October 9, 2019
Kleinfelder File No. 20201105.001A

Mr. John L. Pilipchuk, LG., PE
North Carolina Department of Transportation
State Geotechnical Engineer
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

SUBJECT: Preliminary Site Assessment Report
Parcel 65, Laser Investments, LLC
WBS Element No. 54035.1.1, TIP No. U-5757
NC 8 (Winston Road) from 9th Street to SR 1408 (Biesecker Rd) in Lexington. Widen to multi lanes
Kleinfelder Project No. 20201105.001A

Dear Mr. Pilipchuk,

Kleinfelder is pleased to provide its report detailing the activities conducted as part of the preliminary site assessment for the subject project.

Kleinfelder appreciates the opportunity to be of service to you. Should you have questions or require additional information, please do not hesitate to contact the undersigned.

Sincerely,
KLEINFELDER, INC.

Abigail R. Shurtleff
Environmental Staff Professional

Michael J Burns, PG
Environmental Program Manager

ARS/MJB:asp

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KLEINFELDER 3200 Gateway Centre Blvd. Suite 100, Morrisville, NC 27560 **p |** 919.755.5011 **f |** 919.755.1414

PRELIMINARY SITE ASSESSMENT REPORT
PARCEL 65 LASER INVESTMENTS, LLC
PARCEL 11332C00P0020B
1574 OLD US HIGHWAY 52
LEXINGTON, DAVIDSON COUNTY, NORTH CAROLINA

NCDOT WBS ELEMENT 54035.1.1
STATE PROJECT U-5757
NC 8 (WINSTON RD) FROM 9TH STREET TO SR 1408 (BIESECKER RD) IN LEXINGTON. WIDEN TO MULTI LANES

KLEINFELDER PROJECT NO. 20201105.001A

OCTOBER 9, 2019

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ONLY THE CLIENT OR ITS DESIGNATED REPRESENTATIVES MAY USE THIS DOCUMENT AND ONLY FOR THE SPECIFIC PROJECT FOR WHICH THIS REPORT WAS PREPARED.

A Report Prepared for:

Mr. John L. Pilipchuk, LG., PE
North Carolina Department of Transportation
State Geotechnical Engineer
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

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Prepared by:

Abigail R. Shurtleff
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Reviewed by:

Michael J. Burns, PG
Environmental Program Manager

KLEINFELDER
3200 Gateway Centre Blvd. | Suite 100
Raleigh, North Carolina 27560
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October 9, 2019

Kleinfelder Project No. 20201105.001A

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PRELIMINARY SITE ASSESSMENT REPORT

Site Name and Location:	Parcel 65 1574 Old US Highway 52 Lexington, Davidson County, North Carolina
Latitude and Longitude:	35.846993°N, -80.254131°W
County Parcel Number	11332C00P0020B
Facility ID Number:	N/A
Leaking UST Incident:	N/A
State Project No.:	U-5757
NCDOT Project No.:	NCDOT WBS Element 54035.1.1
Description:	NC 8 (Winston Rd) from 9th Street to SR 1408 (Biesecker Rd) in Lexington. Widen to multi lanes
Date of Report:	October 9, 2019
Consultant:	Kleinfelder, Inc. 3200 Gateway Center Boulevard | Suite 100 Morrisville, North Carolina 27560 Corporate Geology License No. C-521 Corporate Licensure for Engineering F-1312

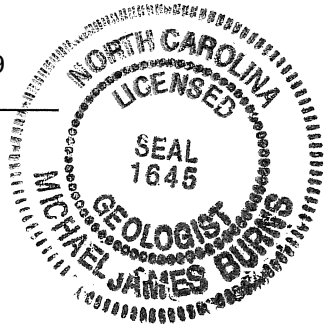
SEAL AND SIGNATURE OF CERTIFYING LICENSED GEOLOGIST

I, Michael J Burns, a Licensed Geologist for Kleinfelder, Inc., do certify that the information contained in this report is correct and accurate to the best of my knowledge.

DocuSigned by:
7E53DC44AC794CA...

10/28/2019

Michael J Burns, LG
NC License No. 1645



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LEXINGTON, DAVIDSON COUNTY, NORTH CAROLINA

NCDOT WBS ELEMENT 54035.1.1
STATE PROJECT U-5757
NC 8 (WINSTON RD) FROM 9TH STREET TO SR 1408 (BIESECKER RD) IN LEXINGTON. WIDEN TO MULTI LANES

1 INTRODUCTION

Kleinfelder, Inc. (Kleinfelder) has prepared this Preliminary Site Assessment (PSA) report to document assessment activities performed on a parcel known as Parcel Number 11332C00P0020B by the Davidson County, NC Tax Assessor's Office and by NCDOT as Parcel 65 (the assessment area is hereafter referred to as the "Project Study Area"). The Project Study Area consisted of the western and northwestern portions of the parcel. Parcel 65 is currently occupied by a used car dealership, Sav-Mart Auto Sales, and associated maintenance garage and paved asphalt parking areas. The parcel is located southeast of the intersection of NC Highway 8 (Winston Road) and Arrington Drive in the Town of Lexington, Davidson County, North Carolina (Figure 1).

The parcel was not previously covered in the Hazardous Materials Survey Report, dated February 28, 2019, prepared by Kleinfelder for SEPI Engineering & Construction. As such, the purpose of the PSA was to evaluate whether unknown USTs or contaminated soil are present in the Project Study Area that may result in increased project costs and future liability if acquired by the NCDOT.

1.1 SITE DESCRIPTION

Parcel 65 has a listed owner of Laser Investments LLC. The parcel has a street address of 1574 Old US Highway 52. The parcel consists of a used car sales dealership with associated maintenance shop and paved asphalt parking areas. The parcel is bounded by Arrington Drive to the north, beyond which is commercial and residential land; by NC Highway 8 (Winston Road) to the west, beyond which is commercial and residential land; by Michael Alley to the east, beyond which is vacant residential land; and by a car wash with associated paved asphalt areas to the south. The parcel is currently the location of Sav-Mart Auto Sales. Photographs of the Project Study Area are provided in Appendix A.

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1.2 SCOPE OF WORK

Kleinfelder conducted this PSA in accordance with the NCDOT's May 24, 2019, Request for Technical and Cost Proposal (RFP) and Kleinfelder's June 18, 2019 Technical and Cost Proposal. The NCDOT granted a formal Notice to Proceed on June 27, 2019.

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2 HISTORY

2.1 PARCEL USAGE

The parcel consists 2 buildings with paved parking areas. The eastern building serves as a vehicle maintenance shop with three bays and the western building serves as an administrative building.

The 2018 Hazardous Materials Survey Report did not include information about the parcel.

Kleinfelder conducted historical research to determine whether any listings of environmental concern were identified for Parcel 65. The following are the results of the additional research:

- Based on a review of aerial photographs, the site appeared to be occupied by residential land from at least 1936 to 1964 and had been developed into commercial land by at least 1983.
- Kleinfelder searched the registered UST database, maintained by the North Carolina Department of Environmental Quality (NCDEQ). The site was not listed.
- No other listings for Parcel 65 were identified utilizing NCDEQ's online Division of Waste Management Site Locator Tool.

2.2 FACILITY ID NUMBERS

Kleinfelder reviewed the NCDEQ UST database for Parcel 65. The parcel was not identified as having any active or inactive USTs.

2.3 GROUNDWATER INCIDENT NUMBERS

No groundwater incident numbers are known to be associated with Parcel 65 at this time.

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3 OBSERVATIONS

3.1 GROUNDWATER MONITORING WELLS

No groundwater monitoring wells were observed on Parcel 65 at the time of site exploration, August 8, 2019.

3.2 ACTIVE USTS

Based on review of the NCDEQ UST database, site visits and previous reports, there are no (0) active USTs located within the Project Study Area.

3.3 OTHER FEATURES APPARENT BEYOND PROJECT STUDY AREA

The Project Study Area consisted of the western and northwestern portions of the parcel. An automotive maintenance facility was observed on the eastern portion of the parcel, outside of the Project Study Area. There were no other features of concern observed beyond the Project Study Area.

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4 METHODS

4.1 PROPERTY OWNER CONTACTS

As part of Kleinfelder's scope of work, the listed property owner was contacted about the work schedule for the field work and the type of work being performed. The owner did not express any concern or special conditions associated with the work being performed.

4.2 HEALTH AND SAFETY

Prior to commencing the field work, Kleinfelder personnel developed a Site-Specific Health and Safety Plan (HASP) covering activities to be performed. The site-specific HASP was discussed with all Kleinfelder personnel involved with the project and at a daily on-site "tail gate" safety meetings with subcontractors and sub consultants. In addition to the HASP, Kleinfelder utilized its comprehensive Corporate Health and Safety Program, targeted to address those specific and critical tasks that involve Kleinfelder personnel and subcontractors. The Loss Prevention System (LPS™), a behavior-based program, is Kleinfelder's company-wide safety system implemented and embraced by all levels of the company.

4.3 GEOPHYSICAL INVESTIGATION

Pyramid Environmental & Engineering, P.C (Pyramid) conducted a geophysical investigation in the Project Study Area between July 15 and 16, 2019. Pyramid utilized electromagnetic (EM) induction technology and ground penetrating radar (GPR) to locate potential geophysical anomalies and potential USTs within the Project Study Area.

There were no EM responses that were not associated with known utilities, vehicles, or other previously known conditions.

A copy of the Pyramid Geophysical Investigation Report, detailing the field methodology, is included in Appendix B.

4.4 SOIL ASSESSMENT

The scope of work for the soil assessment was to evaluate for the presence of soil contamination along the existing right-of-way and/or easement, and, if encountered, to define the vertical and horizontal extent of contamination. The soil borings were planned to be advanced to maximum depths of 10 feet below the ground surface (bgs) unless groundwater was encountered. Field screening using a photo ionization detector (PID) was to be conducted at 1-foot intervals

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beginning at 0 foot to 1 foot. The soil sample with the highest PID reading above background or the sample from the maximum drilled depth would be selected for on-site laboratory analyses.

Prior to the drilling activities, public utilities were marked by NC One Call and private utilities were marked by Pyramid.

Kleinfelder subcontracted Quantex, Inc. (Quantex) to perform the drilling on-site on August 8th, 2019. Quantex advanced four (4) soil borings (P65-B1 through P65-B4) by direct-push technology from the ground surface to boring termination (10 feet bgs) at locations specified by Kleinfelder. The soil boring locations were identified in the field using a GPS. The soil boring locations are shown on Figure 2. The borings were located within the public utility easement and right-of-way along NC Highway 8 (Winston Road) and within the western and northern boundaries of the parcel. Soil samples were collected by driving Macro Core™ samplers in 5-foot intervals. Each soil core was cut open, the soil samples were classified, and the soil was divided into 1-foot sections. Each 1-foot section was screened in the field using a PID. The PID readings are summarized in Table 1.

Soils were determined to be a clayey silt underlain by a silty clay or clay. Groundwater was not encountered in any of the borings at the termination depth of 10 feet bgs. Copies of the boring logs are included in Appendix C.

4.5 SOIL ANALYSIS

The PID readings from soil borings advanced were noted to be low. Based on the PID data and visual observations, one (1) sample from soil borings P65-B1 through P65-B3 and two (2) samples from soil boring P65-B4 were selected for on-site laboratory analysis.

The samples were analyzed by RED Lab, LLC utilizing ultraviolet fluorescence (UVF) methodology to provide real-time analytical results of Total Petroleum Hydrocarbons (TPH), Gasoline Range Organics (GRO), Diesel Range Organics (DRO), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The UVF method was selected because of the possible use of petroleum products on the eastern portion of Parcel 65. The UVF analysis also provided data regarding Environmental Protection Agency 16 total Polycyclic Aromatic Hydrocarbons (PAHs), and Benzo(a)pyrene (BaP).

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5 RESULTS

5.1 GEOPHYSICAL INVESTIGATION

One EM anomaly was identified by the geophysical investigation caused by the vehicles on the site. Collectively, the geophysical data did not record any evidence of unknown metallic USTs at Parcel 65.

5.2 SOIL SAMPLING DATA

The UVF analysis of soil samples did not indicate the presence of petroleum impact in any of the soil samples analyzed. As such, shallow soil impact does not appear to be present within the existing right-of-way or along the western and northern parcel boundaries above NCDEQ Action Limits. A summary of soil sample analytical results is presented in Table 2. The laboratory results associated with each soil boring are presented on Figure 3. The laboratory report and graphs are included in Appendix D.

5.3 SAMPLE OBSERVATIONS

Soils were observed for any obvious evidence of contamination. No visual or olfactory evidence of contamination was noted in any of the soil samples from the borings.

5.4 QUANTITY CALCULATIONS

No quantifiable contaminated soil impact was detected by Kleinfelder personnel during this assessment.

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6 CONCLUSIONS

Based on results of the EM/GPR survey, soil assessment and field observations, Kleinfelder has reached the following conclusions:

- The GPR and EM investigation did not identify unknown features within the Project Study Area.
- The parcel is not listed in any databases of environmental concern maintained by the NCDEQ.
- No soil impact above the NCDEQ Action Limits for TPH GRO and DRO was detected in soil borings advanced along NC Highway 8 (Winston Road) and the northern and western parcel boundaries.
- Groundwater was not encountered in the soil borings at the termination depth of 10 feet bgs.

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7 RECOMMENDATIONS

Based on results of this Preliminary Site Assessment, Kleinfelder recommends no additional sampling or special handling of soils be performed within the Project Study Area on Parcel 65 in Lexington, Davidson County, North Carolina.

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8 LIMITATIONS

Kleinfelder's work will be performed in a manner consistent with that level of care and skill ordinarily exercised by other members of its profession practicing in the same locality, under similar conditions and at the date the services are provided. Kleinfelder's conclusions, opinions and recommendations will be based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. It should be recognized that definition and evaluation of geologic and environmental conditions are a difficult and inexact science. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies. Although risk can never be eliminated, more-detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, Kleinfelder's clients participate in determining levels of service that provide adequate information for their purposes at acceptable levels of risk. More extensive studies, including subsurface studies or field tests, should be performed to reduce uncertainties. Acceptance of this report will indicate that NCDOT has reviewed the document and determined that it does not need or want a greater level of service than provided.

During the course of the performance of Kleinfelder's services, hazardous materials may have been discovered. Kleinfelder assumes no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials. Nothing contained in this report should be construed or interpreted as requiring Kleinfelder to assume the status of an owner, operator, or generator, or person who arranges for disposal, transport, storage or treatment of hazardous materials within the meaning of any governmental statute, regulation or order. NCDOT is solely responsible for directing notification of all governmental agencies, and the public at large, of the existence, release, treatment or disposal of any hazardous materials observed at the project site, either before or during performance of

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Kleinfelder's services. NCDOT is responsible for directing all arrangements to lawfully store, treat, recycle, dispose, or otherwise handle hazardous materials, including cuttings and samples resulting from Kleinfelder's services.

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TABLES

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Table 1: Soil Sample Screening Results

Date	Sample ID	Depth (ft)	PID Reading	Notes
8/8/2019	U5757-P65-B1	1	0.8	
		2	1.5	
		3	1.2	
		4	1.0	
		5	1.8	
		6	2.1	
		7	1.6	
		8	2.1	UVF Analysis
		9	1.2	
		10	1.3	
8/8/2019	U5757-P65-B2	1	0.4	
		2	1.1	
		3	0.6	
		4	1.9	
		5	1.3	
		6	1.8	
		7	1.7	
		8	2.2	UVF Analysis
		9	1.8	
		10	0.8	
8/8/2019	U5757-P65-B3	1	1.1	
		2	1.3	
		3	1.8	
		4	2.0	
		5	2.6	UVF Analysis
		6	1.7	
		7	1.3	
		8	0.0	
		9	0.0	
		10	0.0	
8/8/2019	U5757-P65-B4	1	0.7	
		2	2.3	
		3	1.8	
		4	3.1	
		5	3.9	UVF Analysis
		6	2.3	
		7	2.1	
		8	3.5	
		9	4.3	UVF Analysis
		10	2.1	

Notes:
1) PID = Photoionization Detector
2) PID readings in parts per million (ppm)

TABLE 2: Soil Sample Analytical Summary

Parameter	Analytical Results					Comparison Criteria		
	Soil Sample Results							
Sample ID	P65-B1-8	P65-B2-8	P65-B3-5	P65-B4-5	P65-B4-9	State Action Limit	Protection of Groundwater	Residential Health
PID Reading (ppm)	2.10	2.20	2.60	3.90	4.30			
Collection Depth (ft bgs)	8	8	5	5	9			
Collection Date	8/8/19	8/8/19	8/8/19	8/8/19	8/8/19			
UVF Method								
Diesel Range Organics	**2.2**	**1.2**	<0.25	**0.51**	**0.57**	100	--	--
Gasoline Range Organics	<0.55	<0.41	<0.25	<0.51	<0.57	50	--	--

Notes:

Results displayed in milligram per kilogram (mg/kg)

ft bgs = Feet below ground surface

Bold = Above Laboratory Detection Limit

UVF = Ultraviolet Flouresence

FIGURES

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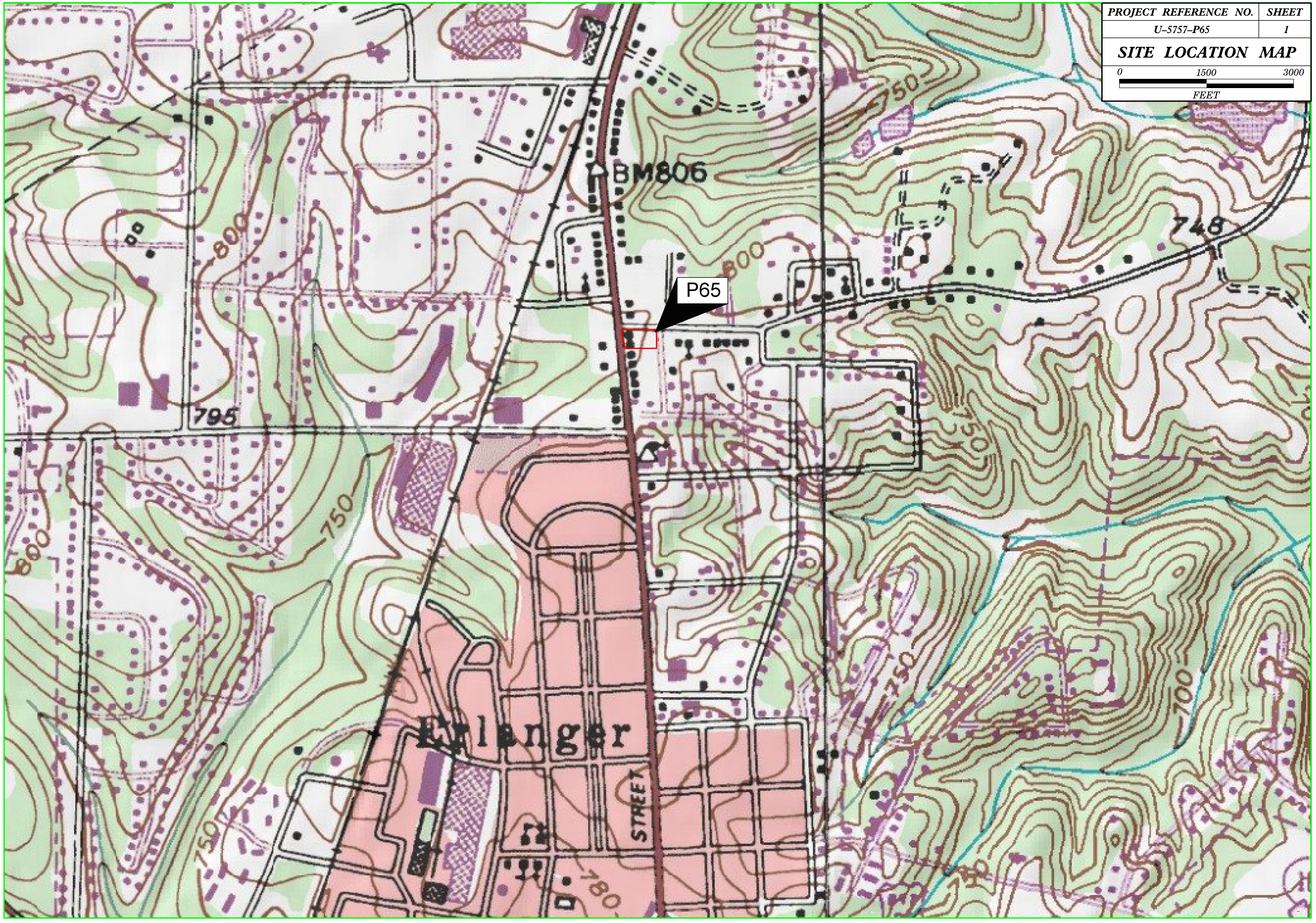
PROJECT REFERENCE NO.	SHEET
U–5757–P65	1

SITE LOCATION MAP

0 1500 3000

FEET



PROJECT REFERENCE NO.	SHEET
U-5757-P65	2

SITE PLAN

0 20 40

FEET

LEGEND

P65B1 SOIL SAMPLE LOCATIONS

P65-B3

P65-B4

P65-B1

P65-B2

+81.95

+50.00

+16.00

C&G

+07.75 RT.

END 2'-6" C&G

-L- STA. 51+

SAG

RT

WE

RETAIN

EY16

W

EXISTING R/W VARIES

EXISTING R/W VARIES

LASER INVESTMENTS, INC.

DB 2164 PG 1870

PB 3 PG 34

65

NC GRID

NAD 83 NA 2011

N

EIP

INC.

PROJECT REFERENCE NO.	SHEET
U-5757-P65	3

SOIL SAMPLE ANALYTICAL RESULTS

0 20 40
FEET

LEGEND

P65B1 SOIL SAMPLE LOCATIONS

SOIL SAMPLE RESULTS

	DRO	GRO
P65-B1-8	2.2	<0.55
P65-B2-8	1.2	<0.41
P65-B3-5	<0.25	<0.25
P65-B4-5	0.51	<0.51
P65-B4-9	0.57	<0.57

NOTES:
1) All results reported in mg/kg
2) DRO = Diesel Range Organics
3) GRO = Gasoline Range Organics
4) Bold concentrations exceed the NCDEQ TPH Action Limit

P65-B3
P65-B4
P65-B1
P65-B2
+81.95
+50.00
+16.00
C&G
+07.75 RT.
END 2'-6" C&G
-L- STA. 51+
SAG
RT
WE
EIP
EY16
W
RETAIN
NC GRID
NAD 83 NA 2011
LASER INVESTMENTS, INC.
DB 2164 PG 1870
PB 3 PG 34
, INC.

APPENDIX A
SITE PHOTOGRAPHS

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View facing north along Winston Road on Parcel 65.

View facing south along Winston Road on Parcel 65.

Original in Color

KLEINFELDER *Bright People. Right Solutions.* www.kleinfelder.com	PROJECT NO:20201105.001A DRAWN: September 2019 DRAWN BY: ARS CHECKED BY: MB FILE NAME: Photo Pages	**SITE PHOTOGRAPHS** Preliminary Site Assessment Report U-5757-P65 Lexington, Davidson County, North Carolina	FIGURE **A-1**

APPENDIX B

GEOPHYSICAL SURVEY REPORT

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PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2019-211)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION:
PARCEL 65
NCDOT PROJECT U-5757 (54035.1.1)

1574 WINSTON ROAD, LEXINGTON, NC

August 20, 2019

Report prepared for: **Michael Burns, P.G.**
Kleinfelder, Inc.
3500 Gateway Center Boulevard, Suite 200
Morrisville, NC 27560

Prepared by: _____

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GEOPHYSICAL INVESTIGATION REPORT
Parcel 65 - 1574 Winston Road
Lexington, Davidson County, North Carolina

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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 Environmental conducted a geophysical investigation for Kleinfelder, Inc. at Parcel 65 located at 1574 Winston Road in Lexington, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project U-5757). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted from July 16-18, 2019, 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. One EM anomaly was identified. EM and GPR data showed no evidence of USTs in and around the EM anomaly caused by the vehicles on the site. Collectively, the geophysical data did not record any evidence of unknown metallic USTs at Parcel 65.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Kleinfelder, Inc. at Parcel 65 located at 1574 Winston Road in Lexington, NC. The survey was part of an NCDOT Right-of-Way (ROW) investigation (NCDOT Project U-5757). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted from July 16-18, 2019, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site included a commercial building surrounded by asphalt and concrete surfaces. An aerial photograph showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

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

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

computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 15.0 software programs.

GPR data were acquired across select EM anomalies on July 18, 2019, using a Geophysical Survey Systems, Inc. (GSSI) UtilityScan DF unit equipped with a dual frequency 300/800 MHz antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the DF unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the DF unit for post-processing and figure generation.

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

Geophysical Surveys for Underground Storage Tanks
on NCDOT Projects

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

DISCUSSION OF RESULTS

Discussion of EM Results

A contour plot of the EM61 results obtained across the survey area at the property is presented in **Figure 2**. Each EM anomaly is numbered for reference in the figure. The following table presents the list of EM anomalies and the cause of the metallic response, if known:

LIST OF METALLIC ANOMALIES IDENTIFIED BY EM SURVEY

Metallic Anomaly #	Cause of Anomaly	Investigated with GPR
1	Vehicles/Bollards/Utilities	✓

All of the site consisted of an asphalt parking lot filled with multiple vehicles. EM Anomaly 1 was associated with interference from the vehicles parked on the site as well as bollards and utilities. These areas were further investigated with GPR to verify that the interference did not obscure any buried 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 twenty formal GPR transects were performed at the site.

GPR Transects 1-20 were performed in a grid-like fashion across the site in areas associated with interference from vehicles, bollards, and suspected utilities (EM Anomaly 1). No evidence of any significant structures such as USTs was observed, verifying that the EM anomaly was the result of interference from the vehicles and bollards. GPR also verified the presence of the utilities.

Collectively, the geophysical data did not record any evidence of unknown metallic USTs at Parcel 65. **Figure 4** provides an overlay of the metal detection results on the NCDOT MicroStation engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 65 in Lexington, 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.
- EM and GPR data showed no evidence of USTs in and around the EM anomaly

caused by the vehicles on the site.

- Collectively, the geophysical data did not record any evidence of unknown metallic USTs at Parcel 65.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Kleinfelder 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 East)

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 65 LEXINGTON, NORTH CAROLINA NCDOT PROJECT U-5757	TITLE	PARCEL 65 - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	DATE	7/19/2019
				PYRAMID PROJECT #:	2019-211
CLIENT	KLEINFELDER				**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 July 16, 2019, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI UtilityScan DF instrument with a dual frequency 300/800 MHz antenna on July 18, 2019.

EM61 Metal Detection Response (millivolts)

N

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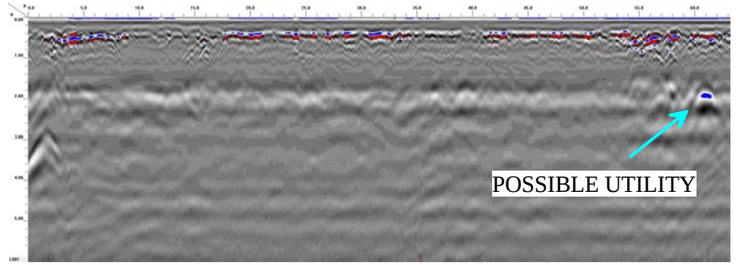
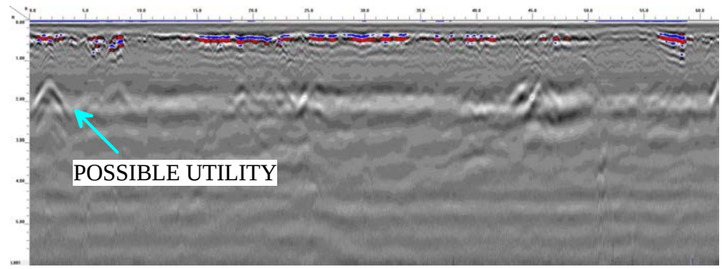
PROJECT	PARCEL 65 LEXINGTON, NORTH CAROLINA NCDOT PROJECT U-5757	TITLE	PARCEL 65 - EM61 METAL DETECTION CONTOUR MAP	DATE 7/19/2019
				PYRAMID PROJECT #: 2019-211
				CLIENT KLEINFELDER
				FIGURE 2

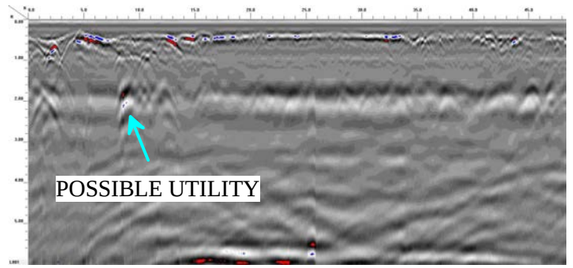
LOCATIONS OF GPR TRANSECTS



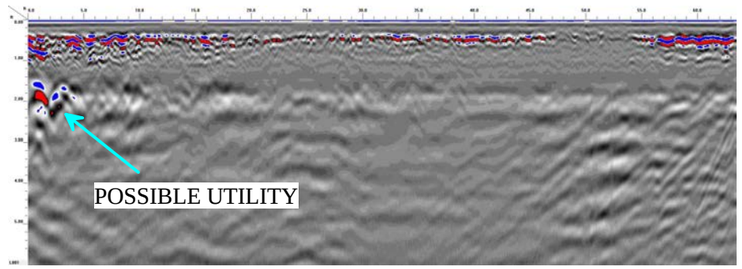
GPR TRANSECT 1 (T1)



GPR TRANSECT 2 (T2)



GPR TRANSECT 13 (T13)



GPR TRANSECT 17 (T17)

N

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PROJECT	PARCEL 65 LEXINGTON, NORTH CAROLINA NCDOT PROJECT U-5757	TITLE	PARCEL 65 - GPR TRANSECT LOCATIONS AND SELECT IMAGES	DATE 7/19/2019 CLIENT KLEINFELDER
				PYRAMID PROJECT #: 2019-211 **FIGURE 3**

LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- 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 15 30
FEET

N

TITLE
OVERLAY OF METAL DETECTION RESULTS
ON NCDOT ENGINEERING PLANS

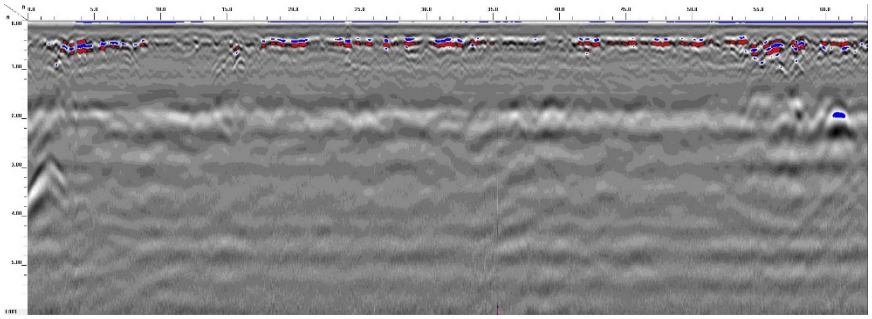
PROJECT
PARCEL 65
LEXINGTON, NORTH CAROLINA
NCDOT PROJECT U-5757

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

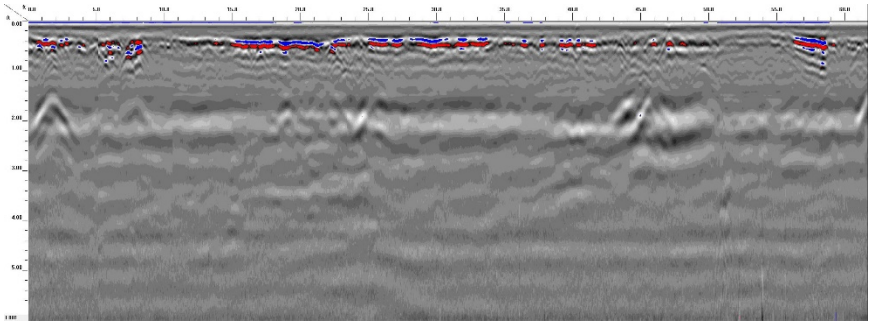
DATE: 08-13-2019 | REVISION NO. 0

PYRAMID PROJECT NO. 2019-211 | FIGURE NO. 4

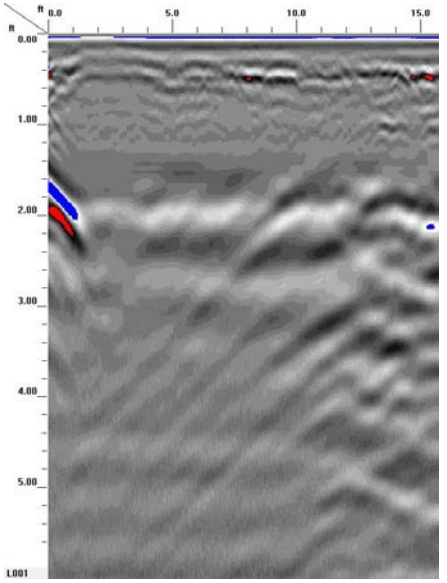
Appendix A – GPR Transect Images



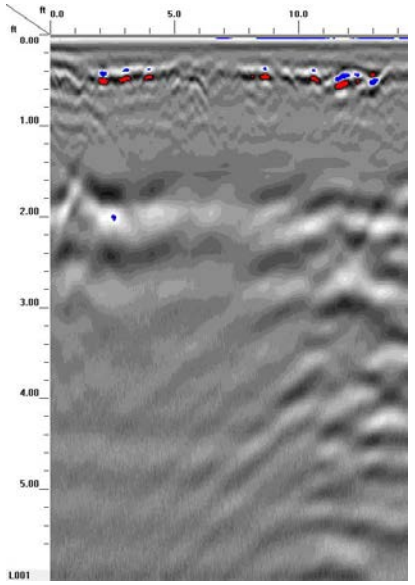
GPR TRANSECT 1



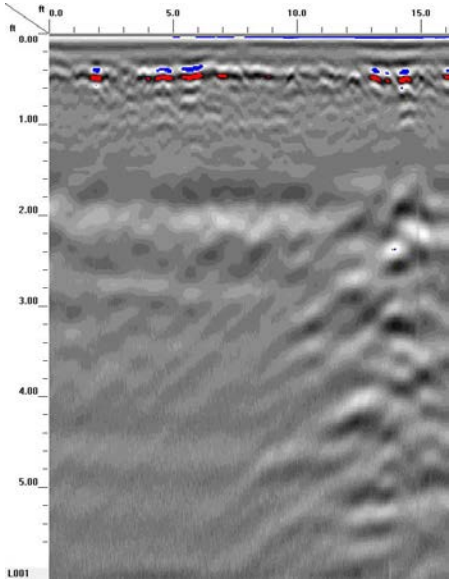
GPR TRANSECT 2



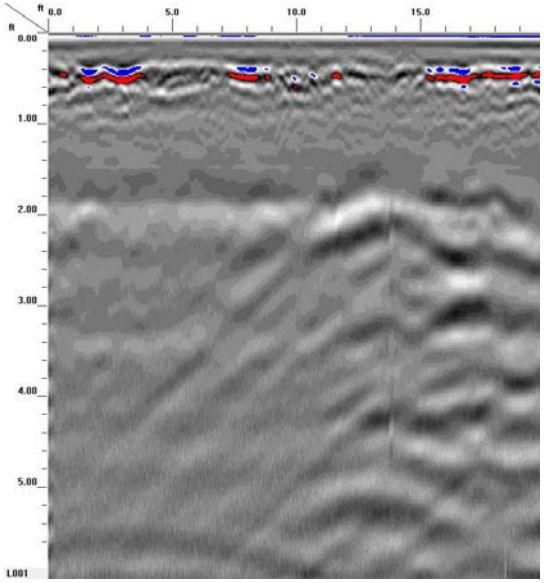
GPR TRANSECT 3



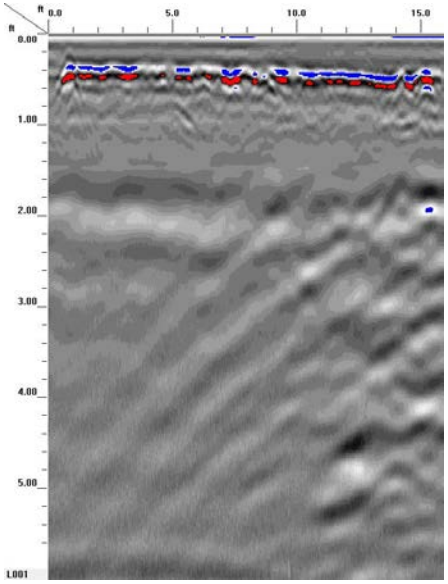
GPR TRANSECT 4



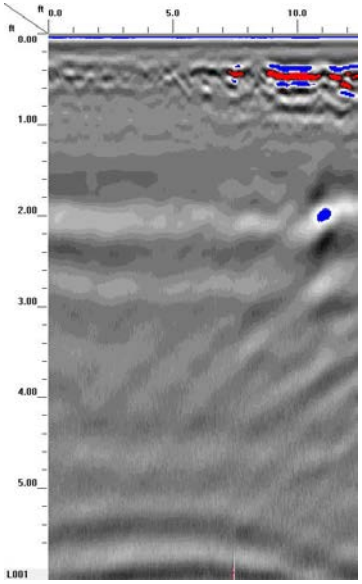
GPR TRANSECT 5



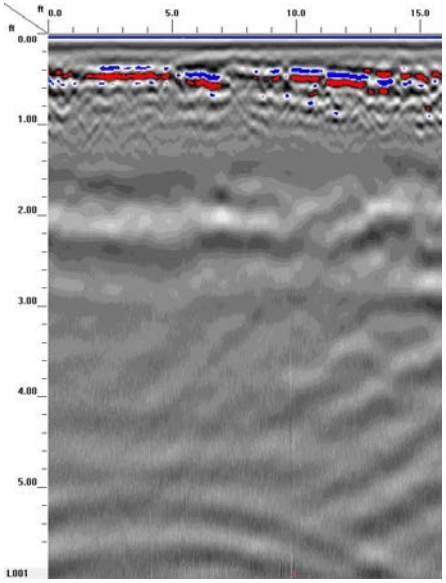
GPR TRANSECT 7



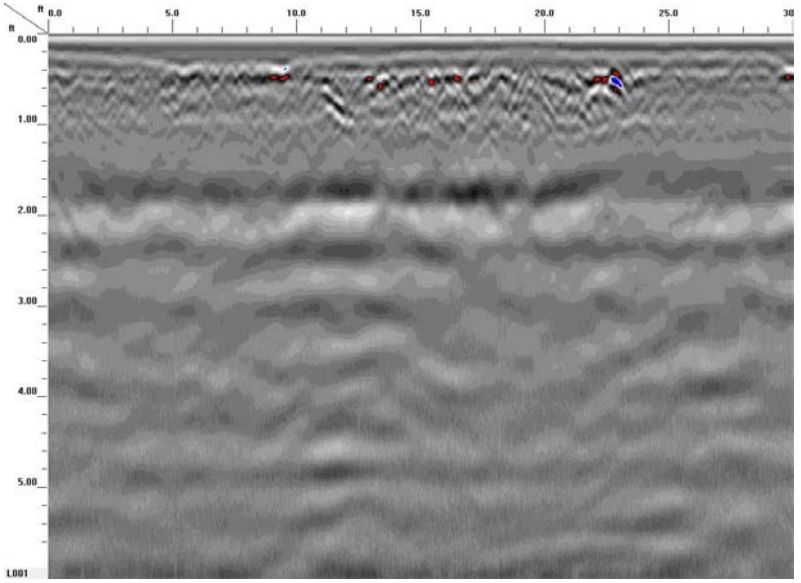
GPR TRANSECT 6



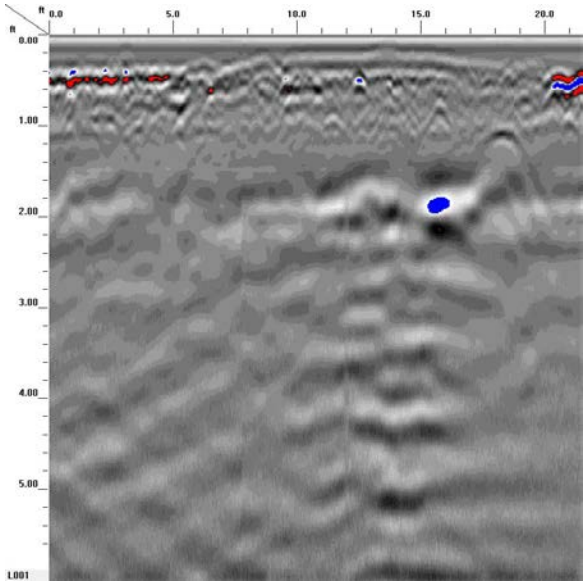
GPR TRANSECT 8



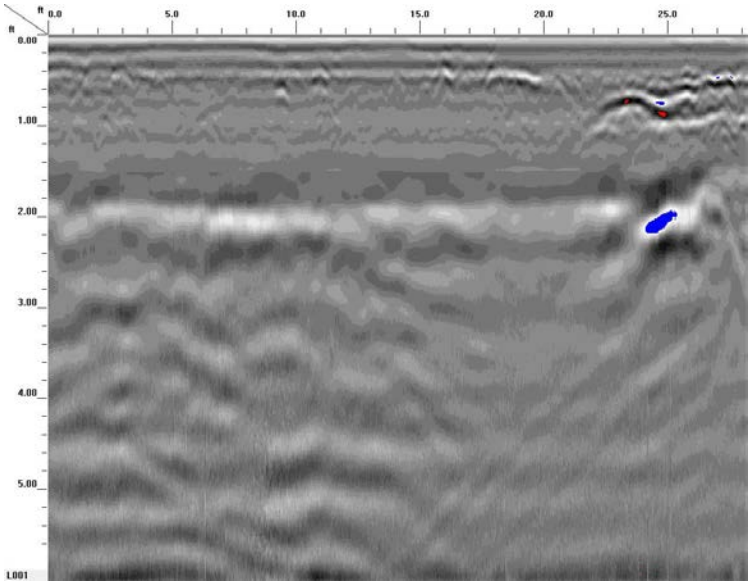
GPR TRANSECT 9



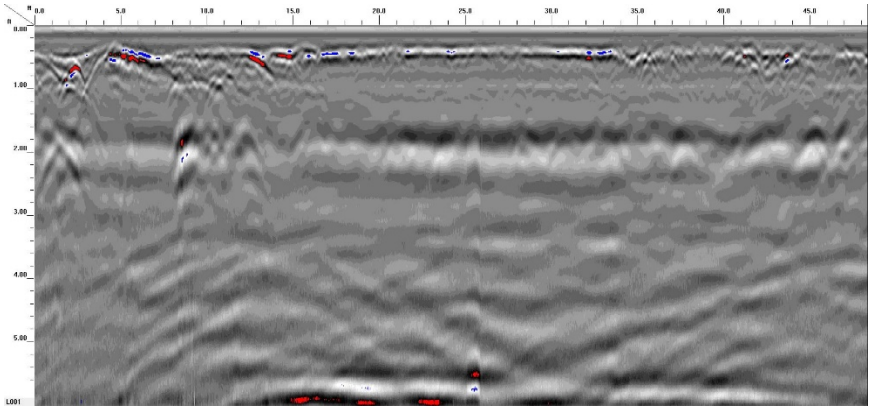
GPR TRANSECT 11



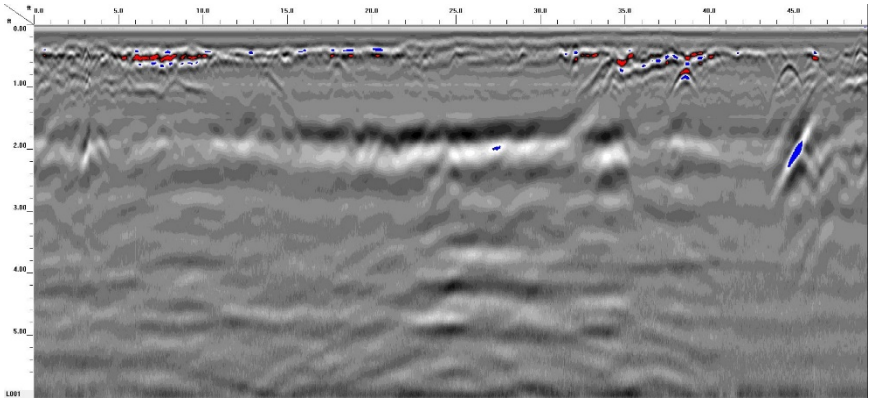
GPR TRANSECT 10



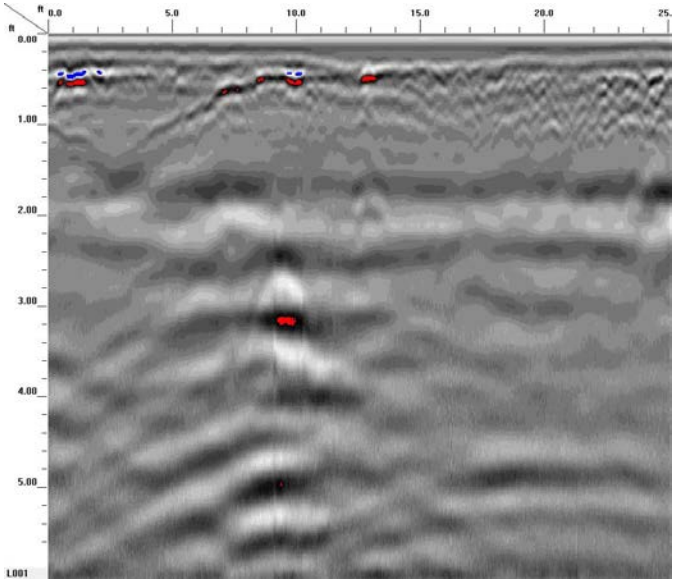
GPR TRANSECT 12



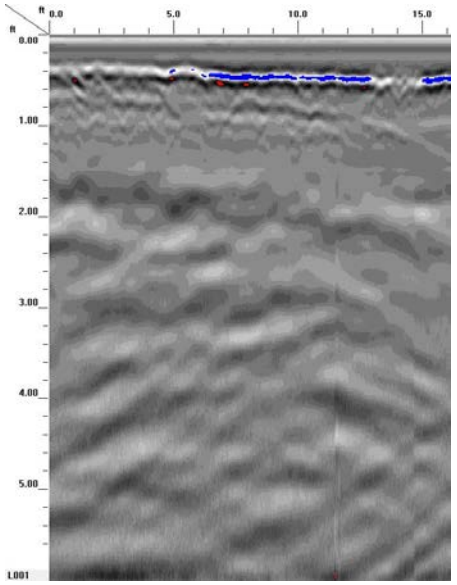
GPR TRANSECT 13



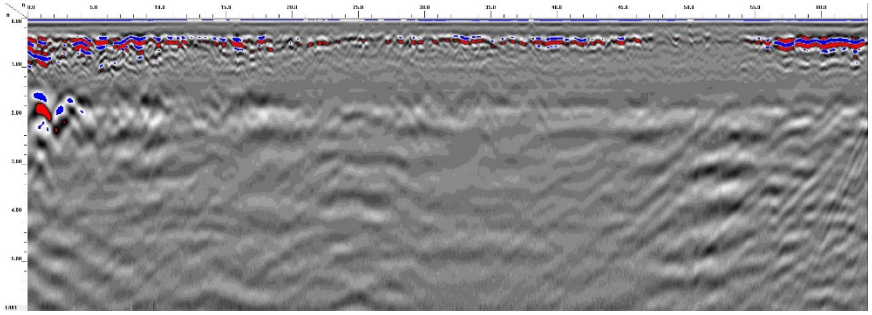
GPR TRANSECT 14



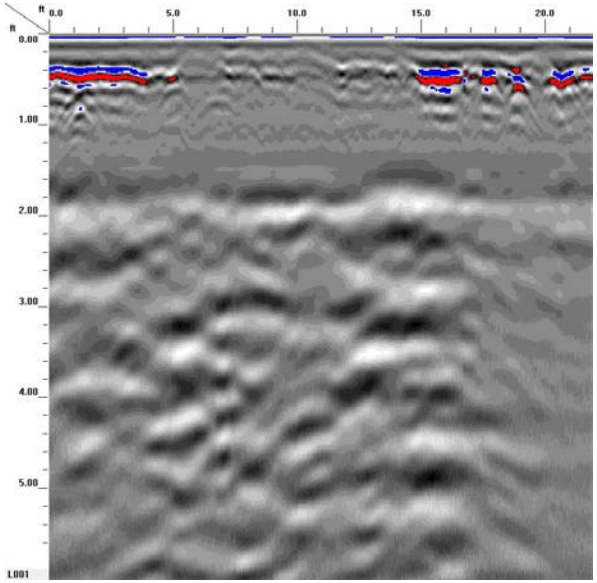
GPR TRANSECT 15



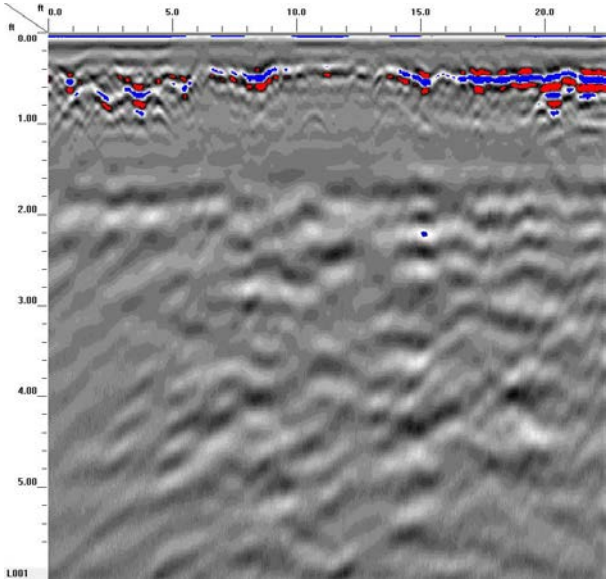
GPR TRANSECT 16



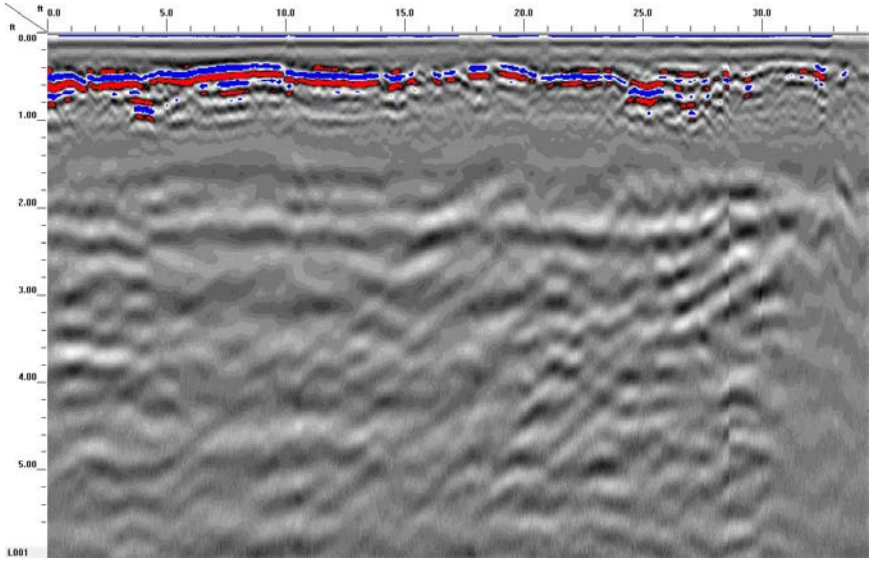
GPR TRANSECT 17



GPR TRANSECT 18



GPR TRANSECT 19



GPR TRANSECT 20

APPENDIX C
BORING LOGS

© 2019Kleinfelder

Date Begin - End:	8/08/2019	**Drilling Company:**	Quantex	**BORING LOG P65-B1**	
Logged By:	A Shurtleff	**Drill Crew:**	Andrew C		
Hor.-Vert. Datum:	WGS 1984 - Not Available	**Drilling Equipment:**	Genuine Geoprobe		
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column		
Weather:	75°F Clear	**Borehole Diameter:**			

FIELD EXPLORATION

Latitude: 35.84649° N
Longitude: -80.25398° E
Surface Condition: Asphalt

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
							ASPHALT
	Direct Push Sleeves				0.8		**SILT with Clay**: reddish brown to reddish yellow, dry to moist
					1.5		
					1.2		
					1.0		
					1.8		
5					2.1		
					1.6		
			P65-B1-8		2.1		
					1.2		
					1.3		
10							

The borehole was terminated at approximately 10 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
An iPad integrated GPS unit was used to locate the borehole with an accuracy of 5 meters.
The boring was backfilled with bentonite

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 20201105.001A
DRAWN BY: A SHURTLEFF
CHECKED BY: M BURNS
DATE: 10/8/2019

BORING LOG P65-B1

NCDOT: U-5757
Biesecker Road
Lexington, NC

1

PAGE: 1 of 1

gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_ENVIRONMENTAL LOG]
PROJECT NUMBER: 20201105.001A
OFFICE FILTER: RALEIGH
PLOTTED: 10/08/2019 04:16 PM BY: AShurtleff

Date Begin - End:	8/08/2019	**Drilling Company:**	Quantex
Logged By:	A Shurtleff	**Drill Crew:**	Andrew C
Hor.-Vert. Datum:	WGS 1984 - Not Available	**Drilling Equipment:**	Genuine Geoprobe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	75°F Clear	**Borehole Diameter:**	

BORING LOG P65-B2

FIELD EXPLORATION

Latitude: 35.84649° N
Longitude: -80.25398° E
Surface Condition: Asphalt

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
0							**ASPHALT**
					0.4		**SILT with Clay**: reddish brown to reddish yellow, dry to moist
					1.1		
					0.6		
					1.9		
	Direct Push Sleeves				1.3		
5					1.8		
					1.7		
			P65-B2-8		2.2		
					1.8		
					0.8		**CLAY with Silt**: light greenish gray and reddish yellow, dry to moist
10							

The borehole was terminated at approximately 10 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
An iPad integrated GPS unit was used to locate the borehole with an accuracy of 5 meters.
The boring was backfilled with bentonite

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 20201105.001A	BORING LOG P65-B2		
DRAWN BY: A SHURTLEFF	NCDOT: U-5757 Biesecker Road Lexington, NC	2	
CHECKED BY: M BURNS			
DATE: 10/8/2019		PAGE: 1 of 1	

PLOTTED: 10/08/2019 04:16 PM BY: AShurtleff
OFFICE FILTER: RALEIGH
PROJECT NUMBER: 20201105.001A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_ENVIRONMENTAL LOG]

Date Begin - End:	8/08/2019	**Drilling Company:**	Quantex
Logged By:	A Shurtleff	**Drill Crew:**	Andrew C
Hor.-Vert. Datum:	WGS 1984 - Not Available	**Drilling Equipment:**	Genuine Geoprobe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	75°F Clear	**Borehole Diameter:**	

BORING LOG P65-B3

FIELD EXPLORATION

Latitude: 35.84649° N
Longitude: -80.25398° E
Surface Condition: Concrete

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
							CONCRETE
	Direct Push Sleeves		P65-B3-5		1.1		**SILT with Clay**: reddish brown to reddish yellow, dry to moist
					1.3		
					1.8		
					2.0		
5					2.6		
					1.7		
					1.3		
					0.0		**CLAY with Silt**: light greenish gray and reddish yellow, dry to moist
					0.0		
					0.0		
10							

The borehole was terminated at approximately 10 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
An iPad integrated GPS unit was used to locate the borehole with an accuracy of 5 meters.
The boring was backfilled with bentonite

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 20201105.001A
DRAWN BY: A SHURTLEFF
CHECKED BY: M BURNS
DATE: 10/8/2019

BORING LOG P65-B3

NCDOT: U-5757
Biesecker Road
Lexington, NC

3

PAGE: 1 of 1

PLOTTED: 10/08/2019 04:16 PM BY: AShurtleff
OFFICE FILTER: RALEIGH
PROJECT NUMBER: 20201105.001A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_ENVIRONMENTAL LOG]

Date Begin - End:	8/08/2019	**Drilling Company:**	Quantex
Logged By:	A Shurtleff	**Drill Crew:**	Andrew C
Hor.-Vert. Datum:	WGS 1984 - Not Available	**Drilling Equipment:**	Genuine Geoprobe
Plunge:	-90 degrees	**Drilling Method:**	See Drilling Method Column
Weather:	75°F Clear	**Borehole Diameter:**	

BORING LOG P65-B4

FIELD EXPLORATION

Latitude: 35.84649° N
Longitude: -80.25398° E
Surface Condition: Asphalt

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Lithologic Description
							ASPHALT
					0.7		**SILT with Clay**: reddish brown to reddish yellow, dry to moist
					2.3		
					1.8		
					3.1		
5	Direct Push Sleeves		P65-B4-5		3.9		
					2.3		
					2.1		**CLAY with Silt**: light greenish gray and reddish yellow, dry to moist
					3.5		
			P65-B4-9		4.3		
					2.1		**CLAY**: light gray and pale red
10							

The borehole was terminated at approximately 10 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
An iPad integrated GPS unit was used to locate the borehole with an accuracy of 5 meters.
The boring was backfilled with bentonite

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 20201105.001A
DRAWN BY: A SHURTLEFF
CHECKED BY: M BURNS
DATE: 10/8/2019

BORING LOG P65-B4

NCDOT: U-5757
Biesecker Road
Lexington, NC

4

PLOTTED: 10/08/2019 04:16 PM BY: AShurtleff
OFFICE FILTER: RALEIGH
PROJECT NUMBER: 20201105.001A
gINT FILE: Klf_gint_master_2020
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_ENVIRONMENTAL LOG]

APPENDIX D

ANALYTICAL REPORT AND GRAPHS

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QED REDLAB RAPID ENVIRONMENTAL DIAGNOSTICS QROS

Hydrocarbon Analysis Results

Client: KLEINFELDER
Address:

Samples taken Thursday, August 8, 2019
Samples extracted Thursday, August 8, 2019
Samples analysed Thursday, August 8, 2019

Contact: ABI SHURTLEFF

Operator MAX MOYER

Project: NCDOT U-5757 ; PARCEL 65

F03640

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	P65 - B1 - 8	21.8	<0.55	<0.55	2.2	2.2	1.2	<0.17	<0.022	0	57.4	42.6	V.Deg.PHC 90.2%,(FCM)
s	P65 - B2 - 8	16.3	<0.41	<0.41	1.2	1.2	0.55	<0.13	<0.016	0	64	36	V.Deg.PHC 93.1%,(FCM),(P)
s	P65 - B3 - 5	10.1	<0.25	<0.25	<0.25	<0.25	<0.05	<0.08	<0.01	0	0	0	,(FCM),(BO)
s	P65 - B4 - 5	20.5	<0.51	<0.51	0.51	0.51	0.55	<0.16	<0.02	0	61.6	38.4	V.Deg.PHC 93.3%,(FCM)
s	P65 - B4 - 9	22.6	<0.57	<0.57	0.57	0.57	0.29	<0.18	<0.023	0	63.6	36.4	V.Deg.PHC 94.8%,(FCM)

Initial Calibrator QC check OK

Final FCM QC Check OK 97.2 %

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

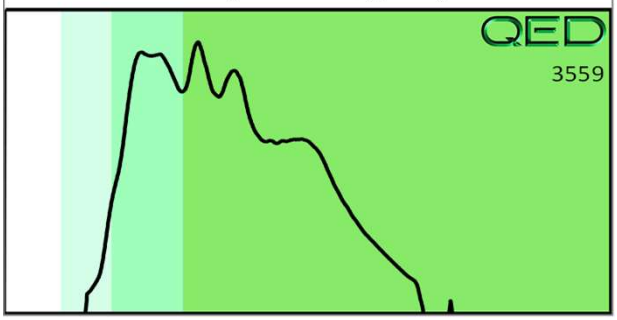
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

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

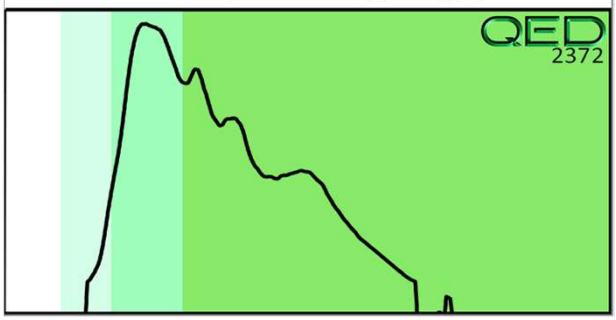
QED Hydrocarbon Fingerprints

Project: NCDOT U-5757 ; PARCEL 65 Thursday, August 8, 2019

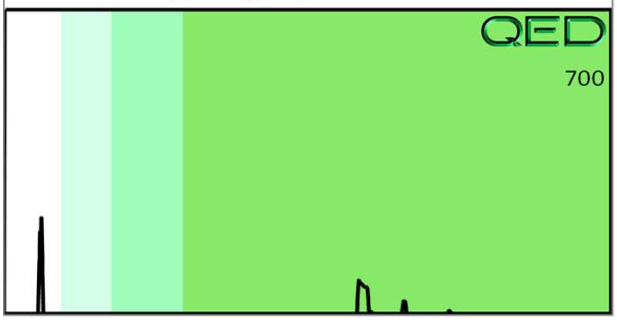
P65 - B1 - 8 : V.Deg.PHC 90.2%,(FCM)



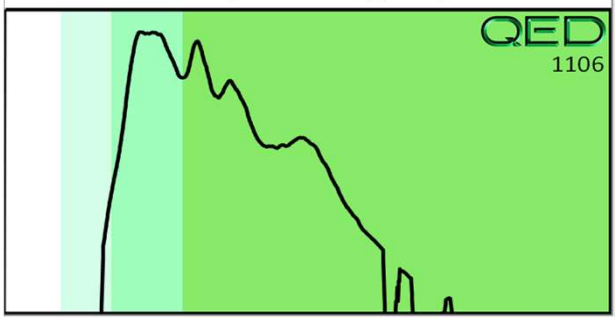
P65 - B2 - 8 : V.Deg.PHC 93.1%,(FCM),(P)



P65 - B3 - 5 : ,(FCM),(BO)



P65 - B4 - 5 : V.Deg.PHC 93.3%,(FCM)



P65 - B4 - 9 : V.Deg.PHC 94.8%,(FCM)