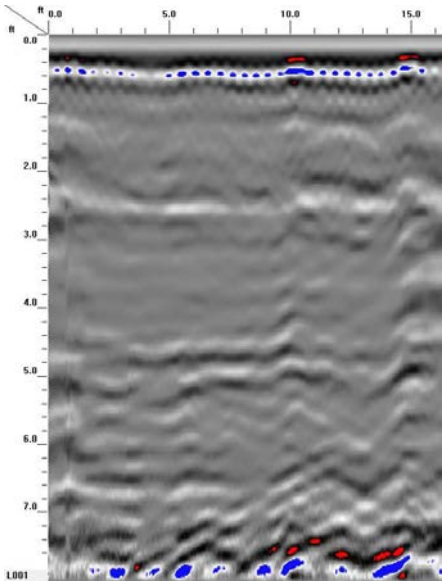

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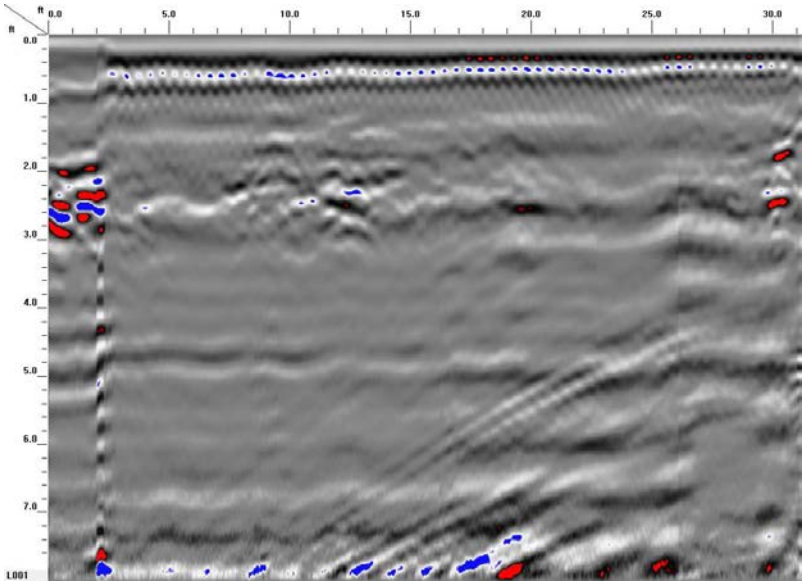

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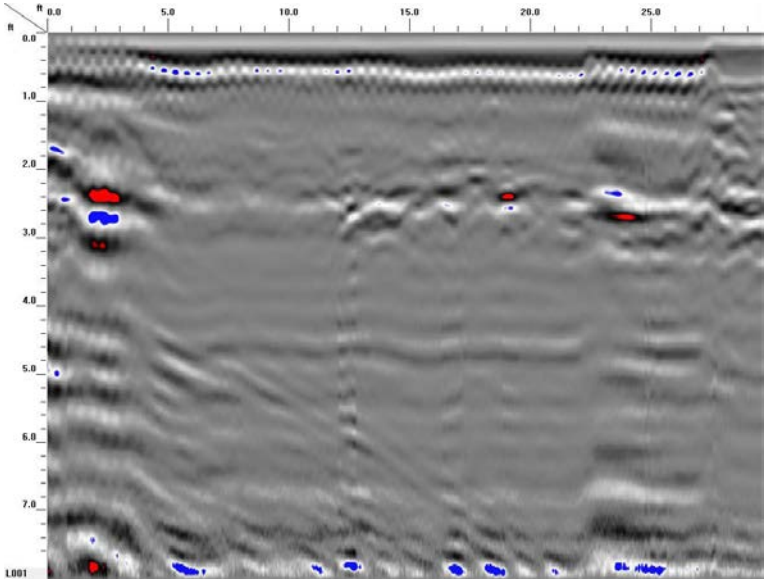
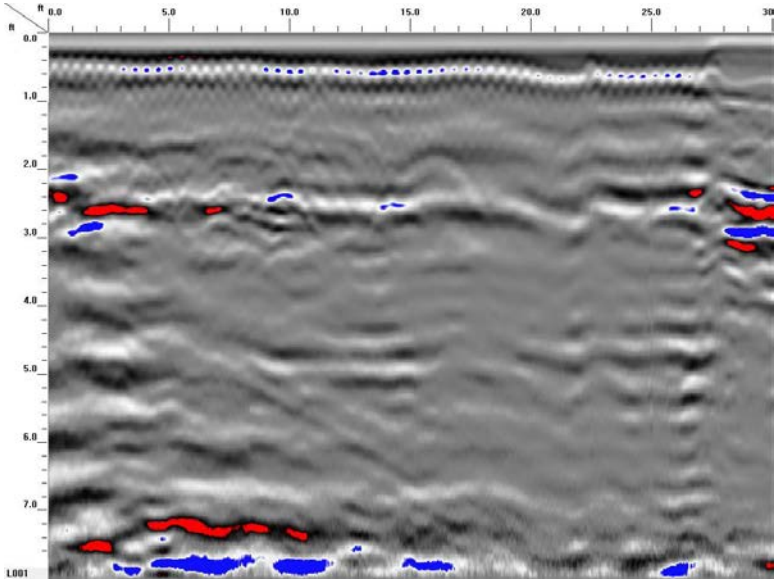


GPR TRANSECT 14



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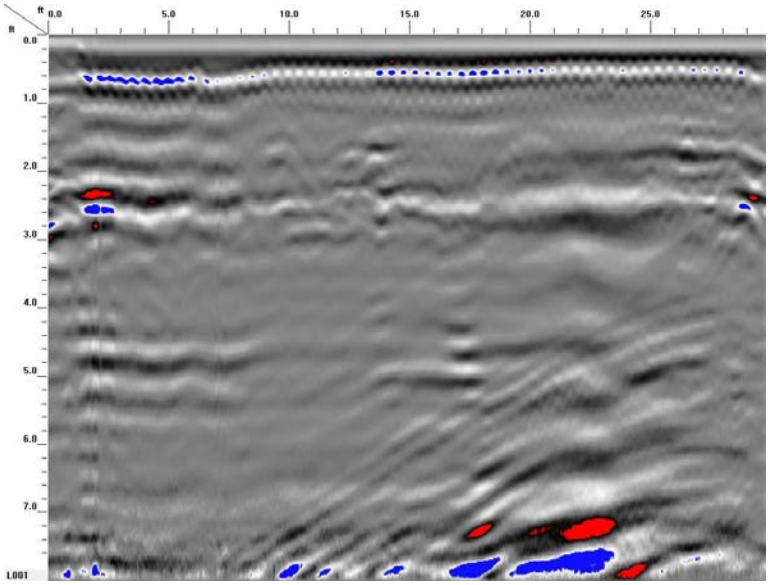

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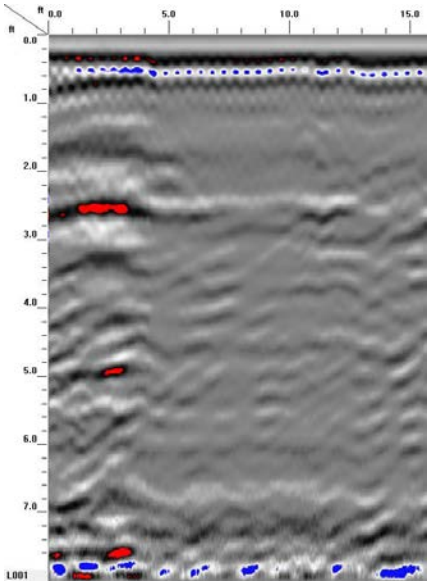
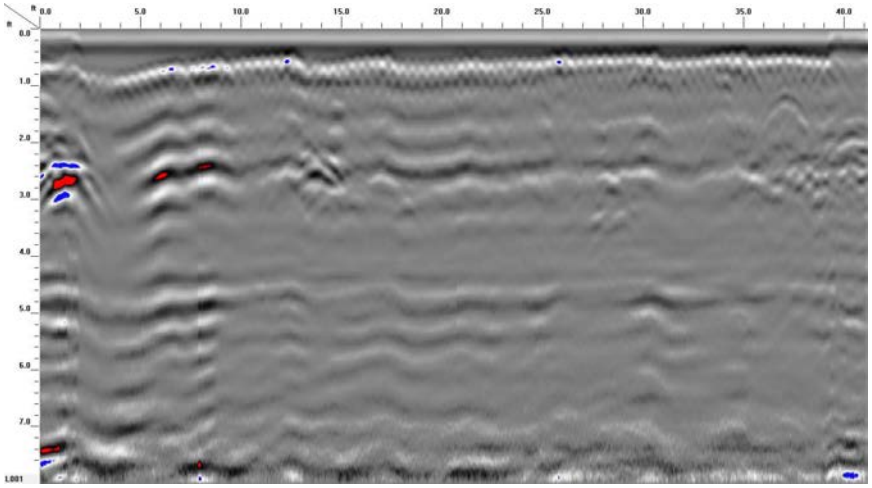
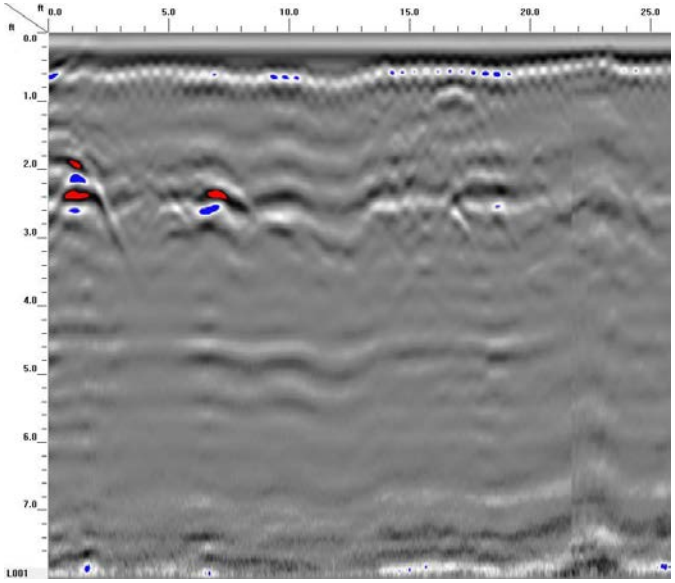


GPR TRANSECT 17



GPR TRANSECT 18



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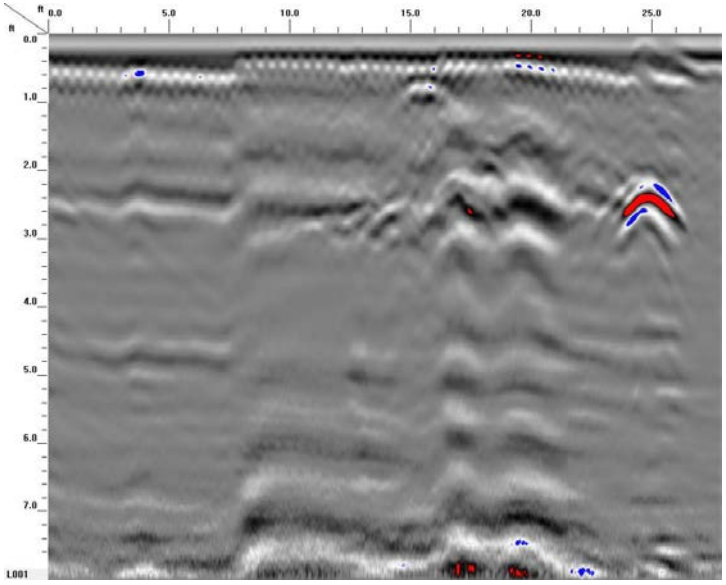

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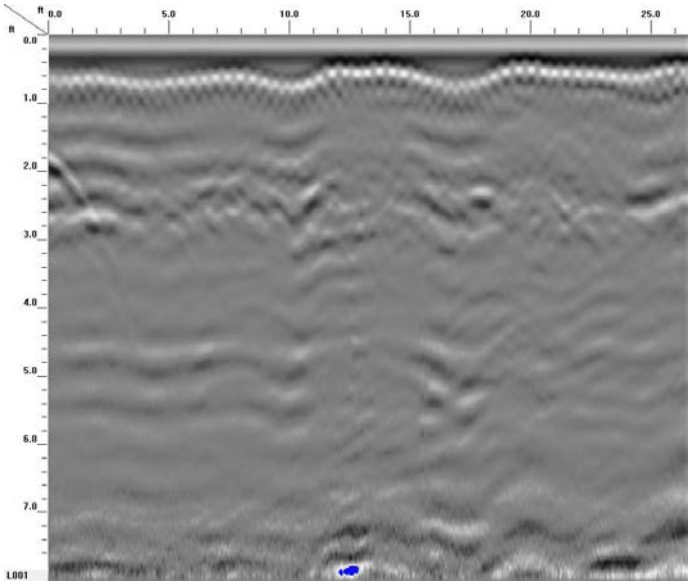

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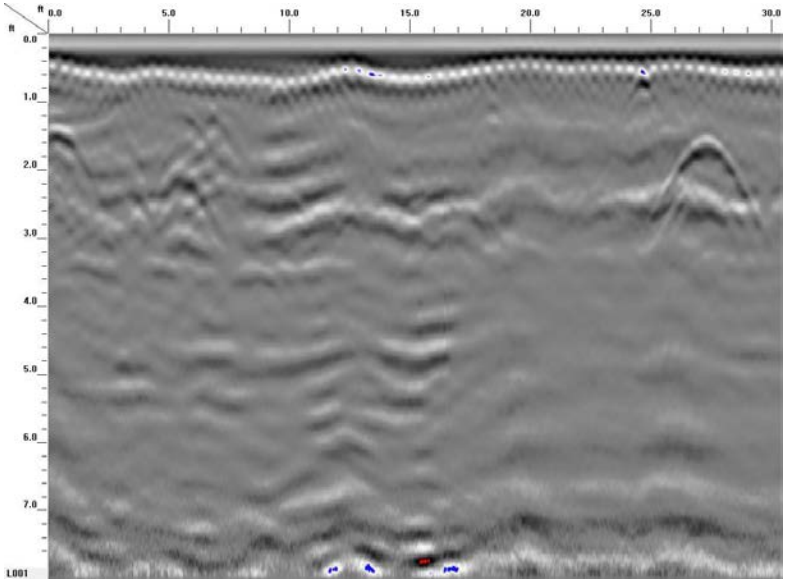

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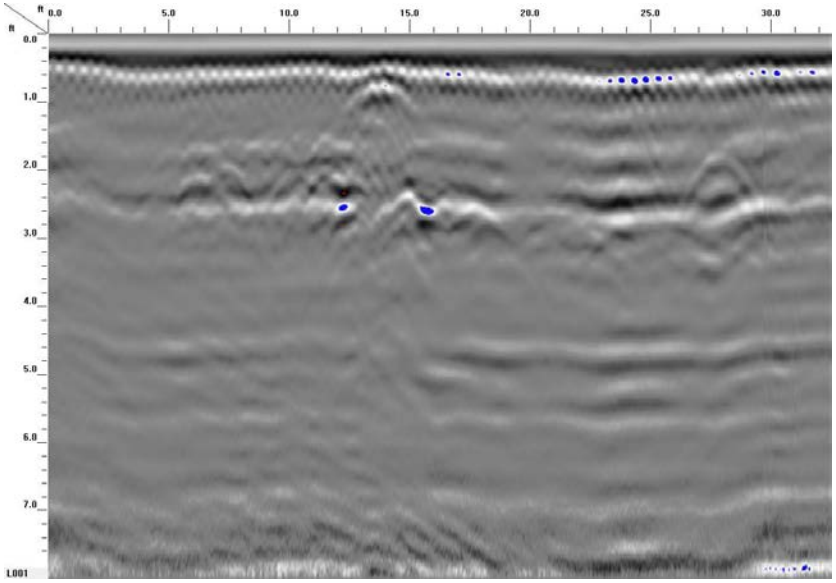
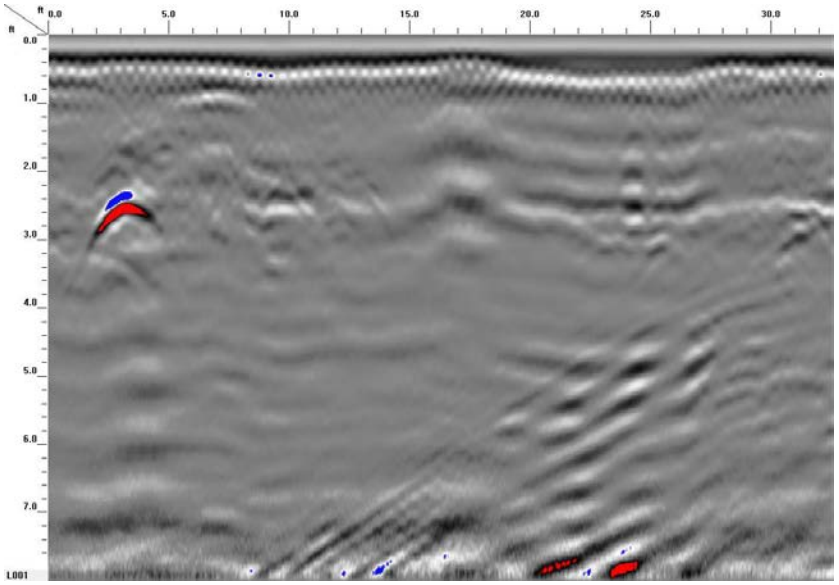
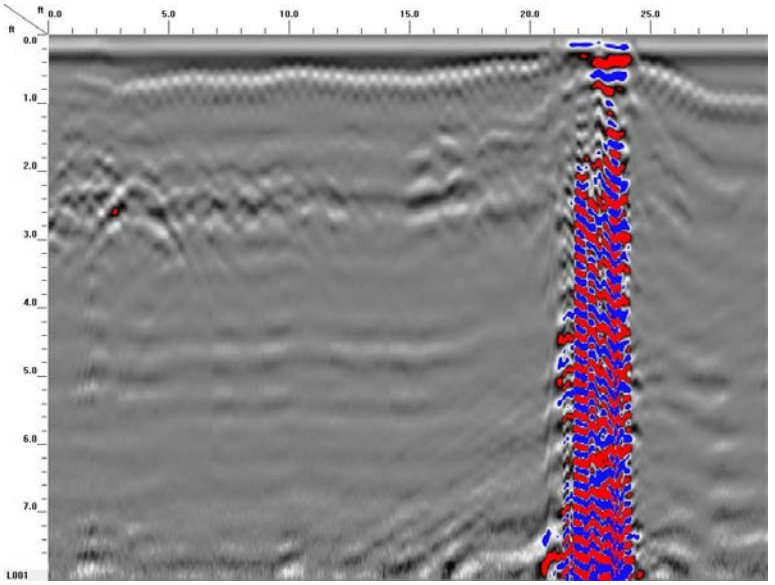


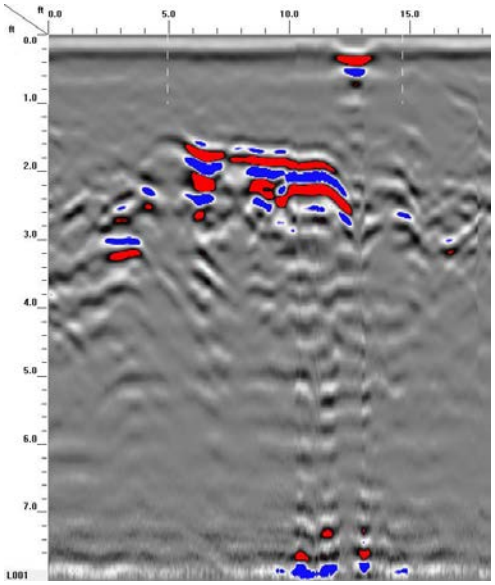
GPR TRANSECT 24



GPR TRANSECT 23



GPR TRANSECT 25



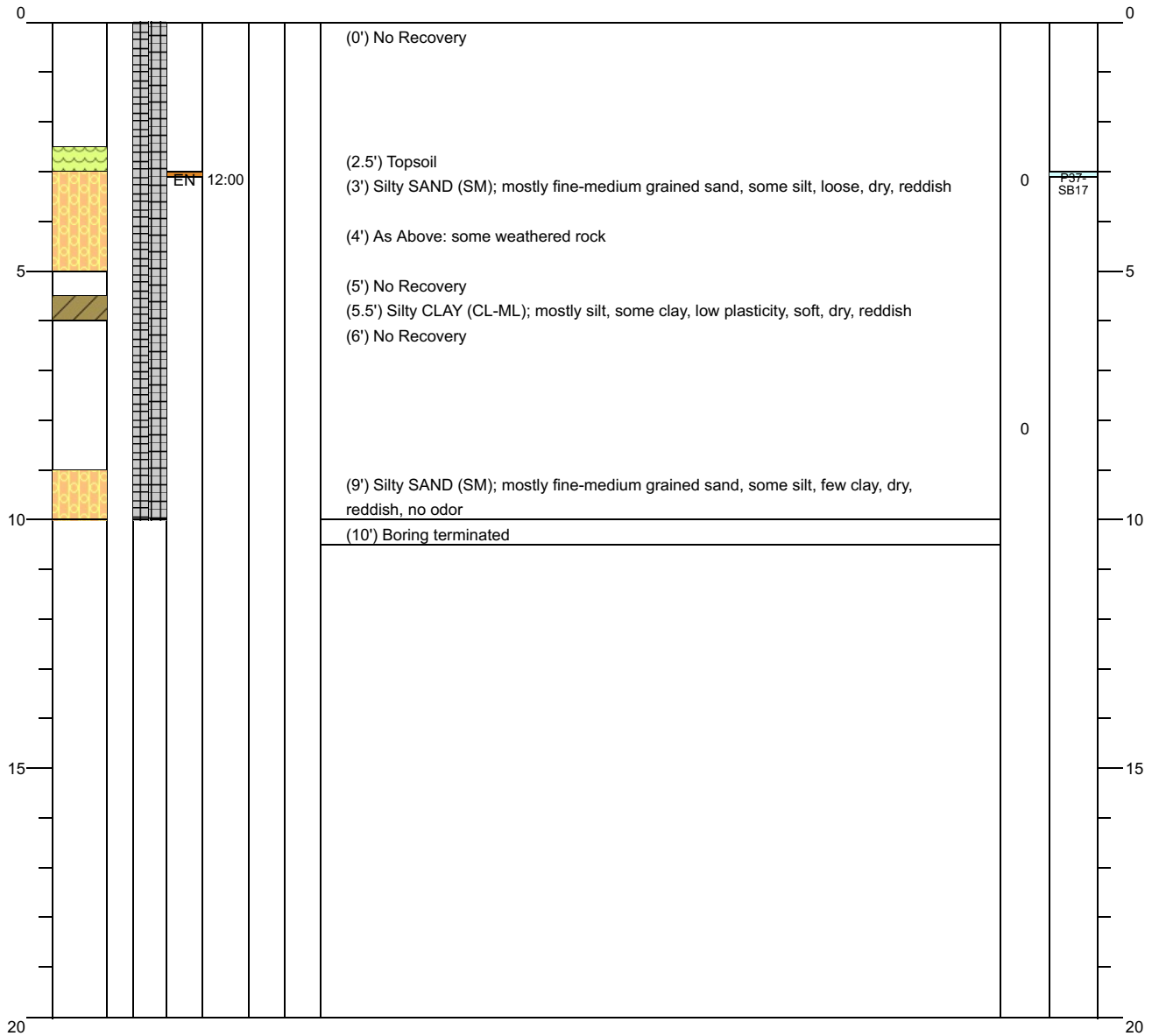
GPR TRANSECT 26

APPENDIX B

SOIL BORING LOGS

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB17
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

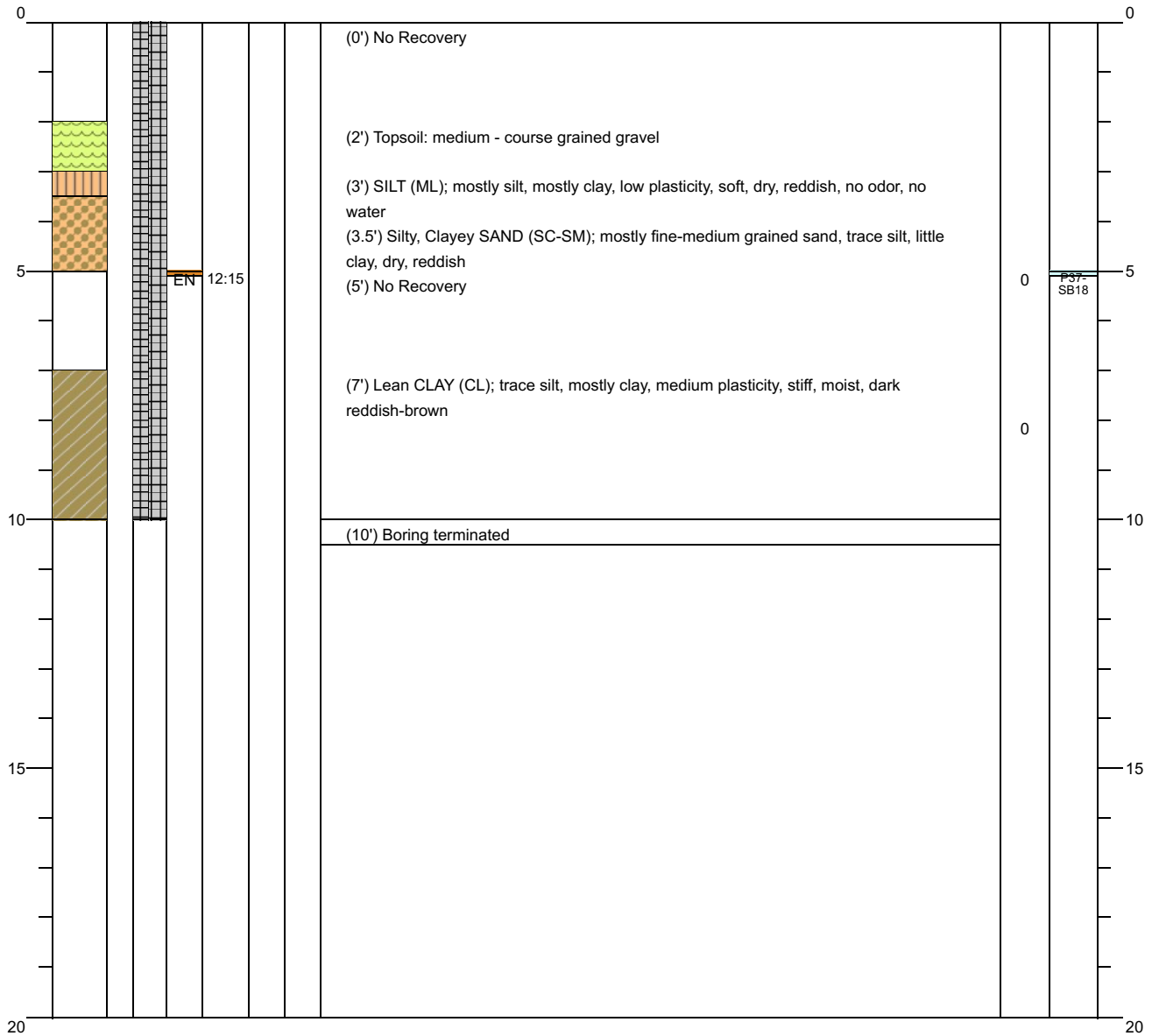
Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**



NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB18
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**



NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB19
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') No Recovery			0
								(2') Topsoil (2.5') Well-graded SAND (SW); mostly fine-medium grained sand, very loose, dry, reddish			
								(4') Well-graded SAND with clay (SW-SC); mostly fine grained sand, some clay, very loose, dry, reddish (5') No Recovery (5.5') SILT with sand (ML); some fine sand, few silt, little clay, low plasticity, dry, reddish			
5				EN	13:10					P37-SB19	5
								(7') No Recovery			
								(8') Well-graded SAND with gravel (SW); some fine-medium grained sand, little fine gravel, very loose, dry, reddish			
10								(10') Boring terminated			10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB20
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') No Recovery			0
								(1') Topsoil: with weathered rock fragments (1.5') Poorly graded SAND (SP); mostly fine-medium grained sand, few fine gravel, trace silt, loose, dry, reddish			
									0.3		
								(3.5') SILT with sand (ML); some fine-medium sand, some silt, some clay, reddish (4') No Recovery			
5								(5') Poorly graded SAND (SP); mostly fine-medium grained sand, trace fine gravel, loose, dry, reddish			5
				EN	13:20			(8') SILT with sand (ML); some fine sand, some silt, some clay, dry, reddish, no odor	1	P37-SB20	
10								(10') Boring terminated			10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB-21
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') No Recovery (1') Asphalt (1.5') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-medium sand, loose, dry, dark gray (2.5') Silty SAND (SM); mostly fine-medium grained sand, some silt, trace clay, loose, dry, reddish (4') Lean CLAY with sand (CL); trace fine gravel, little fine sand, some silt, mostly clay, medium plasticity, dry, dark gray (7') Gravelly lean CLAY (CL); some fine-coarse gravel, some fine sand, some silt, mostly clay, medium plasticity, dry, reddish	0 0.6		0
5											5
10				EN	13:28			(10') Boring terminated		P37-SB21	10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB22
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') Asphalt			0
								(1') Poorly graded GRAVEL with sand (GP); mostly fine-coarse grained gravel, some fine-medium sand, loose, dry, dark gray	1		
				EN	13:40			(2') Lean CLAY with sand (CL); trace fine gravel, some fine-medium sand, some silt, mostly clay, medium plasticity, stiff, dry, reddish		P37-SB22	
5											5
								(6') SILT with sand (ML); some fine-medium sand, mostly silt, trace clay, low plasticity, soft, dry, reddish, no odor	0.4		
10								(10') Boring terminated			10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB23
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') No Recovery			0
								(2') Asphalt (2.5') Poorly graded GRAVEL with sand (GP); some fine-coarse grained gravel, some fine-medium sand, very loose, dry, reddish (3') Silty CLAY (CL-ML); trace fine sand, little silt, mostly clay, medium plasticity, stiff, dry, reddish			
5				EN	13:50			(5') Silty SAND (SM); mostly fine grained sand, some silt, trace clay, medium dense, dry, reddish-brown (6') No Recovery (6.5') Silty SAND (SM); mostly fine grained sand, some silt, trace clay, medium dense, dry, reddish-brown	0.9 0.6	P37-SB23	5
10								(8') Silty SAND (SM); mostly fine-medium grained sand, few fine gravel, some silt, trace clay, loose, dry, light brown (10') Boring terminated			10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB24
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

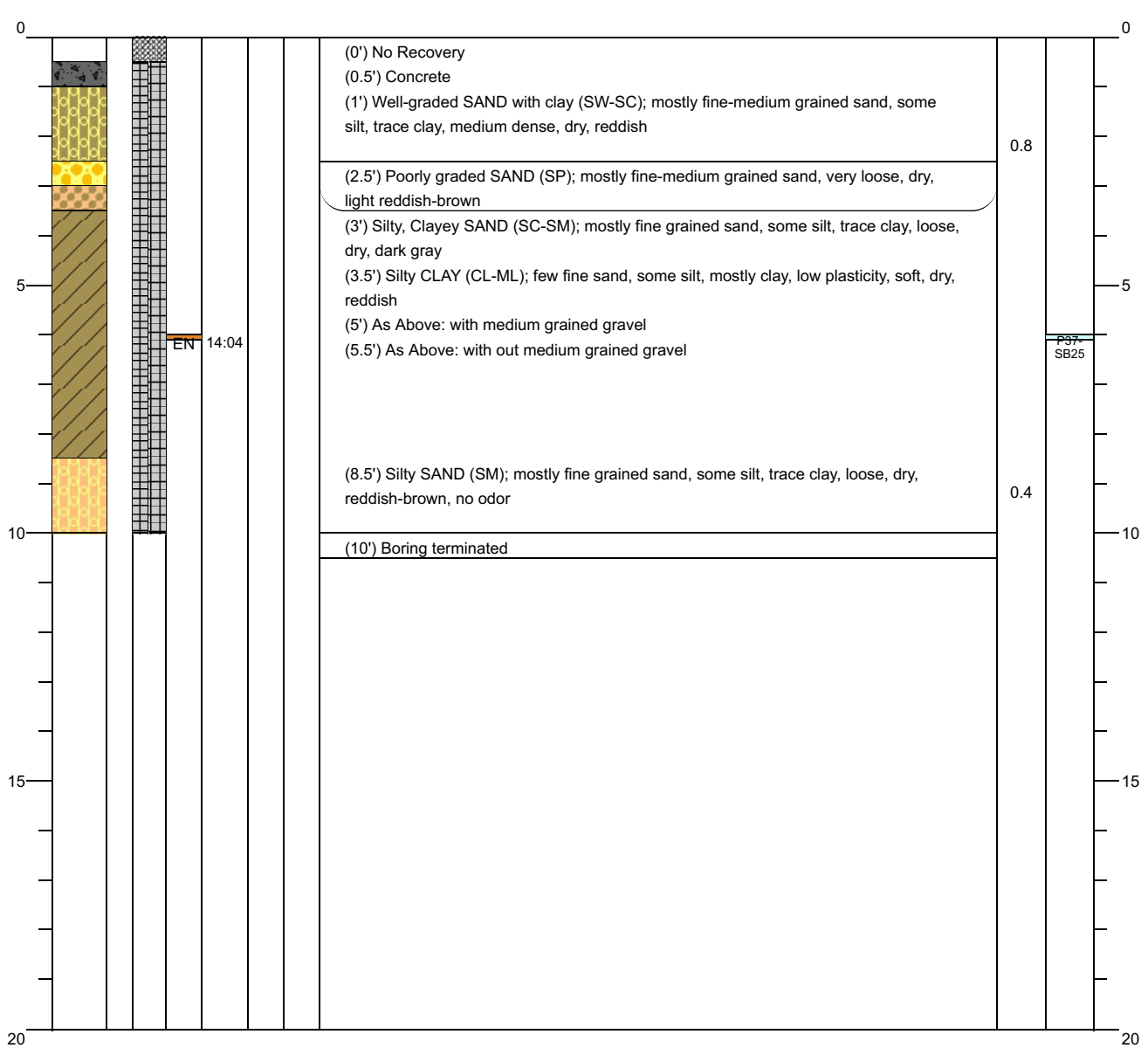
Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') No Recovery (0.5') Topsoil (1') Silty, Clayey SAND (SC-SM); mostly fine-medium grained sand, some silt, some clay, medium dense, dry, reddish (2') Silty CLAY (CL-ML); some silt, mostly clay, medium plasticity, very stiff, dry, reddish	1		0
5								(5') No Recovery (6') Silty, Clayey SAND (SC-SM); mostly fine-medium grained sand, some silt, little clay, medium dense, dry, reddish	0.6		5
				EN	14:28					P37-SB24	
10								(10') Boring terminated			10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB25
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

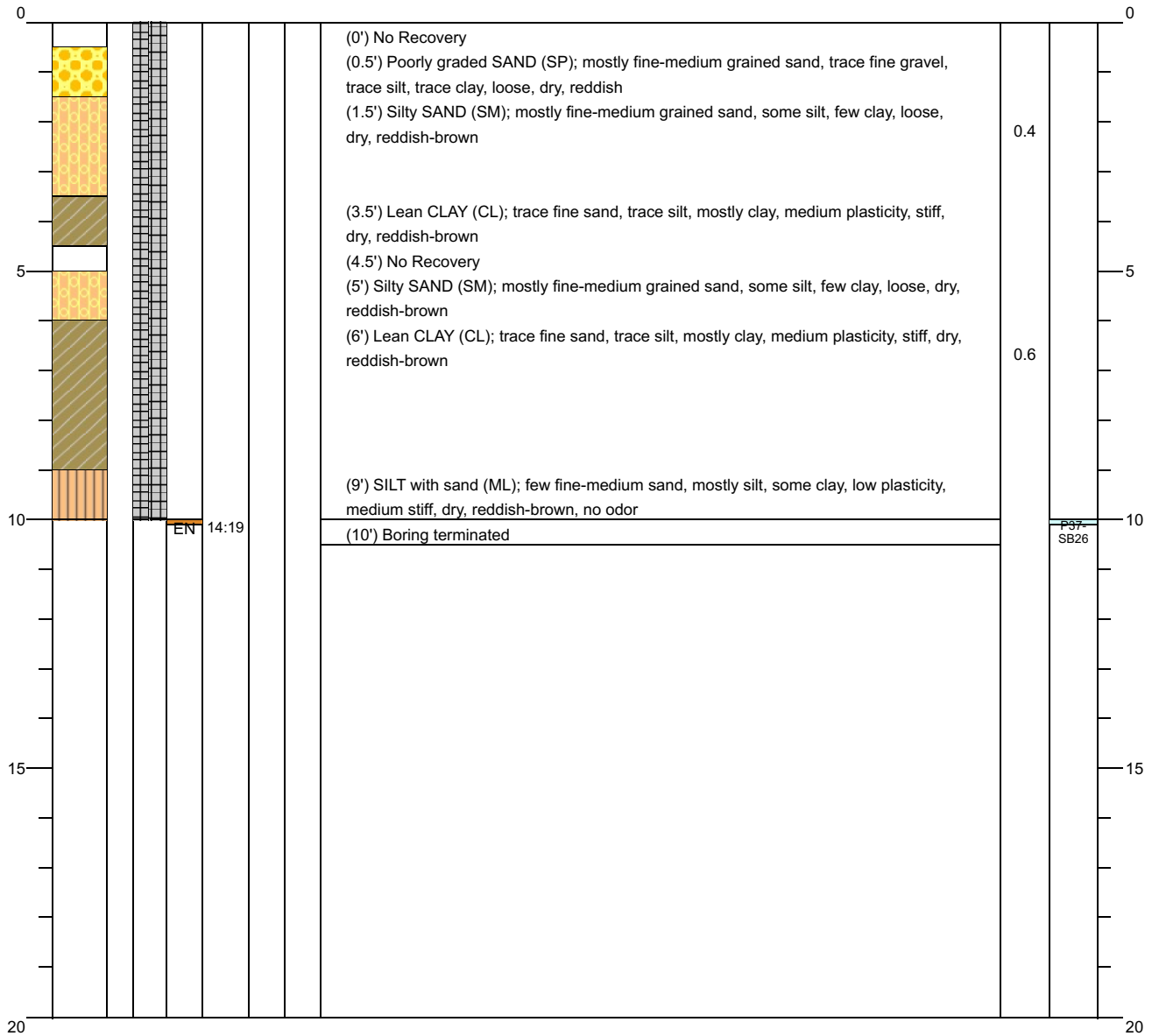
Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**



NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 37 - Lewisville, NC	**Boring No.** P37-SB26
	Address: 116 Lewisville Vienna Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/17/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/17/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**



NOTES:

APPENDIX C

RED LAB, LLC

LABORATORY ANALYTICAL REPORT

QED

REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS

QROS

Hydrocarbon Analysis Results

Client: NCDOT/CES
Address: 3525 WHITEHALL PARK DR
CHARLOTTE, NC

Samples taken Tuesday, May 17, 2022
Samples extracted Tuesday, May 17, 2022
Samples analysed Friday, May 20, 2022

Contact: GREG HANS

Operator CLAIRE NAKAMURA

Project: 116 LEWISVILLE VIENNA RD.

U00904

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	P37 - SB17	13.4	<0.34	1.9	22.8	24.7	12.2	0.56	<0.013	15.1	67.3	17.6	V.Deg.PHC 94.6%,(FCM),(BO),(P)
s	P37 - SB18	12.6	<0.32	0.5	5.3	5.8	2.5	0.12	<0.013	18.1	67.7	14.2	Deg.PHC 77.9%,(FCM)
s	P37 - SB19	12.0	<0.3	<0.3	29.8	29.8	20.6	0.97	0.024	0	77.7	22.3	V.Deg.PHC 76.8%,(FCM),(BO),(P)
s	P37 - SB20	14.5	<0.36	<0.36	<0.36	0.3	0.3	<0.12	<0.015	0	60.7	39.3	Residual HC,(BO),(P)
s	P37 - SB21	14.5	<0.36	1.1	2.4	3.5	1.4	<0.12	<0.015	57.9	35.3	6.8	Deg.PHC 78.6%,(FCM),(BO)
s	P37 - SB22	10.6	<0.27	<0.27	0.54	0.54	0.28	<0.08	<0.011	0	74.9	25.1	Deg.PHC 55.4%,(FCM),(BO),(P)
s	P37 - SB23	14.7	<0.37	<0.37	<0.37	0.21	0.21	<0.12	<0.015	0	81.5	18.5	Residual HC
s	P37 - SB24	9.4	<0.23	<0.23	<0.23	0.14	0.14	<0.08	<0.009	0	81.4	18.6	Residual HC,(BO)
s	P37 - SB25	16.0	<0.4	<0.4	0.4	0.4	0.25	<0.13	<0.016	0	19.6	80.4	Residual HC,(BO),(P)
s	P37 - SB26	9.0	<0.22	<0.22	<0.22	<0.22	<0.04	<0.07	<0.009	0	0	0	PHC not detected

Initial Calibrator QC check OK Final FCM QC Check OK 98.3 %

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

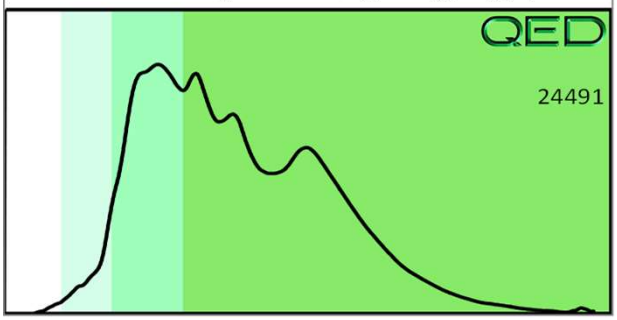
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

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

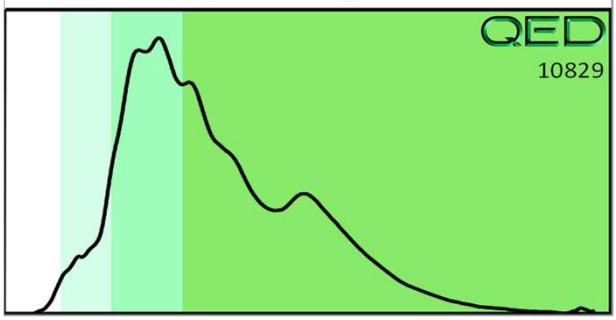
QED Hydrocarbon Fingerprints

Project: 116 LEWISVILLE VIENNA RD. Friday, May 20, 2022

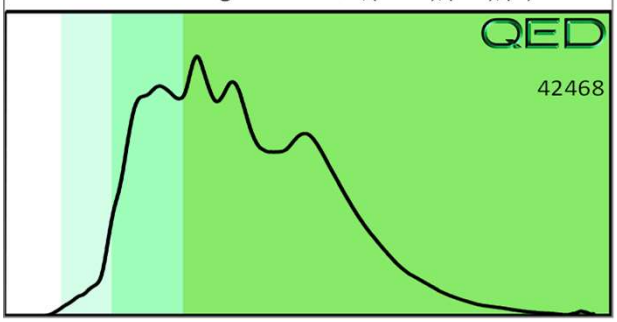
P37 - SB17 : V.Deg.PHC 94.6%,(FCM),(BO),(P)



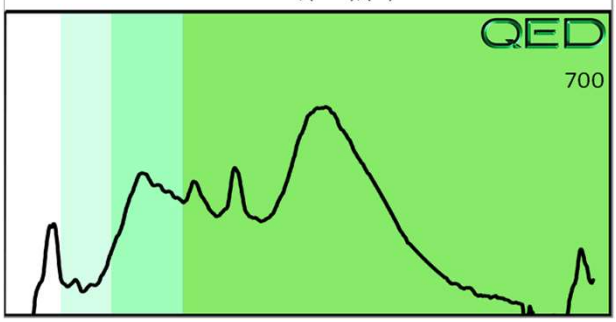
P37 - SB18 : Deg.PHC 77.9%,(FCM)



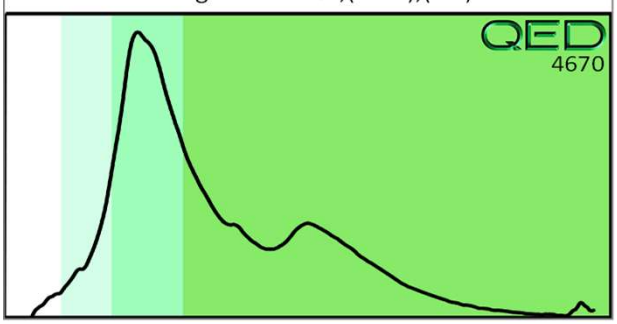
P37 - SB19 : V.Deg.PHC 76.8%,(FCM),(BO),(P)



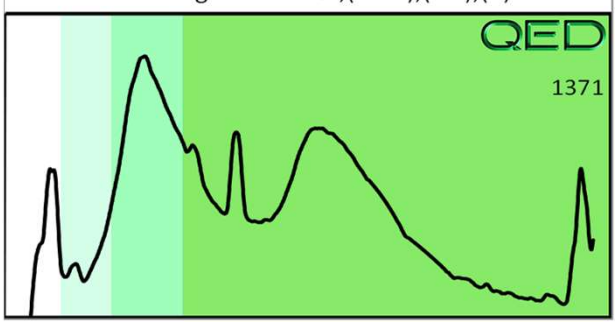
P37 - SB20 : Residual HC,(BO),(P)



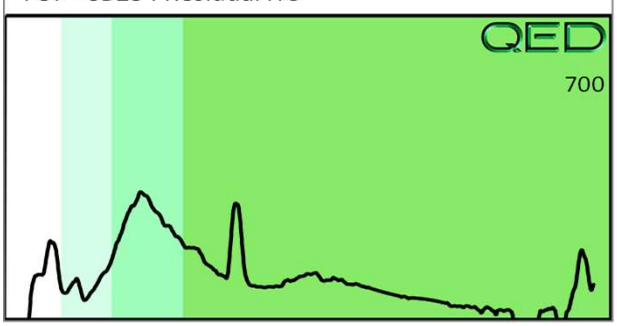
P37 - SB21 : Deg.PHC 78.6%,(FCM),(BO)



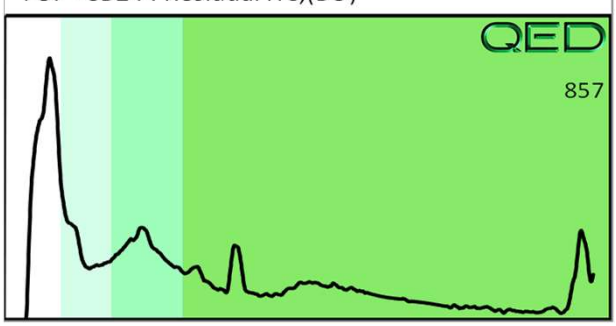
P37 - SB22 : Deg.PHC 55.4%,(FCM),(BO),(P)



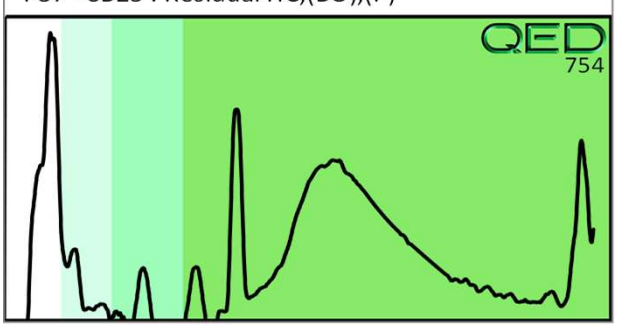
P37 - SB23 : Residual HC



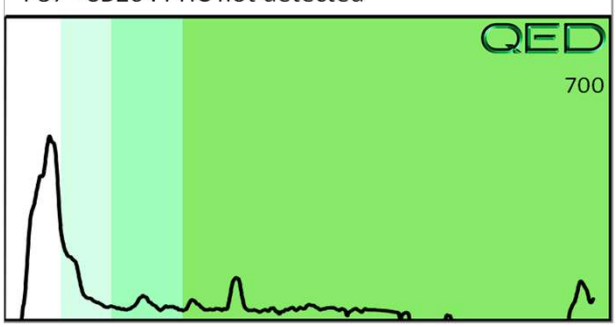
P37 - SB24 : Residual HC,(BO)



P37 - SB25 : Residual HC,(BO),(P)



P37 - SB26 : PHC not detected



Client Name:	NCDOT / CES
Address:	3525 Whitehall Park Dr. Charlotte, NC
Contact:	Greg Hans
Project Ref.:	116 Lewisville Vienna Rd
Email:	ghans@ces-group.net
Phone #:	
Collected by:	Dawn Criswell

REDLAB™
RAPID ENVIRONMENTAL DIAGNOSTICS

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

RED Lab, LLC
5598 Marvin K Moss Lane
MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.

Sample Collection Date/Time	TAT Requested 24 Hour	TAT Requested 48 Hour	Analysis Type UVF	Analysis Type GC	Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
5-17-22/1200		✓	✓		DFC	P37-SB17	62.9	43.5	19.4
5-17-22/1215		✓	✓		DFC	P37-SB18	64.5	43.9	20.6
5-17-22/1310		✓	✓		DFC	P37-SB19	65.7	44.1	21.6
5-17-22/1320		✓	✓		DFC	P37-SB20	62.1	44.2	17.9
5-17-22/1328		✓	✓		DFC	P37-SB21	61.6	43.7	17.9
5-17-22/1340		✓	✓		DFC	P37-SB22	68.9	44.3	24.6
5-17-22/1350		✓	✓		DFC	P37-SB23	61.3	43.6	17.7
5-17-22/1428		✓	✓		DFC	P37-SB24	59.1	44.2	14.9
5-17-22/1404		✓	✓		DFC	P37-SB25	60.3	44.1	16.2
5-17-22/1419		✓	✓		DFC	P37-SB26	59.4	43.8	15.6

COMMENTS/REQUESTS:

TARGET GC/UVF ANALYTES:

Relinquished by		Accepted by	Date/Time
	5/19/22		
Relinquished by		Accepted by	Date/Time
		WK	5/20 12pm

RED Lab USE ONLY

(10)

Ref. No S-2022-3

APPENDIX D

PHOTOGRAPHIC LOG

Figure 1 Parcel 37, front view of the building structure, Collins Petroleum and Electrical, Inc.

Figure 2 Parcel 37, northwest view of the subject property.

Figure 3 Parcel 37, NC 811 utility mark outs. Northern view of property building structure.

Figure 4 Parcel 37, NC 811 and Pyramid utility mark outs along concrete pad at property service bays.

Figure 5 Parcel 37, Pyramid septic tank and septic tank lines mark outs at the western portion of the property.

Figure 6 Parcel 37, SB17, SB19, SB21 and SB24 (at rear of the property structure)

ENGINEERS PLANNERS SURVEYORS SCIENTISTS

CHARLOTTE, NC

COLUMBIA, SC

www.ces-group.net

July 1, 2022

TRANSMITTED VIA EMAIL

Craig Haden
GeoEnvironmental Project Engineer
Geotechnical Engineering Unit
North Carolina Department of Transportation
1020 Birch Ridge Drive
Raleigh, NC 27610

RE: Phase II Investigation
West Bend Masonic Lodge #434 Trust Property – Parcel # 39
6295 Shallowford Road, Lewisville, Forsyth County, NC
NCDOT TIP Number: U-5536
NCDOT WBS Number: 44108.1.2
CES Project Number: 7893.0422E

Dear Mr. Haden:

Please find attached an electronic copy of the Phase II Investigation Report for the West Bend Masonic Lodge #434 Trust Property, identified as Parcel # 39, located at 6295 Shallowford Road, Lewisville, Forsyth County, North Carolina. This Phase II Investigation was performed in accordance with our Technical and Cost Proposal, dated April 7, 2022, and was initiated by a Notice to Proceed (NTP), issued by NCDOT on April 12, 2022, under our GeoEnvironmental Contract, No.: 7000020453, dated April 20, 2020.

Upon your review, please return via DocuSign for final signatures.

Should you have any questions in regards to this Phase II Investigation, please do not hesitate to contact me at (704) 325-5408.

Regards,

CES Group Engineers, LLP.

Greg Hans, PMP
Environmental Project Manager/
Environmental Division Manager

Charles Heleine, PE, REPA
Senior Environmental Engineer

Enclosures: Phase II Investigation Report

ENGINEERS PLANNERS SURVEYORS SCIENTISTS

PHASE II INVESTIGATION

NCDOT TIP Number: U-5536
NCDOT WBS Number: 44108.1.2
West Bend Masonic Lodge # 434 Trust Property: Parcel # 39
6295 Shallowford Road
Lewisville, Forsyth County, North Carolina

Prepared for:

North Carolina Department of Transportation
Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, North Carolina 27610

Prepared by:

CES Group Engineers, LLP
3525 Whitehall Park Drive, Suite 150
Charlotte, North Carolina 28273

CES Project No.: 7893.0422E

July 1, 2022

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

CES Group Engineers, LLP (CES) has prepared this Phase II Investigation Report documenting the performance of field assessment activities on the West Bend Masonic Lodge # 434 Trust property, further identified as North Carolina Department of Transportation (NCDOT) Parcel 39, which is located at 6295 Shallowford Road, Lewisville, Forsyth County, North Carolina (the subject site). This Phase II Investigation was performed in accordance with our Technical Cost Proposal dated April 7, 2022, and was initiated by a Notice to Proceed (NTP), issued by NCDOT on April 12, 2022, under our GeoEnvironmental Contract No. 7000020453, dated April 20, 2020.

The scope of work performed by CES for this Phase II Investigation included a geophysical survey to locate all known, possible and probable underground storage tanks (USTs), followed by a subsurface soil investigation that include the installation of seven soil borings to evaluate the potential for contamination to exist within the construction limits and utility easements located at 6295 Shallowford Road.

A Site Location Map is included as Figure 1.

1.1 Site History and Description

The subject site is located at 6295 Shallowford Road, Lewisville, Forsyth County, North Carolina. The property is vacant and was previously utilized as a gasoline service station, identified as the former Lewisville Shell. The subject site is currently undeveloped, and primarily consists of native grasses and trees, with a relatively flat gradient. According to the aerial images observed utilizing Historical Aerials and Google Earth, structures were observed to be present from the approximate years 1955 to 1998. Nearby and surrounding properties were observed to be utilized for commercial, municipal, institutional and residential purposes.

A review of the North Carolina Department of Environmental Quality (NCDEQ) Division of Waste Management GIS Site Locator Tool resulted in finding that the subject site was listed as the former Quality Oil Company, LLC dba Lewisville Shell, identified as Facility ID No.: 00-0-0000020023, and utilized as a gasoline service station. During 1998, three USTs were removed and Incident Number 30127 was recorded due to the presence of contaminated soils. During 2009, the contaminated soils were excavated from the underground storage tank area of the property, and a Corrective Action Plan was approved by NCDWM-UST to continue further remedial actions, which included MMPE and air sparging for groundwater contamination. On June 16, 2020, NCDEQ required a Notice of Residual Petroleum notice to be filed with the Register of Deeds, due to residual soil and/or groundwater contamination, which was further proceeded by a Notice of No Further Action on October 30, 2020.

2.0 PHASE II FIELD ACTIVITIES

2.1 Geophysical Survey

On May 11, 2022, Pyramid Environmental, PC (Pyramid) of Greensboro, North Carolina, conducted a geophysical survey to locate all known, possible or probable USTs within the subject site by performing electromagnetic (EM) and ground penetrating radar (GPR) surveys. The EM survey data was collected using a Geonics EM61-MK2 (EM61) metal detector integrated with a Geode External GPS/GLONASS receiver. The GPR survey data was collected using a Geophysical Survey Systems, Inc. (GSSI) SIR 4000 control unit coupled to a 350 MHz HS antenna.

The results of the collected geophysical (EM and GRP) data recorded no evidence of metallic USTs at Parcel 39. During the geophysical survey, sixteen anomalies were identified by the EM survey attributed to visible cultural features at the ground surface. Six of the anomalies were further investigated with GPR, which did not record a significant structure, such as an UST.

Pyramid's geophysical survey report, including site map(s) depicting the survey area and results is attached as Appendix A.

2.2 Soil Boring Investigation

On May 18, 2022, Carolina Soil Investigations, LLC (CSI) of Olin, North Carolina, under direction of an onsite CES Environmental Scientist, installed seven soil borings P39-SB27 through P39-SB33 to a maximum of ten feet below surface grade (bsg), utilizing a track mounted geoprobe rig, Model 6712DT, to evaluate the potential for contamination to exist within the eastern and southern portions of the property of 6295 Shallowford Road. Prior to the installation of the seven soil borings, on May 2, 2022, CES utilized a Trimble R8s GNSS/GPS unit to pre-mark each boring in exact locations proposed on NCDOT provided plan sheets (PSH 7), and then collected GPS coordinates. In addition, underground utilities were cleared through the NC 811 public locating service, and by Pyramid during the GPR portion of the geophysical survey.

During the advancement of the seven soil borings, the CES Environmental Scientist field screened encountered soils with a MiniRAE 3000 Photoionization Detector (PID), calibrated by Eastern Solutions LLC on May 10, 2022, for the presence of volatile organic compounds (VOCs) to facilitate the selection of one soil sample from each boring for subsequent laboratory analysis. PID measurements below the detection limit of 5 ppmv were identified as non-detect (ND). Groundwater was not encountered during the installation of the seven soil borings. Numerous groundwater monitoring wells, abandoned in place, were observed within the assessed area, and further to the west-northwest.

Based on field screening data collected, the PID measurements from soil borings P39-SB27 through P39-SB33 were reported as ND. No petroleum odors or stained soils were observed in any of the soil samples collected from the seven soil borings.

Upon completion of the seven soil borings, each boring was backing filled to grade with generated drill cuttings and a sand Hole Plug, by CSI.

Figure 2 depicts the locations of the soil borings P39-SB27 through P39-SB33. GPS coordinates and PID measurements for each soil boring are included on Table 1 and Table 2, respectively. Soil boring logs are provided in Appendix B.

2.3 Soil Sampling and Laboratory Analytical Results

Upon completion of each boring, the soil sample exhibiting the highest PID measurement, or the soil sample from zero to five feet bsg or five to ten feet bsg if the PID measurements were reported as ND, was collected in laboratory provided vials containing 20 mL methanol and stored on ice. The samples were shipped at the close of soil sampling activities on Thursday May 19, 2022 under chain-of-custody (COC) procedures to Red Lab, LLC of Wilmington, North Carolina, for laboratory analysis of petroleum hydrocarbons via the QED Ultraviolet Fluorescence (UVF) methodology, which includes BTEX, GRO, DRO, TPH, Total Aromatics, 16 EPA PAHs, BaP, and identification of specific hydrocarbons (HC).

Laboratory analytical results indicated that concentrations of DRO and/or GRO were reported above laboratory detection limits, but below NCDEQ Action Levels, in soil borings P39-SB31, P39-SB32, and P39-SB33. The maximum reported DRO and GRO concentration were reported as follows:

- DRO at 6.0 mg/kg from a soil sample collected from soil boring P39-SB31, at a depth of approximately 9 feet bsg; and
- GRO at 1.0 mg/kg from a soil sample collected from soil boring P39-SB33, at a depth of approximately 6.5 feet bsg.

Figure 2 depicts the location of soil borings P39-SB27 through P39-SB33, with soil analytical results included for each boring. Table 2 summarizes soil laboratory analytical results including the depth of each collected soil sample with corresponding PID measurements. The Red Lab, LLC soil laboratory analytical reports are included in Appendix C. A photographic log depicting field activities is included in Appendix D.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

The results of the collected geophysical (EM and GRP) data recorded no evidence of metallic USTs at Parcel 39.

Laboratory analytical results indicated that concentrations of DRO and/or GRO were reported above laboratory detection limits, but below NCDEQ Action Levels, in soil borings P39-SB31, P39-SB32, and P39-SB33. The maximum reported DRO and GRO concentration were reported as follows:

- DRO at 6.0 mg/kg from a soil sample collected from soil boring P39-SB31, at a depth of approximately 9 feet bsg; and
- GRO at 1.0 mg/kg from a soil sample collected from soil boring P39-SB33, at a depth of approximately 6.5 feet bsg.

This Phase II Investigation concluded that soils impacted with petroleum constituents are present on Parcel 39 at levels below NCDEQ Action Levels. This conclusion was based on laboratory analytical results reporting concentrations for DRO and GRO above the laboratory detection limits (but below NCDEQ Action Levels) in soil borings P39-SB31, P39-SB32, and P39-SB33.

3.2 Recommendations

During planning of construction activities in work areas generally near soil borings P39-SB31, P39-SB32, and P39-SB33, and potentially in other unexplored areas of Parcel 39, as depicted on the provided NCDOT preliminary plan sheets, it is recommended that encountered soil impacted with petroleum constituents be properly handled and managed in the field, and disposed of by contractors in accordance with applicable state regulations.

4.0 SIGNATURE PAGES

This Phase II Investigation Report was prepared by:

DocuSigned by:
BE8ABC48C6D1471...

07/12/2022

Dawn F. Crowell, MELP, CMCSI
Environmental Scientist/Project Manager
CES Group Engineers, LLP

This Phase II Investigation Report was reviewed by:

DocuSigned by:
Greg Hans
17CA85CB2CDF4C7...

07/12/2022

Greg Hans, PMP
Environmental Division Manager
CES Group Engineers, LLP

This Phase II Investigation Report was reviewed and approved by:

DocuSigned by:
Charles Heleine
0E4F07A7BE324CD...

07/13/2022

Charles Heleine, PE, REPA
Senior Environmental Engineer
CES Group Engineers, LLP.

Electronic Seal/Signature

TABLES

Table 1
Soil Boring GPS Coordinate Data
NCDOT TIP Number: U-5536
NCDOT WBS Numberl 44108.1.2
West Blend Masonic Lodge #434 Trust Property: Parcel 39
6295 Shallowford Road
Lewisville, Forsyth County, North Carolina

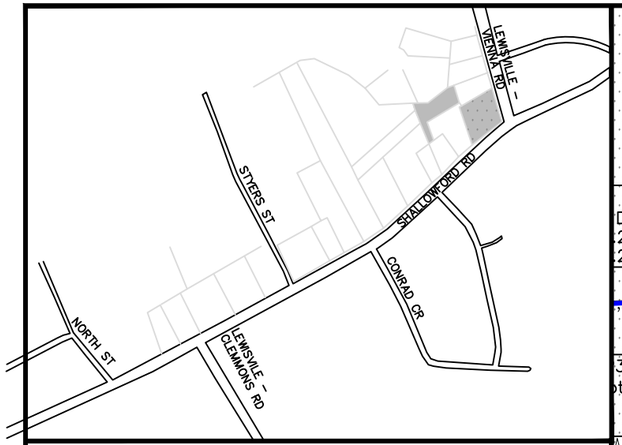
Sample ID	Date Collected (m/dd/yy)	Latitude	Longitude
P39 - SB27	5/18/2022	36.0997264	-80.4150459
P39 - SB28	5/18/2022	36.0998566	-80.4148491
P39 - SB29	5/18/2022	36.0999365	-80.4147549
P39 - SB30	5/18/2022	36.1000180	-80.4147870
P39 - SB31	5/18/2022	36.1000008	-80.4149133
P39 - SB32	5/18/2022	36.1000896	-80.4148944
P39 - SB33	5/18/2022	36.1002392	-80.4148331

Table 2
Summary of Soil Analytical Results
NCDOT TIP Number: U-5536
NCDOT WBS Numberl 44108.1.2
West Blend Masonic Lodge #434 Trust: Parcel 39
6295 Shallowford Road
Lewisville, Forsyth County, North Carolina

				Analytical Method	**UVF**	**UVF**	**UVF**
				COC	**TPH-DRO**	**TPH-GRO**	**HC Fingerprints**
Sample ID	**Date Collected (m/dd/yy)**	**Sample Area**	**Sample Depth**	**PID (ppmv)**	**mg/kg**	**mg/kg**	
P39 - SB27	5/18/2022	Along Shallowford Rd	2	0.6 at 2-ft/ 0.9 at 8.5-ft	<0.37	<0.37	Residual HC
P39 - SB28	5/18/2022	Along Shallowford Rd	4	0.0 at 1-ft / 0.0 at 8.5-ft	<0.37	<0.37	Residual HC
P39 - SB29	5/18/2022	Along Shallowford Rd	7	0.2 at 4-ft / 0.1 at 8-ft	<0.31	<0.31	Residual HC
P39 - SB30	5/18/2022	Along Lewisville Vienna Rd	8	0.6 at 3-ft / 0.8 at 8-ft	<0.36	<0.36	Residual HC
P39 - SB31	5/18/2022	Grass area middle of site	9.5	0.6 at 2-ft / 0.6 at 8-ft	6	0.6	Deg Fuel 75.2%
P39 - SB32	5/18/2022	Grass area middle of site	3	0.5 at 2-ft / 0.6 at 7-ft	3.5	0.93	Deg.PHC 82.2%
P39 - SB33	5/18/2022	Along Lewisville Vienna Rd	6.5	0.6 at 1-ft / 0.6 at 10-ft	4.4	1	Deg.Fuel 67%
				Initial NCDEQ Action Levels for Contamination (mg/kg)	100	50	N/A

P#-SB# = Parcel Number - Soil Boring Number
mg/kg = miligrams per kilogram
PID = photoionization detector
ppmv = parts per million per volume
N/A = not applicable
Soil anlaysis performed by Red Lab, LLC of Wilmington, NC with results generated by a QED HC-1 analyzer

FIGURES



VICINITY MAP
(NOT TO SCALE)

LEGEND:

- BORING LOCATION
- PARCEL BOUNDARY
- MTW – EXISTING MONITOR WELL

SAMPLE–PARCEL – BORING–ID
SAMPLE DEPTH – BORING DEPTH
DRO – CONCENTRATION
GRO – CONSTITUENT

** – BORING SAMPLE LOCATION MOVED PER PROPERTY OWNER OR DUE TO UTILITY CONFLICT.

Sample: P37–SB24
Sample Depth 8.5'
DRO:
GRO:

Sample: P37–SB25
Sample Depth 6'
DRO: 0.4
GRO: <0.4

P37–SB26
Depth 10'
22
22

37–SB21
th 10'

Sample: P37–SB23
Sample Depth 4'
DRO: <0.37
GRO: <0.37

Sample: P37–SB22
Sample Depth 2'
DRO: 0.54
GRO: <0.27

Sample: P37–SB33
Sample Depth 6.5'
DRO: 4.4
GRO: 1

Sample: P39–SB32
Sample Depth 3.0'
DRO: 3.5
GRO: 0.93

Sample: P39–SB30
Sample Depth 8.0'
DRO: <0.36
GRO: <0.36

Sample: P39–SB31
Sample Depth 9.5'
DRO: 6.0
GRO: 0.6

Sample: P39–SB29
Sample Depth 7'
DRO: <0.31
GRO: <0.31

Sample: P39–SB28
Sample Depth 4'
DRO: <0.37
GRO: <0.37

Sample: P39–SB27
Sample Depth 2'
DRO: <0.37
GRO: <0.37

Sample Depth 3'
DRO: 22.8
DRP: 1.9

J&K PROPERTY MNGMNT LLC
DB 2804 PG 559

J&K PROPERTY MNGMNT LLC
DB 2804 PG 5

MICHAEL R & JULIE COLLINS
DB 1726 PG 2080

WEST BEND MASONIC LDG 434AF&AM
DB 1640 PG 3140

WESTBEND MASO LDG #434 TRST
DB 2455 PG 1211

RICHARD STIMSON
DB 3079 PG 4429

REICH W S INC T/A LEW AUTO SER
DB 565 PG 489

THOMAS H FO FAMILY L
DB 2435 P

ACCESS EASE (DB 1726 PG 2080)

THIS DRAWING IS FOR EXHIBIT PURPOSES ONLY. IT IS TO SHOW RELATIVE LOCATIONS OF SOIL SAMPLE LOCATIONS AS SHOWN HEREON. IT IS NOT MEANT FOR CONVEYANCES, SALES OR RECORDING. NO BOUNDARY WORK, RESEARCH OR UTILITY LOCATIONS WERE DONE WITHIN THE SCOPE OF THIS EXHIBIT. ALL LOCATIONS AND PARCEL LINES ARE APPROXIMATE AND NOT TO SCALE.

OWNER/PREPARED FOR:
NCDOT

CES GROUP
ENGINEERS, LLP
NC FIRM LICENSE# F-1240
3525 WHITEHALL PARK DRIVE,
SUITE 150
CHARLOTTE, NC 28273
T 704.489.1500
www.ces-group.net

EXHIBIT SURVEY
PARCEL NO. 39
ENVIRONMENTAL
SAMPLE LOCATIONS
U–5536

DRAWN BY:	JES
CHECKED BY:	JES
PROJECT NUMBER:	7893
SCALE:	1" = 40'
DATE:	5/31/2022
TAX PARCEL:	5885-18-9277.00
DRAWING:	7893-EXHIBITS.dwg

SHEET: 1

LEGEND

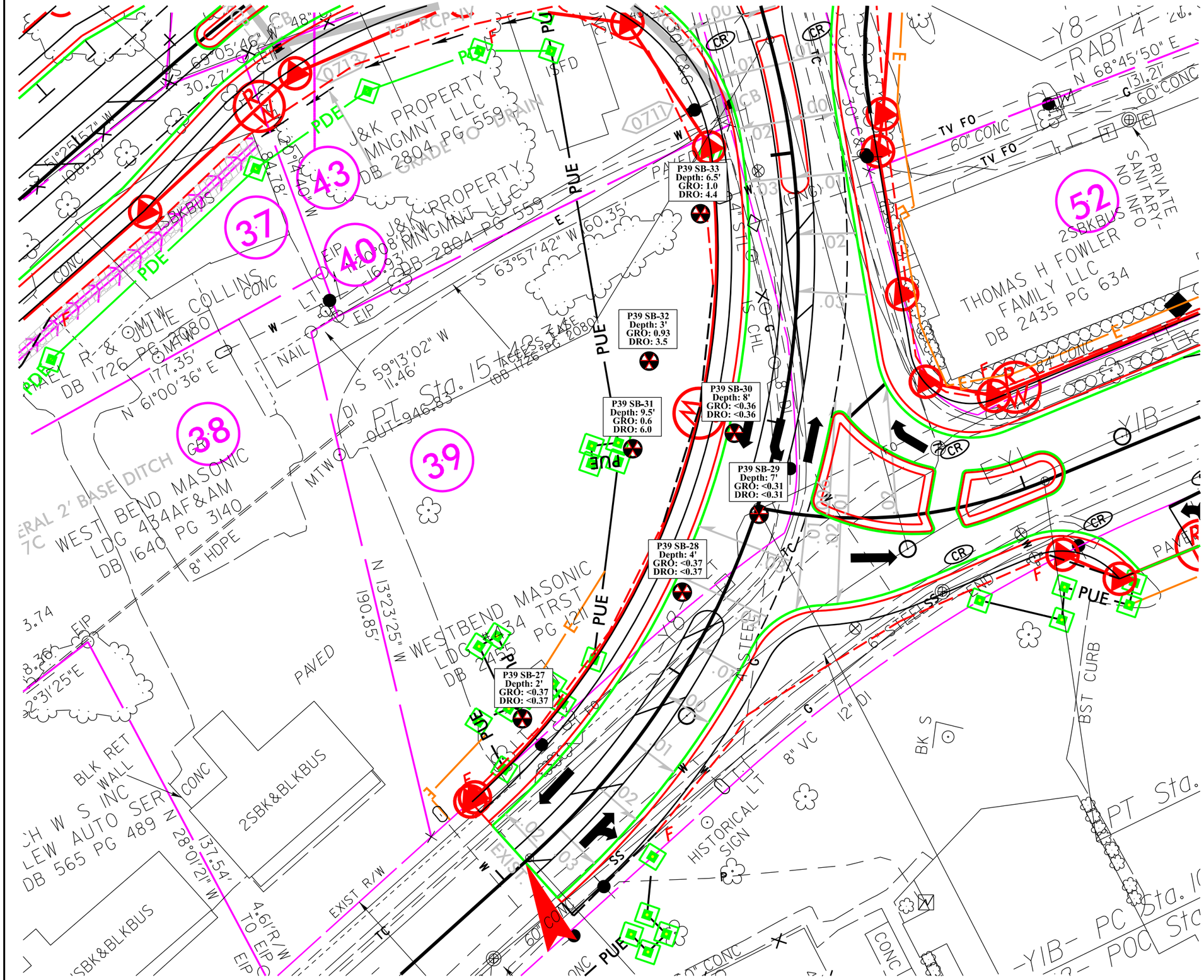
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED DRAINAGE EASEMENT
- SOIL BORING LOCATION

P39 SB-33
P39 SB-32
P39 SB-31
P39 SB-30
P39 SB-29
P39 SB-28
P39 SB-27

0 20 40
FEET

N

TITLE: SITE MAP	
PROJECT: PARCEL 39 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536	
PYRAMID GEOPHYSICS 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
DATE: 6-22-2022	REVISION NO. 0
	FIGURE NO. 2



LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PROPOSED DRAINAGE EASEMENT
- SOIL BORING LOCATION

PX(Y) PARCEL#(BORING#)
DRO DIESEL RANGE ORGANICS*
GRO GASOLINE RANGE ORGANICS*
*ALL CONCENTRATIONS PRESENTED IN mg/kg

TITLE
SOIL ANALYTICAL MAP

PROJECT
PARCEL 39
LEWISVILLE, NORTH CAROLINA
NCDOT PROJECT U-5536

PYRAMID GEOPHYSICS
503 INDUSTRIAL AVENUE
GREENSBORO, NC 27406
336.335.3174 (p) 336.691.0648 (f)
License # C1251 Eng. / #C257 Geology

DATE: 6-22-2022
REVISION NO. 0
FIGURE NO. 3

APPENDIX A

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

GEOPHYSICAL SURVEY REPORT

PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2022-108)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION:
PARCEL 39
NCDOT PROJECT U-5536 (44108.1.2)

6295 SHALLOWFORD ROAD, LEWISVILLE, NC

May 17, 2022

Report prepared for: **Greg Hans, PMP**
CES Group Engineers, LLP
274 North Highway 16 Business, Suite 300
Denver, NC 28037

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
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C257: GEOLOGY C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 39 – 6295 Shallowford Road
Lewisville, Forsyth County, North Carolina

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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
UST .....Underground Storage Tank

EXECUTIVE SUMMARY

Project Description: Pyramid Geophysical Services (Pyramid), a department within Pyramid Environmental & Engineering, P.C., conducted a geophysical investigation for CES Group Engineers, LLP (CES) at Parcel 39, located at 6295 Shallowford Road, in Lewisville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5536). The survey was designed to extend across all accessible portions of the parcel indicated to Pyramid by CES. Conducted from May 10-11, 2022, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Geophysical Results: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of sixteen EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. GPR was performed around all sources of significant metallic interference to confirm that the interference did not obscure any significant structures such as USTs. The geophysical survey identified evidence of utilities and/or buried debris. The geophysical survey also showed evidence of possible buried reinforced concrete, suspected to be demolition remnants related to the former gas station that was located on the parcel. Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 39.

INTRODUCTION

Pyramid Geophysical Services (Pyramid), a department within Pyramid Environmental & Engineering, P.C., conducted a geophysical investigation for CES at Parcel 39, located at 6295 Shallowford Road, in Lewisville, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5536). The survey was designed to extend across all accessible portions of the parcel indicated to Pyramid by CES. Conducted from May 10-11, 2022, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site consisted of a vacant grass lot. Onsite discussions indicated that this property had previously been a gas station. An aerial photograph showing the survey area boundaries and ground-level photographs is shown in **Figure 1**.

FIELD METHODOLOGY

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

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

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

GPR data were acquired across select EM anomalies on May 11, 2022, using a Geophysical Survey Systems, Inc. (GSSI) SIR 4000 control unit coupled to a 350 MHz HS antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the SIR 4000 unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the SIR 4000 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	Water Meter	
2	Guy Wires/Possible Buried Debris	✓
3	Utility/Suspected Buried Demolition Debris	✓
4	Suspected Buried Metallic Debris	✓
5	Suspected Buried Demolition Debris	✓
6	Suspected Buried Metallic Debris	✓
7	Monitoring Well	
8	Vehicles	✓
9	Water Meter	
10	Fence	
11	Utility	
12	Sign	
13	Utility	
14	Sign	
15	Metal Pole	
16	Light	

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including water meters, guy wires, a monitoring well, vehicles, a fence, utilities, signs, a metal pole, and a light. EM Anomalies 2-6 were investigated with GPR to examine whether the anomalies were the result of more significant structures such as USTs. GPR was also performed around areas of significant metallic interference to confirm that the metallic interference did not obscure any significant structures such as USTs.

Discussion of GPR Results

Figure 3 presents the locations of the formal GPR transects performed at the property as well as select transect images. All of the transect images are included in **Appendix A**. A total of ten formal GPR transects were performed at the site.

GPR Transects 1 and 2 were performed across areas of significant metallic interference caused by vehicles (EM Anomaly 8) and suspected buried metallic debris (EM Anomaly

6). These transects showed shallow reflectors consistent with possible buried utilities and/or debris. No evidence of significant structures such as USTs was observed.

GPR Transects 3-10 were performed across EM Anomalies 2-5. Several transects showed shallow reflectors consistent with possible buried utilities and/or debris. GPR Transects 3, 4, and 8 showed evidence of possible buried reinforced concrete, suspected to be demolition remnants. GPR Transects 6 and 7 showed evidence of interference within the subsurface; however, no evidence of buried debris could be observed by radar. No evidence of significant structures such as USTs was observed in these transects.

Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 39. **Figure 4** provides an overlay of the metal detection results onto the NCDOT Engineering plans.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 39 in Lewisville, 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.
- GPR was performed around all sources of significant metallic interference to confirm that the interference did not obscure any significant structures such as USTs.
- The geophysical survey identified evidence of utilities and/or buried debris.
- The geophysical survey also showed evidence of possible buried reinforced concrete, suspected to be demolition remnants related to the former gas station that was located on the parcel.
- Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 39.

LIMITATIONS

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

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA

View of Survey Area (Facing Approximately Northeast)

View of Survey Area (Facing Approximately North)

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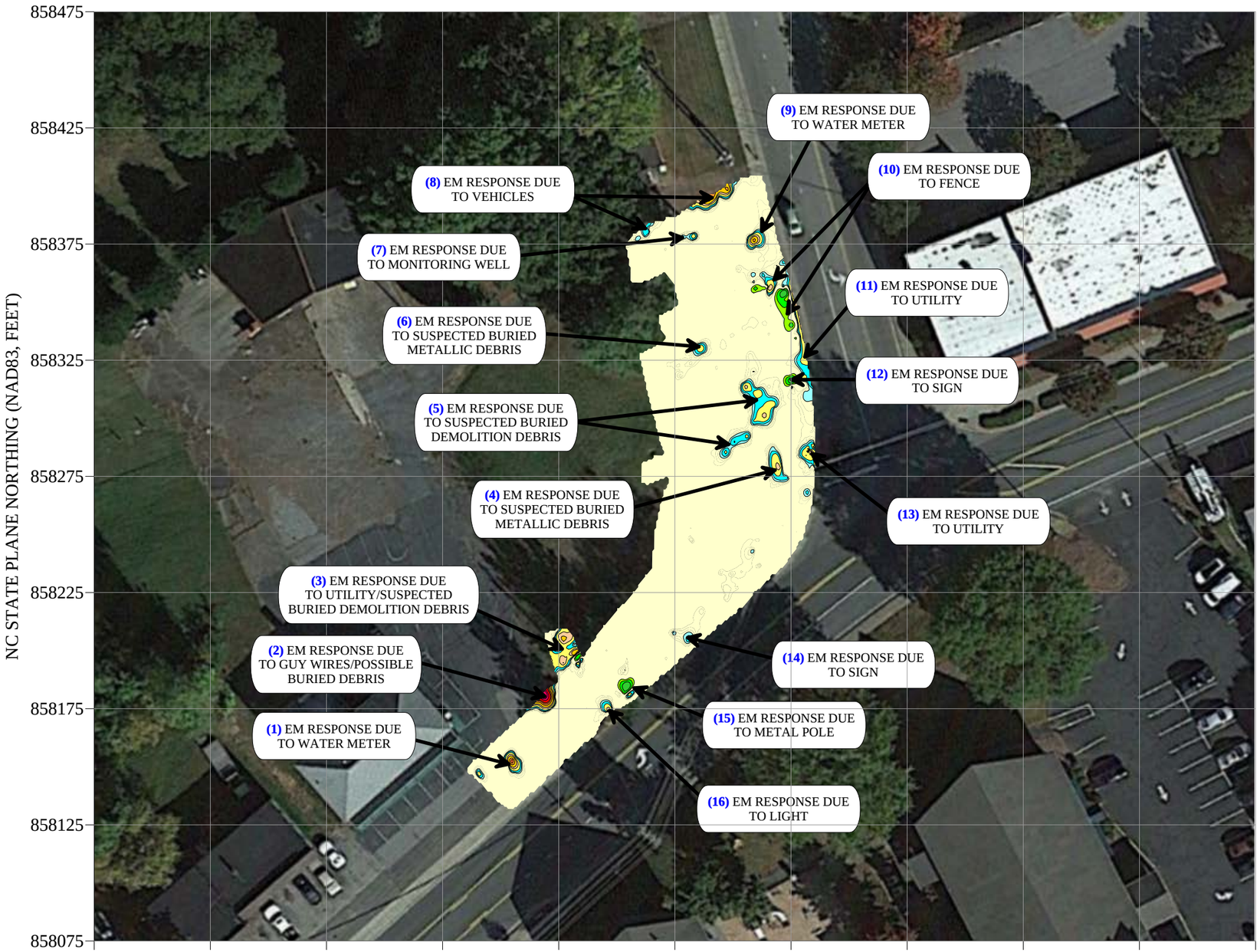
PYRAMID GEOPHYSICS 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 39 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536	TITLE PARCEL 39 - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	DATE 5/11/2022 PYRAMID PROJECT #: 2022-108	CLIENT CES GROUP ENGINEERS **FIGURE 1**

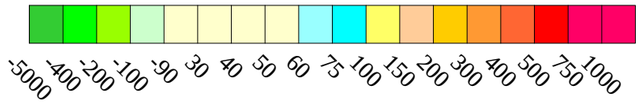
EM61 METAL DETECTION RESULTS



NO EVIDENCE OF METALLIC USTs WAS 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 EM data were collected on May 10, 2022, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI SIR 4000 instrument with a 350 MHz HS antenna on May 11, 2022.

EM61 Metal Detection Response (millivolts)



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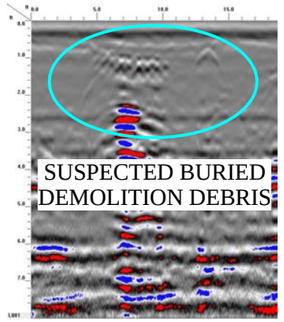
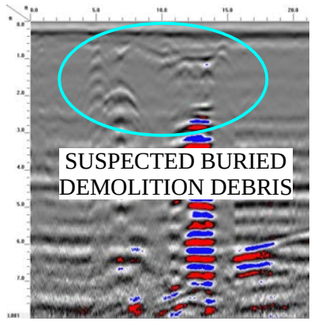
PROJECT	PARCEL 39 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536
TITLE	PARCEL 39 - EM61 METAL DETECTION CONTOUR MAP
DATE	5/11/2022
PYRAMID PROJECT #:	2022-108
CLIENT	CES GROUP ENGINEERS
	FIGURE 2

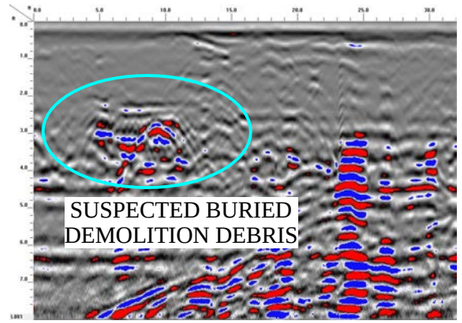
GPR TRANSECT LOCATIONS



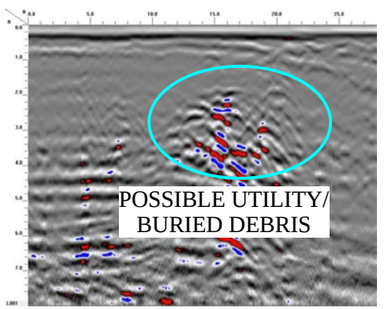
GPR TRANSECT 3 (T3)



GPR TRANSECT 4 (T4)



GPR TRANSECT 8 (T8)



GPR TRANSECT 10 (T10)

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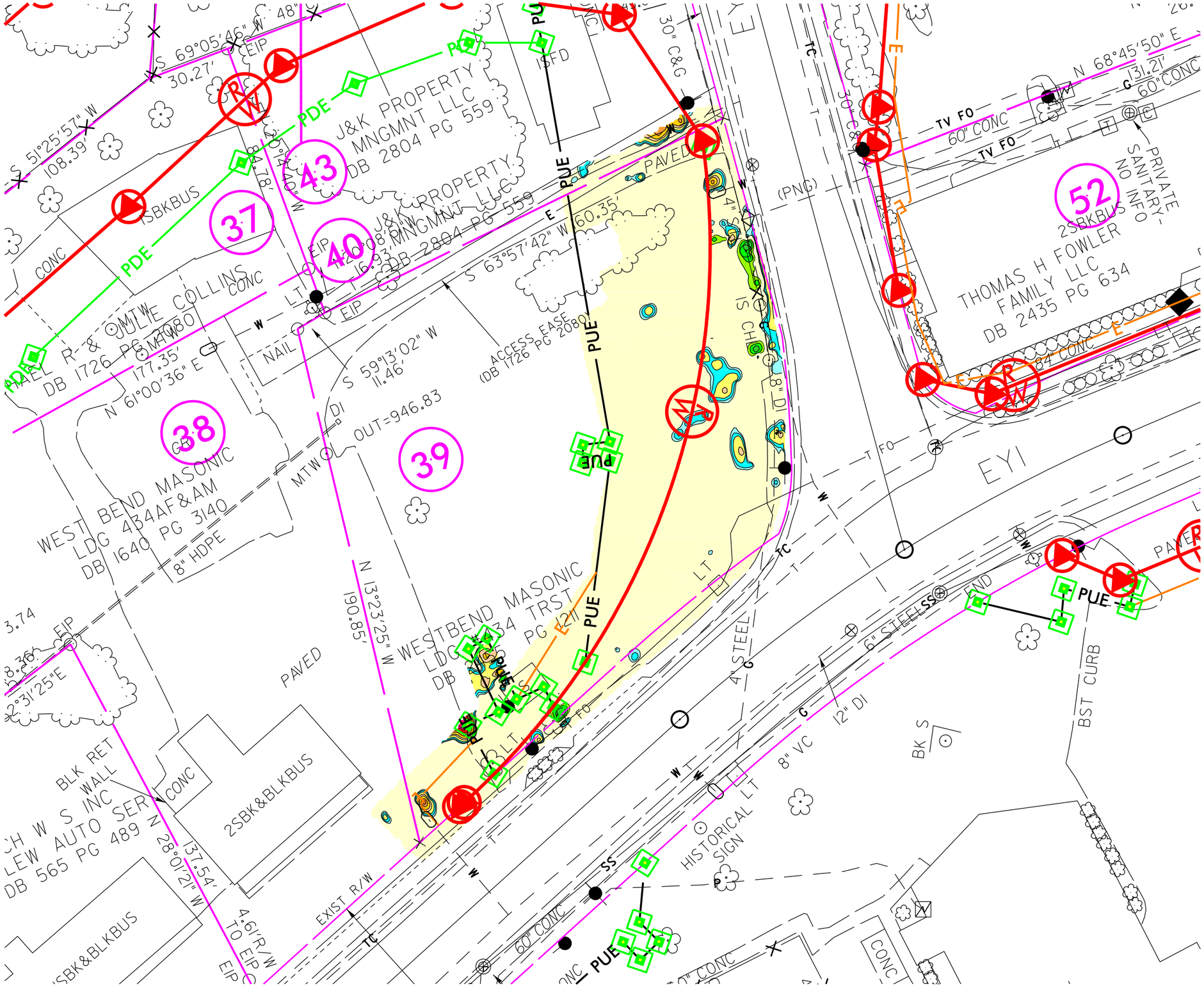
PROJECT	PARCEL 39 LEWISVILLE, NORTH CAROLINA NCDOT PROJECT U-5536
TITLE	PARCEL 39 - GPR TRANSECT LOCATIONS AND SELECT IMAGES
DATE	5/11/2022
PYRAMID PROJECT #:	2022-108
CLIENT	CES GROUP ENGINEERS
	FIGURE 3



0 20 40
FEET

TITLE
OVERLAY OF METAL DETECTION RESULTS ON NCDOT ENGINEERING PLANS

PROJECT
PARCEL 39
LEWISVILLE, NORTH CAROLINA
NCDOT PROJECT U-5536

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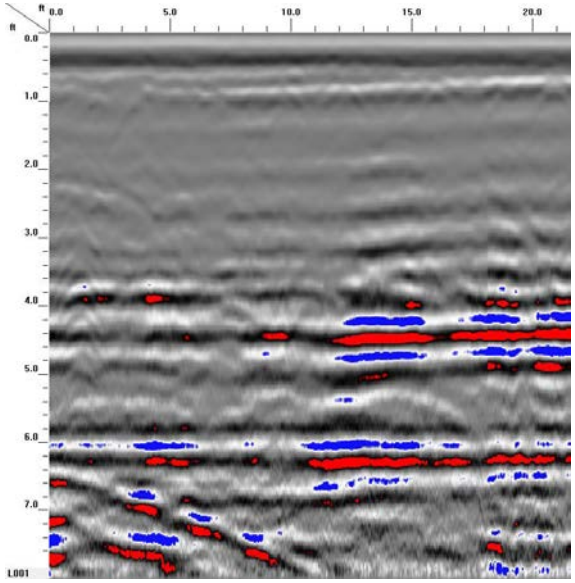
License # C1251 Eng. / #C257 Geology

DATE: 5-16-2022	REVISION NO. 0
PYRAMID PROJECT NO. 2022-108	FIGURE NO. 4

Appendix A – GPR Transect Images



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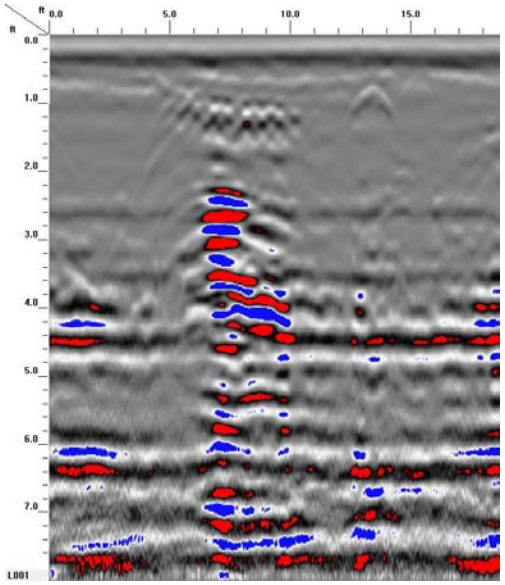

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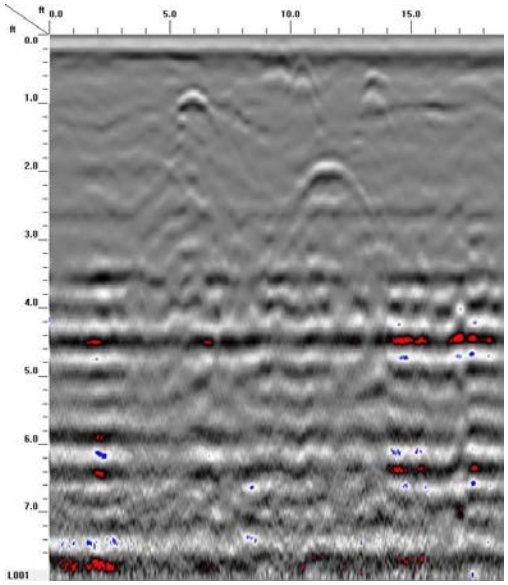

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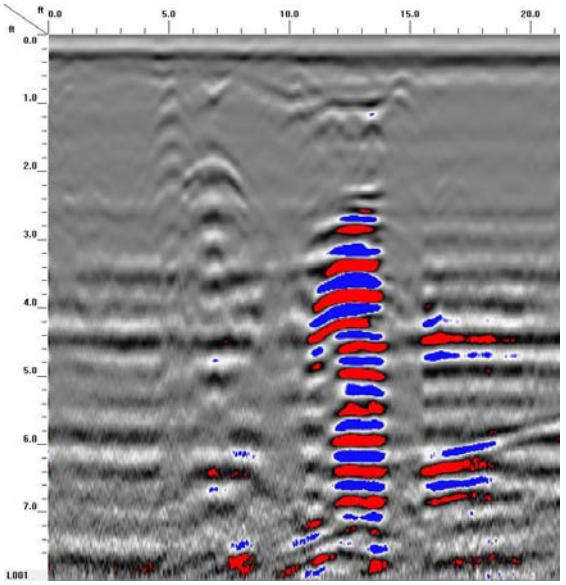
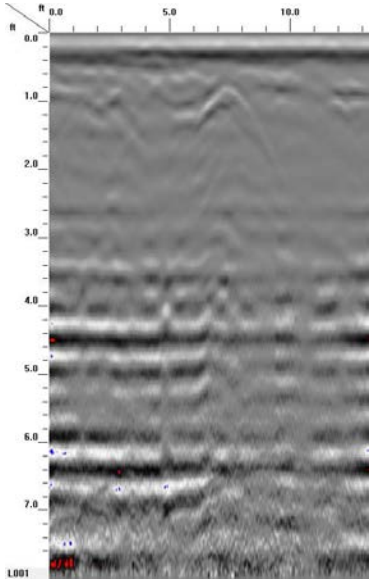
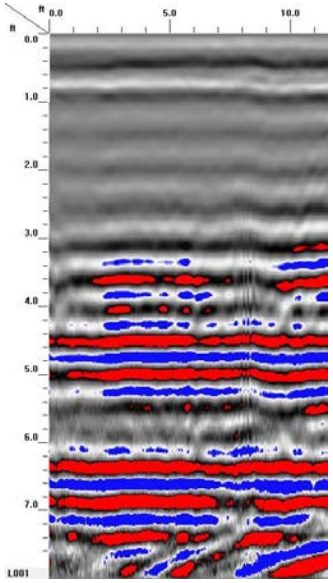


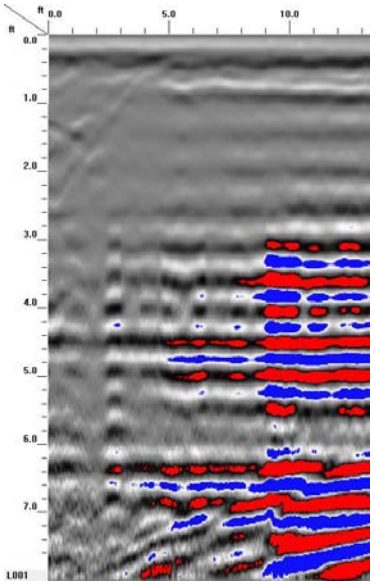
GPR TRANSECT 4



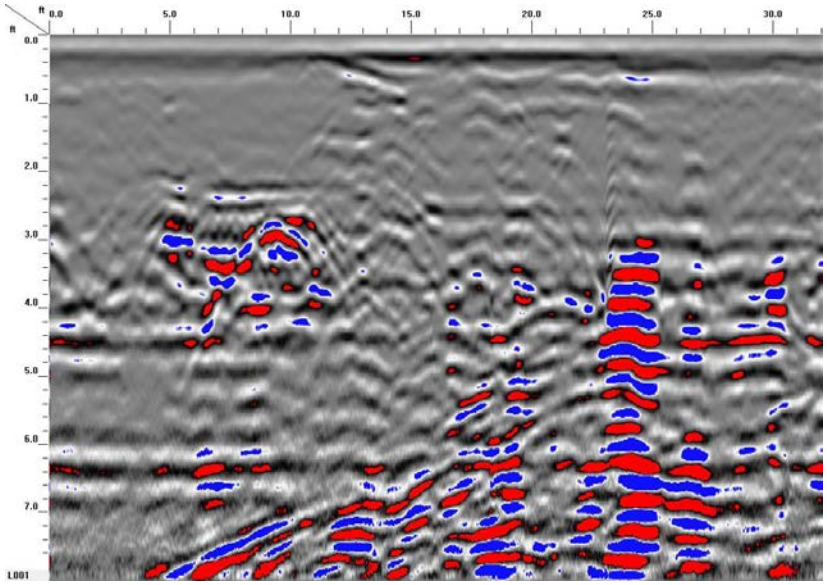
GPR TRANSECT 5



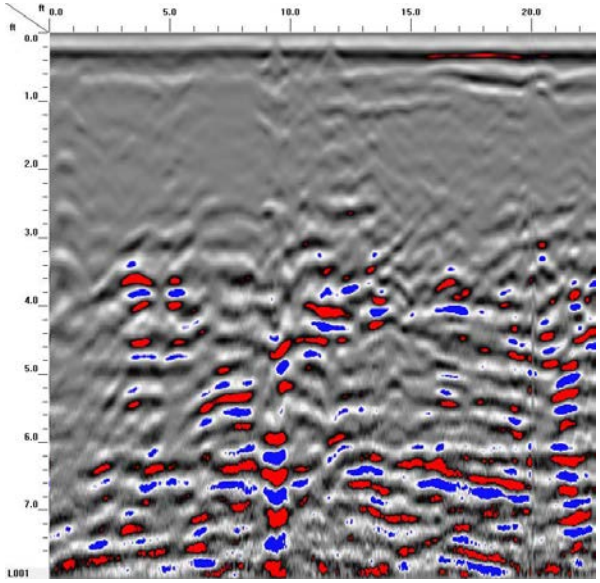
GPR TRANSECT 7



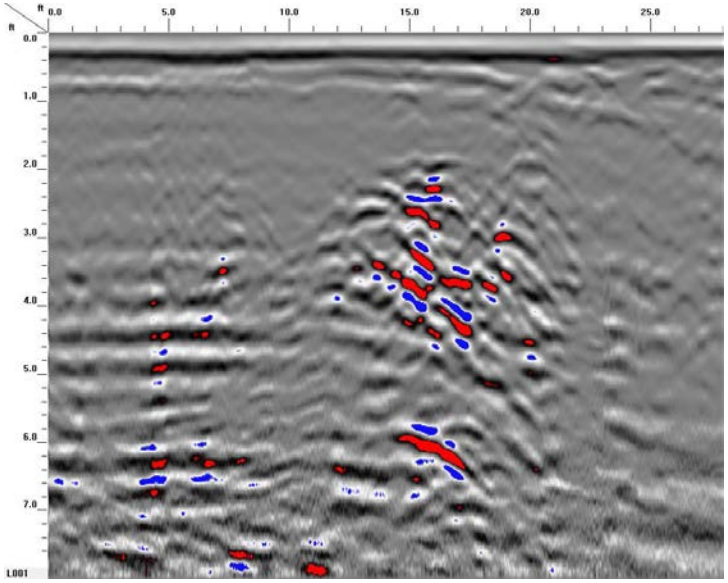
GPR TRANSECT 6



GPR TRANSECT 8



GPR TRANSECT 9



GPR TRANSECT 10

APPENDIX B

SOIL BORING LOGS

	Client: NC DOT	**BORING LOG**
	Project: Parcel 39 - Lewisville, NC	**Boring No.** P39-SB27
	Address: 6295 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

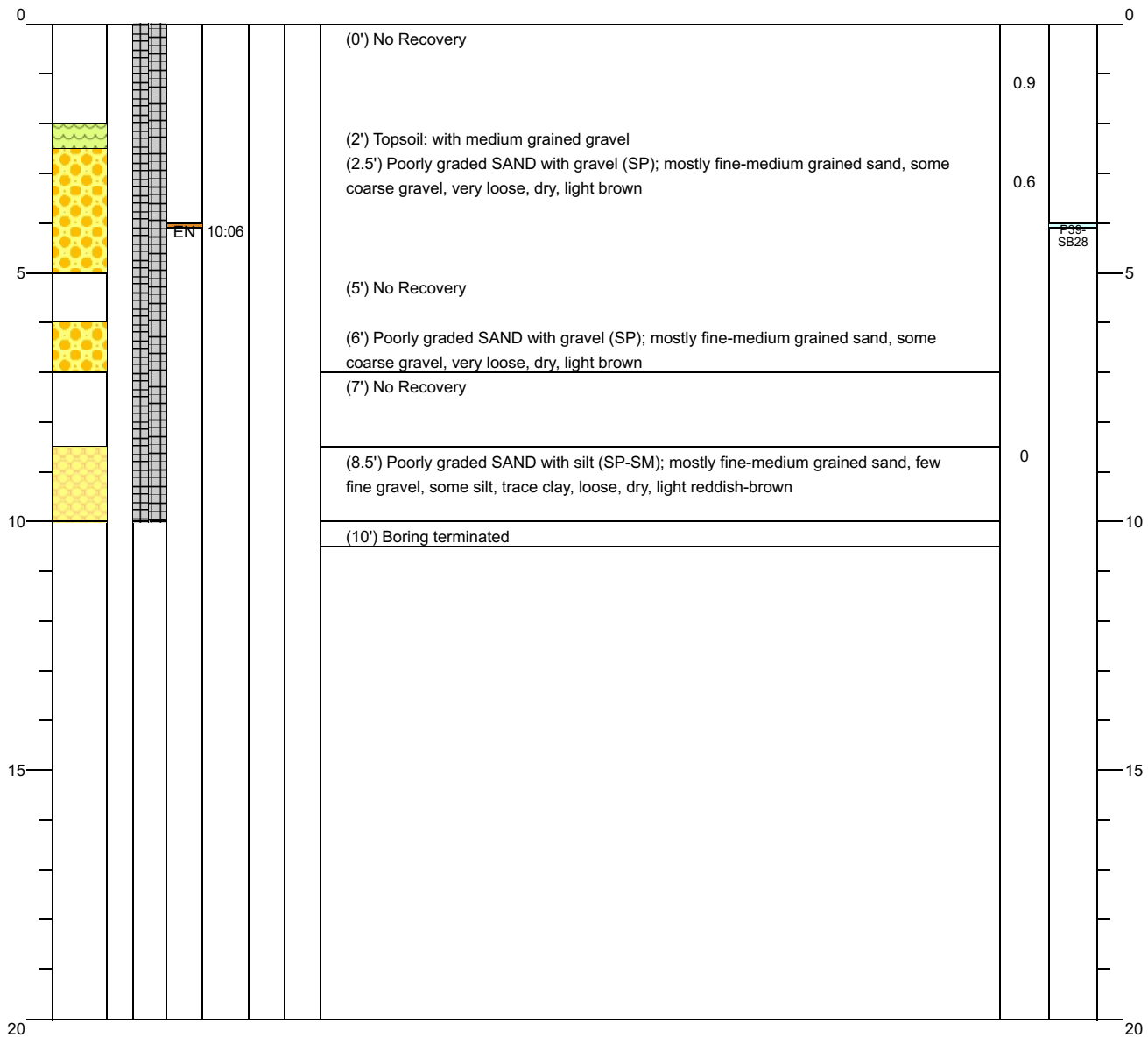
Drilling Start Date:	**05/18/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/18/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0				EN	09:55			(0') No Recovery (0.5') Topsoil (1') Poorly graded SAND with silt and gravel (SP-SM); mostly fine-medium grained sand, some fine gravel, little silt, loose, dry, reddish-brown	0	P39-SB27	0
5								(5') No Recovery (5.5') Poorly graded SAND with silt and gravel (SP-SM); mostly fine-medium grained sand, some fine gravel, little silt, loose, dry, reddish-brown			5
10								(10') Boring terminated			10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 39 - Lewisville, NC	**Boring No.** P39-SB28
	Address: 6295 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

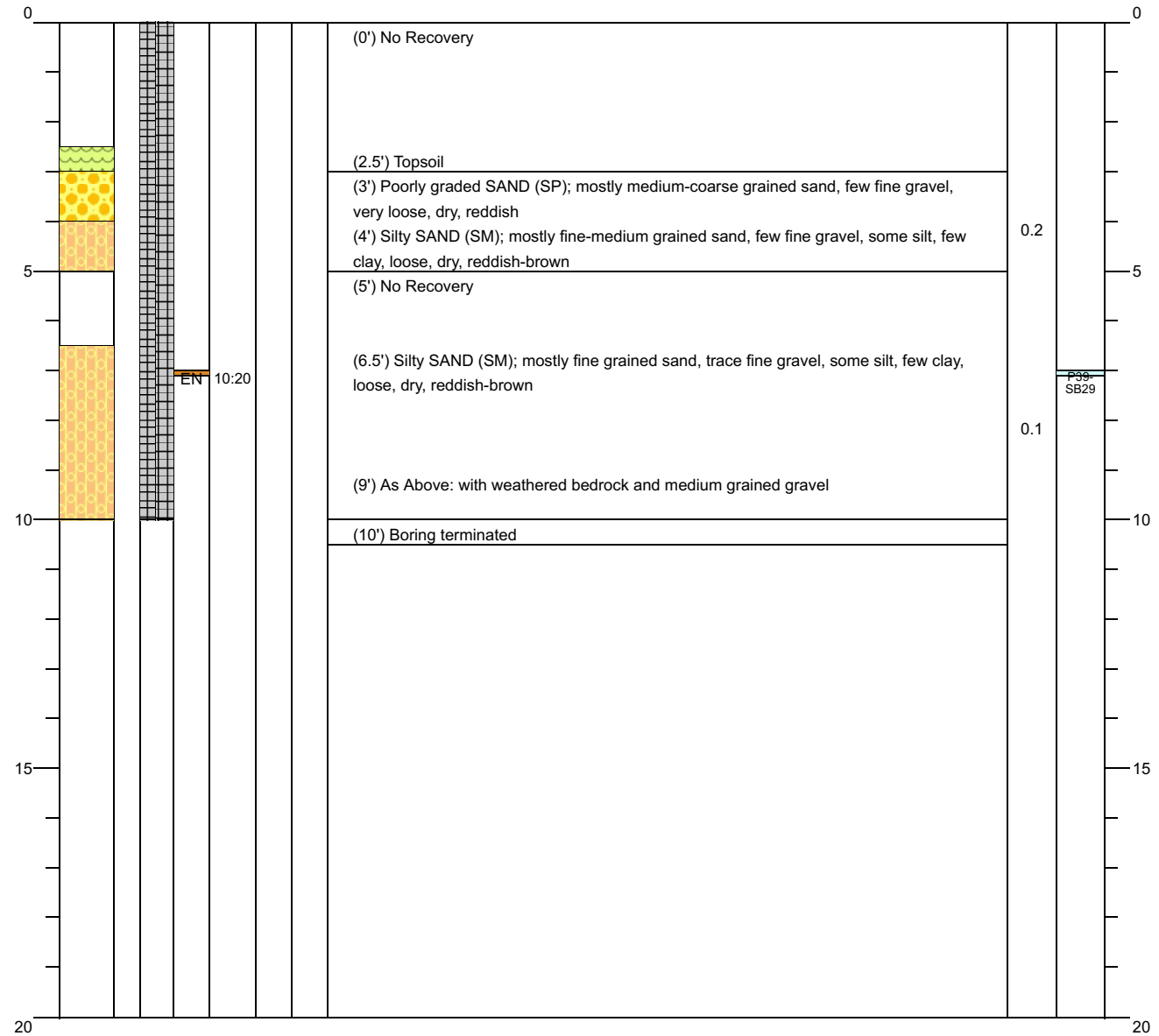
Drilling Start Date:	**05/18/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/18/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**



NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 39 - Lewisville, NC	**Boring No.** P39-SB29
	Address: 6295 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/18/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/18/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**



NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 39 - Lewisville, NC	**Boring No.** P39-SB30
	Address: 6295 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/18/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/18/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') Topsoil (0.5') Poorly graded SAND (SP); mostly medium grained sand, very loose, dry, light brown (1') Lean CLAY (CL); trace silt, mostly clay, medium plasticity, very stiff, moist, reddish-brown			0
									0.6		
5								(5.5') Silty SAND (SM); mostly fine-medium grained sand, some silt, few clay, medium dense, dry, reddish-brown			5
				EN					0.8	P39-SB30	
10								(9.5') Poorly graded SAND with gravel (SP); mostly medium grained sand, little coarse gravel, very loose, dry, light brown (10') Boring terminated			10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 39 - Lewisville, NC	**Boring No.** P39-SB31
	Address: 6295 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/18/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/18/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') No Recovery			0
								(0.5') Poorly graded SAND (SP); mostly medium grained sand, few fine gravel, very loose, dry, light brown			
								(1.5') Poorly graded SAND with silt (SP-SM); mostly fine-medium grained sand, little silt, little clay, loose, dry, light reddish-brown	0.6		
								(3') Silty, Clayey SAND (SC-SM); mostly fine-medium grained sand, little silt, little clay, medium dense, dry, reddish-brown			
5											5
									0.6		
10				EN				(10') Boring terminated		P39-SB31	10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 39 - Lewisville, NC	**Boring No.** P39-SB32
	Address: 6295 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/18/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/18/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') Poorly graded SAND with gravel (SP); mostly medium-coarse grained sand, little coarse gravel, very loose, dry, light reddish-brown			0
								(2') Lean CLAY with sand (CL); little fine sand, trace silt, mostly clay, medium plasticity, stiff, moist, reddish-brown			
				EN	10:54					P39-SB32	
5								(4.5') No Recovery (5') Clayey SAND (SC); mostly fine-medium grained sand, trace silt, some clay, medium dense, dry, reddish-brown (5.5') Lean CLAY (CL); trace fine sand, trace silt, mostly clay, medium plasticity, stiff, moist, reddish-brown (6.5') SILT (ML); trace fine sand, mostly silt, little clay, nonplastic, soft, dry, dark reddish-brown			5
								(8.5') As Above: with medium grained weathered bedrock			
10								(10') Boring terminated			10
15											15
20											20

NOTES:

	Client: NC DOT	**BORING LOG**
	Project: Parcel 39 - Lewisville, NC	**Boring No.** P39-SB33
	Address: 6295 Shallowford Road, Lewisville, NC	**Page:** 1 of 1

Drilling Start Date:	**05/18/2022**	Boring Depth (ft):	**10**
Drilling End Date:	**05/18/2022**	Boring Diameter (in):	**2.00**
Drilling Company:	**Carolina Soil Investigations, LLC**	Sampling Method(s):	**Encore**
Drilling Method:	**Direct Push**	DTW During Drilling (ft):	**N/A**
Drilling Equipment:	**Geoprobe**	DTW After Drilling (ft):	**N/A**
Driller:	**Danny Summers**	Ground Surface Elev. (ft):	**N/A**
Logged By:	**Dawn Crowell**	Location (Lat, Long):	**N/A**

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT: Sample Type	COLLECT: Time	COLLECT: Blow Counts	COLLECT: Recovery (ft)	SOIL/ROCK VISUAL DESCRIPTION	MEASURE: PID (ppm)	MEASURE: Lab Sample	DEPTH (ft)
0								(0') Topsoil (0.5') Poorly graded SAND (SP); mostly fine-medium grained sand, some silt, medium dense, dry, reddish-brown	0.6		0
								(3') As Above: with weathered rock fragments			
5				EN				(4') Poorly graded SAND (SP); mostly medium-coarse grained sand, few fine gravel, very loose, dry, light reddish-brown		P39-SB33	5
								(7') Lean CLAY (CL); trace fine sand, trace silt, mostly clay, medium plasticity, stiff, moist, dark reddish-brown			
10								(10') Boring terminated	0.6		10
15											15
20											20

NOTES:

APPENDIX C

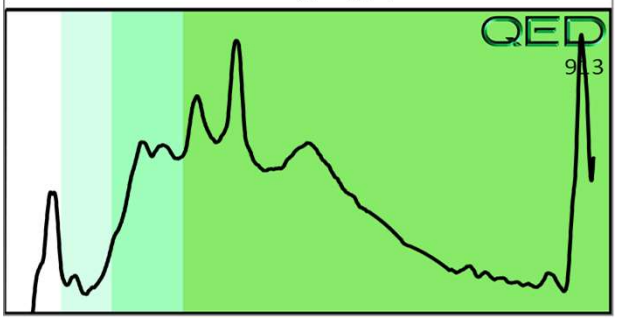
RED LAB, LLC

LABORATORY ANALYTICAL REPORT

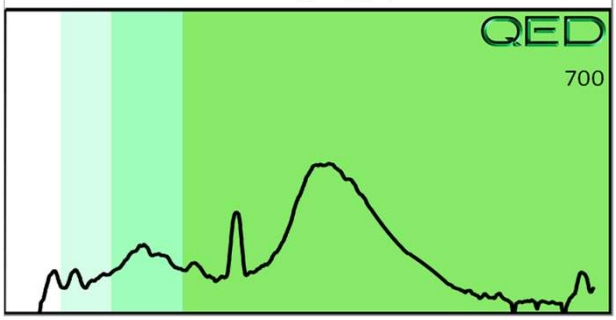
QED Hydrocarbon Fingerprints

Project: 6295 SHALLOWFORD RD. Friday, May 20, 2022

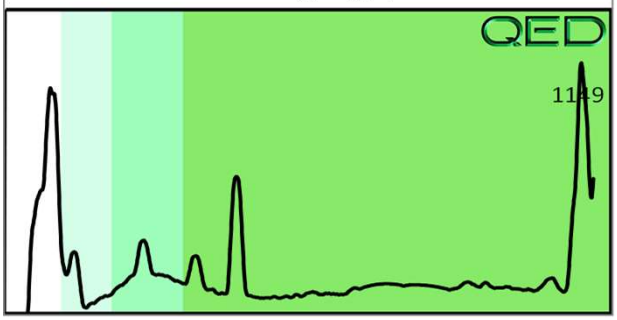
P39 - SB27 : Residual HC,(BO),(P)



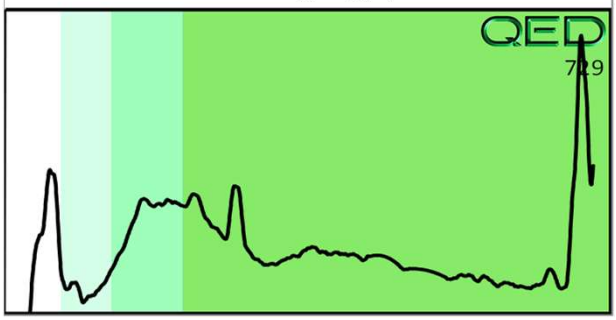
P39 - SB28 : Residual HC,(BO),(P)



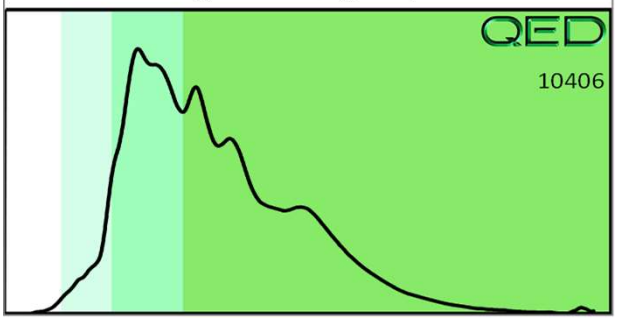
P39 - SB29 : Residual HC,(BO),(P)



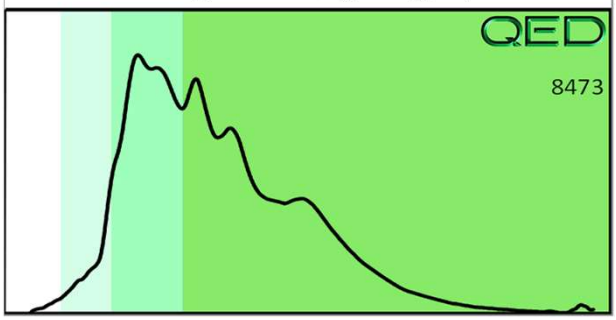
P39 - SB30 : Residual HC,(BO),(P)



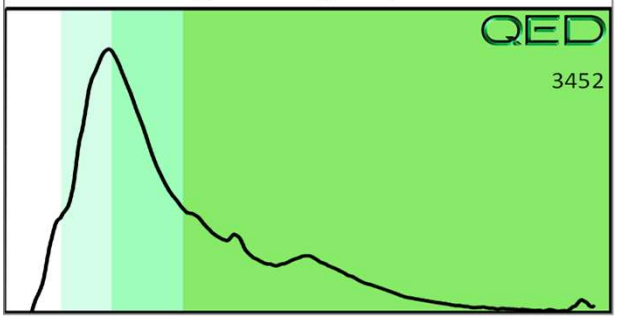
P39 - SB31 : Deg Fuel 75.2%,(FCM)



P39 - SB32 : Deg.PHC 82.2%,(FCM),(BO)



P39 - SB33 : Deg.Fuel 67%,(FCM)



QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: NCDOT/CES
Address: 3525 WHITEHALL PARK DR
CHARLOTTE, NC

Samples taken Wednesday, May 18, 2022
Samples extracted Wednesday, May 18, 2022
Samples analysed Friday, May 20, 2022

Contact: GREG HANS

Operator CLAIRE NAKAMURA

Project: 6295 SHALLOWFORD RD.

U00904

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	P39 - SB27	14.8	<0.37	<0.37	<0.37	0.37	0.37	<0.12	<0.015	0	55.9	44.1	Residual HC,(BO),(P)
s	P39 - SB28	14.7	<0.37	<0.37	<0.37	0.22	0.22	<0.12	<0.015	0	22	78	Residual HC,(BO),(P)
s	P39 - SB29	12.3	<0.31	<0.31	<0.31	0.18	0.18	<0.1	<0.012	0	100	0	Residual HC,(BO),(P)
s	P39 - SB30	14.5	<0.36	<0.36	<0.36	0.22	0.22	<0.12	<0.015	0	36.8	63.2	Residual HC,(BO),(P)
s	P39 - SB31	13.0	<0.33	0.6	6	6.6	3.1	0.17	<0.013	22.8	63.6	13.5	Deg Fuel 75.2%,(FCM)
s	P39 - SB32	12.0	<0.3	0.93	3.5	4.4	1.9	<0.1	<0.012	39.1	48.8	12.1	Deg.PHC 82.2%,(FCM),(BO)
s	P39 - SB33	13.1	<0.33	1	4.4	5.4	3	<0.1	<0.013	77.4	18.1	4.4	Deg.Fuel 67%,(FCM)

Initial Calibrator QC check OK

Final FCM QC Check OK 92.4 %

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

Client Name:	NC DOT / CES
Address:	3525 Whitehall Park Dr. Charlotte, NC
Contact:	Greg Hans
Project Ref.:	6295 Shallowford Rd.
Email:	ghans@ces-group.net
Phone #:	
Collected by:	Dawn Connell

REDLAB™
RAPID ENVIRONMENTAL DIAGNOSTICS

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

RED Lab, LLC
5598 Marvin K Moss Lane
MARBIONC Bldg, Suite 2003
Wilmington, NC 28409

Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.

Sample Collection	TAT Requested		Analysis Type		Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
Date/Time	24 Hour	48 Hour	UVF	GC					
5-18-22/0955		✓	✓		DFC	P39-SB 27	61.0	43.4	17.6
5-18-22/1006		✓	✓		DFC	P39-SB 28	61.3	43.6	17.7
5-18-22/1020		✓	✓		DFC	P39-SB 29	65.4	44.3	21.1
5-18-22/1030		✓	✓		DFC	P39-SB 30	62.2	44.3	17.9
5-18-22/1037		✓	✓		DFC	P39-SB 31	64.0 ~~65.7~~	44.0	~~21.7~~ 20.0
5-18-22/1054		✓	✓		DFC	P39-SB 32	65.4	44.2	21.7
5-18-22/1105		✓	✓		DFC	P39-SB 33	62.8	43.4	19.4

COMMENTS/REQUESTS:

TARGET GC/UVF ANALYTES:

Relinquished by		Accepted by	Date/Time
Relinquished by		Accepted by	Date/Time
		ECN 5/20/2022 11:50 AM	

RED Lab USE ONLY

(7) 5-2022-4

Ref. No

APPENDIX D

PHOTOGRAPHIC LOG

Figure 1 Parcel 39, NC 811 and Pyramid utility mark outs at southwestern portion of property along Shallowford Road

Figure 2 Parcel 39, NC 811 and Pyramid utility mark outs near fiber optic easement, along Shallowford Road.

Figure 3 Parcel 39, NC 811 and Pyramid utility mark outs at the center of the property, along Lewisville Vienna Road.

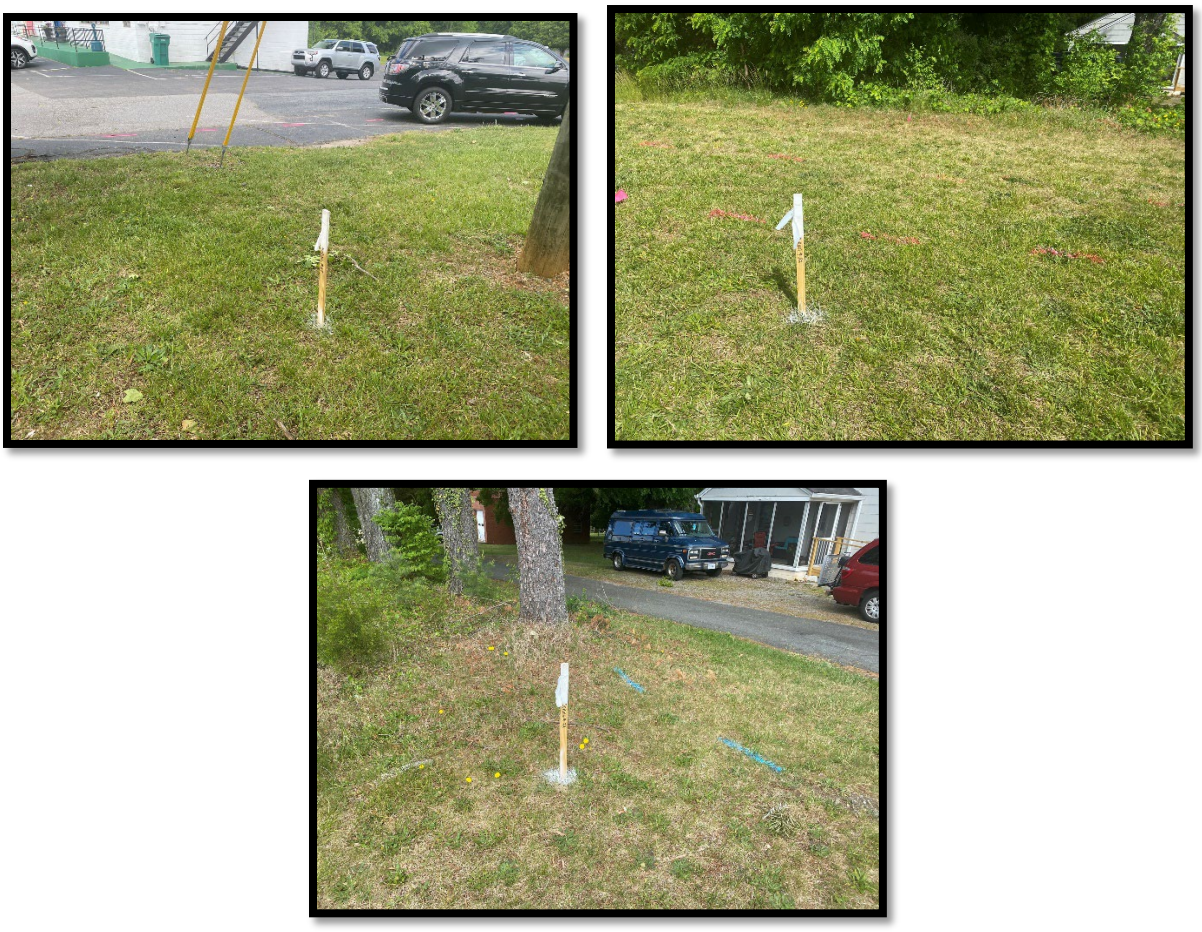


Figure 4 Parcel 39, Pyramid utility mark outs at SB27, SB32 and SB33.