

Phase II Site Assessment Report

August 16, 2021
WBS Element: 44691.1.1
State Project: R-5759
Wilkes County

At

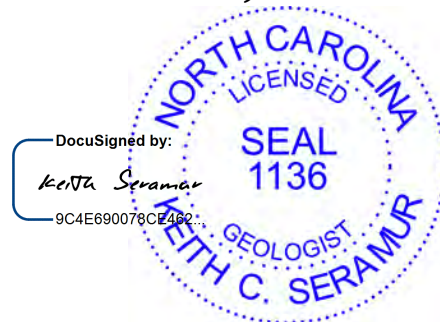
Parcel #060
James D. & Shirley A. Johnson Et Al. Property
2065 Statesville Road, North Wilkesboro, NC 28659
PIN #: 3877-79-6463
Facility ID No.: N/A
Groundwater Incident No.: N/A

Prepared For:

Mr. Gordon Box
NCDOT, Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, NC 27699-1589

Prepared By:

Seramur & Associates, PC
165 Knoll Drive
Boone, NC 28607



Keith C. Seramur, P.G.

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1.0 Introduction

1.1 General Site Background Information

Seramur & Associates, PC was contracted to complete a Phase II Site Assessment (PSA) at:

Parcel #060
James D. & Shirley A. Johnson Et Al. Property
PIN #: 3877-79-6463
2065 Statesville Road, North Wilkesboro, NC 28659
Facility ID No.: N/A

This parcel is located along the eastern side of Statesville Road approximately 600 feet south of the intersection with Old State Highway 60. The property is on a ridge crest west of the Fishing Creek stream valley, approximately 0.2 miles west of the stream. Bedrock in the area is mapped as Henderson Gneiss, a biotitic augen gneiss (Rankin, D.W., Espenshade, G.H., Shaw, K.W., and Neumann, R.B.. Geologic map of the west half of the Winston-Salem quadrangle, North Carolina-Virginia, U.S. Geologic Survey Misc. Inv. Series Map I-709-B, 1975).

A Notice to Proceed was obtained from NCDOT on June 25, 2021. Our area of investigation was limited to the area surrounding the northernmost building on the property and included the proposed Permanent Utility Easement (PUE), Permanent Drainage Utility Easement (DUE) and proposed and existing Right-of-Way (R/W) along the eastern side of Statesville Rd. (Figure 2). The Phase II Site Assessment scope of work was limited to completing a geophysical survey at the property to investigate the potential for unknown underground storage tanks. Background research for this project included reviewing historic aerial photographs and NCDEQ databases.

2.0 Scope of Work

2.1 Background Research

According to Wilkes County Tax Administration records, the parcel is owned by James D. and Shirley A. Johnson (ETAL). Available historic aerial photographs from the USGS EarthExplorer website and Google Earth Pro were reviewed.

The following NCDEQ databases were queried for incidents at Parcel #060:

- Active USTs
- UST Incident Map
- UST Database
- Hazardous Waste Sites

2.2 Geophysical Surveys

Seramur & Associates used the Pythagorean Theorem to establish one rectangular grid across the proposed R/W and easements for a geophysical survey at Parcel #060 (Figure 3). Grid 1 extends along the east edge of the property along Statesville Road. Geophysical grid data was collected along transects at a two-foot spacing. Additionally, five GPR transects were collected around the building.

The magnetometer data was collected with a GEM Systems GSM-19W Walking Overhauser

Magnetometer. This data was compiled in an Excel spreadsheet and a contour map of the magnetometer data was drafted using Golden Software's Surfer® modeling program. The lighter shades are lower magnetic readings and the darker colors are higher magnetic readings (Figure 4). Ferrous objects in the subsurface produce a magnetic field that differs from the surrounding soil and produces positive and negative magnetic anomalies.

A Ground Penetrating Radar (GPR) survey was completed across the grid using Geophysical Survey Systems, Inc. UtilityScan GPR System with a 350 MHz hyperstacking antenna. This GPR system is equipped with a calibrated survey wheel. The GPR data was downloaded and saved onto a computer. The GPR grid data has been processed and modeled using GPR Slice® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. Three-dimensional models of the GPR grid data were produced with GPR Slice® software. Three time slices (or depth slices) were imaged in each grid at depths of 0.3 to 0.6 feet, 1.6 to 1.9 feet and 3.8 to 4.1 feet (Figures 5 through 7). Each depth slice is a horizontal slice or plan view of the reflections across a 0.3-foot thickness of the subsurface. For example, the deep GPR depth slices for the grids show reflections in the radar data between depths of 2.7 and 3.0 feet.

The GPR transect data has been processed and modeled using Radan® software. The GPR data processing included adjusting time zero, completing a background removal and adjusting the time variable gain to enhance deep reflections. The profiles of the GPR transects are shown in Figures 8a and 8b. Significant anomalies are notated on the profile images.

2.3 Plate 1 – Photographs of Parcel #060 Photographs taken on July 11th, 2021



3.0 Results of Investigation

Parcel #060 currently operates as a Sweepstakes Parlor. Aerial images from EarthExplorer and Google Earth Pro indicate that this portion of Statesville Road has been developed since at least the 1960s. The 1963 photograph is unclear at this part of the road, but it appears that a different building was developed on the property at this time. The historic photographs do not appear to

show past use of the property that could indicate a potential environmental condition. NCDEQ databases document no incidents or registered USTs at the property.

SAPC personnel made a pedestrian reconnaissance of the property during the initial site visit on July 11, 2021. No evidence of a UST system was observed. A vault was observed off the southeast corner of the building. The Schonstedt locator did not detect ferrous objects in the subsurface at this location.

3.1 Geophysical Surveys

A grid of magnetometer data was collected on the western edge of the property along Statesville Road (Figure 4). A few linear sets of elevated magnetometer readings were recorded across the center of the grid. These elevated magnetometer readings are likely related to utility lines.

The shallow GPR depth slice (0.3-0.6 feet) for Grid 1 shows dispersed medium amplitude reflections in the center of the grid and a high amplitude rectangular anomaly in the north end of the grid (Figure 5). This anomaly is too shallow to be a UST, but could possibly be related to a utility line. The intermediate GPR depth slice (1.6-1.9 feet) for Grid 1 shows some quasi-linear (discontinuous) sets of reflection between the north end of the building and the road (Figure 6). The deep GPR depth slice (3.8 to 4.1 feet) shows a linear high amplitude set of reflections extending from the northwest corner of the building to the roadway (Figure 7). This could be a sewer line or other utility. The GPR profiles at this part of the grid show a hard reflector at depth that could be the bottom of an excavation trench (Inset A on Figure 7)

Five transects of GPR data were collected around the building at Parcel 60 (Figures 8a and 8b). Transects 1 and 2 were collected on the south side of the building. A possible utility trench is observed on both of these profiles between about 25 and 40 feet. Additionally, a few hyperbolae were observed on both of these profiles near the south side of the building and are likely utility lines. Transects 3 and 4 were collected on the north side of the building. A few hyperbolae were imaged on these transects. The magnetometer did not detect ferrous objects in the subsurface at this location. Numerous utility meters are located on this side of the building, so these hyperbolae are interpreted as underground utilities. Transect 5 was collected along the rear (east) side of the building and across the area near the subsurface vault. Evidence of a UST was not imaged at this location (Figure 9b). The GPR passed over an exposed electric wire at the surface around 76 feet through the transect and this produced “ringing” through the entire depth of the profile at this location.

3.2 Conclusions

Parcel #060 is currently operated as a Sweepstakes Parlor. The geophysical surveys did not find evidence of a UST or remnant infrastructure from a UST system at Parcel 60.

4.0 Recommendations

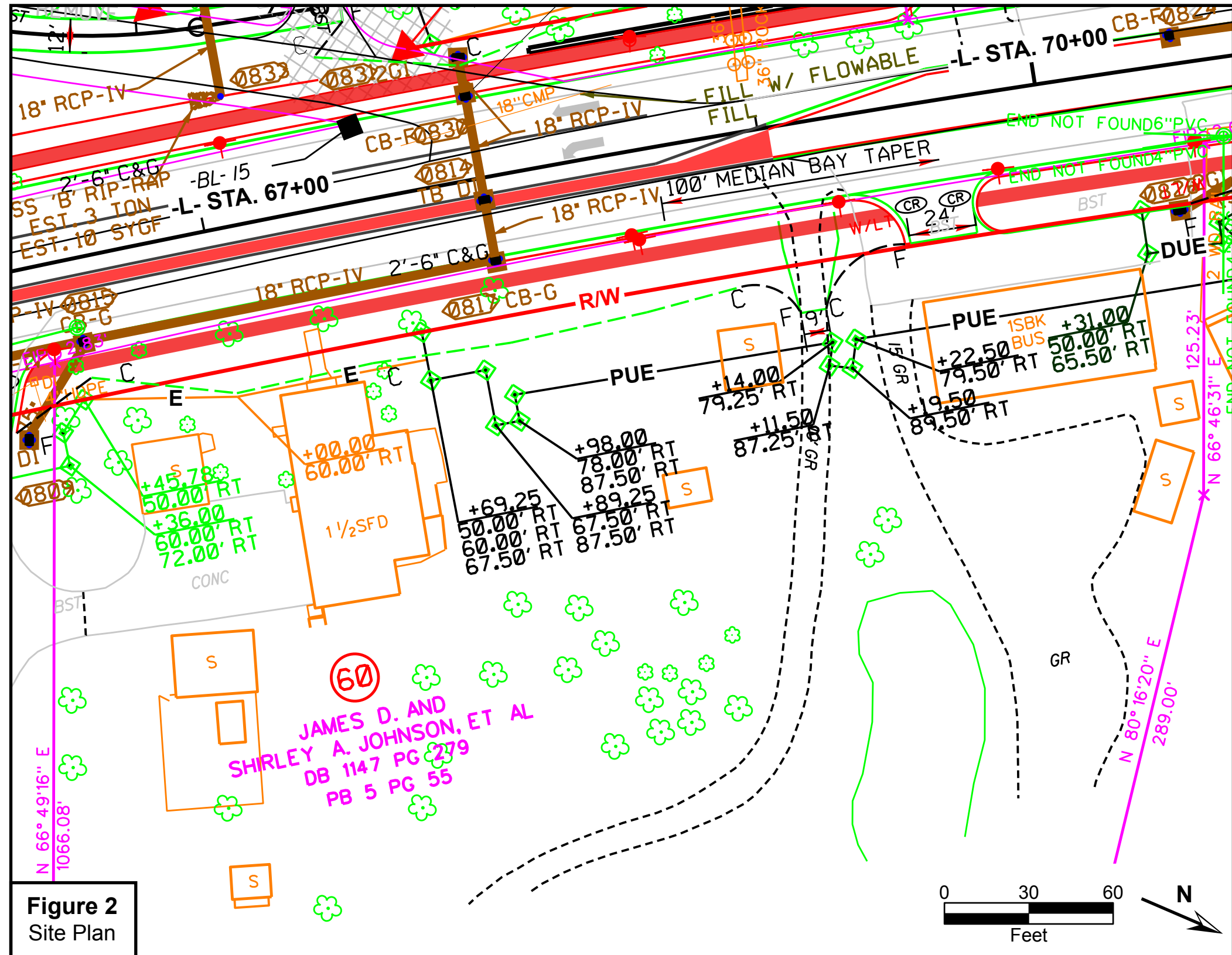
Seramur & Associates does not recommend any further assessment work for Parcel #060.

Appendix A

Figures



Figure 1 Site Location Map Source: U.S.G.S. The National Map	TIP Number: R-5759 Wilkes County, NC	J.D. and S.A. Johnson, et al. Property 2065 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 060 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	0 400 800 Feet N
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TIP Number: R-5759
Wilkes County, NC

J.D. and S.A. Johnson, et al. Property
2065 Statesville Road
North Wilkesboro, NC

Parcel I.D. #: 060
Facility I.D. #: N/A

Seramur & Associates, PC
Boone, NC

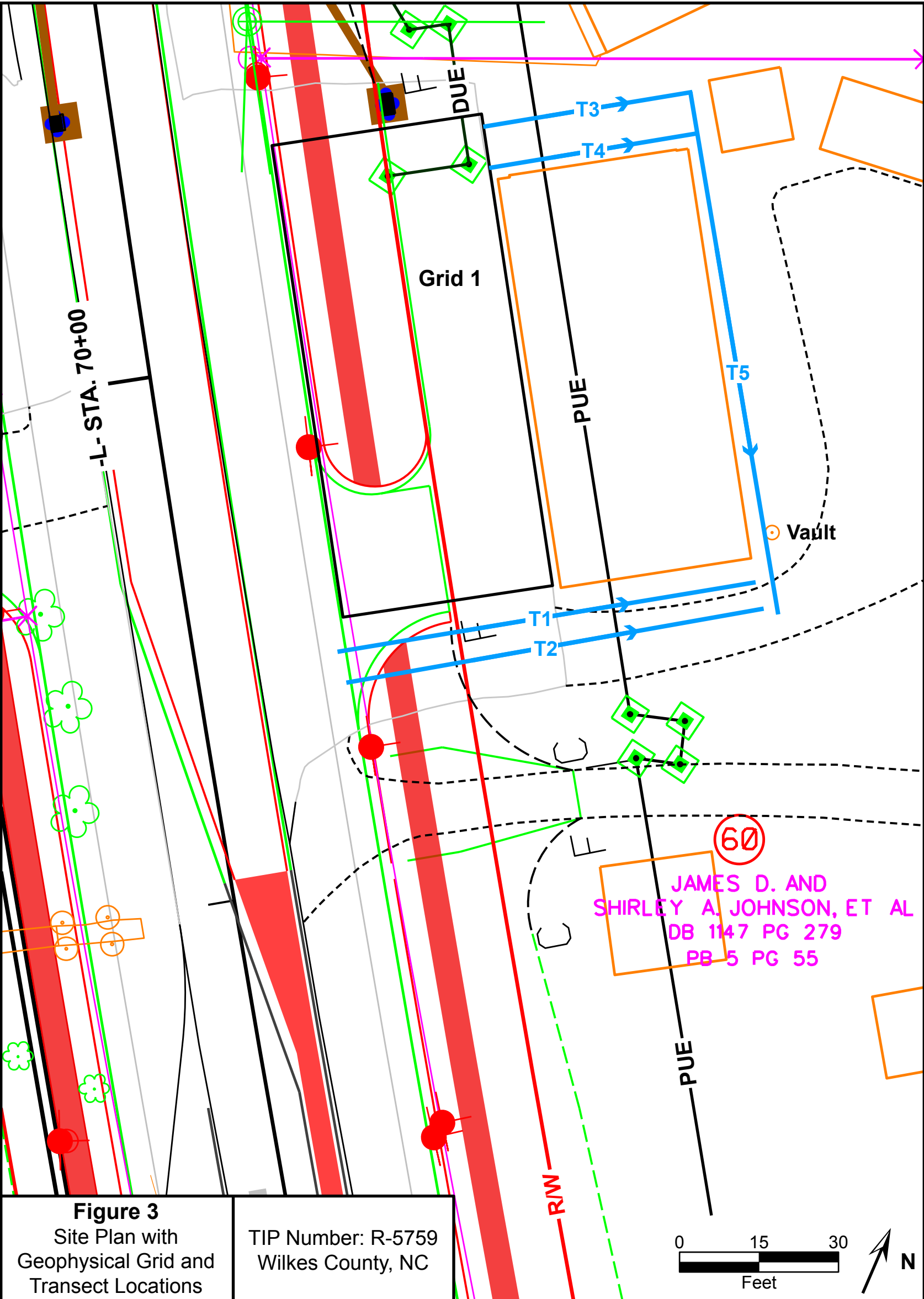


Figure 3 Site Plan with Geophysical Grid and Transect Locations	TIP Number: R-5759 Wilkes County, NC		
J.D. and S.A. Johnson, et al. Property 2065 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 060 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	

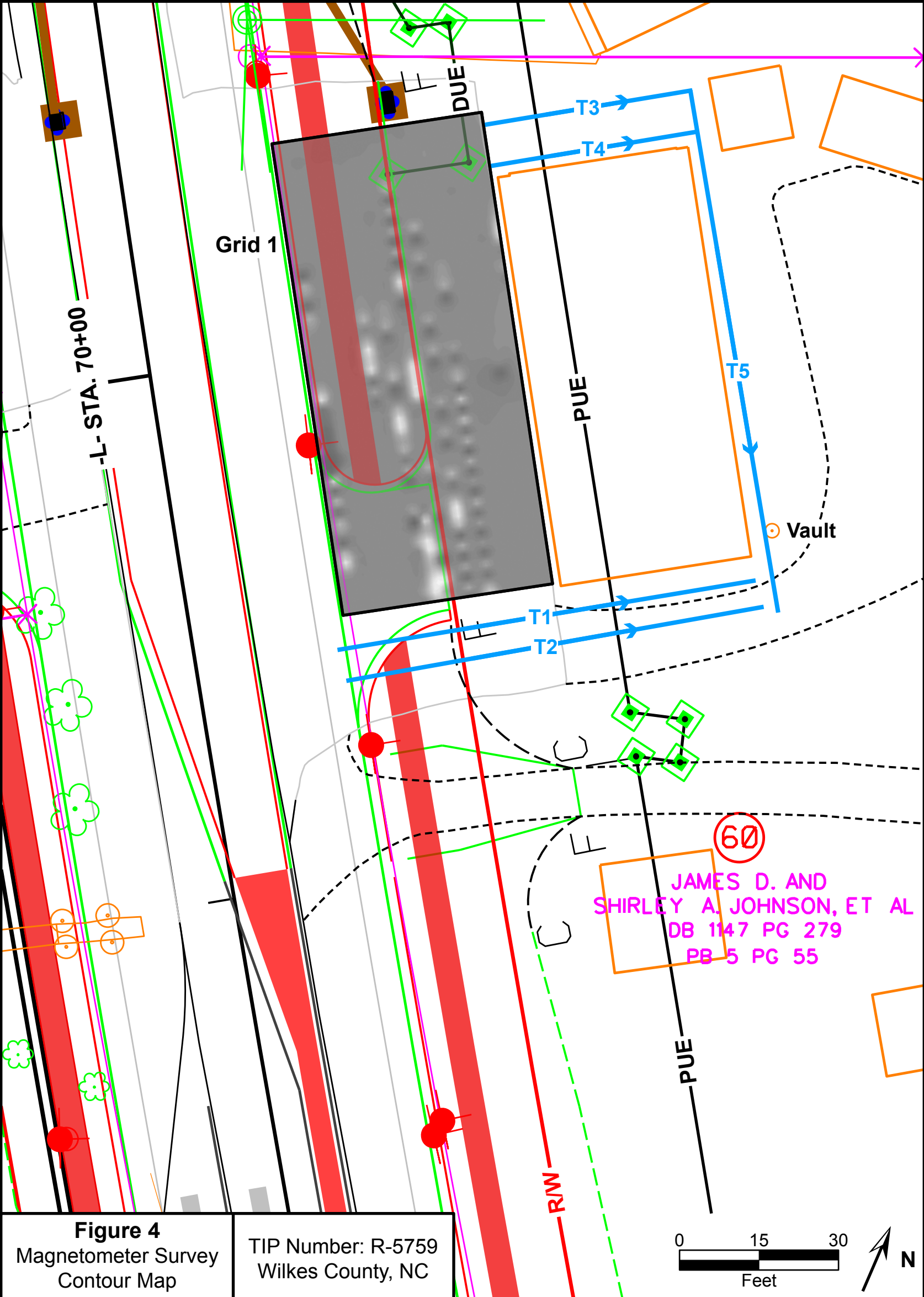


Figure 4 Magnetometer Survey Contour Map	TIP Number: R-5759 Wilkes County, NC	0 15 30 Feet N	
J.D. and S.A. Johnson, et al. Property 2065 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 060 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC	

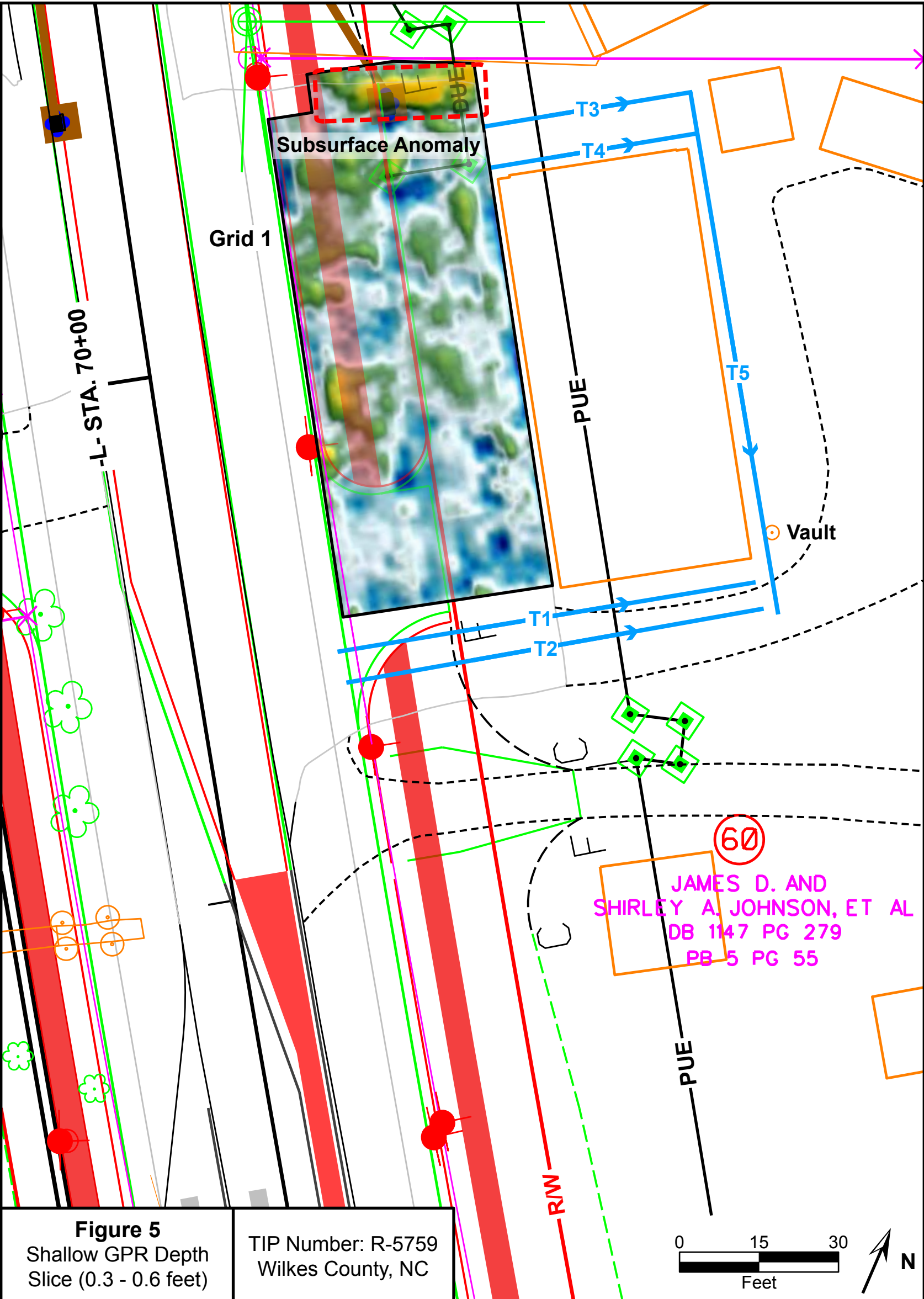
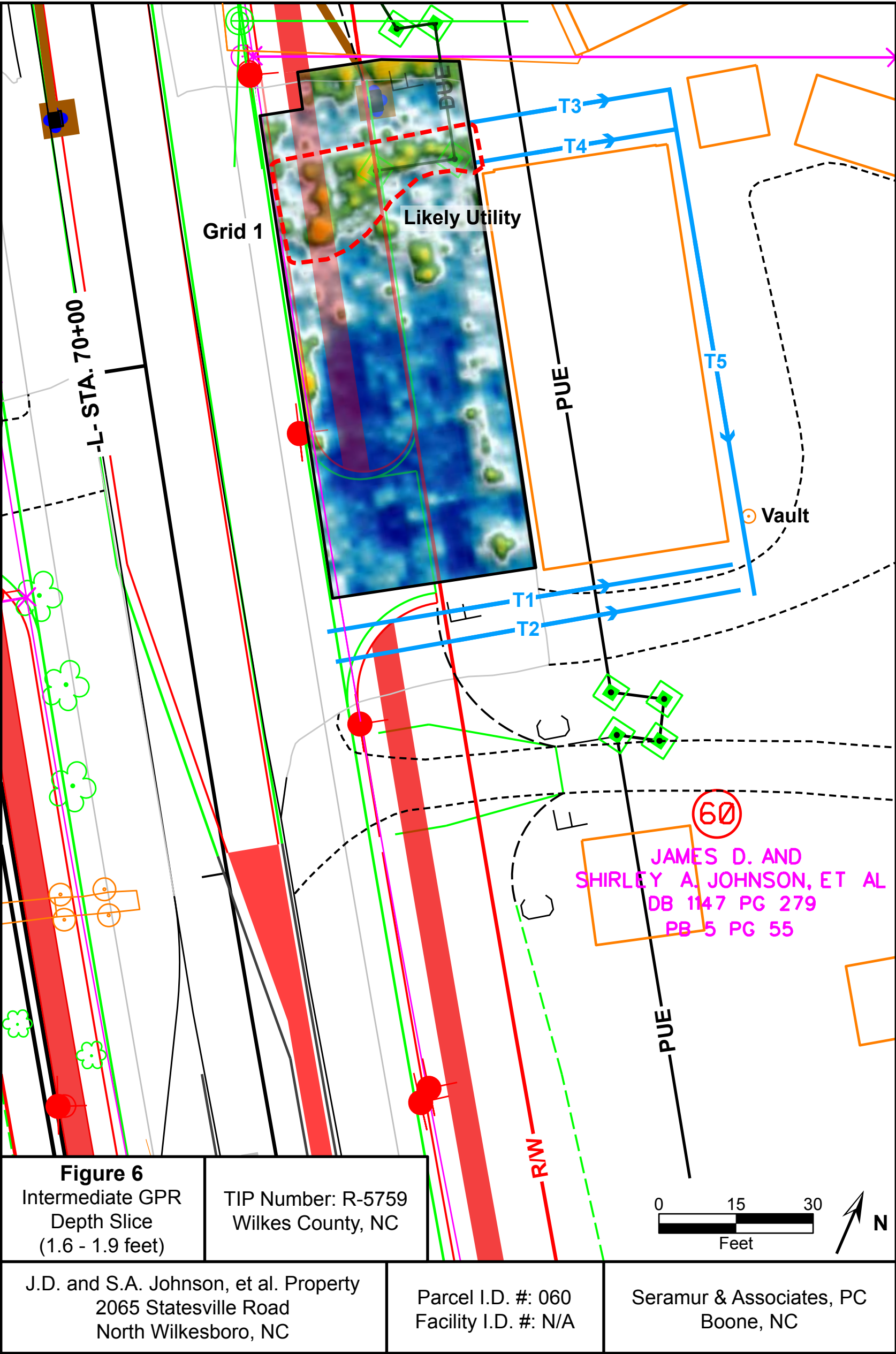
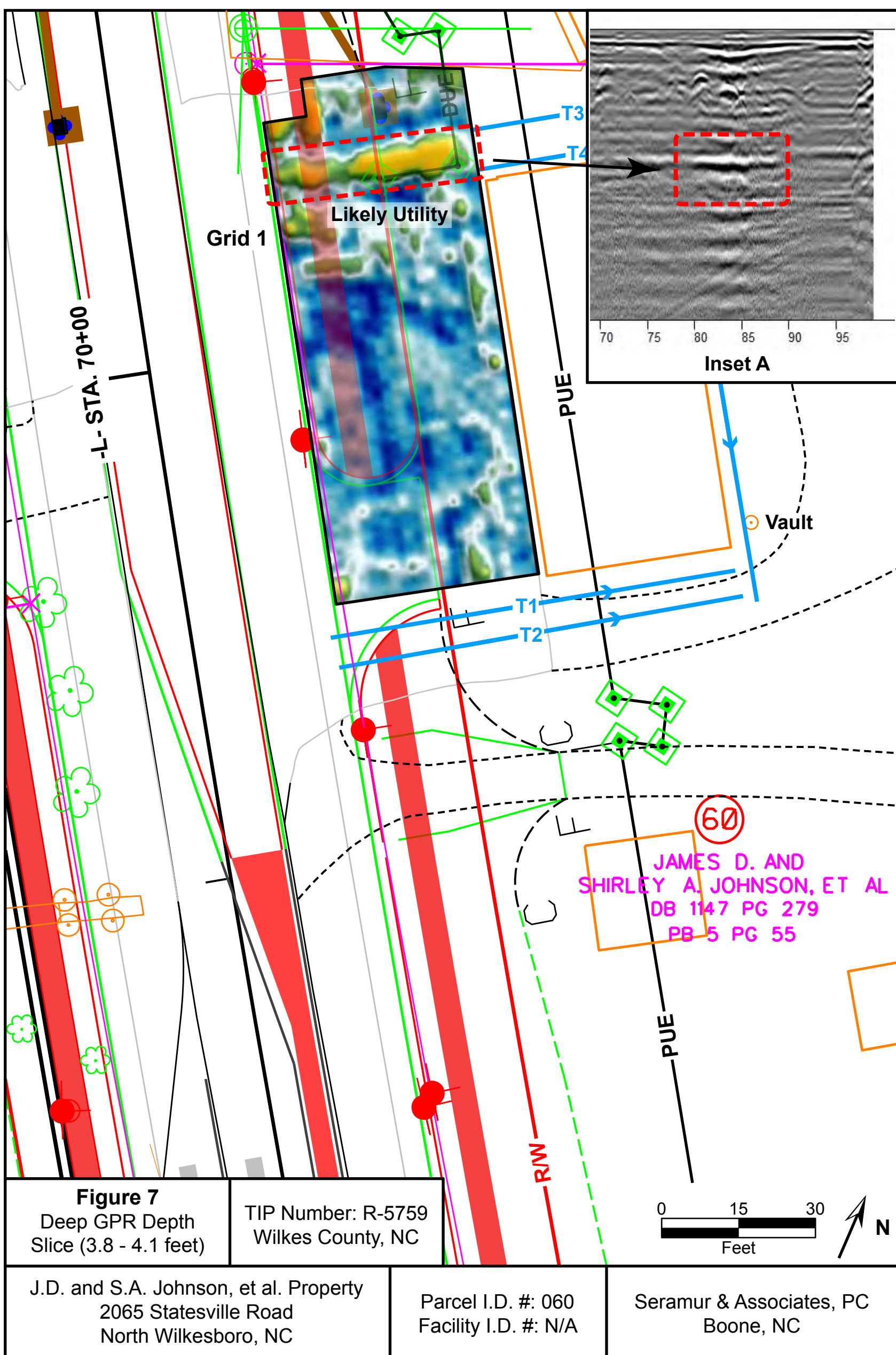
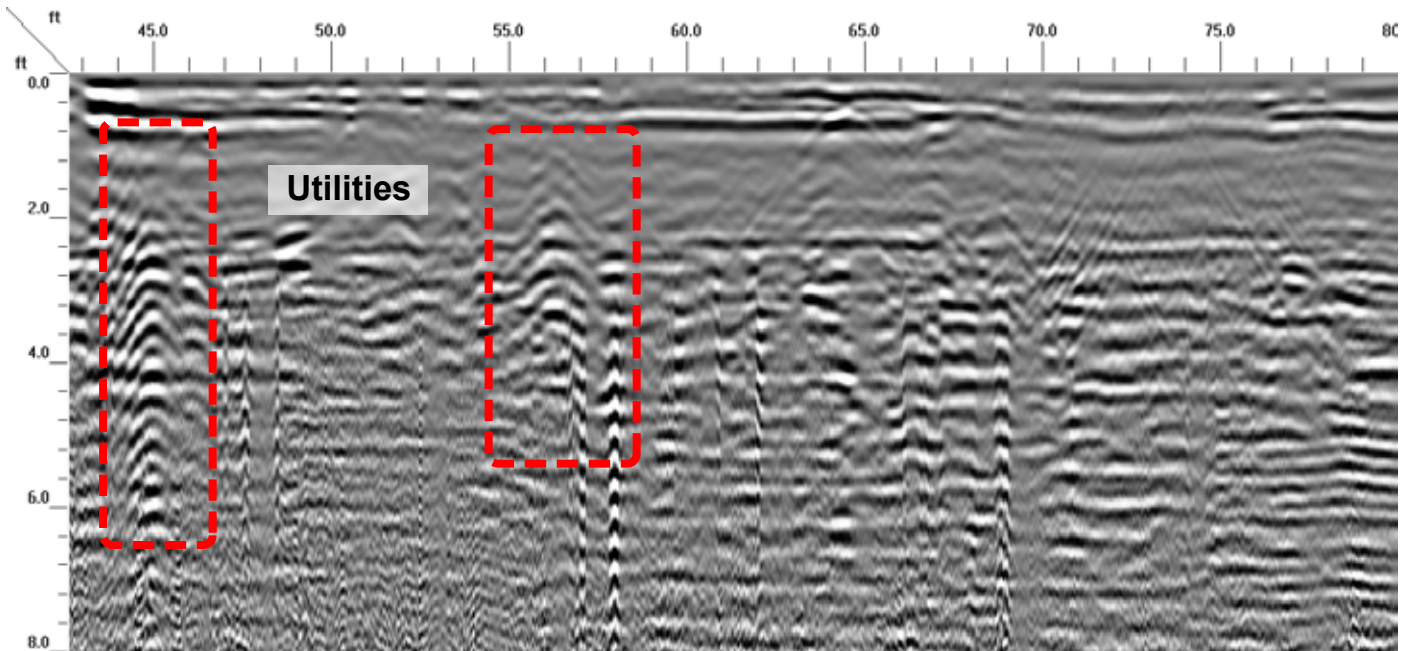
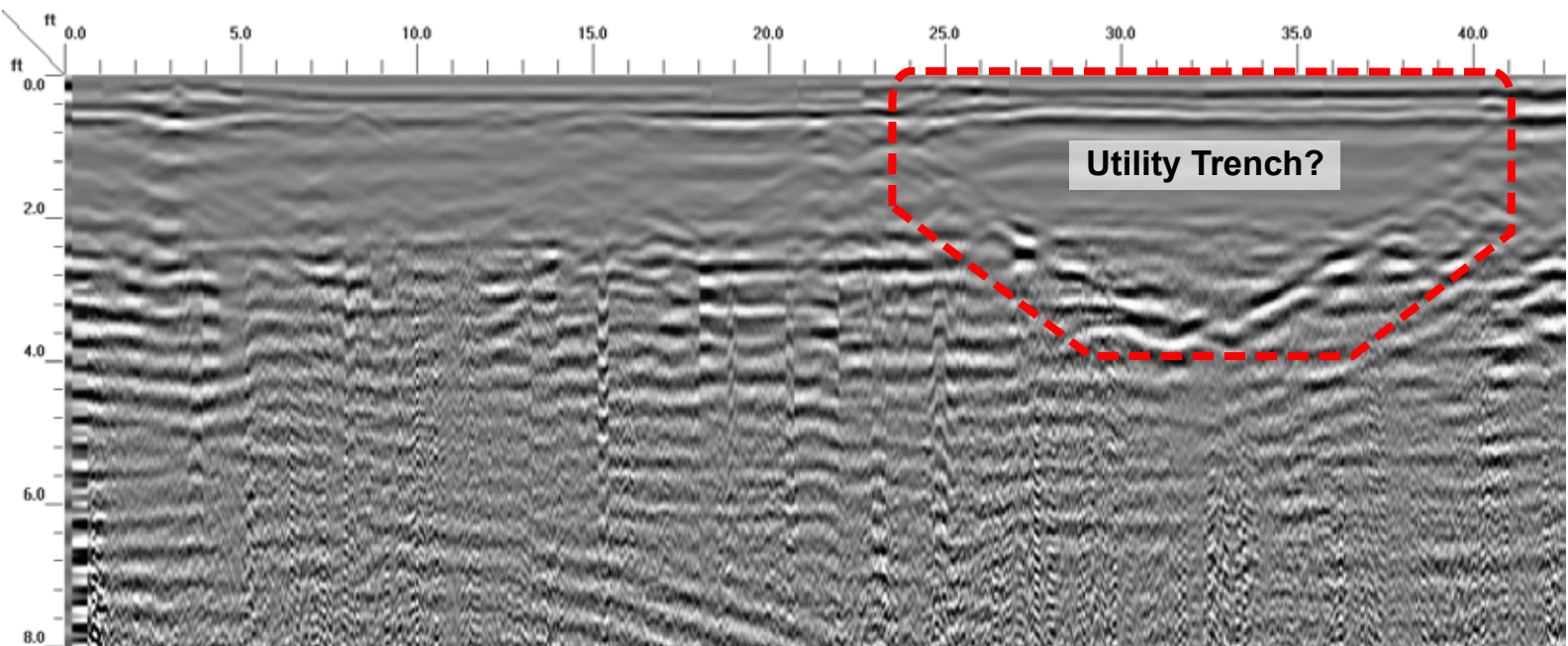


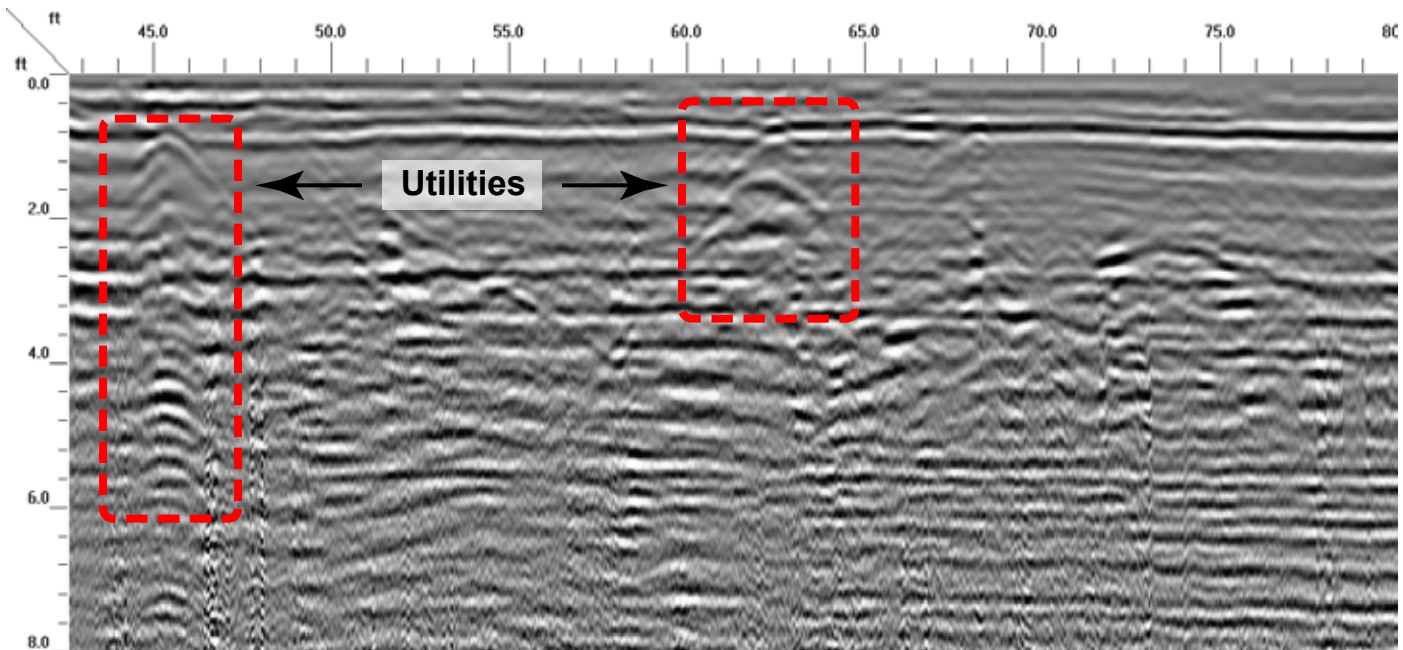
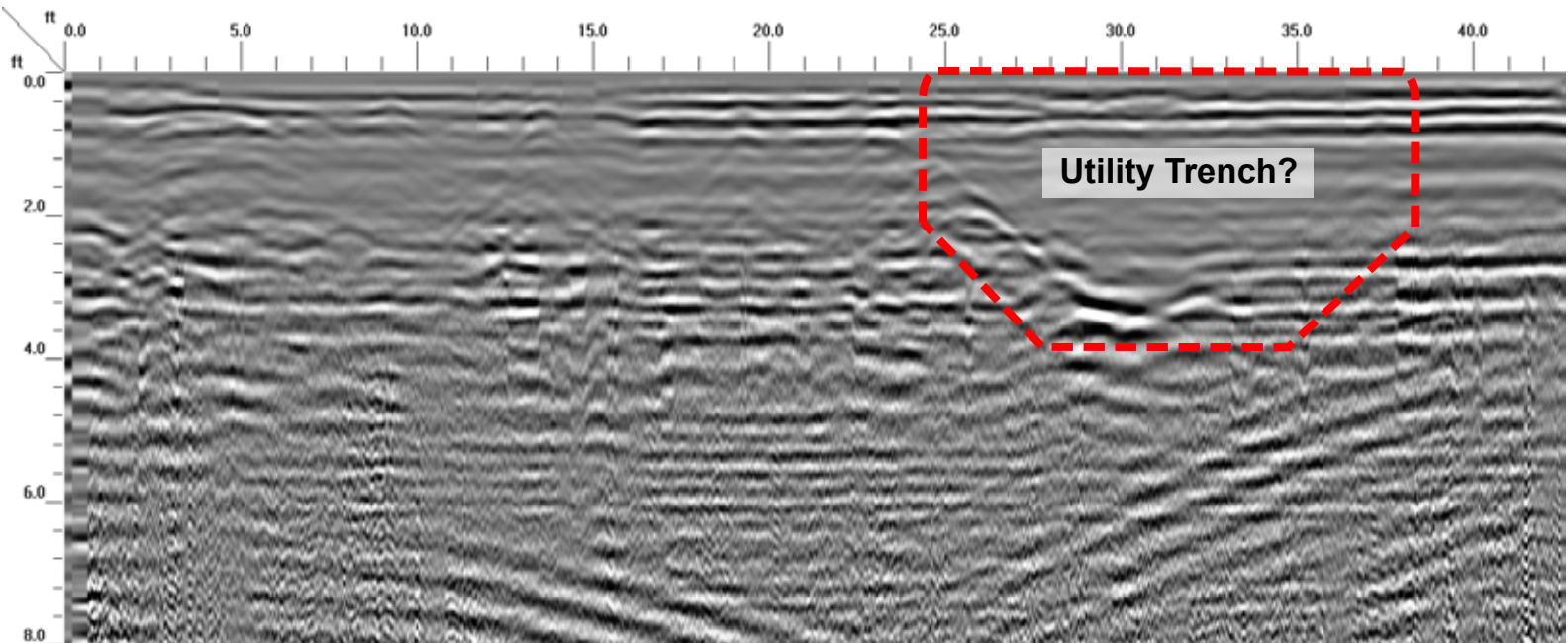
Figure 5 Shallow GPR Depth Slice (0.3 - 0.6 feet)	TIP Number: R-5759 Wilkes County, NC	0 15 30 Feet N
J.D. and S.A. Johnson, et al. Property 2065 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 060 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC





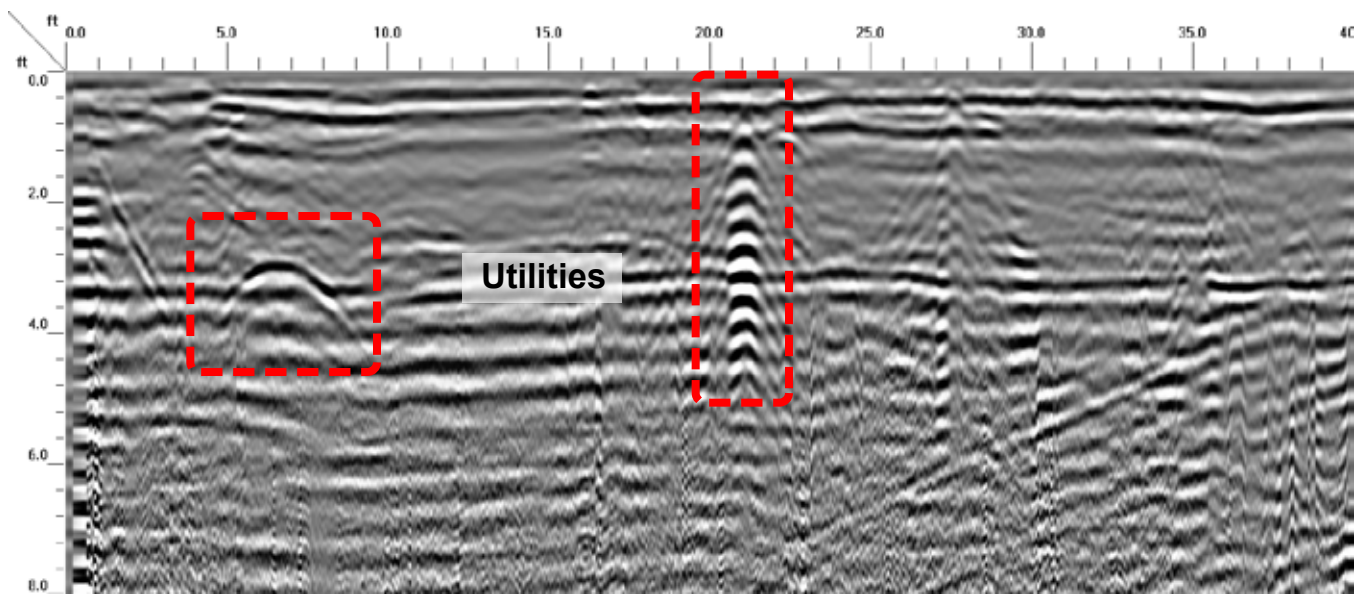


Transect 1

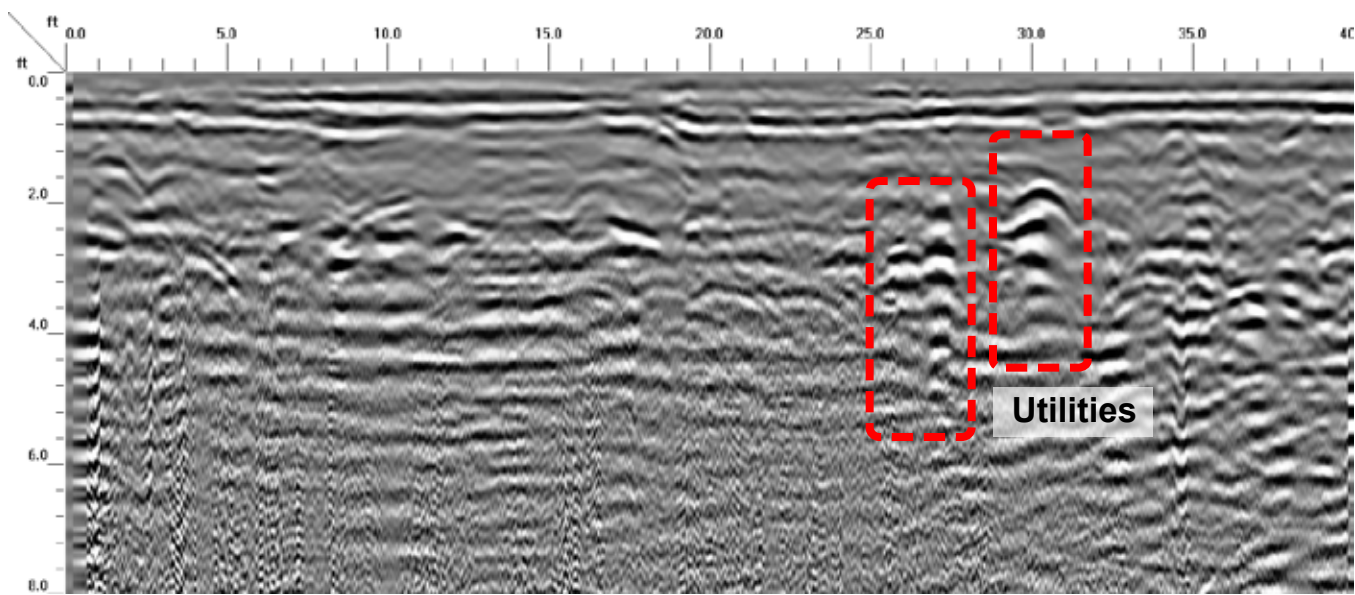


Transect 2

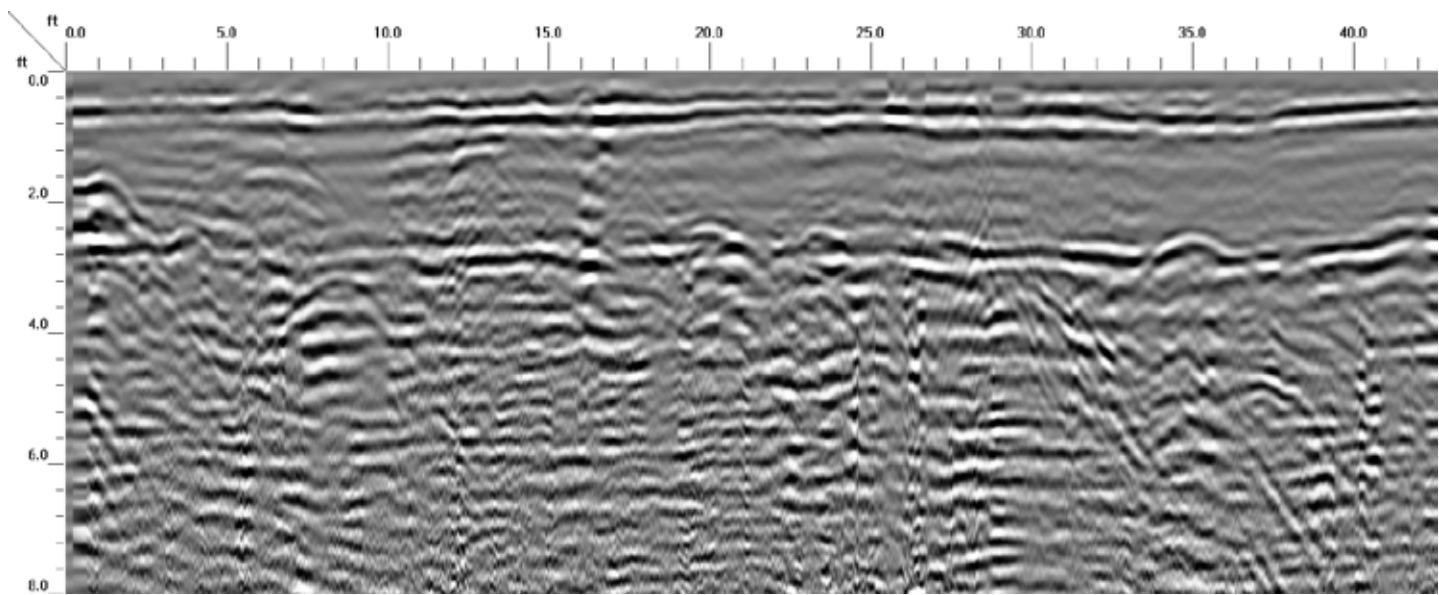
Figure 8a GPR Transects 1 and 2	TIP Number: R-5759 Wilkes County, NC	J.D. and S.A. Johnson, et al. Property 2065 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 060 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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Transect 3



Transect 4



Transect 5

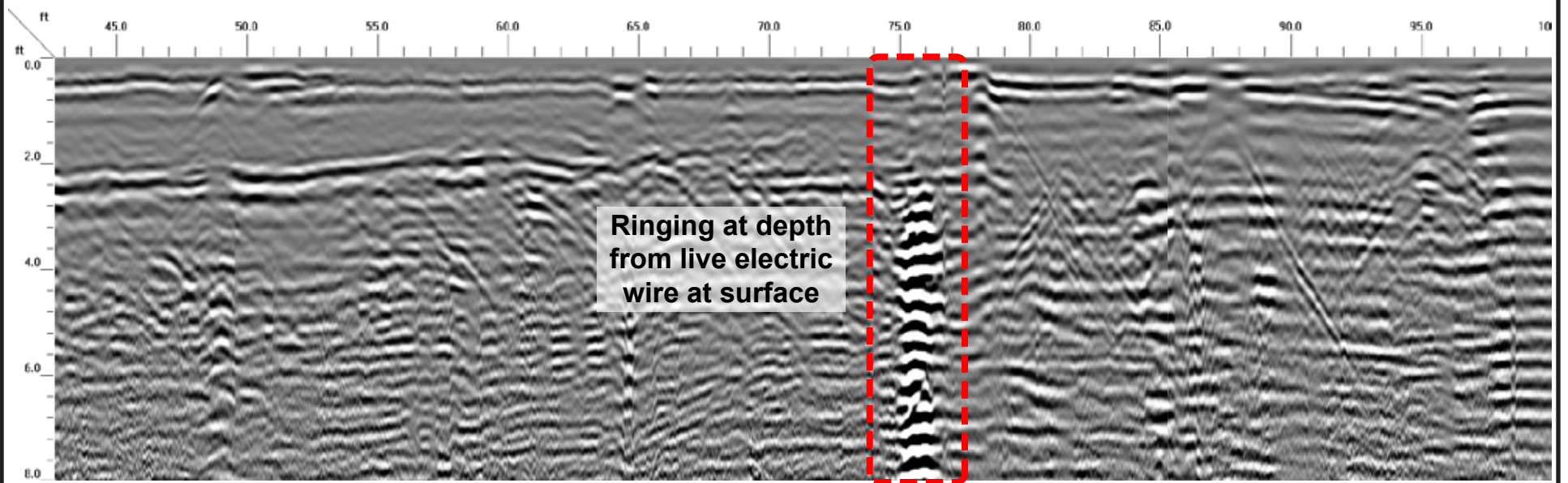


Figure 8b GPR Transects 3 through 5	TIP Number: R-5759 Wilkes County, NC	J.D. and S.A. Johnson, et al. Property 2065 Statesville Road North Wilkesboro, NC	Parcel I.D. #: 060 Facility I.D. #: N/A	Seramur & Associates, PC Boone, NC
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September 10, 2021
Kleinfelder File No. RAL21R130255

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 63, James Clayton Faw AKA KLR Real Estate, LLC
WBS Element No. 44691.1.1, TIP No. R-5759
Proposed widening of NC 115 from US 421 to 2nd Street in Wilkesboro and
North Wilkesboro, Wilkes County, NC
Kleinfelder Project No. 20221238.001A**

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.

Evan D. Amber
Environmental Staff Professional I

Michael J Burns
Environmental Program Manager, LG

EDA/MJB:asp

R-5759-P63
20221238.001A | RAL21R130255
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1941 Statesville Road
September 10, 2021
www.kleinfelder.com



**PRELIMINARY SITE ASSESSMENT REPORT
PARCEL 63, JAMES CLAYTON FAW
AKA KLR REAL ESTATE, LLC
PIN 2203474 / 2206795
1941 STATESVILLE ROAD
NORTH WILKESBORO, WILKES COUNTY, NORTH CAROLINA**

**NCDOT WBS ELEMENT 44691.1.1
STATE PROJECT R-5759
PROPOSED WIDENING OF NC 115 FROM US 421 TO 2ND
STREET IN WILKESBORO AND NORTH WILKESBORO**

KLEINFELDER PROJECT NO. 20221238.001A

SEPTEMBER 10, 2021

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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

PRELIMINARY SITE ASSESSMENT REPORT
PARCEL 63, JAMES CLAYTON FAW AKA KLR REAL ESTATE, LLC
PIN 2026795 / 2206795
1941 STATESVILLE ROAD
NORTH WILKESBORO, WILKES COUNTY, NORTH CAROLINA

NCDOT WBS ELEMENT 44691.1.1
STATE PROJECT R-5759
PROPOSED WIDENING OF NC 115 FROM US 421 TO 2ND STREET IN WILKESBORO AND
NORTH WILKESBORO

Prepared by:



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Reviewed by:



Michael J. Burns
Environmental Program Manager, LG

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Raleigh, North Carolina 27560
P | 919.755.5011

September 10, 2021

Kleinfelder Project No. 20221238.001A

PRELIMINARY SITE ASSESSMENT REPORT

Site Name and Location: Parcel 63
1941 Statesville Road
North Wilkesboro, Wilkes County, North Carolina

Latitude and Longitude: 36.15021°N, -81.11023°W

County Parcel Number 2203474 / 2206795

Facility ID Number: 00-0-0000008002

Leaking UST Incident: N/A

State Project No.: R-5759

NCDOT Project No.: NCDOT WBS Element 44691.1.1

Description: Proposed widening of NC 115 from US 421 to 2nd Street in Wilkesboro and North Wilkesboro

Date of Report: September 10, 2021

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.

Michael J Burns, LG
NC License No. 1645

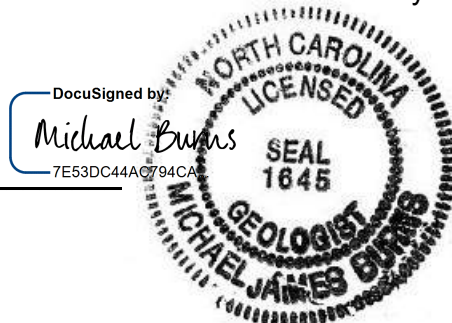


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- 2 Site Plan

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**PRELIMINARY SITE ASSESSMENT
PARCEL 63, JAMES CLAYTON FAW
PIN 2203474 / 2206795
1941 STATESVILLE ROAD
NORTH WILKESBORO, WILKES COUNTY, NORTH CAROLINA**

**NCDOT WBS ELEMENT 44691.1.1
STATE PROJECT R-5759
PROPOSED WIDENING OF NC 115 FROM US 421 TO 2ND STREET IN WILKESBORO AND
NORTH WILKESBORO**

1 INTRODUCTION

Kleinfelder, Inc. (Kleinfelder) has prepared this Preliminary Site Assessment (PSA) report to document assessment activities performed on Parcel 63 (the assessment area is hereafter referred to as the “Project Study Area”). The Project Study Area consists of the western and southern portions of a parcel that are within the right-of-way and/or easement on Wilkes County Tax Assessor’s Office Parcel Numbers 2203474 / 2206785. Parcel 63 is currently occupied by a BP gas station. Parcel 63 is located along the eastern side of NC 115 (US 421 BUS), north of NC State Road (SR) 2318, in North Wilkesboro, Wilkes County, North Carolina (Figure 1).

Based on the information provided in the Pre-Scoping Comments letter, dated September 20, 2018, prepared by the North Carolina Department of Transportation (NCDOT), the parcel (listed as Site # 09 in the letter) was reported as an apparently active gas station with four (4) underground storage tanks (USTs) registered to Facility ID 8002. As such, the purpose of the PSA was to evaluate whether contaminated soil is 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 63 has a listed owner of James Clayton Faw AKA KLR Real Estate, LLC. The parcel’s street address is 1941 Statesville Road. The parcel consists of an active BP retail gasoline filling station, including three fuel islands, an UST bed in the northern area of the parcel, a convenience store in the eastern area of the parcel, and maintained grass areas surrounding the parcel. The parcel is bounded by vacant, vegetated land to the north, beyond which is an apparently inactive gas station (owned by Service Distributing Co., Inc AKA Umana, Kenneth E); by NC 115 to the west, beyond which are residential homes and wooded land; by NC SR 2318 to the south, beyond which is commercial land associated with Wilkes Pools & Spas; and by wooded areas to the east,

beyond which are residential homes. Photographs of the Project Study Area are provided in Appendix A.

1.2 SCOPE OF WORK

Kleinfelder conducted this PSA in accordance with the NCDOT's June 1, 2021, Request for Technical and Cost Proposal (RFP) and Kleinfelder's June 16, 2021, Technical and Cost Proposal. The NCDOT granted a formal Notice to Proceed on June 21, 2021.

2 HISTORY

2.1 PARCEL USAGE

The parcel consists of an active BP retail gasoline filling station and convenience store.

The September 20, 2018 Pre-Scoping Comments letter included information about four (4) USTs registered to Facility ID 8002 on the property. The proposed NCDOT easement passes through a portion of the active UST bed.

Kleinfelder conducted historical research to determine whether additional environmental listings were identified for Parcel 63. The following are the results of the additional research:

- Based on a review of historical aerial photographs using Google Earth Pro and the NCDOT Historical Aerial Imagery Index, the site appeared to have similar development since at least 1985. Historical imagery was not available prior to this year.
- Kleinfelder searched the registered underground storage tank (UST) database, maintained by the NCDEQ. The site was listed as Facility ID 00-0-00000008002, which operated three (3) gasoline USTs and one (1) diesel UST owned by Fast Track Inc Co: three (3) 10,000-gallon gasoline USTs were installed on May 7, 1985, and one (1) 6,000-gallon diesel UST was installed on May 7, 1985. All USTs are constructed of single wall steel and are currently active. This database did not contain any known incident records.
- No other listings for Parcel 63 were identified on any of the available NCDEQ pollution incident databases.

2.2 FACILITY ID NUMBERS

Kleinfelder reviewed the NCDEQ UST database for Parcel 63. The parcel was identified as having four (4) active USTs and is listed as Facility ID: 00-0-00000008002.

2.3 GROUNDWATER INCIDENT NUMBERS

No active groundwater incidents are known to be associated with Parcel 63 at this time.

3 OBSERVATIONS

3.1 GROUNDWATER MONITORING WELLS

No active groundwater monitoring wells were observed on Parcel 63 at the time of site exploration, Monday, August 2, 2021. However, an approximately 1 x 1-ft square concrete area was observed between the UST bed and the fuel islands in the northern area of the Project Study Area, which is possibly indicative of a historical groundwater monitoring well.

3.2 ACTIVE USTS

Based on review of the NCDEQ UST database, site visits and previous reports, there are four (4) active USTs located on site. The USTs are connected to the fuel islands by underground product lines.

3.3 OTHER FEATURES APPARENT BEYOND PROJECT STUDY AREA

The Project Study Area consisted of the western and southern portions of the parcel within the NCDOT right-of-way or easement. Outside of the Project Study Area, in the eastern portion of the property, a convenience store and parking lot area was observed. In the eastern portion of the parcel, adjacent to the parking lot, an approximately 500-gallon kerosene above ground storage tank (AST) was observed. Stressed vegetation and a slight petroleum odor were noted in the vicinity of the AST. A photograph of the kerosene AST is provided in Appendix A. There were no other features of concern observed in other portions of the parcel beyond the Project Study Area.

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 14 and 16, 2021. Pyramid utilized electromagnetic (EM) induction technology and ground penetrating radar (GPR) to locate potential geophysical anomalies and potential USTs within the Project Study Area.

A total of ten (10) EM anomalies were identified, nine (9) of which were directly attributed to visible cultural features at the ground surface, including reinforced concrete, signs, drop inlets, a manhole, a donation box, and utilities. One (1) EM anomaly was associated with four known USTs located beneath the asphalt in the northern portion of the parking lot. Known USTs #1-3 are all approximately 25-ft long by 9-ft wide, and Known UST #4 is approximately 20-ft long by 9-ft wide.

There were no EM or GPR responses that were not associated with known/suspected utilities, USTs, or buried metallic debris.

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 the presence of soil contamination along the existing right-of-way and/or easement to evaluate whether known impact is present in this area and maybe migrating off-site. The soil borings were planned to be advanced to maximum depths of 12-feet below the ground surface (ft bgs) since the depth of the UST basin may be up to 10 ft bgs. Field screening using a photoionization detector (PID) was conducted at 1-foot intervals beginning from the ground surface to total boring depth. The soil sample with the highest PID reading above background or the sample from the maximum drilled depth was 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 South Atlantic Environmental Drilling and Construction Company (SAEDACCO) to perform the drilling on-site on August 2, 2021. SAEDACCO advanced seven (7) soil borings (P63-B1 through P63-B7) by a combination of hand auger and direct-push technology at locations specified by Kleinfelder. The soil boring locations were identified in the field using a GPS. The borings were located within the right-of-way adjacent to the UST bed, along NC 115 adjacent to the fuel islands, and along NC 2318 with three borings in maintained grass areas and one boring in the parking lot area as close to the kerosene AST as the right-of-way permitted. The soil boring locations are shown on Figure 2.

Soil samples were collected by hand auger to 5-ft bgs, and then by driving Macro Core™ samplers in 5-foot intervals to boring termination (where direct-push technology was applied). For the soils collected via hand auger, a sample was collected from the end of the auger after each 1-ft interval of soil was removed and soils were classified as each auger sample was removed. For the soils collected via MacroCore™ samplers, each soil core was cut open, the soil samples were classified, and the soil divided into 1-foot sections. Each 1-foot section, collected via either method, was screened in the field using a PID. The PID readings are summarized in Table 1.

Soils were determined to be primarily a brown and reddish-brown silt and silty clay, and secondarily contain brown and yellowish-brown sand and silty sands, except in the case of soil boring P63-B5 which encountered partially-weathered rock or bedrock at 9-ft bgs, and boring P63-B6 which contained rock fragments and lenses of pink and white silt. Groundwater was not encountered in any of the borings at the termination depths of 12-ft 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, between one (1) and three (3) of the samples from each boring was selected for on-site laboratory analysis. Four (4) samples from soil boring P63-B1 from 9 to 12-ft bgs exhibited the highest PID readings of 4.0 – 6.2 parts per million (ppm).

Selected 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 known current use of petroleum products on Parcel 63. The UVF analysis also provided data regarding Environmental Protection Agency 16 total Polycyclic Aromatic Hydrocarbons (PAHs), and Benzo(a)pyrene (BaP).

5 RESULTS

5.1 GEOPHYSICAL INVESTIGATION

The EM and GPR surveys did not identify unknown geophysical anomalies within the Project Study Area.

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 above NCDEQ Action Levels. A summary of soil sample PID readings are presented in Table 1, and laboratory analytical results are presented in Table 2. The laboratory results associated with each boring are presented on Figure 2. 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

Kleinfelder did not identify soil impact in the current right-of-way.

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 identified four (4) known USTs located beneath the asphalt in the northern portion of the parking lot. Known USTs #1-3 are all approximately 25-ft long by 9-ft wide and Known UST #4 is approximately 20-ft long by 9-ft wide. The GPR and EM investigation did not identify unknown features.
- The site is listed in the NCDEQ UST Database as Facility ID 00-0-0000008002. Four (4) USTs are located on site and are currently active. No indication of the presence or likely presence of inactive USTs was observed on Parcel 63 at the time of site exploration, August 2, 2021. An approximately 500-gallon kerosene AST was observed in the eastern portion of the parcel, outside of the Project Study Area, with stressed vegetation and a slight petroleum odor noted at the time of site reconnaissance.
- No soil impact was detected in borings advanced within the current right-of-way above the NCDEQ Action Levels for TPH GRO and DRO.
- Groundwater was not encountered in the soil borings at a depth of 12 ft bgs.

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 63 in North Wilkesboro, Wilkes County, North Carolina.

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

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.

TABLES

Table 1: Soil Sample Screening Results

Date	Sample ID	Depth (ft)	PID Reading	Notes
8/2/2021	R-5759-P63-B1	1	0.0	
		2	0.0	
		3	0.0	
		4	0.0	
		5	0.0	
		6	0.2	UVF Analysis
		7	0.0	
		8	0.9	UVF Analysis
		9	4.5	
		10	4.4	
		11	6.2	UVF Analysis
		12	4.0	
8/2/2021	R-5759-P63-B2	1	0.0	
		2	0.0	
		3	0.0	
		4	0.0	
		5	0.0	
		6	0.0	
		7	0.0	
		8	0.0	
		9	0.0	
		10	0.0	
		11	0.0	
		12	0.0	UVF Analysis
8/2/2021	R-5759-P63-B3	1	0.2	
		2	0.0	
		3	0.0	
		4	0.0	
		5	0.2	UVF Analysis
		6	0.0	
		7	0.0	
		8	0.0	
		9	0.0	
		10	0.0	
		11	0.0	
		12	0.0	UVF Analysis
8/2/2021	R-5759-P63-B4	1	0.3	
		2	0.0	
		3	0.1	
		4	1.1	UVF Analysis
		5	0.3	UVF Analysis
		6	0.0	UVF Analysis
		7	0.0	
		8	0.0	
		9	0.0	
		10	0.1	
		11	0.1	
		12	0.0	UVF Analysis
8/2/2021	R-5759-P63-B5	1	0.0	
		2	0.0	
		3	0.0	
		4	0.0	
		5	0.1	UVF Analysis
		6	0.0	
		7	0.0	
		8	0.0	
		9	0.0	
		10	0.0	
		11	0.0	
		12	0.0	UVF Analysis
8/2/2021	R-5759-P63-B6	1	0.0	
		2	0.0	
		3	0.0	
		4	0.0	
		5	0.0	
		6	0.0	
		7	0.0	
		8	0.0	
		9	0.0	
		10	0.0	
		11	0.0	
		12	0.0	UVF Analysis
8/2/2021	R-5759-P63-B7	1	0.0	
		2	0.0	UVF Analysis
		3	0.0	
		4	0.0	
		5	0.0	UVF Analysis
		6	0.0	
		7	0.0	
		8	0.0	
		9	0.0	
		10	0.0	
		11	0.0	
		12	0.0	UVF Analysis

Notes:

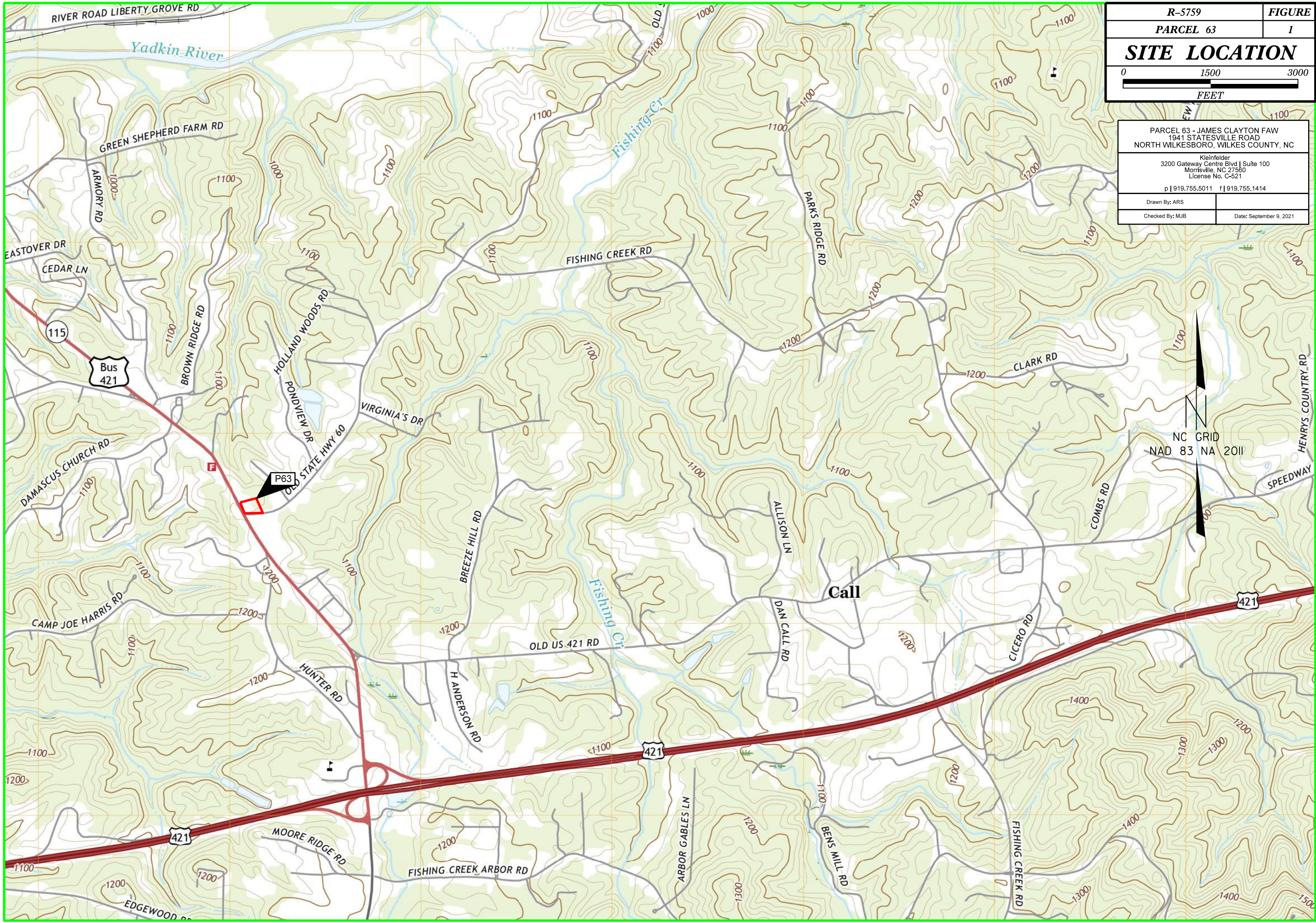
- 1) PID = Photoionization Detector
- 2) PID readings in parts per million (ppm)
- 3) NA = Not Analyzed

TABLE 2: Soil Sample Analytical Summary

Parameter	Analytical Results																Comparison Criteria		
	Soil Sample Results																		
Sample ID	P63-B1-6	P63-B1-8	P63-B1-11	P63-B2-12	P63-B3-5	P63-B3-12	P63-B4-4	P63-B4-5	P63-B4-6	P63-B4-12	P63-B5-5	P63-B5-12	P63-B6-12	P63-B7-2	P63-B7-5	P63-B7-12	State Action Level	Protection of Groundwater	Residential Health
PID Reading (ppm)	0.2	0.9	6.2	0.0	0.2	0.0	1.1	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0			
Collection Depth (ft bgs)	6	8	11	12	5	12	4	5	6	12	5	12	12	2	5	12			
Collection Date	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21	8/2/21			
UVF Method																			
Diesel Range Organics	23.8	15.5	1.4	<0.20	<0.19	1.3	37	44	0.06	<0.21	0.3	<0.14	<0.20	<0.12	<0.18	<0.11	100	--	--
Gasoline Range Organics	<0.50	22.9	<0.40	<0.50	<0.40	<0.50	<0.40	<0.50	<0.40	<0.50	<0.50	<0.30	<0.50	<0.30	<0.40	<0.27	50	--	--

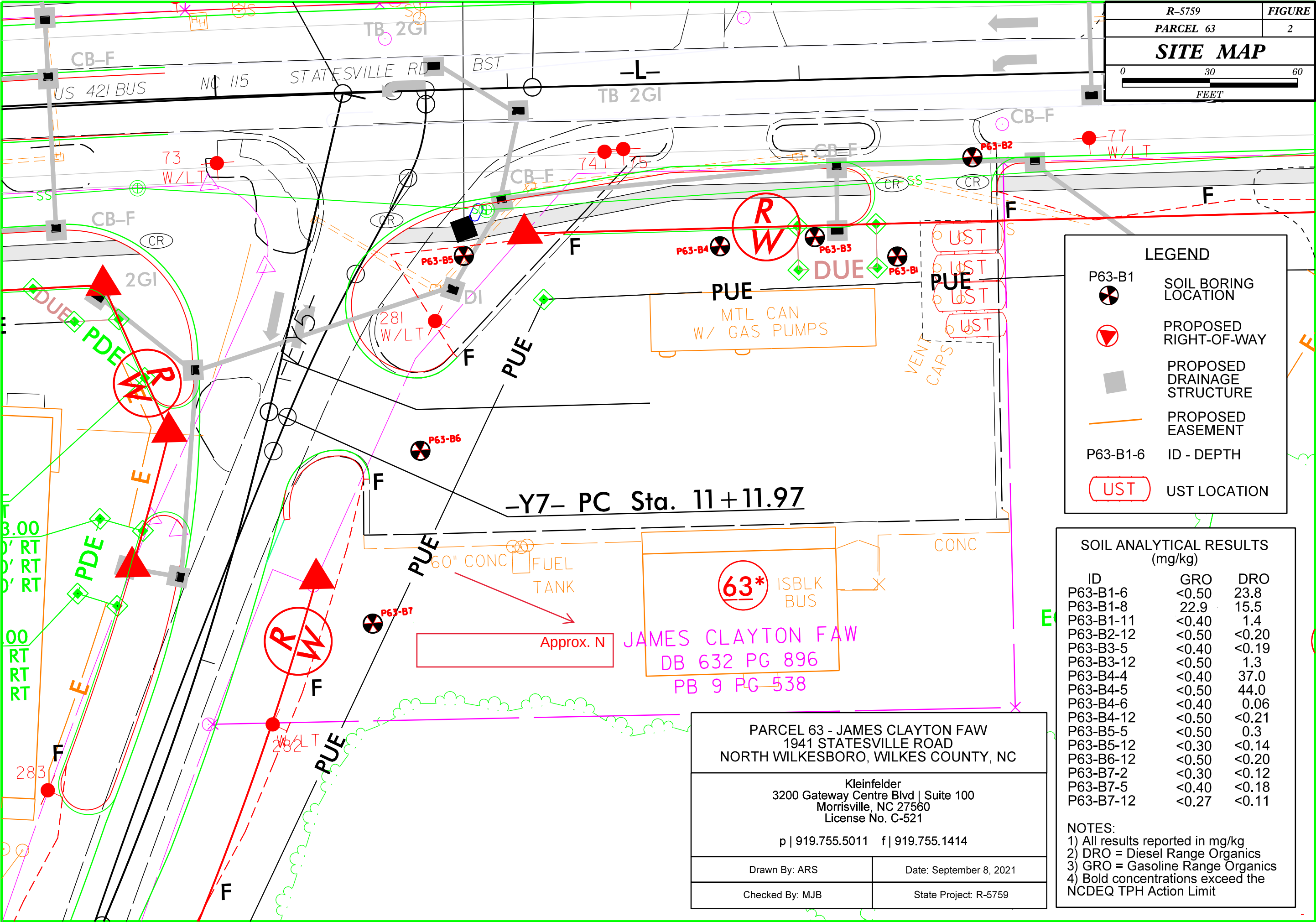
Notes:
 Results displayed in milligrams per kilogram (mg/kg)
 ft bgs = Feet below ground surface
 Bold = Above Laboratory Detection Level
 Highlighted concentrations exceed the NCDEQ action level
 UVF = Ultraviolet Fluorescence

FIGURES



R-5759	FIGURE
PARCEL 63	1
SITE LOCATION	
0 1500 3000 FEET	

PARCEL 63 - JAMES CLAYTON FAW 1941 STATESVILLE ROAD NORTH WILKESBORO, WILKES COUNTY, NC	
Kleinfelder 3200 Gateway Centre Blvd Suite 100 Morrisville, NC 27560 License No. C-521 p 919.755.5011 f 919.755.1414	
Drawn By: ARS	
Checked By: MJB	Date: September 9, 2021



LEGEND

P63-B1

SOIL BORING LOCATION

PROPOSED RIGHT-OF-WAY

PROPOSED DRAINAGE STRUCTURE

PROPOSED EASEMENT

P63-B1-6

ID - DEPTH

UST LOCATION

SOIL ANALYTICAL RESULTS (mg/kg)		
ID	GRO	DRO
P63-B1-6	<0.50	23.8
P63-B1-8	22.9	15.5
P63-B1-11	<0.40	1.4
P63-B2-12	<0.50	<0.20
P63-B3-5	<0.40	<0.19
P63-B3-12	<0.50	1.3
P63-B4-4	<0.40	37.0
P63-B4-5	<0.50	44.0
P63-B4-6	<0.40	0.06
P63-B4-12	<0.50	<0.21
P63-B5-5	<0.50	0.3
P63-B5-12	<0.30	<0.14
P63-B6-12	<0.50	<0.20
P63-B7-2	<0.30	<0.12
P63-B7-5	<0.40	<0.18
P63-B7-12	<0.27	<0.11

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

PARCEL 63 - JAMES CLAYTON FAW 1941 STATESVILLE ROAD NORTH WILKESBORO, WILKES COUNTY, NC	
Kleinfelder 3200 Gateway Centre Blvd Suite 100 Morrisville, NC 27560 License No. C-521	
p 919.755.5011 f 919.755.1414	
Drawn By: ARS	Date: September 8, 2021
Checked By: MJB	State Project: R-5759

APPENDIX A

SITE PHOTOGRAPHS



View facing southeast from the northwestern corner of the Project Study Area along US 421 northbound, towards a UST bed containing four USTs, fuel islands, and convenience store of the BP gas station that occupies the parcel.



View facing northwest from the southeastern corner of the Project Study Area, facing power lines, water and sewer lines, and a decrepit kerosene tank.

Original in Color

	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-1
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 63, James Clayton Faw AKA KLR Real Estate, LLC 1941 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



An approximately 500-gallon kerosene AST in the eastern area of the Project Study Area adjacent to the BP parking lot. Stressed vegetation and a slight petroleum odor were noted in the vicinity of the AST.



View facing west from the BP convenience store located on the eastern boundary of the parcel, towards the fuel islands and US 421.

Original in Color

	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-2
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 63, James Clayton Faw AKA KLR Real Estate, LLC 1941 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing north-northwest from the southwestern boundary of the Project Study Area, facing along US 421 northbound.



Likely closed groundwater monitoring well located in the northern area of the Project Study Area parking lot between the fuel islands and the UST bed.

Original in Color

	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-3
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 63, James Clayton Faw AKA KLR Real Estate, LLC 1941 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing northwest from the southwestern boundary of the Project Study Area, facing along US 421 northbound.



View facing east from the northwestern area of the Project Study Area between the UST bed and the fuel islands. Concrete fill purpose is unknown.

Original in Color

	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-4
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 63, James Clayton Faw AKA KLR Real Estate, LLC 1941 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing northwest from the western portion of the Project Study Area, depicting four known USTs outlined with white spray paint.

Original in Color

 KLEINFELDER <i>Bright People. Right Solutions.</i> www.kleinfelder.com	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-5
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 63, James Clayton Faw AKA KLR Real Estate, LLC 1941 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		

APPENDIX B
GEOPHYSICAL SURVEY REPORT



PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2021-190)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCEL 63 NCDOT PROJECT U-5759

1941 STATESVILLE ROAD, NORTH WILKESBORO, NC

August 6, 2021

Report prepared for: Michael Burns, P.G.
Kleinfelder, Inc.
3200 Gateway Centre Blvd., Suite 100
Morrisville, NC 27560

Prepared by: _____

A handwritten signature in black ink, appearing to read "E. Cross".

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

Reviewed by: _____

A handwritten signature in black ink, appearing to read "Doug Canavella".

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

503 INDUSTRIAL AVENUE, GREENSBORO, NC 27406

P: 336.335.3174 F: 336.691.0648

C257: GEOLOGY

C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 63 - 1941 Statesville Road
North Wilkesboro, Wilkes County, North Carolina

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Limitations	5

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- Figure 3 – Parcel 63 - GPR Transect Locations and Select Images
- Figure 4 – Parcel 63 - Locations and Sizes of Four Known USTs
- Figure 5 – Overlay of Metal Detection Results and Four Known USTs on NCDOT
Engineering Plans

Appendices

- Appendix A – GPR Transect Images

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 (Pyramid) conducted a geophysical investigation for Kleinfelder, Inc. at Parcel 63, located at 1941 Statesville Road, in North Wilkesboro, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5759). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted on July 14-16, 2021, 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 ten EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. GPR was performed across and around all sources of significant metallic interference to confirm that the interference did not obscure any significant structures such as USTs. GPR was also performed across the known USTs to verify their sizes and orientations. The geophysical survey identified evidence of utilities and/or smaller fragments of buried debris.

Four known USTs were observed in the northern portion of the parking lot. Known USTs #1-3 are all approximately 25 feet long by 9 feet wide. Known UST #4 is approximately 20 feet long by 9 feet wide. Collectively, the geophysical data recorded evidence of four known metallic USTs at Parcel 63. No evidence of any unknown USTs was observed.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Kleinfelder, Inc. at Parcel 63, located at 1941 Statesville Road, in North Wilkesboro, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5759). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted on July 14-16, 2021, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site consisted of an active gas station surrounded by asphalt, concrete, and grass surfaces. Four known USTs were observed in an active UST pit servicing the station pumps. 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 16, 2021, 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 SIR 4000 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	Manhole	
2	Drop Inlet/Sign	
3	Sign	
4	Sign	
5	Reinforced Concrete/ Four Known USTs	✓
6	Reinforced Concrete	✓
7	Donation Box	✓
8	Utility	
9	Light Pole	
10	Drop Inlet	

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including a manhole, drop inlets, signs, reinforced concrete, a donation box, and utilities. Four known USTs were also observed in the northern portion of the parking lot. GPR was performed across and around all sources of significant metallic interference to confirm that the interference did not obscure any significant structures such as USTs. GPR was also performed across the known USTs to verify their sizes and orientations.

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 eight formal GPR transects were performed at the site.

GPR Transects 1-5 were performed in the northern portion of the parking lot, across the four known USTs. Transect 1 showed four large, high-amplitude hyperbolic reflectors and Transects 2-5 each showed a high-amplitude lateral reflector. These reflectors are typical of USTs. Known USTs #1-3 are all approximately 25 feet long by 9 feet wide. Known UST #4 is approximately 20 feet long by 9 feet wide. **Figure 4** provides the locations and sizes

of the four known USTs, overlain on an aerial, along with ground-level photographs. Transects 1-6 confirmed the presence of reinforcement within the concrete. Transects 6-8 showed no evidence of significant structures such as USTs. Evidence of utilities and/or smaller fragments of buried debris was also observed.

Collectively, the geophysical data recorded no evidence of unknown metallic USTs at Parcel 63. Four known USTs were observed in the northern portion of the parking lot. **Figure 5** provides an overlay of the metal detection results and four known USTs on the NCDOT engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 63 in North Wilkesboro, 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 across and around all sources of significant metallic interference to confirm that the interference did not obscure any significant structures such as USTs. GPR was also performed across the known USTs to verify their sizes and orientations.
- The geophysical survey identified evidence of utilities and/or smaller fragments of buried debris.
- Four known USTs were observed in the northern portion of the parking lot. Known USTs #1-3 are all approximately 25 feet long by 9 feet wide. Known UST #4 is approximately 20 feet long by 9 feet wide.
- Collectively, the geophysical data recorded evidence of four known metallic USTs at Parcel 63. No evidence of any unknown USTs was observed.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Kleinfelder, Inc. 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 South)



View of Survey Area (Facing Approximately South)



 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 63 NORTH WILKESBORO, NORTH CAROLINA NCDOT PROJECT U-5759	TITLE PARCEL 63 - GEOPHYSICAL SURVEY BOUNDARIES AND SITE PHOTOGRAPHS	DATE 7/19/2021	CLIENT Kleinfelder
			PYRAMID PROJECT #: 2021-190	FIGURE 1

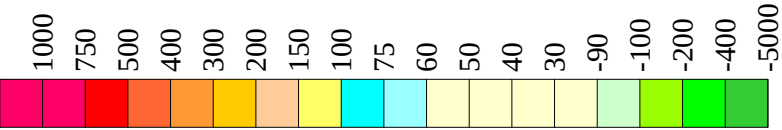
EM61 METAL DETECTION RESULTS



EVIDENCE OF FOUR KNOWN USTs WAS OBSERVED. NO EVIDENCE OF UNKNOWN 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 14, 2021, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI SIR 4000 instrument with a 350 MHz HS antenna on July 16, 2021.

EM61 Metal Detection Response (millivolts)



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

PROJECT
PARCEL 63
NORTH WILKESBORO, NORTH CAROLINA
NCDOT PROJECT U-5759

TITLE
PARCEL 63 -
EM61 METAL DETECTION CONTOUR MAP

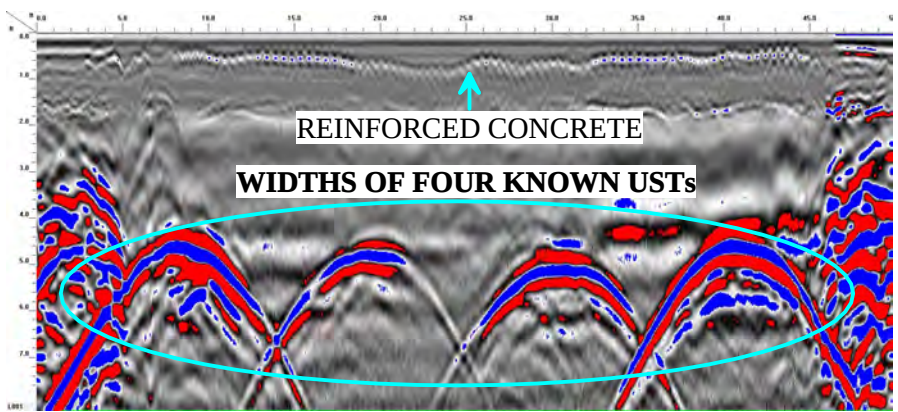
DATE 7/19/2021

PYRAMID PROJECT #: 2021-190

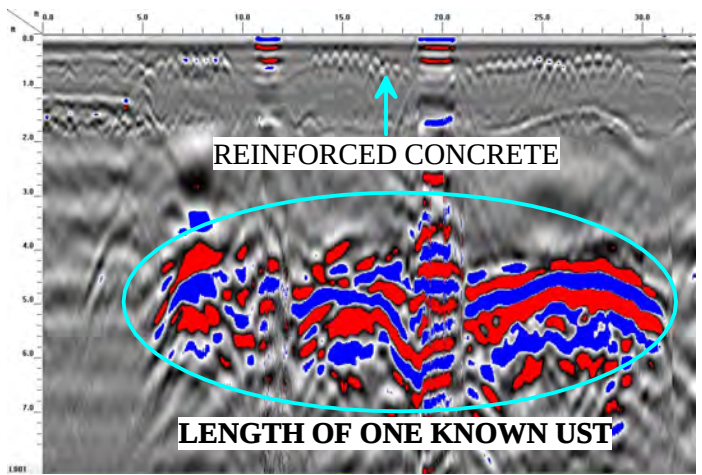
CLIENT Kleinfelder

FIGURE 2

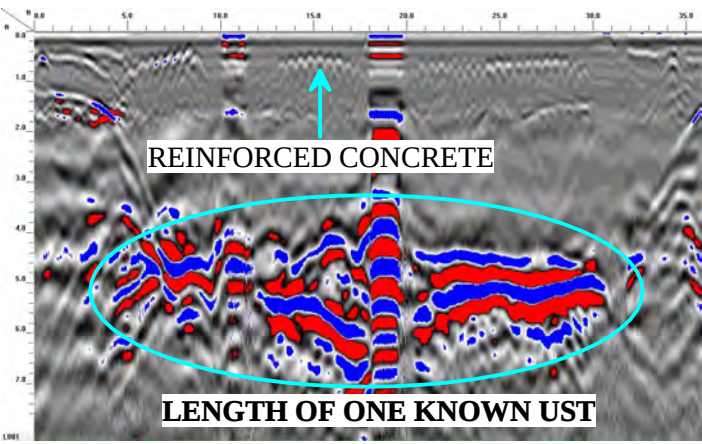
GPR TRANSECT LOCATIONS



GPR TRANSECT 1 (T1)



GPR TRANSECT 2 (T2)

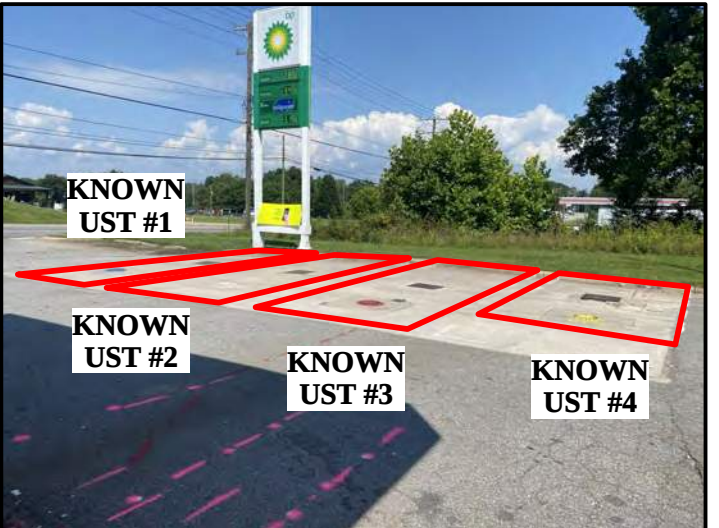


GPR TRANSECT 3 (T3)

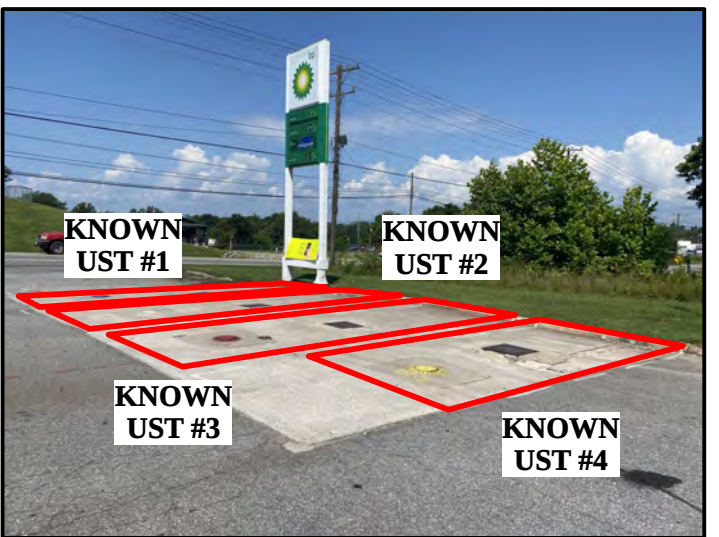


 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 63 NORTH WILKESBORO, NORTH CAROLINA NCDOT PROJECT U-5759	TITLE PARCEL 63 - GPR TRANSECT LOCATIONS AND SELECT IMAGES	DATE 7/19/2021	CLIENT Kleinfelder
			PYRAMID PROJECT #: 2021-190	FIGURE 3

LOCATIONS OF FOUR KNOWN USTs



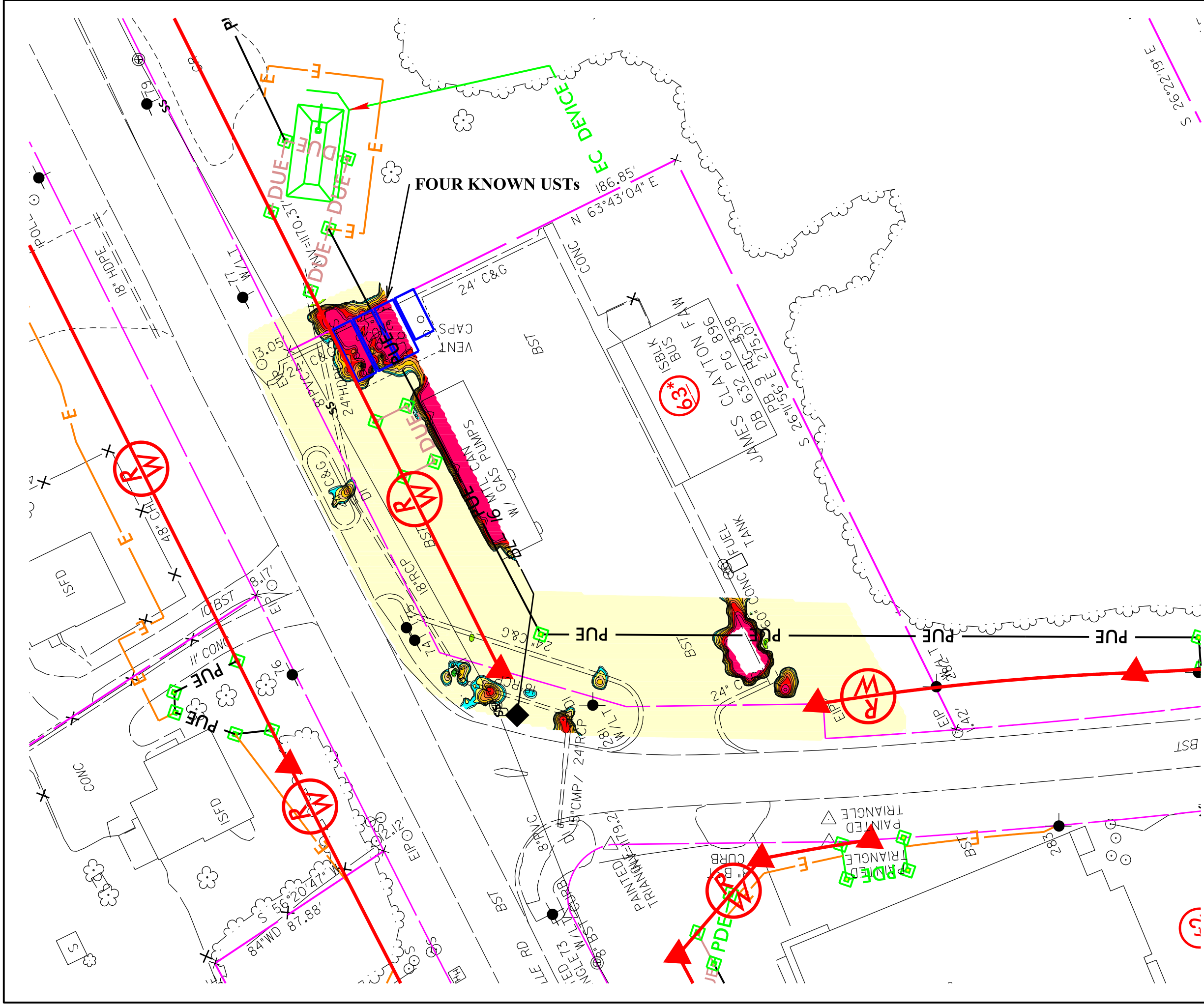
View of Four Known USTs
(Facing Approximately North)



View of Four Known USTs
(Facing Approximately West)

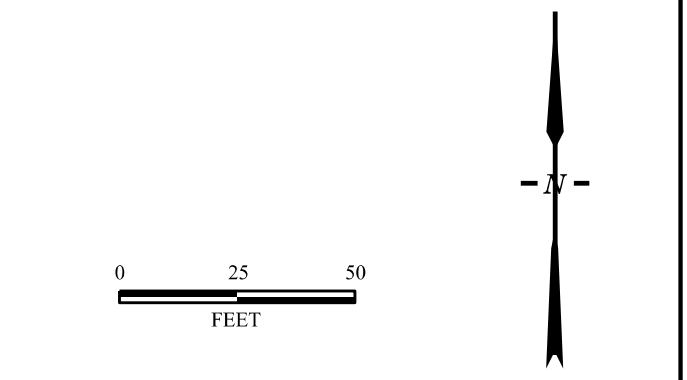
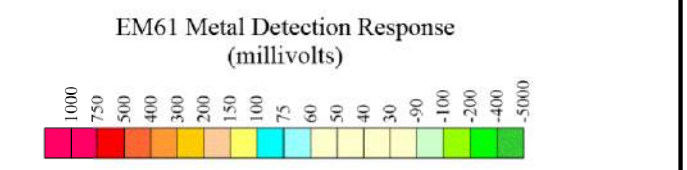


 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 63 NORTH WILKESBORO, NORTH CAROLINA NCDOT PROJECT U-5759	TITLE PARCEL 63 - LOCATIONS AND SIZES OF FOUR KNOWN USTs	DATE 7/19/2021	CLIENT Kleinfelder
			PYRAMID PROJECT #: 2021-190	FIGURE 4



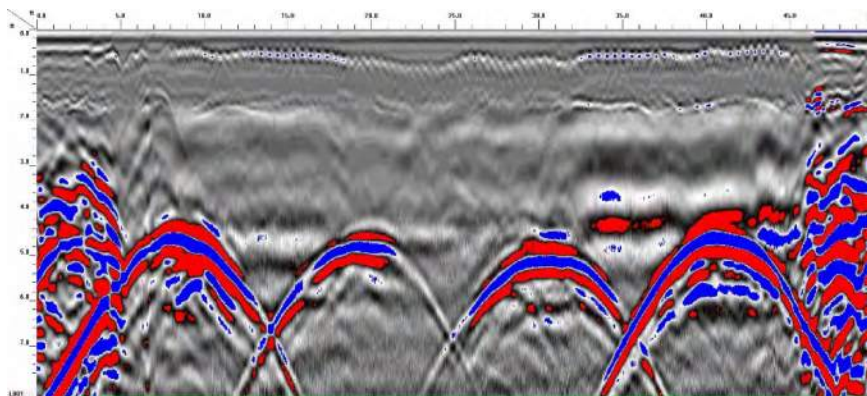
LEGEND

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

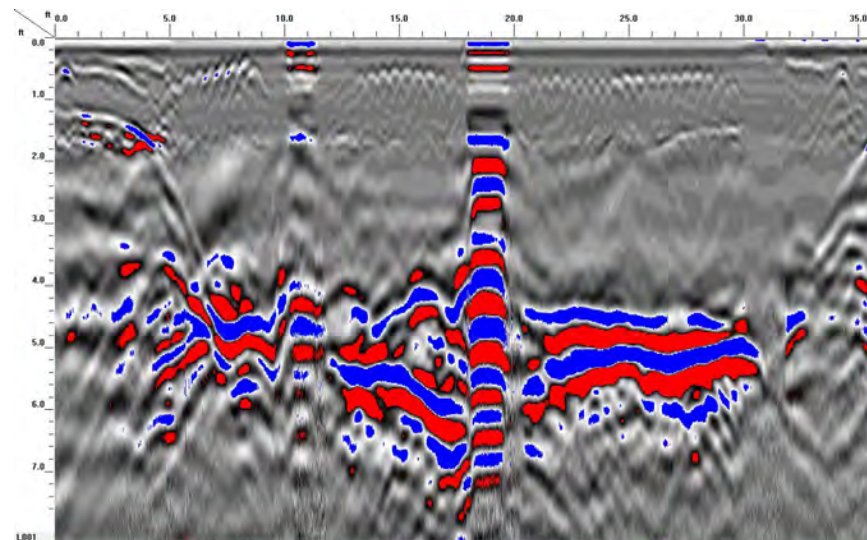


TITLE OVERLAY OF METAL DETECTION RESULTS AND FOUR KNOWN USTs ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 63 WILKESBORO, NORTH CAROLINA NCDOT PROJECT R-5759	
 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
DATE: 8-9-2021	REVISION NO. 0
PYRAMID PROJECT NO. 2021-190	FIGURE NO. 5

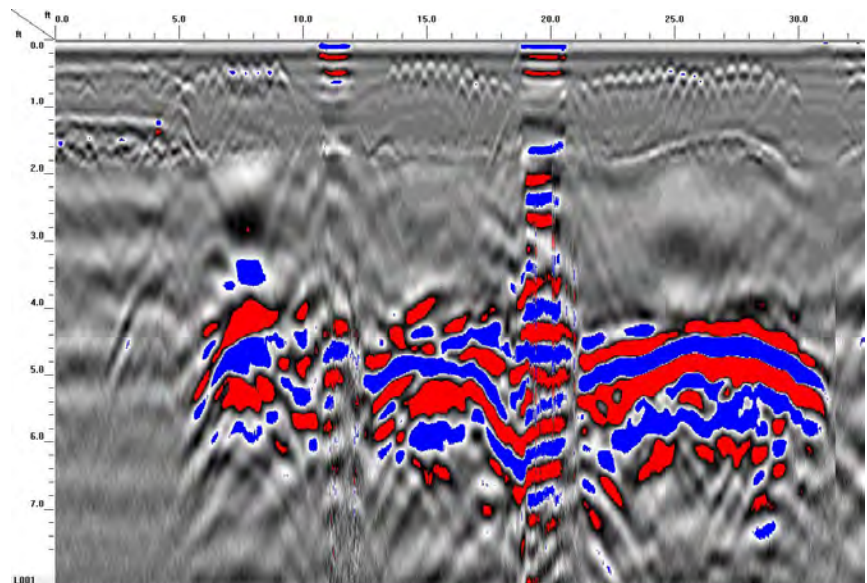
Appendix A – GPR Transect Images



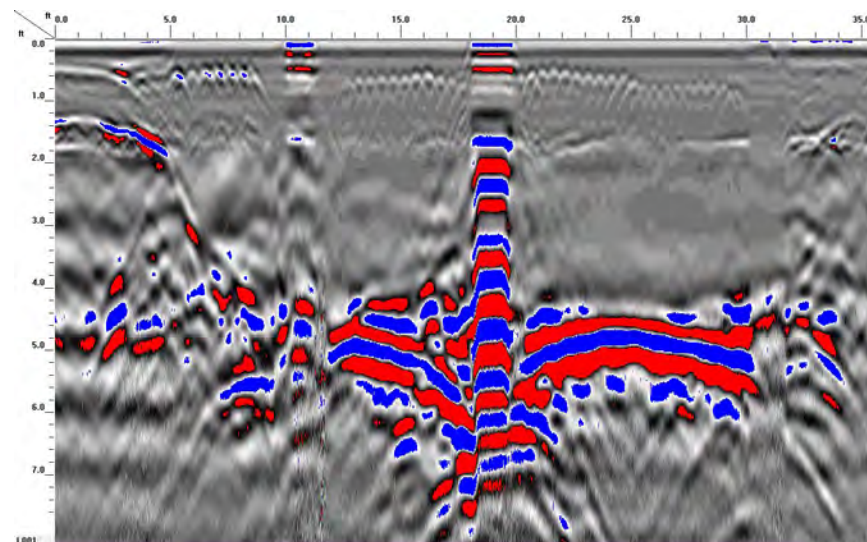
GPR TRANSECT 1



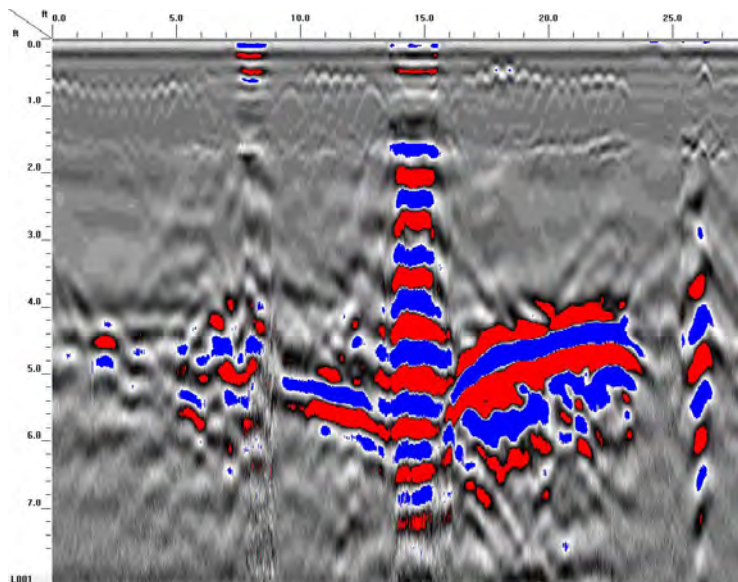
GPR TRANSECT 3



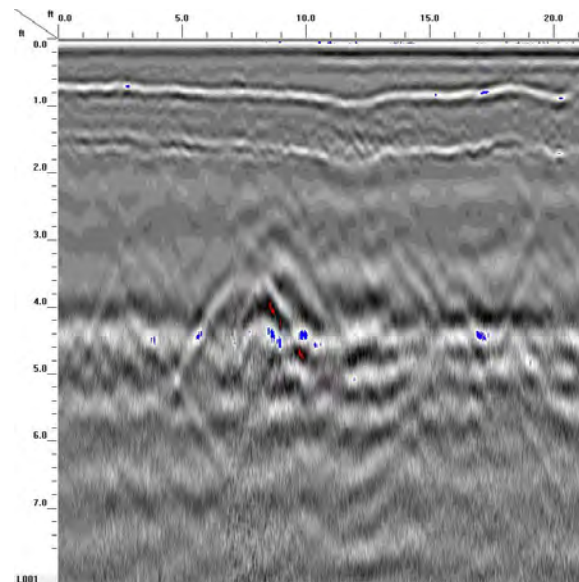
GPR TRANSECT 2



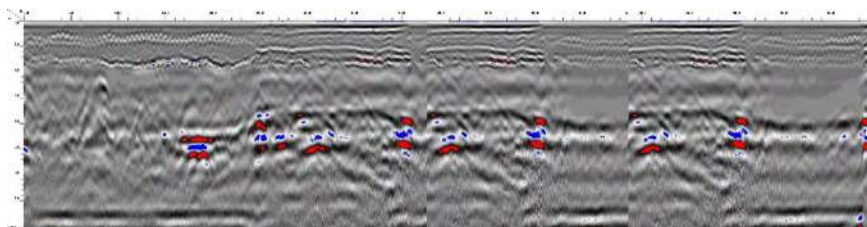
GPR TRANSECT 4



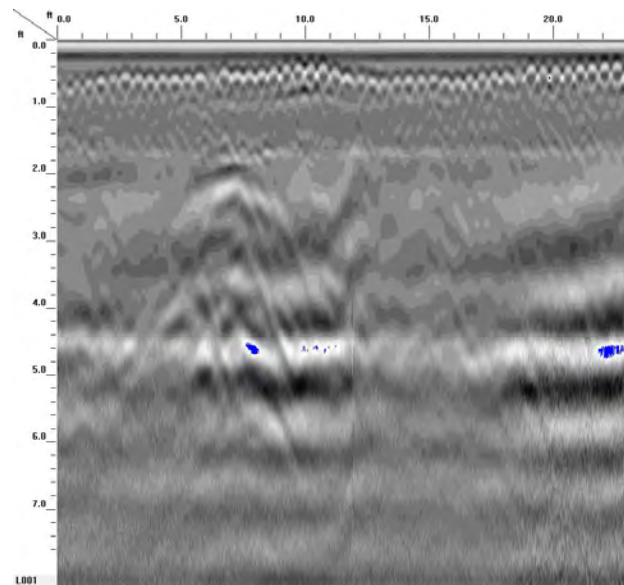
GPR TRANSECT 5



GPR TRANSECT 7



GPR TRANSECT 6



GPR TRANSECT 8

APPENDIX C

BORING LOGS

Date Begin - End:	8/02/2021	Drilling Company:	SAEDACCO	ENVIRONMENTAL BORING LOG P63-B1
Logged By:	E. AMBER	Drill Crew:	S. HUNT	
Hor.-Vert. Datum:	Not Available	Drilling Equipment:	6620DT GeoProbe	
Plunge:	-90 degrees	Drilling Method:	See Drilling Method Column	
Weather:	SUNNY	Bore Diameter:		

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	FIELD EXPLORATION	
							Surface Condition: Asphalt	Lithologic Description
								ASPHALT: black
					0.0			SAND: gray
					0.0			Silty CLAY: reddish brown and red, slightly micaceous
					0.0			
					0.0			
					0.0			
					0.2			
					0.0			
					0.9			
					4.5			
					4.4			
					6.2			
					4.0			

The borehole was terminated at approximately 12 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The environmental boring was backfilled with bentonite.



PROJECT NO.:
20221238.001A

DRAWN BY: EA

CHECKED BY: MJB

DATE: 8/6/2021

ENVIRONMENTAL BORING LOG P63-B1

NCDOT R-5759 PSAs
North Wilkesboro, NC

Page: 1 of 1

Page: 1 of 1

Page: 1 of 1

Drilling Company:	<u>SAEDACCO</u>
Drill Crew:	<u>S. HUNT</u>
Drilling Equipment:	<u>6620DT GeoProbe</u>
Drilling Method:	<u>See Drilling Method Column</u>
Bore Diameter:	

FIELD EXPLORATION

Surface Condition: Grass & Weeds

Lithologic Description

TOPSOIL: brown

SAND with Silt: red

Sandy SILT: reddish brown and yellowish brown

Clayey SILT: red, fill

Sandy SILT: brown and pink

BEDROCK: black and white

The borehole was terminated at approximately 12 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The environmental boring was backfilled with bentonite.



DRAWN BY: EA

CHECKED BY: MJB

DATE: 8/12/2021

ENVIRONMENTAL BORING LOG
P63-B5

NCDOT R-5759 PSAs
North Wilkesboro, NC

Depth (feet)	FIELD EXPLORATION						
	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Asphalt
							Lithologic Description
Hand Auger Geoprobe 5 10							ASPHALT: black
				0.0			Silty SAND: reddish brown and brown
				0.0			
				0.0			
				0.0			
				0.0			SILT with Cobbles: reddish brown and pinkish white and brown, some rock fragments, maybe bedrock
				0.0			
				0.0			
				0.0			
				0.0			
				0.0			
				0.0			SILT with Cobbles: reddish brown and pinkish white and brown, some rock fragments, maybe bedrock
The borehole was terminated at approximately 12 ft. below ground surface.							<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not observed during drilling or after completion. <u>GENERAL NOTES:</u> The environmental boring was backfilled with bentonite.



PROJECT NO.:
20221238.001A

DRAWN BY: EA

CHECKED BY: MJB

DATE: 8/12/2021

ENVIRONMENTAL BORING LOG
P63-B6

NCDOT R-5759 PSAs
North Wilkesboro, NC

Page: 1 of 1

APPENDIX D

ANALYTICAL REPORT AND GRAPHS

Hydrocarbon Analysis Results



Client: KLEINFELDER

Address:



Samples taken

Samples extracted

Samples analysed



Monday, August 2, 2021

Monday, August 2, 2021

Monday, August 2, 2021

Contact: ABI SHURTLEFF

Operator

MAX MOYER

Project: R-5759 ; PARCEL 63

T03308

Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	B1 - 11	18.0	<0.4	<0.4	1.4	1.4	0.6	0.026	<0.001	0	87.7	12.3	V.Deg.PHC 85.4%,(FCM)
Soil	B1 - 8	17.0	<0.4	22.9	15.5	38.4	6.9	0.3	0.003	79.9	18.5	1.5	No Match found
Soil	B1 - 6	20.0	<0.5	<0.5	23.8	23.8	9	0.4	0.008	0	87.2	12.8	V.Deg.PHC 98.4%,(FCM)
Soil	B2 - 12	20.0	<0.5	<0.5	<0.2	<0.5	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	B3 - 5	19.0	<0.4	<0.4	<0.19	<0.4	<0.01	<0.01	<0.006	0	100	0	Residual HC
Soil	B3 - 12	20.0	<0.5	<0.5	1.3	1.3	0.6	0.02	<0.001	0	86.4	13.6	V.Deg.PHC 83.6%,(FCM)
Soil	B4 - 5	20.0	<0.5	<0.5	44	44	24.9	1.3	0.007	0	94.4	5.6	Deg Fuel 76.2%,(FCM),(BO)
Soil	B4 - 12	21.0	<0.5	<0.5	<0.21	0.015	0.015	0.002	<0.006	0	0	100	Residual HC

Initial Calibrator QC check **OK**

Final FCM QC Check **OK**

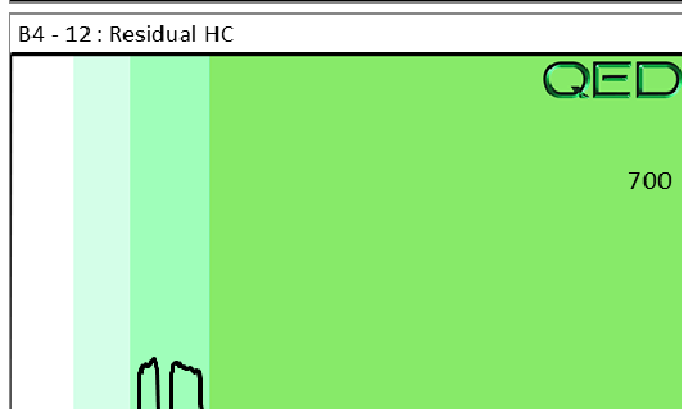
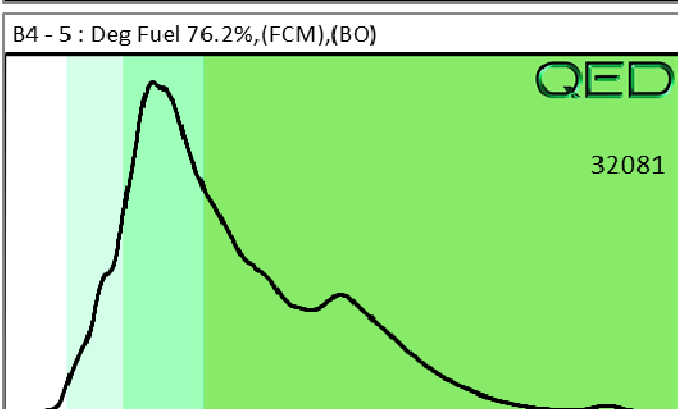
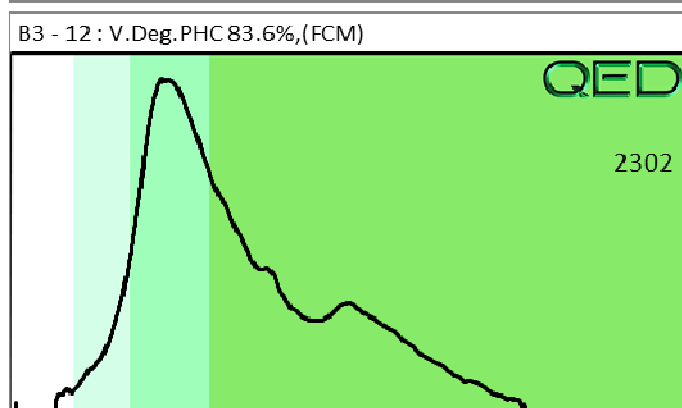
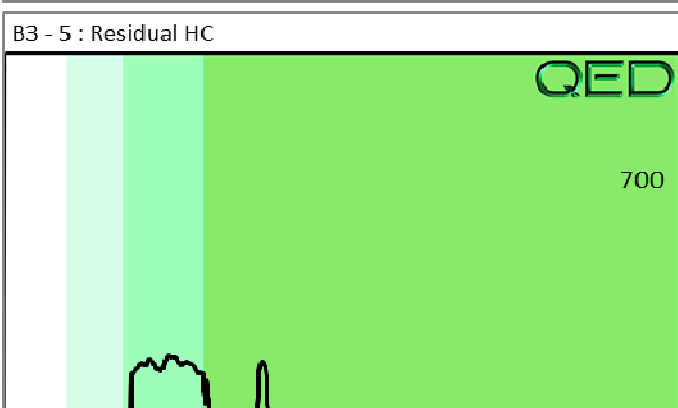
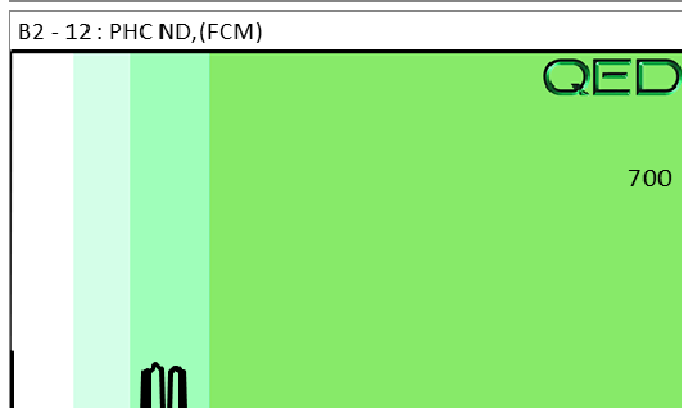
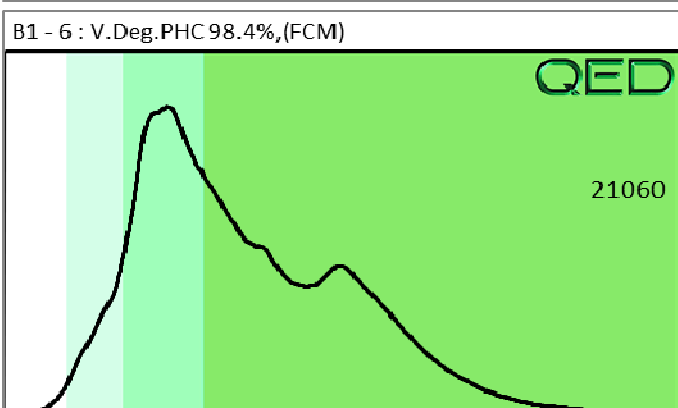
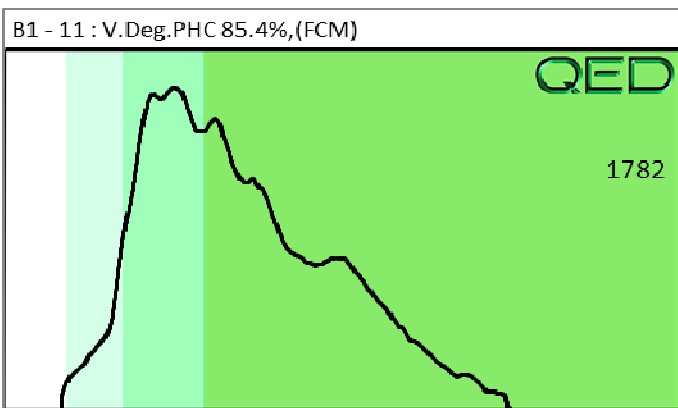
96.4%

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

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

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

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



Hydrocarbon Analysis Results



Client: KLEINFELDER

Address:



Samples taken

Samples extracted

Samples analysed



Monday, August 2, 2021

Monday, August 2, 2021

Monday, August 2, 2021

Contact: ABI SHURTLEFF

Operator

MAX MOYER

Project: R-5759 ; PARCEL 63

T03308

Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	B4 - 4	18.0	<0.4	<0.4	37	37	21.6	1.2	0.007	0	93.9	6.1	Deg Fuel 75.6%,(FCM)
Soil	B4 - 6	17.0	<0.4	<0.4	0.06	0.06	0.06	0.007	<0.005	0	78.7	21.3	Residual HC
Soil	B5 - 12	14.0	<0.3	<0.3	<0.14	<0.3	<0.007	<0.007	<0.004	0	0	0	PHC ND,(FCM)
Soil	B5 - 5	20.0	<0.5	<0.5	0.3	0.3	0.15	0.008	<0.006	0	71.4	28.6	V.Deg.PHC 67%,(FCM)
Soil	B6 - 12	20.0	<0.5	<0.5	<0.2	<0.5	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	B7 - 12	11.0	<0.27	<0.27	<0.11	0.011	0.011	<0.001	<0.003	0	100	0	Residual HC
Soil	B7 - 5	18.0	<0.4	<0.4	<0.18	<0.4	<0.009	<0.009	<0.005	0	0	0	PHC ND,(FCM)
Soil	B7 - 2	12.0	<0.3	<0.3	<0.12	<0.3	<0.006	<0.006	<0.004	0	0	0	PHC ND,(FCM)

Initial Calibrator QC check **OK**

Final FCM QC Check **OK**

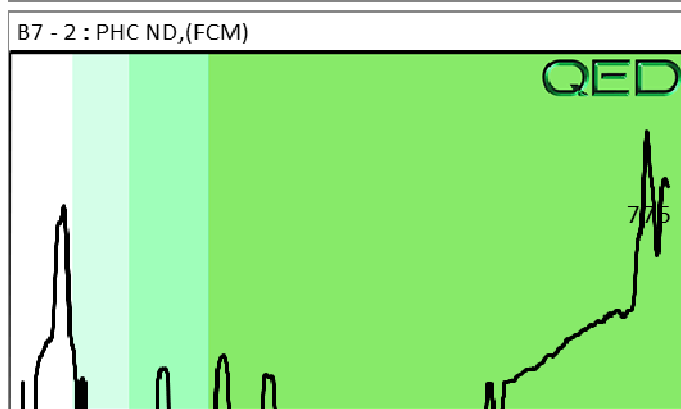
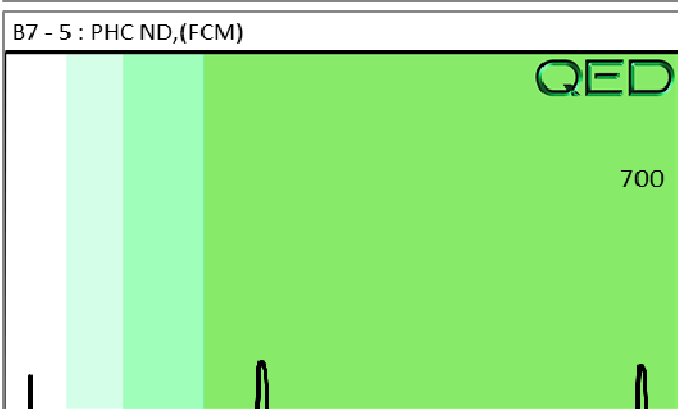
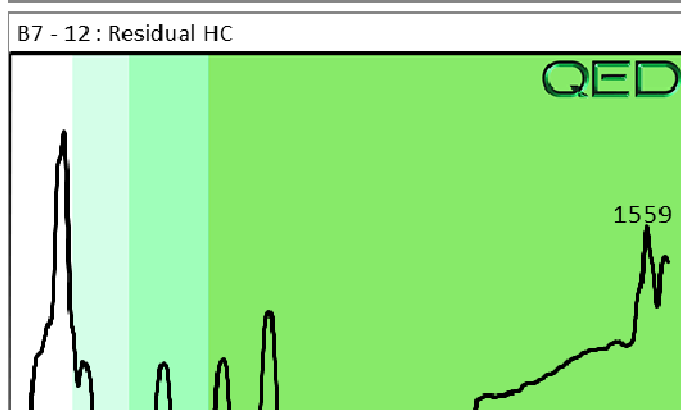
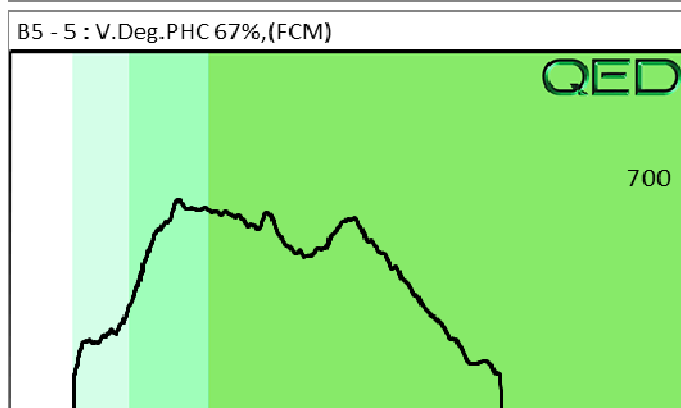
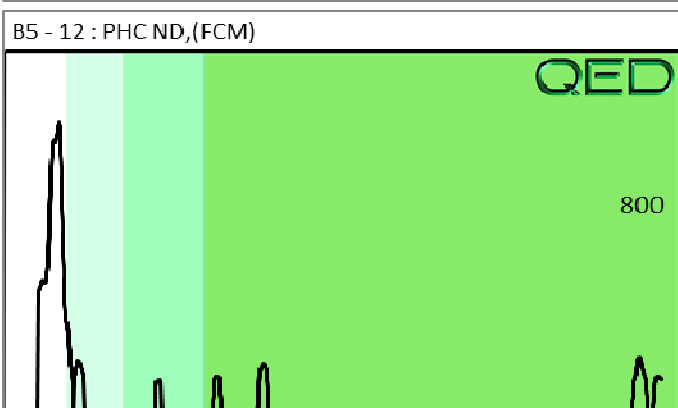
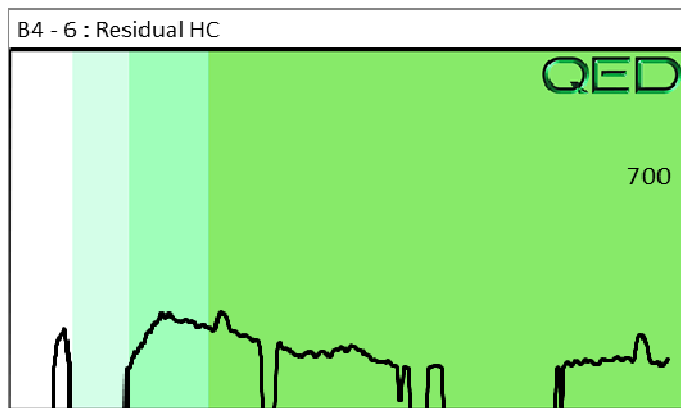
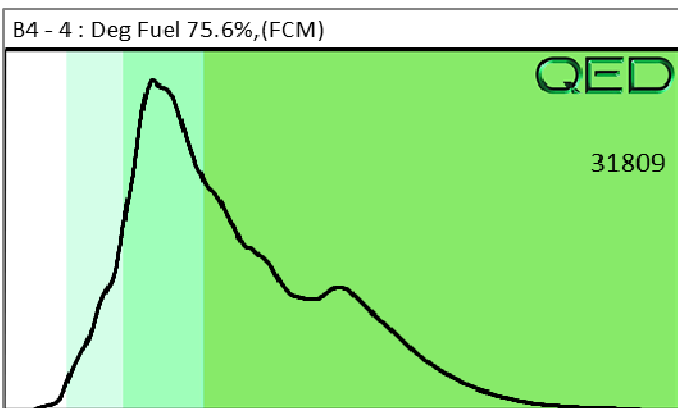
104.9%

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

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

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





September 10, 2021
Kleinfelder File No. RAL21R130258

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, Service Distributing Co., Inc AKA Umana Kenneth E (formerly
Hamby)
WBS Element No. 44691.1.1, TIP No. R-5759
Proposed widening of NC 115 from US 421 to 2nd Street in Wilkesboro and
North Wilkesboro, Wilkes County, NC
Kleinfelder Project No. 20221238.001A**

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.

Evan D. Amber
Environmental Staff Professional I

Michael J Burns
Environmental Program Manager, LG

EDA/MJB:asp

R-5759-P65
20221238.001A | RAL21R130258
© 2021 Kleinfelder

1865 Statesville Road
September 10, 2021
www.kleinfelder.com



**PRELIMINARY SITE ASSESSMENT REPORT
PARCEL 65, SERVICE DISTRIBUTING CO., INC AKA UMANA
KENNETH E (FORMERLY HAMBY)
PIN 2202859
1865 STATESVILLE ROAD
NORTH WILKESBORO, WILKES COUNTY, NORTH CAROLINA**

**NCDOT WBS ELEMENT 44691.1.1
STATE PROJECT R-5759
PROPOSED WIDENING OF NC 115 FROM US 421 TO 2ND
STREET IN WILKESBORO AND NORTH WILKESBORO**

KLEINFELDER PROJECT NO. 20221238.001A

SEPTEMBER 10, 2021

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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

PRELIMINARY SITE ASSESSMENT REPORT
PARCEL 65, SERVICE DISTRIBUTING CO., INC AKA UMANA KENNETH E (FORMERLY
HAMBY)
PIN 2202859
1865 STATESVILLE ROAD
NORTH WILKESBORO, WILKES COUNTY, NORTH CAROLINA

NCDOT WBS ELEMENT 44691.1.1
STATE PROJECT R-5759
PROPOSED WIDENING OF NC 115 FROM US 421 TO 2ND STREET IN WILKESBORO AND
NORTH WILKESBORO

Prepared by:



Evan D. Amber
Environmental Staff Professional I



Abigail R. Shurtleff
Staff Professional II

Reviewed by:



Michael J. Burns
Environmental Program Manager, LG

KLEINFELDER
3200 Gateway Centre Blvd. | Suite 100
Raleigh, North Carolina 27560
P | 919.755.5011

September 10, 2021

Kleinfelder Project No. 20221238.001A

PRELIMINARY SITE ASSESSMENT REPORT

Site Name and Location: Parcel 65
1865 Statesville Road
North Wilkesboro, Wilkes County, North Carolina

Latitude and Longitude: 36.15116°N, -81.11096°W

County Parcel Number 2202859

Facility ID Number: N/A

Leaking UST Incident: N/A

State Project No.: R-5759

NCDOT Project No.: NCDOT WBS Element 44691.1.1

Description: Proposed widening of NC 115 from US 421 to 2nd Street in Wilkesboro and North Wilkesboro

Date of Report: September 10, 2021

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.

Michael J Burns, LG
NC License No. 1645

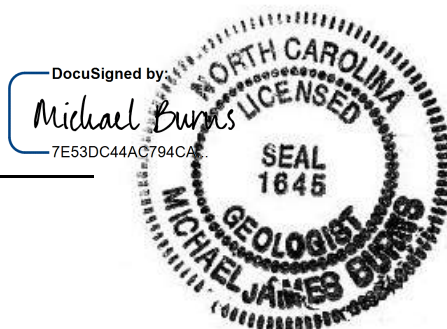


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**PRELIMINARY SITE ASSESSMENT REPORT
PARCEL 65, SERVICE DISTRIBUTING CO., INC AKA UMANA KENNETH E (FORMERLY
HAMBY)
PIN 2202859
1865 STATESVILLE ROAD
NORTH WILKESBORO, WILKES COUNTY, NORTH CAROLINA**

**NCDOT WBS ELEMENT 44691.1.1
STATE PROJECT R-5759
PROPOSED WIDENING OF NC 115 FROM US 421 TO 2ND STREET IN WILKESBORO AND
NORTH WILKESBORO**

1 INTRODUCTION

Kleinfelder, Inc. (Kleinfelder) has prepared this Preliminary Site Assessment (PSA) report to document assessment activities performed on Parcel 65 (the assessment area is hereafter referred to as the “Project Study Area”). The Project Study Area consists of the western, southern, and southeastern portions of a parcel that are within the right-of-way and/or easement on Wilkes County Tax Assessor’s Office Parcel Number 2202859. Parcel 65 is currently occupied by an inactive gas station. Parcel 65 is located along the eastern side of NC 115 (US 421 BUS), north of NC State Road (SR) 2318 and south of Eagle Lane, in North Wilkesboro, Wilkes County, North Carolina (Figure 1).

Based on the information provided in the Pre-Scoping Comments letter, dated September 20, 2018, prepared by the North Carolina Department of Transportation (NCDOT), the parcel (listed as Site # 10 in the letter) was reported as an apparently inactive gas station and was not registered with an underground storage tank (UST) Facility ID Number. As such, the purpose of the PSA was to evaluate whether contaminated soil is 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 Service Distributing Co., LLC AKA Umana, Kenneth E (formerly Hamby). The parcel’s street address is 1865 Statesville Road. The parcel consists of an inactive retail gasoline filling station, including a pump island and canopy, an inactive convenience store, and paved asphalt areas. The parcel currently appears to be utilized as a small equipment maintenance and storage facility. The parcel is bounded by vacant, vegetated land and wooded land to the north and to the east, beyond which are residential homes; by NC 115 to the west, beyond which are residential homes and maintained grass areas; and by vacant, vegetated land

to the south, beyond which is an active BP retail gasoline filling station. Photographs of the Project Study Area are provided in Appendix A.

1.2 SCOPE OF WORK

Kleinfelder conducted this PSA in accordance with the NCDOT's June 1, 2021, Request for Technical and Cost Proposal (RFP) and Kleinfelder's June 16, 2021, Technical and Cost Proposal. The NCDOT granted a formal Notice to Proceed on June 21, 2021.

2 HISTORY

2.1 PARCEL USAGE

The parcel consists of an inactive retail gasoline filling station and convenience store, currently utilized as a small equipment maintenance and storage facility.

The September 20, 2018 Pre-Scoping Comments letter did not identify an UST Facility ID Number for the property. The proposed NCDOT easement passes through the western portion of the parcel.

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

- Based on a review of historical aerial photographs using Google Earth Pro and the NCDOT Historical Aerial Imagery Index, the site appeared to have similar development since at least 1993 and was undeveloped in 1960. Site development in available 1985 imagery was not assessed due to poor image resolution. Historical imagery was not available prior to 1960.
- Kleinfelder searched the registered underground storage tank database, maintained by the NCDEQ. The site was not listed with an UST Facility ID Number. This database did not contain any known incident records.
- No other listings for Parcel 65 were identified on any of the available NCDEQ pollution incident databases.

2.2 FACILITY ID NUMBERS

Kleinfelder reviewed the NCDEQ UST database for Parcel 65. The parcel was not listed with an UST Facility ID Number.

2.3 GROUNDWATER INCIDENT NUMBERS

No active groundwater incidents are known to be associated with Parcel 65 at this time.

3 OBSERVATIONS

3.1 GROUNDWATER MONITORING WELLS

One (1) active groundwater monitoring well was observed on Parcel 65 at the time of site exploration on Monday, August 2 and Tuesday, August 3, 2021. The groundwater monitoring well was located outside of the northern edge of the concrete wall that bounds the area underneath the former fuel canopy, in the northern portion of the Project Study Area, and is depicted on Figure 2.

3.2 ACTIVE USTS

Based on review of the NCDEQ UST database, site visits and previous reports, there are no active USTs located on site.

3.3 INACCESSIBLE PORTIONS OF THE PROJECT STUDY AREA

The western portion of the parcel under the fuel canopy (former convenience store) and the southeastern portion of the Project Study Area were not fully accessible at the time of site exploration on Monday, August 2 and Tuesday, August 3, 2021. A portion of the southeastern area of the Project Study Area was inaccessible due to parked commercial vehicles and trailers. Three large steel drums were observed beneath one of the vehicles. Kleinfelder could not observe the contents of the steel drums. Photographs of observed features in the inaccessible portions of the Project Study Area are provided in Appendix A.

3.4 FEATURES APPARENT BEYOND THE PROJECT STUDY AREA

The Project Study Area consisted of the western, southern, and southeastern portions of the parcel within the NCDOT right-of-way or easement. Outside of the Project Study Area, in the eastern portion of the property, an inactive convenience store and paved asphalt area was observed. Along the southern side of the convenience store, an inactive pipe possibly leading to underground product lines was observed. In the eastern portion of the parcel discarded tires and automotive debris was observed on the vacant, vegetated land between the asphalt and the wooded land. The area under the fuel canopy contained inactive industrial, agricultural, and automotive equipment. Surface staining with an odor or petroleum was observed beneath several pieces of equipment as well as in the northwestern corner of a concrete wall that bounds the area underneath the former fuel canopy. Photographs of observed features outside of the Project Study Area are provided in Appendix A.

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 14 and 16, 2021. Pyramid utilized electromagnetic (EM) induction technology and ground penetrating radar (GPR) to locate potential geophysical anomalies and potential USTs within the Project Study Area.

A total of seven (7) EM anomalies were identified. Two (2) EM anomalies were associated with utilities, one (1) with a drop inlet, one (1) with the reinforced concrete wall that bounds the area underneath of the fuel canopy, and two (2) with parked commercial vehicles and trailers. One (1) EM anomaly in the northern portion of the Project Study Area was not associated with a known response feature (labelled as a "no confidence anomaly" in the geophysical report), and is depicted on Figure 2. Based on site observations, this is most likely a buried former stormwater drain.

Pyramid did not investigate the area underneath the fuel canopy because stored industrial, agricultural, and automotive equipment prevented access of the EM and GPR equipment. An area in the southeastern portion of the Project Study Area also was also not accessible due to parked commercial vehicles and trailers.

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 the presence of soil contamination along the existing right-of-way and/or easement to evaluate whether known impact is present in this area and maybe migrating off-site. The soil borings were planned to be advanced to maximum depths of 12-feet below the ground surface (ft bgs) since the depth of the former UST basin may be up to 11 ft bgs. Field screening using a photoionization detector (PID) was conducted at 1-foot intervals beginning from the ground surface to total boring depth. The soil sample with the highest PID reading above background or the sample from the maximum drilled depth was 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 South Atlantic Environmental Drilling and Construction Company (SAEDACCO) to perform the drilling on-site on August 2 and August 3, 2021. SAEDACCO advanced nine (9) soil borings (P65-B1 through P65-B9) by direct-push technology at locations specified by Kleinfelder. The soil boring locations were identified in the field using a GPS. The borings were located in the paved asphalt area in the northern portion of the Project Study Area, along the western portion of the Project Study Area between NC 115 and the concrete wall that bounded the area underneath the fuel canopy, in the southern portion of the Project Study Area as close to the parked commercial vehicles and trailers as was accessible, and in the eastern portion of the Project Study Area in the asphalt and in the adjacent grass area. The soil boring locations are shown on Figure 2.

Soil samples were collected by driving Macro Core™ samplers in 5-foot intervals to boring termination (where direct-push technology was applied). Each soil core was cut open, the soil samples were classified, and the soil 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 primarily brown, reddish-brown, and yellowish-brown silts, and secondarily contain multicolored silts, and brown and white sands and silty sands. Soil boring P65-B2 contained rock fragments within the silty sand from 9 to 12-ft bgs, and soil boring P65-B8

contained quartz fragments within the silt from 7 to 8-ft bgs. Groundwater was not encountered in any of the borings at the termination depths of 12-ft 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 or two of the samples from each boring was selected for on-site laboratory analysis. Soil boring P65-B8 exhibited the highest PID reading of 4.5 parts per million (ppm) at 10-ft bgs, and soil boring P65-B9 exhibited the second highest PID reading of 2.5 ppm at 4-ft bgs.

Selected 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 suspected historical use of petroleum products on Parcel 65. The UVF analysis also provided data regarding Environmental Protection Agency 16 total Polycyclic Aromatic Hydrocarbons (PAHs), and Benzo(a)pyrene (BaP).

5 RESULTS

5.1 GEOPHYSICAL INVESTIGATION

The EM and GPR surveys identified one (1) unknown geophysical anomaly within the northern portion of the Project Study Area. The unknown anomaly is labelled as a “no confidence anomaly” in the geophysical report provided in Appendix B, and its location is indicated on Figure 2.

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 above NCDEQ Action Levels. A summary of soil sample PID readings are presented in Table 1, and laboratory analytical results are presented in Table 2. The laboratory results associated with each boring are presented on Figure 2. 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

Kleinfelder did not identify soil impact in the current right-of-way.

6 CONCLUSIONS

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

- The site is not listed in the NCDEQ UST Database with a Facility ID Number, and no incidents or other listings for Parcel 65 were identified on any of the available NCDEQ pollution incident databases. However, a groundwater monitoring well and former fuel canopy are evidence that USTs were once likely located on-site.
- The GPR and EM investigation identified one (1) unknown anomaly feature in the northern portion of the Project Study Area (Figure 2). Pyramid did not investigate the area underneath the fuel canopy because stored industrial, agricultural, and automotive equipment prevented access of the EM and GPR equipment. An area in the southeastern portion of the Project Study Area also was also not accessible due to parked commercial vehicles and trailers.
- No soil impact was detected in borings advanced within the current right-of-way above the NCDEQ Action Levels for TPH GRO and DRO. However, surface staining with an odor of petroleum was observed on the concrete underneath the fuel canopy and on the asphalt outside of the Project Study Area. Further, the southeastern portion of the Project Study Area was inaccessible for soil borings due to parked commercial vehicles and trailers.
- Groundwater was not encountered in the soil borings at a depth of 12-ft bgs.

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 North Wilkesboro, Wilkes County, North Carolina.

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

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.

TABLES

Table 1: Soil Sample Screening Results

Date	Sample ID	Depth (ft)	PID Reading	Notes
8/2/2021	R-5759-P65-B1	1	0.0	
		2	0.0	
		3	0.0	
		4	0.0	
		5	0.0	
		6	0.0	
		7	0.0	
		8	0.0	
		9	0.0	
		10	0.0	
		11	0.0	
		12	0.0	UVF Analysis
8/2/2021	R-5759-P65-B2	1	0.3	
		2	0.1	
		3	0.3	
		4	0.0	
		5	0.2	
		6	0.2	
		7	0.0	
		8	0.3	
		9	0.0	
		10	0.7	
		11	0.0	
		12	0.7	UVF Analysis
8/3/2021	R-5759-P65-B3	1	0.2	
		2	0.0	
		3	0.0	
		4	0.2	
		5	0.0	
		6	0.0	
		7	0.2	UVF Analysis
		8	0.0	
		9	0.0	
		10	0.0	
		11	0.0	
		12	0.0	UVF Analysis
8/3/2021	R-5759-P65-B4	1	0.0	
		2	0.0	
		3	1.9	UVF Analysis
		4	1.3	
		5	1.3	
		6	0.8	
		7	1.0	
		8	0.8	
		9	1.1	UVF Analysis
		10	0.6	
		11	0.3	
		12	0.1	
8/3/2021	R-5759-P65-B5	1	0.0	
		2	0.3	
		3	0.4	
		4	0.4	
		5	0.7	UVF Analysis
		6	0.5	
		7	0.5	
		8	0.2	
		9	0.1	
		10	0.1	
		11	0.2	
		12	0.1	
8/3/2021	R-5759-P65-B6	1	0.5	
		2	0.7	
		3	0.5	
		4	0.7	
		5	0.7	
		6	0.9	
		7	0.6	
		8	0.9	UVF Analysis
		9	0.5	
		10	0.0	
		11	0.1	
		12	0.2	
8/3/2021	R-5759-P65-B7	1	0.3	
		2	0.3	
		3	0.0	
		4	0.0	
		5	0.6	UVF Analysis
		6	0.2	
		7	0.2	
		8	0.4	
		9	0.1	
		10	0.0	
		11	0.1	
		12	0.2	
8/3/2021	R-5759-P65-B8	1	0.0	
		2	0.2	
		3	0.1	
		4	0.0	
		5	0.9	
		6	0.9	
		7	1.4	
		8	2.6	
		9	1.6	
		10	4.5	UVF Analysis
		11	2.3	
		12	0.8	
8/3/2021	R-5759-P65-B9	1	0.0	
		2	0.0	
		3	1.1	
		4	2.5	UVF Analysis
		5	0.0	
		6	0.0	
		7	0.0	
		8	0.3	
		9	0.9	
		10	0.9	
		11	0.9	
		12	0.1	

Notes:

- 1) PID = Photoionization Detector
- 2) PID readings in parts per million (ppm)
- 3) NA = Not Analyzed
- 4) UVF = Ultraviolet Fluorescence

TABLE 2: Soil Sample Analytical Summary

Parameter	Analytical Results												Comparison Criteria		
	Soil Sample Results														
Sample ID	P65-B1-12	P65-B2-8	P65-B2-12	P65-B3-7	P65-B3-12	P65-B4-3	P65-B4-9	P65-B5-5	P65-B6-8	P65-B7-5	P65-B8-10	P65-B9-4	State Action Level	Protection of Groundwater	Residential Health
PID Reading (ppm)	0.0	0.3	0.7	0.0	0.0	1.9	1.1	0.7	0.9	0.6	4.5	2.5			
Collection Depth (ft bgs)	12	8	12	12	12	3	9	5	8	5	10	4			
Collection Date	8/2/21	8/2/21	8/2/21	8/2/21	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21			
UVF Method															
Diesel Range Organics	0.09	<0.25	<0.21	0.09	<0.20	0.9	<0.13	0.5	<0.17	0.9	<0.18	1.2	100	--	--
Gasoline Range Organics	<0.50	<0.60	<0.50	<0.50	<0.50	<0.40	<0.30	<0.40	<0.40	<0.50	<0.40	<0.50	50	--	--

Notes:

Results displayed in milligrams per kilogram (mg/kg)

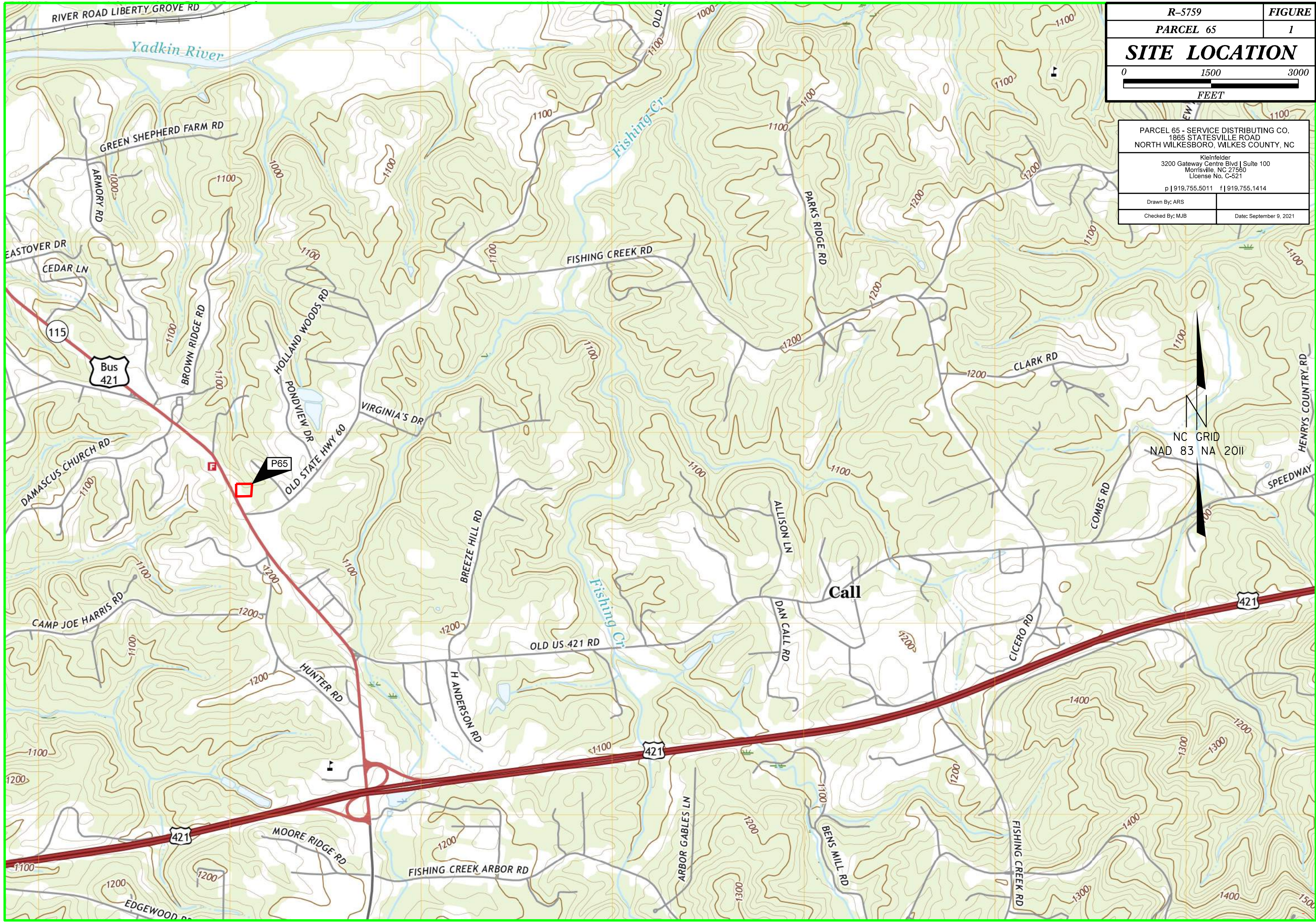
ft bgs = Feet below ground surface

Bold = Above Laboratory Detection Level

Highlighted concentrations exceed the NCDEQ action level

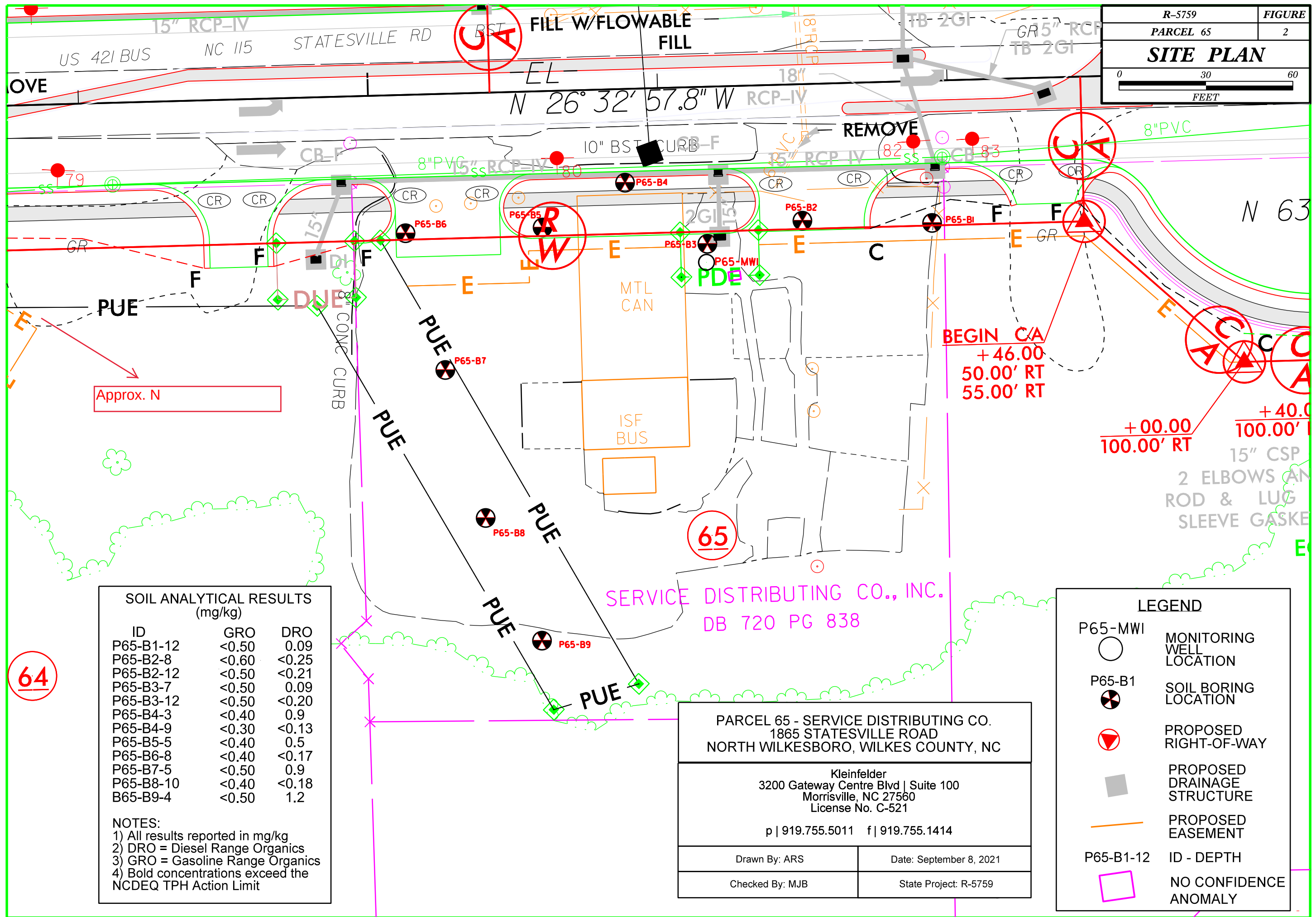
UVF = Ultraviolet Fluorescence

FIGURES



R-5759	FIGURE
PARCEL 65	1
SITE LOCATION	
0 1500 3000 FEET	

PARCEL 65 - SERVICE DISTRIBUTING CO. 1865 STATESVILLE ROAD NORTH WILKESBORO, WILKES COUNTY, NC	
Kleinfelder 3200 Gateway Centre Blvd Suite 100 Morrisville, NC 27560 License No. C-521 p 919.755.5011 f 919.755.1414	
Drawn By: ARS	
Checked By: MJB	Date: September 9, 2021



APPENDIX A

SITE PHOTOGRAPHS



View facing north from the southwestern corner of the Project Study Area displaying inactive fuel islands and an inactive convenience store.



View facing north from the southwestern corner of the Project Study Area, displaying NC 115 on the western boundary of the Project Study Area and overhead power lines.

Original in Color

SITE PHOTOGRAPHS

Preliminary Site Assessment Report
 R-5759 – Parcel 65, Service Distributing Co.,
 Inc AKA Umana, Kenneth E (formerly Hamby)
 1865 Statesville Road
 North Wilkesboro, Wilkes County, NC 28659

FIGURE

A-1



View facing west from the eastern boundary of the Project Study Area along the side of the inactive convenience store.



Inactive product pipe located along the southern side of the convenience store structure.

Original in Color

	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-2
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 65, Service Distributing Co., Inc AKA Umana, Kenneth E (formerly Hamby) 1865 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing northeast from the southwestern corner of the convenience store structure.



View facing west from the eastern boundary of the Project Study Area displaying parked commercial vehicles which prevented geophysical analysis within the area.

Original in Color

 KLEINFELDER <i>Bright People. Right Solutions.</i> www.kleinfelder.com	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-3
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 65, Service Distributing Co., Inc AKA Umana, Kenneth E (formerly Hamby) 1865 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



Three large steel drums with unknown contents stored underneath a parked commercial vehicle in the southern portion of the Project Study Area.



View facing southeast from the southern end of the fuel canopy displaying parked commercial vehicles which prevented geophysical analysis within the area.

Original in Color

 KLEINFELDER <i>Bright People. Right Solutions.</i> www.kleinfelder.com	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-4
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 65, Service Distributing Co., Inc AKA Umana, Kenneth E (formerly Hamby) 1865 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing east towards the eastern boundary of the Project Study Area, with some petroleum surface staining on the asphalt.



Discarded tires and automotive debris located in the eastern portion of the Project Study Area.

Original in Color

 KLEINFELDER <i>Bright People. Right Solutions.</i> www.kleinfelder.com	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-5
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 65, Service Distributing Co., Inc AKA Umana, Kenneth E (formerly Hamby) 1865 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing north from the eastern boundary of the Project Study Area displaying the area behind the convenience store along the eastern boundary of Parcel 65.



Petroleum surface staining in the eastern portion of the Project Study Area.

Original in Color

	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-6
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcel 65, Service Distributing Co., Inc AKA Umana, Kenneth E (formerly Hamby) 1865 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing south from the northwestern corner of the Project Study Area along NC 115.



View facing south from the western boundary of the Project Study Area along NC 115.

Original in Color



View facing west underneath the former fuel canopy.



Stored equipment underneath the former fuel canopy with petroleum surface contamination.

Original in Color

SITE PHOTOGRAPHS

Preliminary Site Assessment Report
 R-5759 – Parcel 65, Service Distributing Co.,
 Inc AKA Umana, Kenneth E (formerly Hamby)
 1865 Statesville Road
 North Wilkesboro, Wilkes County, NC 28659

FIGURE

A-8



View facing west towards NC 115 displaying machinery stored underneath the former fuel canopy.



A groundwater monitoring well located outside of the northern edge of the concrete wall that bounds the area under the former fuel canopy, in the northern portion of the Project Study Area. *Original in Color*

APPENDIX B

GEOPHYSICAL SURVEY REPORT



PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2021-190)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCEL 65 NCDOT PROJECT U-5759

1865 STATESVILLE ROAD, NORTH WILKESBORO, NC

August 6, 2021

Report prepared for: Michael Burns, P.G.
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Prepared by: _____

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Reviewed by: _____

A handwritten signature in black ink, appearing to read "Doug Canavella".

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C257: GEOLOGY

C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 65 - 1865 Statesville Road
North Wilkesboro, Wilkes County, North Carolina

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NCDOT Engineering Plans

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 (Pyramid) conducted a geophysical investigation for Kleinfelder, Inc. at Parcel 65, located at 1865 Statesville Road, in North Wilkesboro, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5759). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted on July 14-16, 2021, 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 seven 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.

A no confidence anomaly was identified just north of the pump island canopy. No Confidence Anomaly #1 is approximately 4 feet long by 3 feet wide. This anomaly is inconsistent with a UST. Collectively, the geophysical data recorded evidence of one no confidence anomaly at Parcel 65. No evidence of unknown USTs was observed.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Kleinfelder, Inc. at Parcel 65, located at 1865 Statesville Road, in North Wilkesboro, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5759). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted on July 14-16, 2021, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site consisted of an inactive gas station surrounded by asphalt, concrete, and grass surfaces. Part of the southern portion of the survey area was inaccessible due to the presence of trailers and vehicles. 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 16, 2021, 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 SIR 4000 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	Sign/Water Meter	
2	Reinforced Concrete Wall	
3	Drop Inlet	
4	Manhole/Utilities	
5	Trailer	✓
6	One No Confidence Anomaly	✓
7	Vehicles/Trailers	✓

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including a sign, a water meter, a reinforced concrete wall, a drop inlet, a manhole, utilities, trailers, and vehicles. EM Anomaly 6 was investigated with GPR to examine whether the anomaly was the result of a significant structure such as a UST. GPR was performed around the trailers and vehicles to confirm that the metallic interference did not obscure any significant structures such as USTs. Additionally, GPR was performed under the pump island canopy as it was inaccessible to the EM equipment.

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 five formal GPR transects were performed at the site. Extensive reconnaissance GPR was also performed around the trailers and vehicles in the southern portion of the property.

GPR Transect 1 was performed across EM Anomaly 5, caused by the presence of a trailer. This transect showed discrete hyperbolic reflectors consistent with possible utilities and/or buried debris. GPR Transect 2 was performed across EM Anomaly 6. This transect showed a shallow, smaller, high-amplitude lateral reflector. This reflector is atypical of a UST and this feature is classified as a no confidence anomaly. No Confidence Anomaly #1 is approximately 4 feet long by 3 feet wide. **Figure 4** provides the location and size of the no

confidence anomaly, overlain on an aerial, along with ground-level photographs. The remaining transects showed evidence of possible buried utilities and/or debris. The transects performed under the pump island canopy (Transects 3-5) and the reconnaissance GPR performed in the southern portion of the property showed evidence of reinforced concrete and buried utilities and/or debris, but no evidence of more significant structures was observed.

Collectively, the geophysical data recorded evidence of one no confidence anomaly at Parcel 65. No evidence of unknown USTs was observed. **Figure 5** provides an overlay of the metal detection results and one no confidence anomaly on the NCDOT engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 65 in North Wilkesboro, 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.
- A no confidence anomaly was identified just north of the pump island canopy. No Confidence Anomaly #1 is approximately 4 feet long by 3 feet wide. This anomaly is inconsistent with a UST.
- Collectively, the geophysical data recorded evidence of one no confidence anomaly at Parcel 65. No evidence of unknown USTs was observed.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Kleinfelder, Inc. 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 South)



View of Survey Area (Facing Approximately East)



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PROJECT
PARCEL 65
NORTH WILKESBORO, NORTH CAROLINA
NCDOT PROJECT U-5759

TITLE
PARCEL 65 -
GEOPHYSICAL SURVEY BOUNDARIES
AND SITE PHOTOGRAPHS

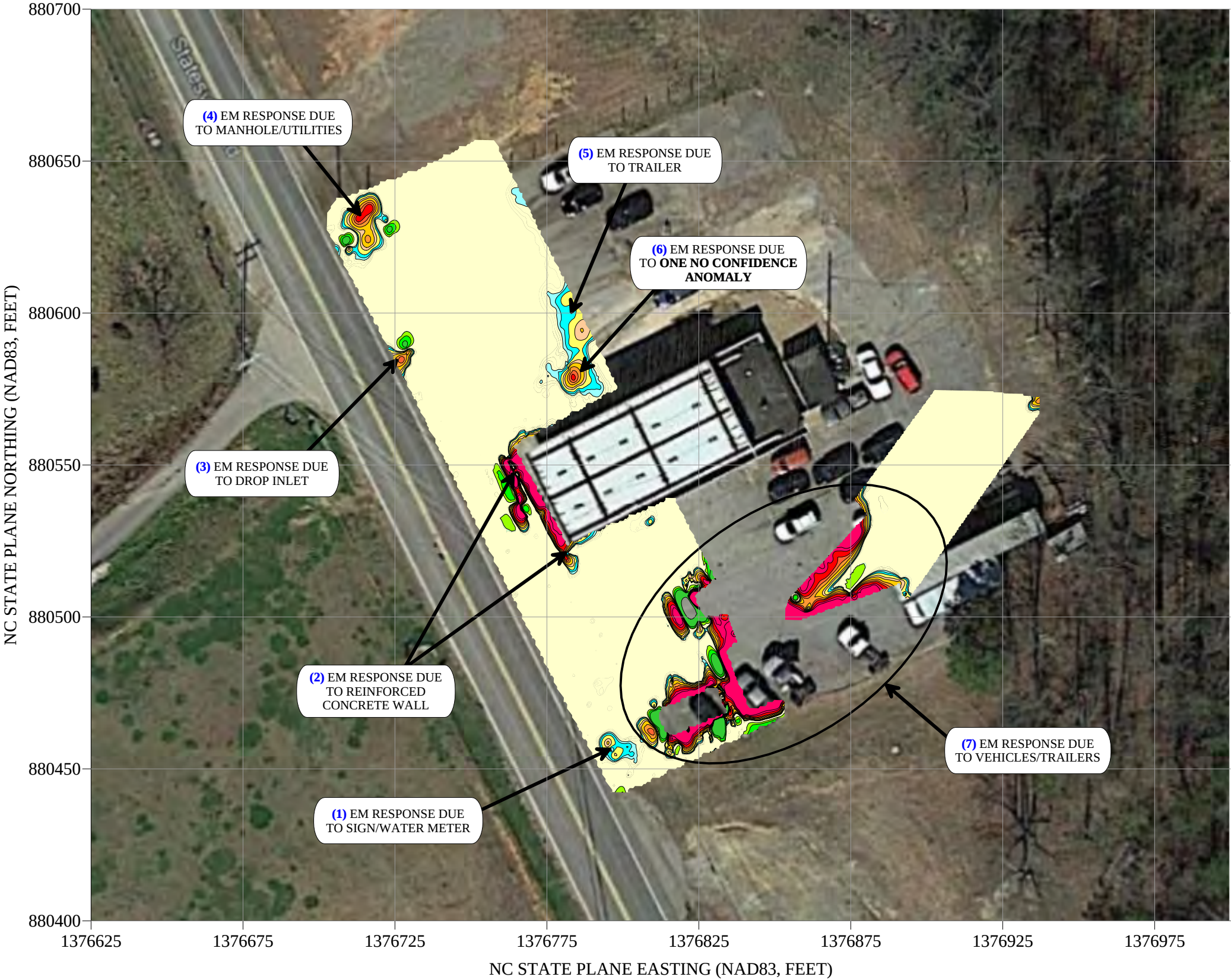
DATE
7/19/2021

PYRAMID
PROJECT #:
2021-190

CLIENT
Kleinfelder

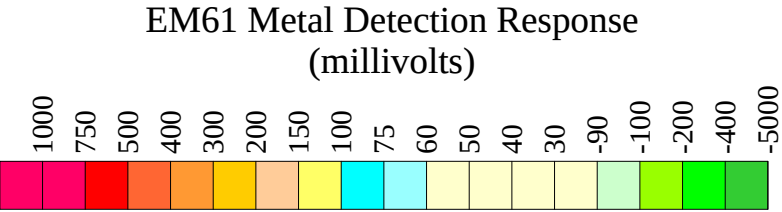
FIGURE 1

EM61 METAL DETECTION RESULTS



EVIDENCE OF ONE NO CONFIDENCE ANOMALY 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 14-15, 2021, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI SIR 4000 instrument with a 350 MHz HS antenna on July 16, 2021.



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PROJECT
PARCEL 65
NORTH WILKESBORO, NORTH CAROLINA
NCDOT PROJECT U-5759

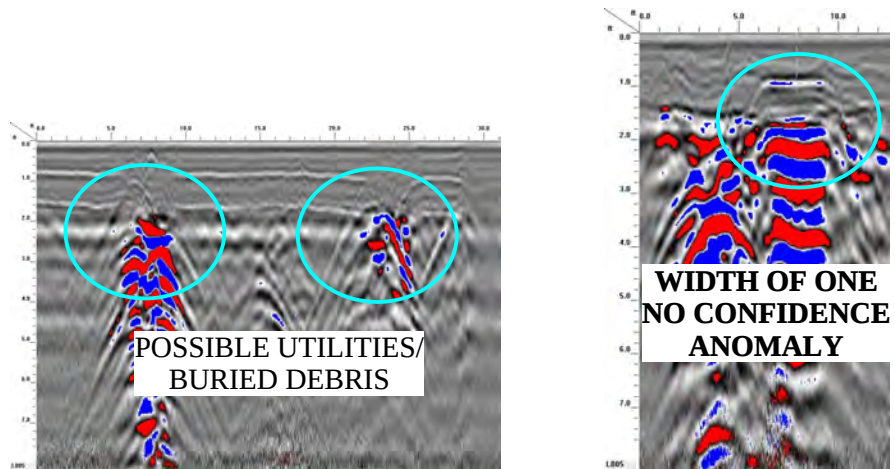
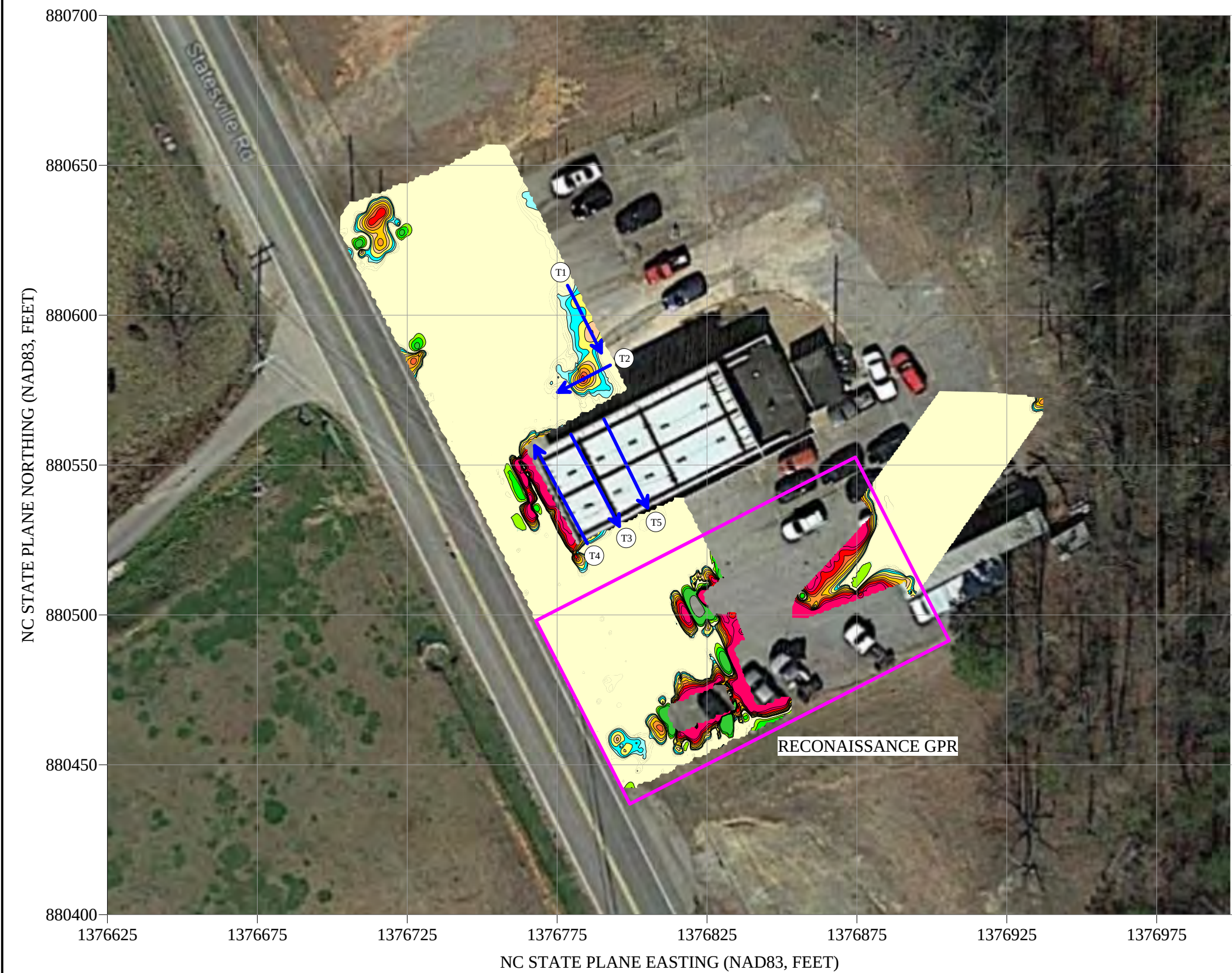
TITLE
PARCEL 65 -
EM61 METAL DETECTION CONTOUR MAP

DATE
7/19/2021
PYRAMID PROJECT #:
2021-190

CLIENT
Kleinfelder
FIGURE 2

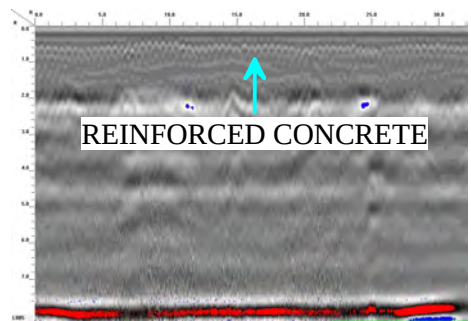


GPR TRANSECT LOCATIONS

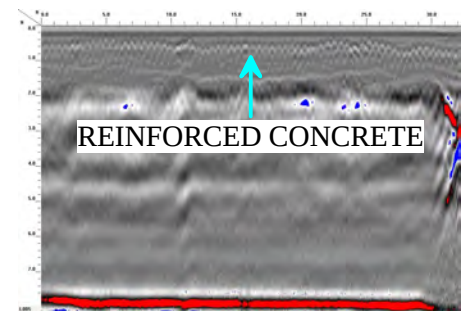


GPR TRANSECT 1 (T1)

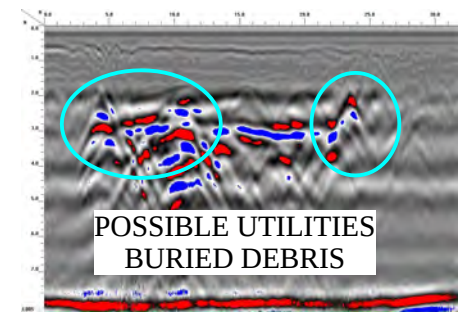
GPR TRANSECT 2 (T2)



GPR TRANSECT 3 (T3)



GPR TRANSECT 4 (T4)



GPR TRANSECT 5 (T5)



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			PYRAMID PROJECT #: 2021-190	FIGURE 3

LOCATION OF ONE NO CONFIDENCE ANOMALY



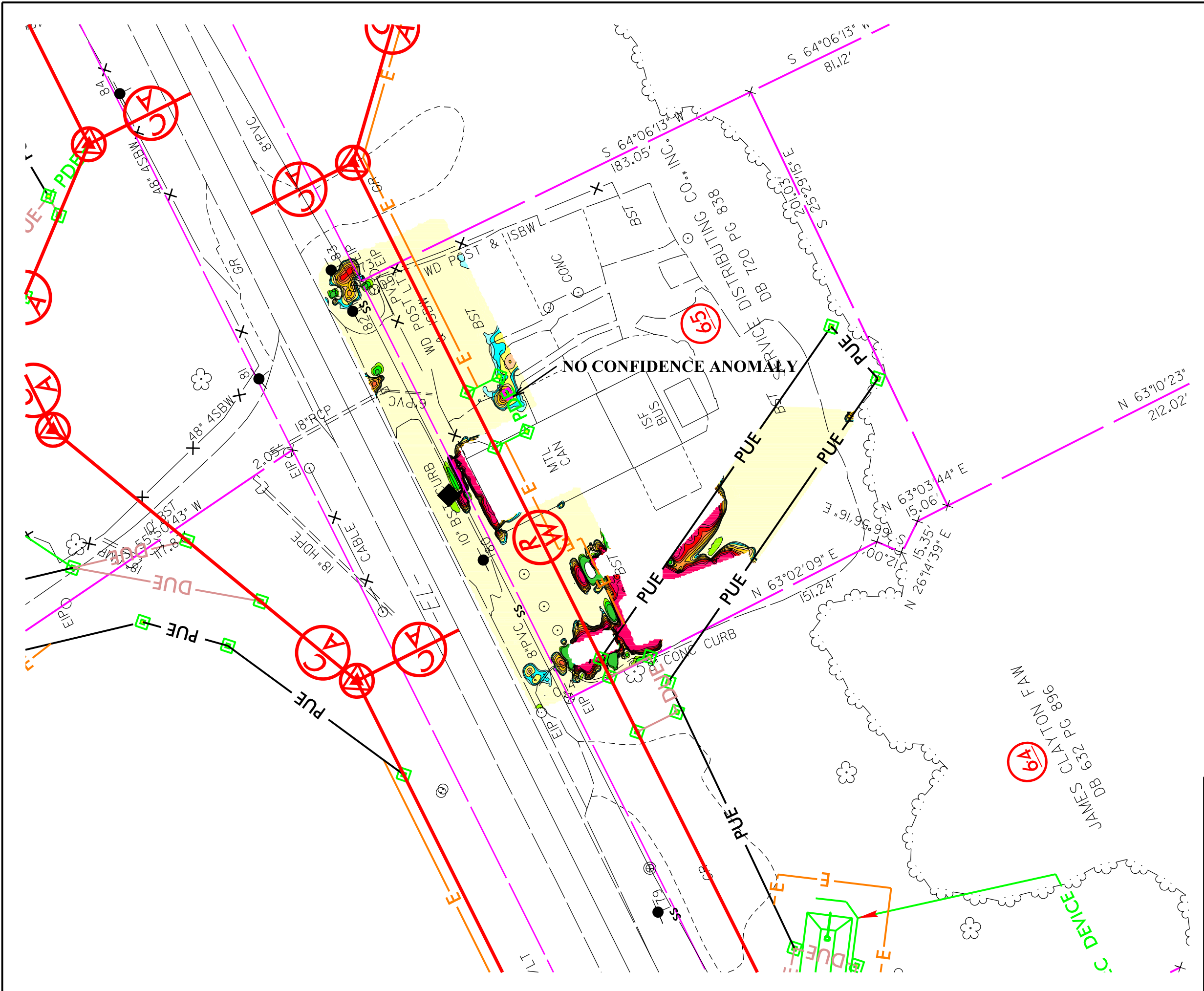
View of One No Confidence Anomaly
(Facing Approximately South)



View of One No Confidence Anomaly
(Facing Approximately Southeast)



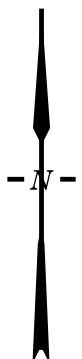
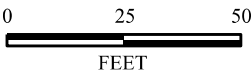
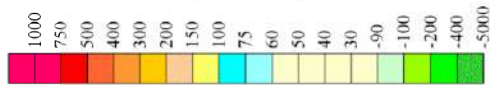
 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	PROJECT PARCEL 65 NORTH WILKESBORO, NORTH CAROLINA NCDOT PROJECT U-5759	TITLE PARCEL 65 - LOCATION AND SIZE OF ONE NO CONFIDENCE ANOMALY	DATE 7/19/2021	CLIENT Kleinfelder
			PYRAMID PROJECT #: 2021-190	FIGURE 4



LEGEND

- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PUE
- PROPOSED PERMANENT UTILITY
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE
- NO CONFIDENCE ANOMALY

EM61 Metal Detection Response (millivolts)



TITLE OVERLAY OF METAL DETECTION RESULTS AND ONE NO CONFIDENCE ANOMALY ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 65 WILKESBORO, NORTH CAROLINA NCDOT PROJECT R-5759	
 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
DATE: 8-9-2021	REVISION NO. 0
PYRAMID PROJECT NO. 2021-190	FIGURE NO. 5

APPENDIX C

BORING LOGS

Date Begin - End: 8/02/2021		Drilling Company: SAEDACCO		ENVIRONMENTAL BORING LOG P65-B1				
Logged By: E. AMBER		Drill Crew: S. HUNT						
Hor.-Vert. Datum: Not Available		Drilling Equipment: 6620DT GeoProbe						
Plunge: -90 degrees		Drilling Method: See Drilling Method Column						
Weather: SUNNY		Bore Diameter:						
FIELD EXPLORATION								
Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Asphalt	
							Lithologic Description	
5 10	Geoprobe				0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		ASPHALT: black	
							SILT: red and pink and brown	
The borehole was terminated at approximately 12 ft. below ground surface.							<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not observed during drilling or after completion. <u>GENERAL NOTES:</u> The environmental boring was backfilled with bentonite.	
		PROJECT NO.: 20221238.001A		ENVIRONMENTAL BORING LOG P65-B1				
		DRAWN BY: EA						
		CHECKED BY: MJB		NCDOT R-5759 PSAs North Wilkesboro, NC				
		DATE: 8/12/2021						

Date Begin - End: 8/02/2021		Drilling Company: SAEDACCO		ENVIRONMENTAL BORING LOG P65-B2								
Logged By: E. AMBER		Drill Crew: S. HUNT										
Hor.-Vert. Datum: Not Available		Drilling Equipment: 6620DT GeoProbe										
Plunge: -90 degrees		Drilling Method: See Drilling Method Column										
Weather: SUNNY		Bore Diameter:										
FIELD EXPLORATION												
Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Asphalt					
							Lithologic Description					
5 10	Geoprobe				0.3 0.1 0.3 0.0 0.2 0.2 0.0 0.3 0.0 0.7 0.0 0.7		ASPHALT: black					
							SILT: reddish brown					
							SAND: white and brown					
							SILT: yellowish brown					
							Silty SAND with Cobbles: white and brown, rock fragments					
							The borehole was terminated at approximately 12 ft. below ground surface.		<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not observed during drilling or after completion. <u>GENERAL NOTES:</u> The environmental boring was backfilled with bentonite.			
									PROJECT NO.: 20221238.001A		ENVIRONMENTAL BORING LOG P65-B2	
									DRAWN BY: EA CHECKED BY: MJB DATE: 8/12/2021		NCDOT R-5759 PSAs North Wilkesboro, NC	

Date Begin - End: 8/03/2021		Drilling Company: SAEDACCO		ENVIRONMENTAL BORING LOG P65-B3			
Logged By: E. AMBER		Drill Crew: S. HUNT					
Hor.-Vert. Datum: Not Available		Drilling Equipment: 6620DT GeoProbe					
Plunge: -90 degrees		Drilling Method: See Drilling Method Column					
Weather: CLOUDY		Bore Diameter:					
FIELD EXPLORATION							
Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Asphalt
							Lithologic Description
5 10	Geoprobe				0.2 0.0 0.0 0.2 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0		Silty SAND: brown
							Sandy SILT: reddish brown
The borehole was terminated at approximately 12 ft. below ground surface.							<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not observed during drilling or after completion. <u>GENERAL NOTES:</u> The environmental boring was backfilled with bentonite.
		PROJECT NO.: 20221238.001A		ENVIRONMENTAL BORING LOG P65-B3			
		DRAWN BY: EA CHECKED BY: MJB DATE: 8/12/2021		NCDOT R-5759 PSAs North Wilkesboro, NC			

Date Begin - End:	8/03/2021	Drilling Company:	SAEDACCO	ENVIRONMENTAL BORING LOG P65-B4
Logged By:	E. AMBER	Drill Crew:	S. HUNT	
Hor.-Vert. Datum:	Not Available	Drilling Equipment:	6620DT GeoProbe	
Plunge:	-90 degrees	Drilling Method:	See Drilling Method Column	
Weather:	CLOUDY	Bore Diameter:		

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	FIELD EXPLORATION	
							Surface Condition: Asphalt	Lithologic Description
								ASPHALT: black
					0.0			SILT: reddish brown
					0.0			SILT: yellowish brown
					1.9			
					1.3			
					1.3			
5					0.8			
					1.0			
					0.8			
					1.1			
					0.6			
10					0.3			
					0.1			
The borehole was terminated at approximately 12 ft. below ground surface.								GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion. GENERAL NOTES: The environmental boring was backfilled with bentonite.



PROJECT NO.:
20221238.001A

DRAWN BY: EA

CHECKED BY: MJB

DATE: 8/12/2021

**ENVIRONMENTAL BORING LOG
P65-B4**

NCDOT R-5759 PSAs
North Wilkesboro, NC

Drilling Company:	SAEDACCO
Drill Crew:	S. HUNT
Drilling Equipment:	6620DT GeoProbe
Drilling Method:	See Drilling Method Column
Bore Diameter:	

FIELD EXPLORATION

Surface Condition: Asphalt

Lithologic Description

ASPHALT: black

SILT: reddish brown

SILT: reddish brown and yellowish brown

SILT: pink and brown

The borehole was terminated at approximately 12 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The environmental boring was backfilled with bentonite.



PROJECT NO.:
20221238.001A

DRAWN BY: EA

CHECKED BY: MJB

DATE: 8/12/2021

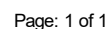
ENVIRONMENTAL BORING LOG
P65-B5

NCDOT R-5759 PSAs
North Wilkesboro, NC

ENVIRONMENTAL BORING LOG P65-B6

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The environmental boring was backfilled with bentonite.

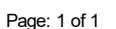


Page: 1 of 1

ENVIRONMENTAL BORING LOG P65-B8

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The environmental boring was backfilled with bentonite.



Page: 1 of 1

APPENDIX D

ANALYTICAL REPORT AND GRAPHS

Hydrocarbon Analysis Results



Client: KLEINFELDER

Address:



Samples taken

Samples extracted

Samples analysed



Monday, August 2, 2021

Monday, August 2, 2021

Monday, August 2, 2021

Contact: ABI SHURTLEFF

Operator

MAX MOYER

Project: R-5759 ; PARCEL 65

T03308

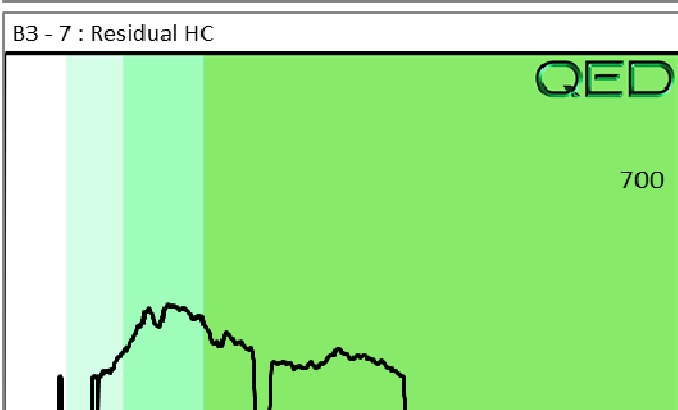
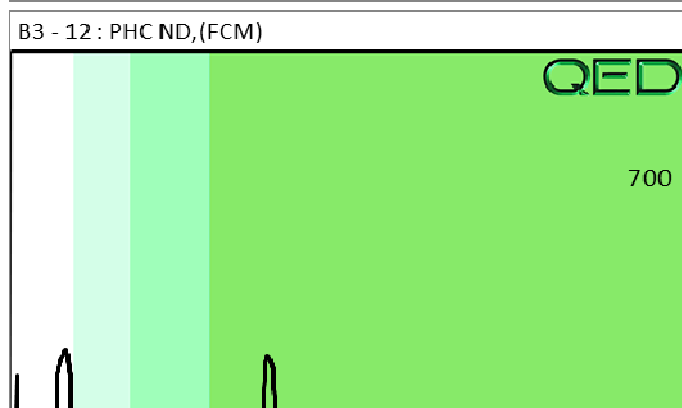
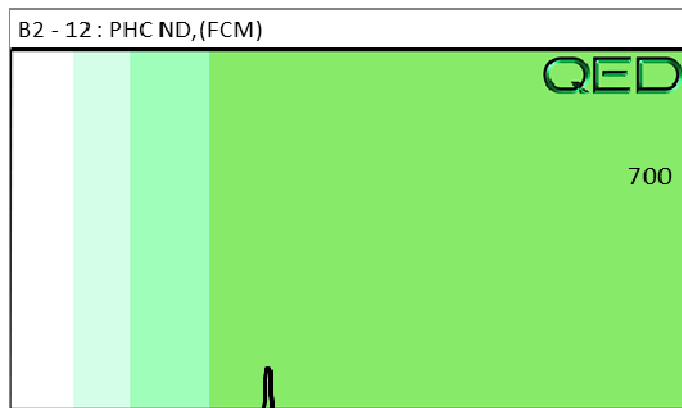
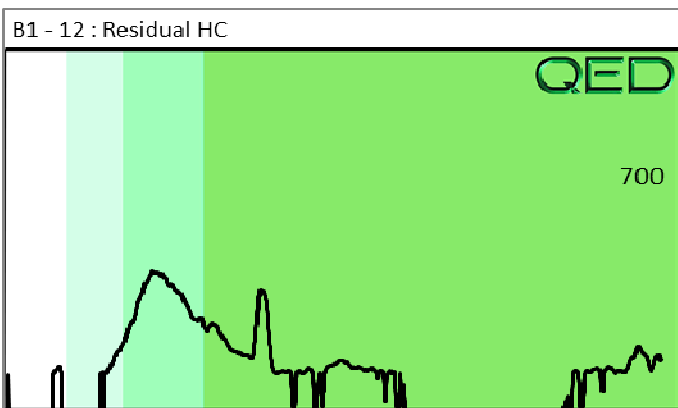
Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	B1 - 12	22.0	<0.5	<0.5	0.09	0.09	0.09	0.01	<0.007	0	86.1	13.9	Residual HC
Soil	B2 - 12	21.0	<0.5	<0.5	<0.21	<0.5	<0.011	<0.011	<0.006	0	0	0	PHC ND,(FCM)
Soil	B2 - 8	25.0	<0.6	<0.6	<0.25	<0.6	<0.013	<0.013	<0.008	0	0	0	PHC ND,(FCM)
Soil	B3 - 12	20.0	<0.5	<0.5	<0.2	<0.5	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	B3 - 7	23.0	<0.5	<0.5	0.09	0.09	0.08	0.008	<0.007	0	67.8	32.2	Residual HC
Initial Calibrator QC check			OK		Final FCM QC Check					OK		101.7%	

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

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

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

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



Hydrocarbon Analysis Results



Client: KLEINFELDER

Address:



Samples taken

Samples extracted

Samples analysed



Tuesday, August 3, 2021

Tuesday, August 3, 2021

Tuesday, August 3, 2021

Contact: ABI SHURTLEFF

Operator

MAX MOYER

Project: R-5759 ; PARCEL 65

T03308

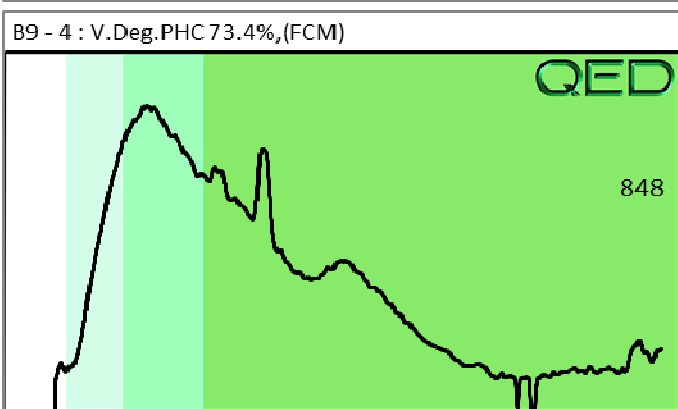
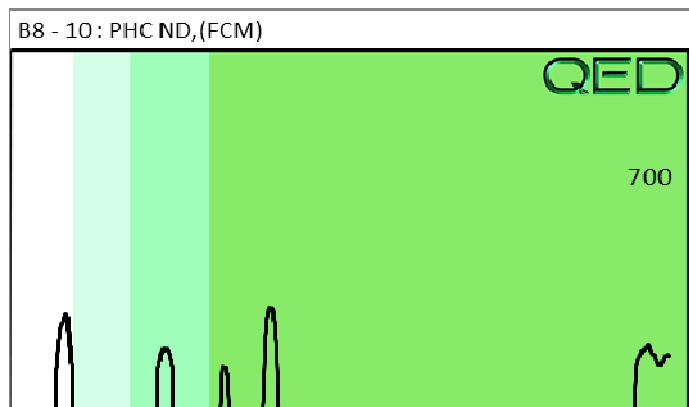
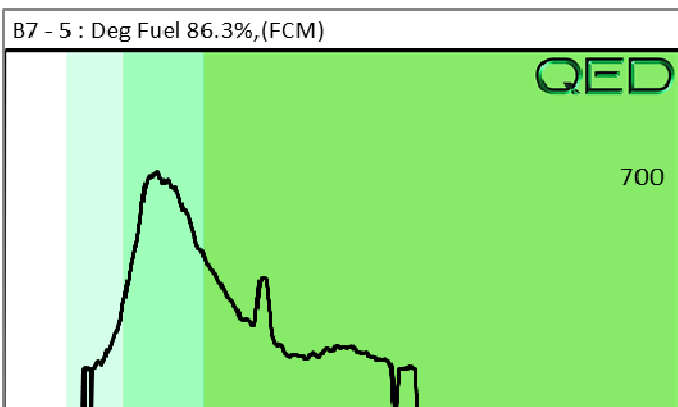
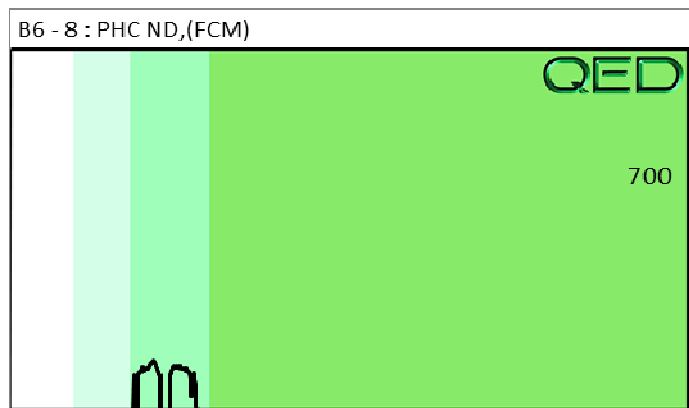
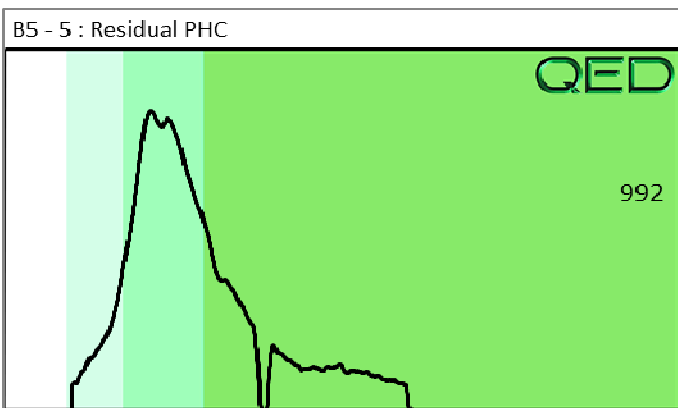
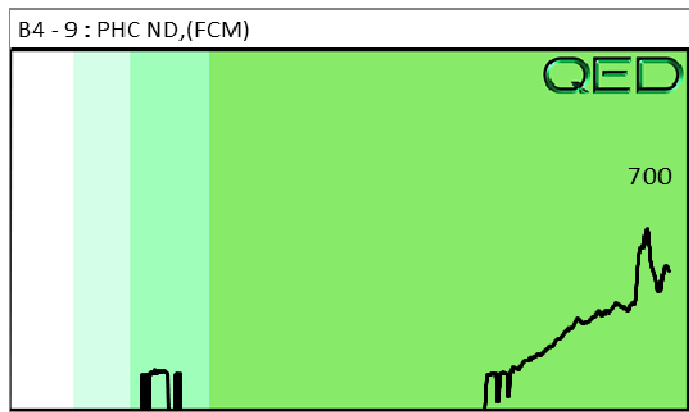
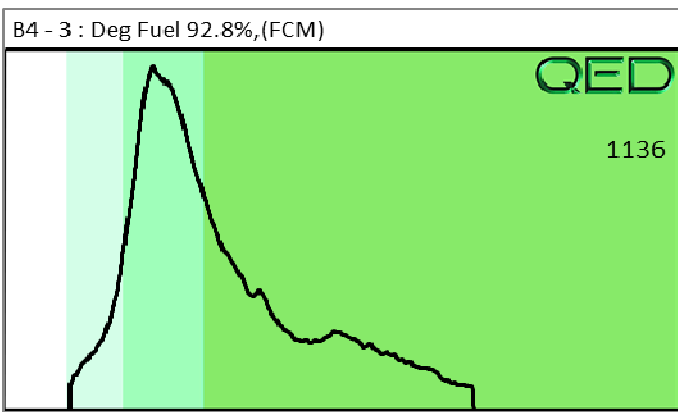
Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	B4 - 3	18.0	<0.4	<0.4	0.9	0.9	0.4	0.023	<0.005	0	92.5	7.5	Deg Fuel 92.8%,(FCM)
Soil	B4 - 9	13.0	<0.3	<0.3	<0.13	<0.3	<0.007	<0.007	<0.004	0	0	0	PHC ND,(FCM)
Soil	B5 - 5	17.0	<0.4	<0.4	0.5	0.5	0.4	0.05	<0.005	0	95.4	4.6	Residual PHC
Soil	B6 - 8	17.0	<0.4	<0.4	<0.17	<0.4	<0.009	<0.009	<0.005	0	0	0	PHC ND,(FCM)
Soil	B7 - 5	22.0	<0.5	<0.5	0.9	0.9	0.21	0.013	<0.007	0	100	0	Deg Fuel 86.3%,(FCM)
Soil	B8 - 10	18.0	<0.4	<0.4	<0.18	<0.4	<0.009	<0.009	<0.005	0	0	0	PHC ND,(FCM)
Soil	B9 - 4	23.0	<0.5	<0.5	1.2	1.2	0.8	0.04	<0.003	0	93.7	6.3	V.Deg.PHC 73.4%,(FCM)
Initial Calibrator QC check			OK			Final FCM QC Check			OK			88.9%	

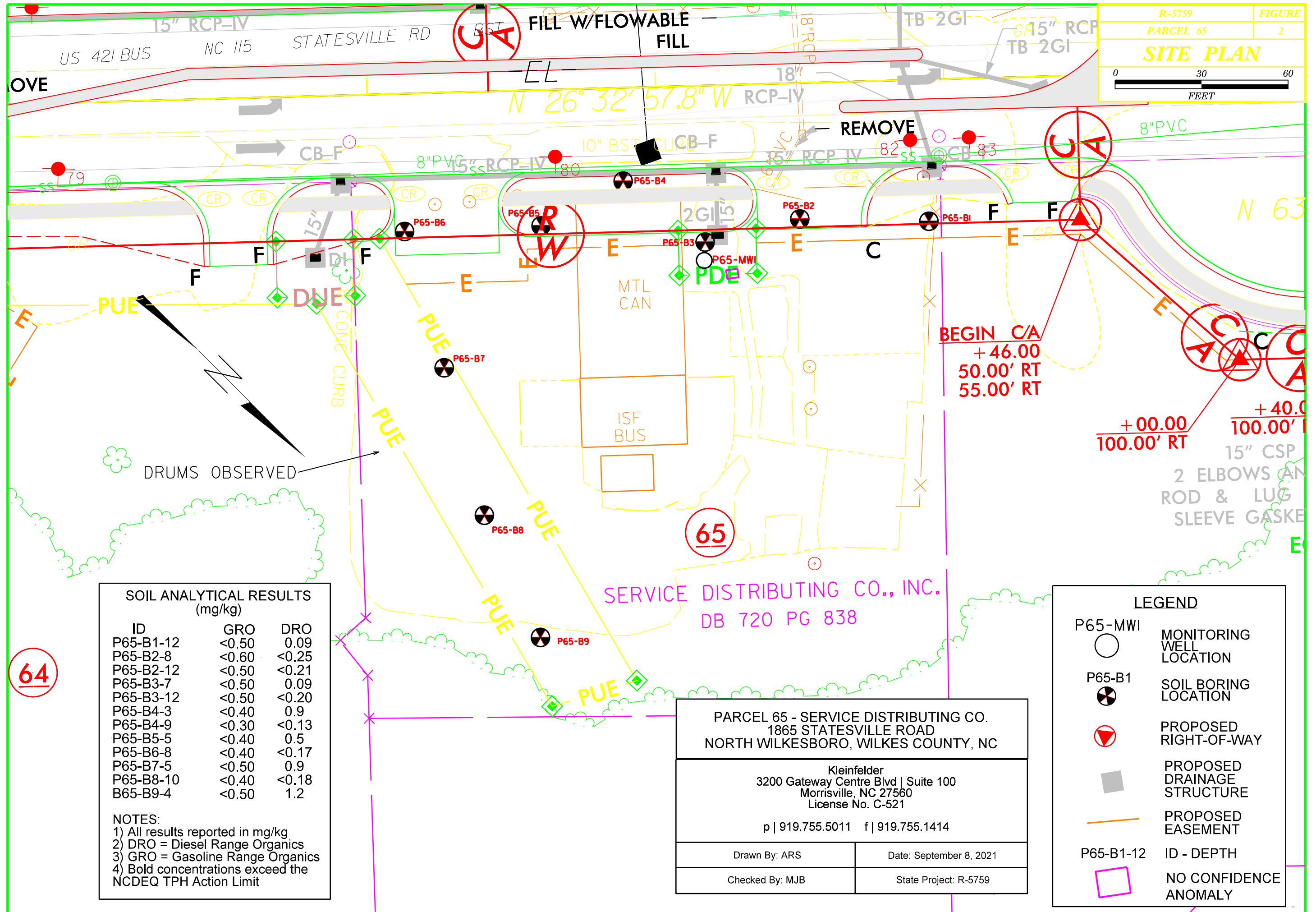
Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values uncorrected for moisture or stone content. Fingerprints provide a tentative hydrocarbon identification.

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

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

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







September 10, 2021
Kleinfelder File No. RAL21R130270

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
Parcels 72 & 73, Harold T. and Linda Kay Ashley Call AKA Call, Harold T & Linda A
WBS Element No. 44691.1.1, TIP No. R-5759
Proposed widening of NC 115 from US 421 to 2nd Street in Wilkesboro and North Wilkesboro, Wilkes County, NC
Kleinfelder Project No. 20221238.001A**

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.

Evan D. Amber
Staff Professional I

Michael J Burns, LG
Environmental Program Manager

EDA/MJB:asp



**PRELIMINARY SITE ASSESSMENT REPORT
PARCELS 72 & 73, HAROLD T. AND LINDA ASHLEY CALL AKA
CALL, HAROLD T & LINDA A
PIN 2203273 & 2203149
1748 & 1728 STATESVILLE ROAD
NORTH WILKESBORO, WILKES COUNTY, NORTH CAROLINA**

**NCDOT WBS ELEMENT 44691.1.1
STATE PROJECT R-5759
PROPOSED WIDENING OF NC 115 FROM US 421 TO 2ND
STREET IN WILKESBORO AND NORTH WILKESBORO**

KLEINFELDER PROJECT NO. 20221238.001A

SEPTEMBER 10, 2021

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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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PIN 2203273 & 2203149
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NORTH WILKESBORO, WILKES COUNTY, NORTH CAROLINA**

**NCDOT WBS ELEMENT 44691.1.1
STATE PROJECT R-5759
PROPOSED WIDENING OF NC 115 FROM US 421 TO 2ND STREET IN WILKESBORO AND
NORTH WILKESBORO**

Prepared by:



Evan D. Amber
Staff Professional I



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September 10, 2021

Kleinfelder Project No. 20221238.001A

PRELIMINARY SITE ASSESSMENT REPORT

Site Name and Location: Parcels 72 & 73
1748 & 1728 Statesville Road
North Wilkesboro, Wilkes County, North Carolina

Latitude and Longitude: 36.15233°N, -81.11215°W
36.15277°N, -81.11260°W

County Parcel Number 2203273 & 2203149

Facility ID Number: 00-0-0000006960

Leaking UST Incident: 30597

State Project No.: R-5759

NCDOT Project No.: NCDOT WBS Element 44691.1.1

Description: Proposed widening of NC 115 from US 421 to 2nd Street in Wilkesboro and North Wilkesboro

Date of Report: September 10, 2021

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.

Michael J Burns, LG
NC License No. 1645

DocuSigned by:

Michael Burns

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- E Limited Site Assessment Report

**PRELIMINARY SITE ASSESSMENT REPORT
PARCELS 72 & 73, HAROLD T. AND LINDA ASHLEY CALL AKA CALL, HAROLD T &
LINDA A
PIN 2203273 & 2203149
1748 & 1728 STATESVILLE ROAD
NORTH WILKESBORO, WILKES COUNTY, NORTH CAROLINA**

**NCDOT WBS ELEMENT 44691.1.1
STATE PROJECT R-5759
PROPOSED WIDENING OF NC 115 FROM US 421 TO 2ND STREET IN WILKESBORO AND
NORTH WILKESBORO**

1 INTRODUCTION

Kleinfelder, Inc. (Kleinfelder) has prepared this Preliminary Site Assessment (PSA) report to document assessment activities performed on Parcels 72 & 73 (the assessment area is hereafter referred to as the "Project Study Area"). The Project Study Area consists of the eastern and northern portions of two parcels that are within the right-of-way and/or easement on Wilkes County Tax Assessor's Office Parcel Numbers 2203273 and 2203149. Parcels 72 & 73 are currently occupied by a restaurant (Harold's Restaurant) and an automotive repair facility (Queen's Garage). Parcels 72 & 73 are located along the western side of NC 115 (US 421 BUS AKA Statesville Road), where NC 115 intersects with Eagle Lane in North Wilkesboro, Wilkes County, North Carolina (Figure 1).

Based on the information provided in the Pre-Scoping Comments letter, dated September 20, 2018, prepared by the North Carolina Department of Transportation (NCDOT), the parcels (listed as Site # 11 in the letter) were reported as a former gas station registered with underground storage tank (UST) Facility ID 6960. UST incident 30597 was also documented at the site. The automotive garage building reportedly remains on site and has two bay doors that may contain hydraulic lifts. As such, the purpose of the PSA was to: (A) conduct a PSA to evaluate whether contaminated soil is present in the Project Study Area that may result in increased project costs and future liability if acquired by the NCDOT; and (B) coordinate with the NCDOT Right of Way Agent to inspect the interior of the automotive garage on Parcel 73 to evaluate for the presence of in-ground hydraulic lifts.

1.1 SITE DESCRIPTION

Parcels 72 & 73 have listed owners of Harold T. and Linda Kay Ashley Call AKA Call, Harold T & Linda A. The parcel's street addresses are 1748 and 1728 Statesville Road. The parcels consist of a former retail gasoline filling station and are currently occupied by a restaurant (Harold's Restaurant) and an automotive repair facility (Queen's Garage). The Project Study Area primarily consists of a gravel parking lot area on Parcel 72 and an asphalt parking lot area on Parcel 73, as well as maintained grass areas in the vicinity of the electric utility poles and a restaurant advertisement billboard located along the western side of NC 115.

The parcels are bounded to the north by the Broadway Volunteer Fire Department building and its associated asphalt parking area, beyond which is an electrical substation, maintained vegetated land, and residential homes; to the east by NC 115, beyond which is maintained vegetated land and residential homes; and to the south and west by maintained vegetated land and wooded land, beyond which are residential homes.

Photographs of the Project Study Area are provided in Appendix A.

1.2 SCOPE OF WORK

Kleinfelder conducted this PSA in accordance with the NCDOT's June 1, 2021, Request for Technical and Cost Proposal (RFP) and Kleinfelder's June 16, 2021, Technical and Cost Proposal. The NCDOT granted a formal Notice to Proceed on June 21, 2021.

2 HISTORY

2.1 PARCEL USAGE

The parcel consists of a restaurant (Harold's Restaurant) and an automotive repair facility (Queen's Garage).

The September 20, 2018 Pre-Scoping Comments letter included information about UST Incident 30597 on the property at Queen's Garage, registered to Facility ID 6960. The proposed NCDOT easement passes through a portion of the garage building that may contain hydraulic lifts, and the easement also passes through the likely location of the former UST bed.

Kleinfelder conducted historical research to determine whether additional environmental listings were identified for Parcels 72 & 73. The following are the results of the additional research:

- Based on a review of historical aerial photographs using Google Earth Pro and the NCDOT Historical Aerial Imagery Index, the site appeared to have similar development since at least 1980. Historical imagery of 1960 suggested that the site was under development at that time. Historical imagery prior to 1960 was not available.
- Kleinfelder searched the registered underground storage tank (UST) database, maintained by the NCDEQ. The site was listed as Facility ID 00-0-0000006960 and named Harold's Restaurant – Service Station, with owners listed as Harold T and Linda K Call. The facility operated three (3) 10,000-gallon gasoline USTs which were installed on May 12, 1966, and removed on June 23, 2005. All USTs were constructed of single wall steel with a suction piping system and are now permanently closed.
- No online documents are available for UST Incident 30597. However, the NCDEQ UST Incidents Map locator identified the incident as attributed to UST Number WS-7153 and the incident having occurred on July 5, 2005, at 0800 hours, and reported on July 6, 2005, at 0800 hours. Kleinfelder contacted Doug Whitmire, L.G. of the NCDEQ Winston-Salem Regional Office to obtain reports and was provided with a Limited Site Assessment (LSA), dated October 12, 2005. A summary of the LSA findings as well as NCDEQ Winston-Salem Regional Office database comments are provided in Section 2.4 below.
- No other listings for Parcels 72 & 73 were identified on any of the available NCDEQ pollution incident databases.

2.2 FACILITY ID NUMBERS

Kleinfelder reviewed the NCDEQ UST database for Parcels 72 & 73. The parcels were identified as having had three (3) permanently closed USTs and is listed as Facility ID: 00-0-0000006960.

2.3 GROUNDWATER INCIDENT NUMBERS

No active groundwater incidents are known to be associated with Parcels 72 & 73 at this time.

2.4 LIMITED SITE ASSESSMENT

A Phase I LSA Report, written by Geoscience and Technology, P.A., dated October 12, 2005, detailed an investigation of petroleum impact to the soil beneath three (3) 10,000-gallon USTs that were removed on June 23, 2005. This LSA refers to UST Incident 30597 (alternate ID: UST Number WS-7153), the Former Queen's Garage, located at 1728 Statesville Road, North Wilkesboro, Wilkes County, NC (i.e., Parcel 73). The UST closure samples analyzed for the LSA indicated that the soils beneath the center 10,000-gallon gasoline UST were impacted with gasoline constituents. The source of the release was suspected to be either the dispenser or the distribution piping previously located directly over this tank. One groundwater monitoring well, MW1, was installed on-site, which revealed only C9-C22 Aromatics above the NC Administrative Code, Subchapter 2L, Section .0202 (NCAC 2L) standard. Based on the LSA investigation, the LSA reported the site as an apparently "Low Risk" classification for UST Incident 30597, and recommended that the incident may be "Closed Out". A copy of the LSA is provided as Appendix E.

The following comments exist in the NCDEQ Winston-Salem Regional Office database regarding the LSA for UST Incident 30597:

- Following review of the LSA, the risk was determined to be Low. C9-C22 Aromatics exceed the NCAC 2L, but all other parameters are less than 2L. The area is served by public water, and no potable wells were identified within 1,000 feet. Soil samples did not detect anything over the NC Soil-to-Groundwater Maximum Soil Contaminant Concentrations (MSCCs).
- The incident can be closed out with a Notice of Residual Petroleum (NORP) and public notice. The owners of the business are apparently deceased, and the property has not been conveyed.

The NCDEQ Winston-Salem Regional Office expressed to Kleinfelder that the property should not be conveyed without at least a NORP being recorded, regardless of whether or not public notification and closure of UST Incident 30597 are achieved. It is the responsibility of the current landowner to have a NORP placed on the land prior to a transfer. Since the responsible parties for the incident (the former owners of Queen's Garage) are deceased, an alternate way to have a NORP placed on the property is to send the property to NCDEQ's State Lead Program.

There is a possibility for petroleum constituents above the NCAC 2L standards to exist in the groundwater surrounding the source area (the former gasoline UST bed), as groundwater was not encountered or sampled as part of this PSA. The source area, groundwater monitoring well location (P73-MW1), and potential groundwater contamination area are indicated on Figure 2.

3 OBSERVATIONS

3.1 GROUNDWATER MONITORING WELLS

One (1) active groundwater monitoring well (P73-MW1) was observed on Parcel 73 at the time of site exploration, Tuesday, August 3, 2021. The groundwater monitoring well was located in the asphalt parking lot area east of the automotive storefront and approximately 20-ft south of the garage bay doors. The location of the well is indicated on Figure 2.

The groundwater monitoring well is associated with UST Incident 30597, and is located within the suspected source area (the former gasoline UST bed). Based on review of the 2005 LSA, the well was installed on September 15, 2005 to a total depth of 58-feet below ground surface (ft bgs). Groundwater was located approximately 49.5-ft bgs at the time of well installation.

3.2 ACTIVE USTS

Based on review of the NCDEQ UST database, site visits and previous reports, there are no active USTs located on site.

3.3 FEATURES APPARENT BEYOND THE PROJECT STUDY AREA

The Project Study Area consisted of the eastern and northern portions of two parcels within the NCDOT right-of-way or easement. Outside of the Project Study Area, surface staining was observed on the asphalt in the northwestern corner of the property. Parked commercial vehicles and trailers were observed in the southwestern corner of the property. Photographs of the surface staining and the commercial vehicles are provided in Appendix A. There were no other features of concern observed in other portions of the parcel beyond the Project Study Area.

3.4 INTERIOR OF THE AUTOMOTIVE GARAGE

Kleinfelder was not able to inspect the interior of the automotive garage on Parcel 73 to evaluate for the presence of in-ground hydraulic lifts, as Kleinfelder had not received entry authorization from the NCDOT Right of Way Agent by the time of site exploration, Tuesday August 3, 2021.

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 14 and 16, 2021. Pyramid utilized electromagnetic (EM) induction technology and ground penetrating radar (GPR) to locate potential geophysical anomalies and potential USTs within the Project Study Area.

A total of five (5) EM anomalies were identified, four (4) of which were directly attributed to visible cultural features at the ground surface, including a building, vehicles, a water meter, a sign, and mailboxes. One (1) EM anomaly was not associated with known/suspected utilities or buried metallic debris (listed as Metallic Anomaly #5 and in the geophysical report) in the southeastern portion of the Project Study Area. Subsurface conditions encountered during GPR Transect 1 across Metallic Anomaly # 5 prevented the GPR from penetrating more than approximately 12 inches below the surface. Given the size and amplitude of the EM anomaly and the lack of information from the GPR investigation due to subsurface conditions, Metallic Anomaly # 5 was classified as a "no confidence anomaly". No Confidence Anomaly # 1 was approximately 16-ft long by 7-ft wide (Figure 2).

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 the presence of soil contamination along the existing right-of-way and/or easement to evaluate whether known impact is present in this area and maybe migrating off-site. The soil borings were planned to be advanced to maximum depths of 12- ft bgs since the depth of the former UST basin may have been up to 10-ft bgs. Field screening using a photoionization detector (PID) was conducted at 1-foot intervals beginning from the ground surface to total boring depth. The soil sample with the highest PID reading above background or the sample from the maximum drilled depth was 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 South Atlantic Environmental Drilling and Construction Company (SAEDACCO) to perform the drilling on-site on August 3, 2021. SAEDACCO advanced three (3) soil borings in Parcel 72 (P72-B1 through P72-B3) and four (4) soil borings in Parcel 73 (P73-B1 through P73-B4) by direct-push technology at locations specified by Kleinfelder. The soil boring locations were identified in the field using a GPS. The borings were located within the right-of-way in the asphalt and gravel parking areas east of the buildings and the automotive garage, in the vicinity of the no confidence anomaly, and in the vicinity of the suspected former UST bed. The soil boring locations are shown on Figure 2.

Soil samples were collected by driving Macro Core™ samplers in 5-foot intervals to boring termination (where direct-push technology was applied). Each soil core was cut open, the soil samples were classified, and the soil divided into 1-foot sections. Each 1-foot section, collected via either method, was screened in the field using a PID. The PID readings are summarized in Table 1.

Soil borings from Parcel 72 and soil borings P73-B1 and P73-B4 were determined to be primarily composed of a reddish-brown and yellowish-brown silt, and to secondarily contain lenses of reddish-brown, white, and pink clayey silts. Soil boring P73-B2 had limited recovery from 5 – 10- ft bgs and consisted of brown and reddish-brown and slightly micaceous sandy silt, clayey silt, and sandy clay. Soil boring P73-B3 consisted of yellowish-brown and reddish-brown sandy silt to a depth of 9-ft bgs, and thereafter consisted of reddish-brown silty clay. Groundwater was not

encountered in any of the borings at the termination depths of 12-ft bgs. Copies of the boring logs are included in Appendix C.

4.5 SOIL ANALYSIS

Based on the PID data and visual observations, one or two of the samples from each boring was selected for on-site laboratory analysis. The PID readings from soil borings advanced were noted to be low, ranging from 0.0 – 4.3 parts per million (ppm), except for soil boring P73-B2 at 10-ft bgs that returned a PID reading of 35.5 ppm. This boring was advanced within the suspected source area for UST Incident 30597, and adjacent to the groundwater monitoring well observed on-site (P73-MW1).

Selected 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 known historical use of petroleum products on Parcels 72 & 73. The UVF analysis also provided data regarding Environmental Protection Agency 16 total Polycyclic Aromatic Hydrocarbons (PAHs), and Benzo(a)pyrene (BaP).

5 RESULTS

5.1 GEOPHYSICAL INVESTIGATION

The EM and GPR surveys identified one (1) unknown geophysical anomaly in the southeastern portion of the Project Study Area. The unknown anomaly is labelled as a “no confidence anomaly” in the geophysical report provided as Appendix B. No Confidence Anomaly # 1 was approximately 16-ft long by 7-ft wide and is shown on Figure 2.

5.2 SOIL SAMPLING DATA

The UVF analysis of soil boring P73-B2 at 10-ft bgs with the highest PID reading of 35.5 ppm yielded a GRO of 29.3 ppm, which is below the NCDEQ Action Level of 50 ppm. The UVF analysis of all other analyzed soil samples also did not indicate the presence of petroleum impact. As such, shallow soil impact does not appear to be present within the existing right-of-way above NCDEQ Action Levels. A summary of soil sample PID readings are presented in Table 1, and laboratory analytical results are presented in Table 2. The laboratory results associated with each boring are presented on Figure 2. 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

Kleinfelder did not identify soil impact in the current right-of-way.

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 identified one (1) unknown feature in the southeastern portion of the Project Study Area. The unknown anomaly is labelled as a “no confidence anomaly” in the geophysical report provided as Appendix B. No Confidence Anomaly # 1 was approximately 16-ft long by 7-ft wide and is shown on Figure 2.
- The site is listed in the NCDEQ UST Database as Facility ID 00-0-0000006960. The three (3) 10,000-gallon gasoline USTs formerly located on site were removed on June 23, 2005. There were no known active USTs on Parcels 72 & 73 at the time of site exploration, August 3, 2021.
- UST Incident 30597 was documented for the former UST Number WS-7153 on-site. The NCDEQ Winston-Salem Regional Office provided a LSA for UST Incident 30597, dated October 12, 2005, which detailed that the soils beneath the former center 10,000-gallon gasoline UST were impacted by gasoline constituents. Groundwater within one monitoring well installed on-site revealed only one parameter, C9-C22 Aromatics, above the applicable NCAC 2L standard. The incident was classified as “Low Risk,” and NCDEQ noted that the incident may be closed with a NORP and public notification, although at least the NORP (regardless of public notification and case closure) should be filed prior to any transfer of the property.
- No soil impact was detected in borings advanced within the current right-of-way above the NCDEQ Action Levels for TPH GRO and DRO, including the soil boring advanced within the former suspected source area (the former gasoline UST bed) for UST Incident 30597.
- Groundwater was not encountered in the soil borings at a depth of 12-ft bgs.
- There is a possibility that residual petroleum constituents above the NCAC 2L standards may be present within the groundwater surrounding groundwater monitoring well P73-MW1, as groundwater was not sampled as part of this PSA.
- Kleinfelder was not provided access by the NCDOT Right of Way Agent to the interior of the automotive garage building to evaluate for the presence of in-ground hydraulic lifts by the time of site exploration, August 3, 2021.

7 RECOMMENDATIONS

Based on results of this Preliminary Site Assessment, Kleinfelder recommends that no additional sampling or special handling of soils be performed within the Project Study Area on Parcels 72 & 73 in North Wilkesboro, Wilkes County, North Carolina.

Based on information provided by the NCDEQ Winston-Salem Regional Office, Kleinfelder recommends at least filing a NORP prior to conveyance of Parcel 73, if not achieving public notice and case closure for UST Incident 30597.

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 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.

TABLES

Table 1: Soil Sample Screening Results

Date	Sample ID	Depth (ft)	PID Reading	Notes
8/3/2021	R-5759-P72-B1	1	0.7	
		2	0.3	
		3	0.3	
		4	0.6	
		5	0.6	UVF Analysis
		6	0.1	
		7	0.0	
		8	0.0	
		9	0.0	
		10	0.0	
		11	0.6	UVF Analysis
		12	0.2	
8/3/2021	R-5759-P72-B2	1	0.0	
		2	0.0	
		3	0.0	
		4	0.0	
		5	0.0	
		6	0.0	
		7	0.0	
		8	0.0	
		9	0.0	
		10	0.0	
		11	0.0	
		12	0.0	UVF Analysis
8/3/2021	R-5759-P72-B3	1	0.0	
		2	0.3	
		3	0.7	
		4	0.4	
		5	0.3	
		6	1.5	UVF Analysis
		7	0.0	
		8	1.3	
		9	0.0	
		10	0.4	
		11	0.1	
		12	0.2	
8/3/2021	R-5759-P73-B1	1	0.5	
		2	0.8	
		3	0.6	
		4	2.9	UVF Analysis
		5	1.5	
		6	0.6	
		7	2.3	
		8	1.8	
		9	2.6	
		10	2.9	
		11	3.5	UVF Analysis
		12	2.3	
8/3/2021	R-5759-P73-B2	1	2.6	
		2	0.0	
		3	3.2	
		4	2.5	
		5	0.7	
		6	6.7	
		7	NA	Limited Recovery
		8	4.3	
		9	NA	Limited Recovery
		10	35.5	UVF Analysis
		11	3.9	UVF Analysis
		12	3.5	
8/3/2021	R-5759-P73-B3	1	0.8	
		2	1.1	
		3	1.3	
		4	2.5	
		5	2.3	
		6	1.0	
		7	1.2	
		8	0.8	
		9	1.1	
		10	2.2	
		11	2.6	
		12	2.7	UVF Analysis
8/3/2021	R-5759-P73-B4	1	0.9	
		2	1.6	
		3	1.8	
		4	1.7	
		5	1.7	
		6	3.4	UVF Analysis
		7	0.6	
		8	2.3	
		9	1.5	
		10	2.1	
		11	2.0	
		12	1.3	

Notes:

- 1) PID = Photoionization Detector
- 2) PID readings in parts per million (ppm)
- 3) NA = Not Analyzed
- 4) UVF = Ultraviolet Fluorescence

TABLE 2: Soil Sample Analytical Summary

Parameter	Analytical Results										Comparison Criteria		
	Soil Sample Results												
Sample ID	P72-B1-5	P72-B1-11	P72-B2-12	P72-B3-6	P73-B1-4	P73-B1-11	P73-B2-10	P73-B2-11	P73-B3-12	P73-B4-6	State Action Level	Protection of Groundwater	Residential Health
PID Reading (ppm)	0.6	0.6	0.0	1.5	2.9	3.5	35.5	3.9	2.7	3.4			
Collection Depth (ft bgs)	5	11	12	6	4	11	10	11	12	6			
Collection Date	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21	8/3/21			
UVF Method													
Diesel Range Organics	<0.21	<0.19	<0.11	<0.24	1	<0.19	4	<0.17	<0.22	<0.26	100	--	--
Gasoline Range Organics	<0.50	<0.40	<0.27	<0.60	<0.50	<0.40	29.3	<0.40	<0.50	<0.60	50	--	--

Notes:

Results displayed in milligrams per kilogram (mg/kg)

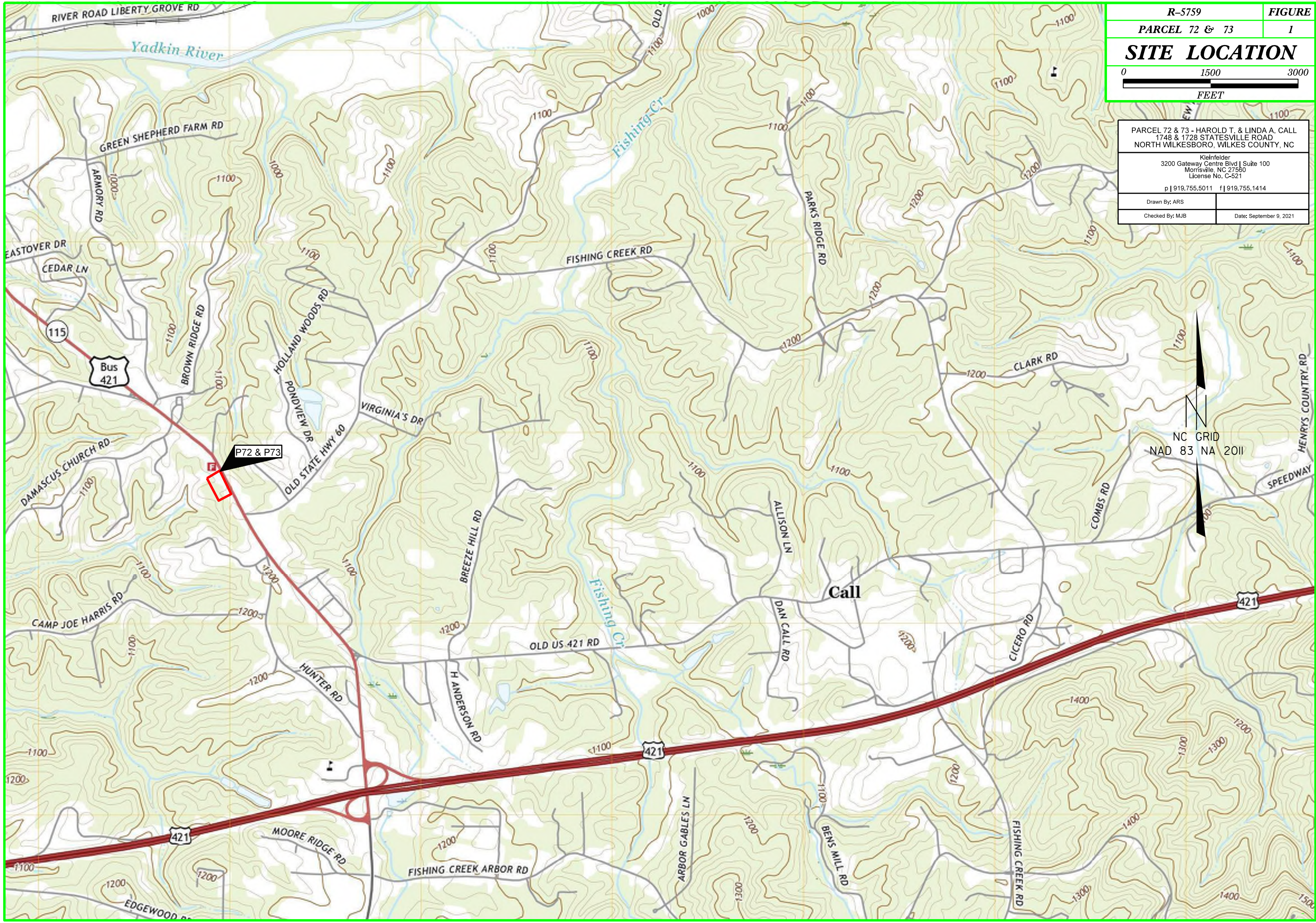
ft bgs = Feet below ground surface

Bold = Above Laboratory Detection Level

Highlighted concentrations exceed the NCDEQ action level

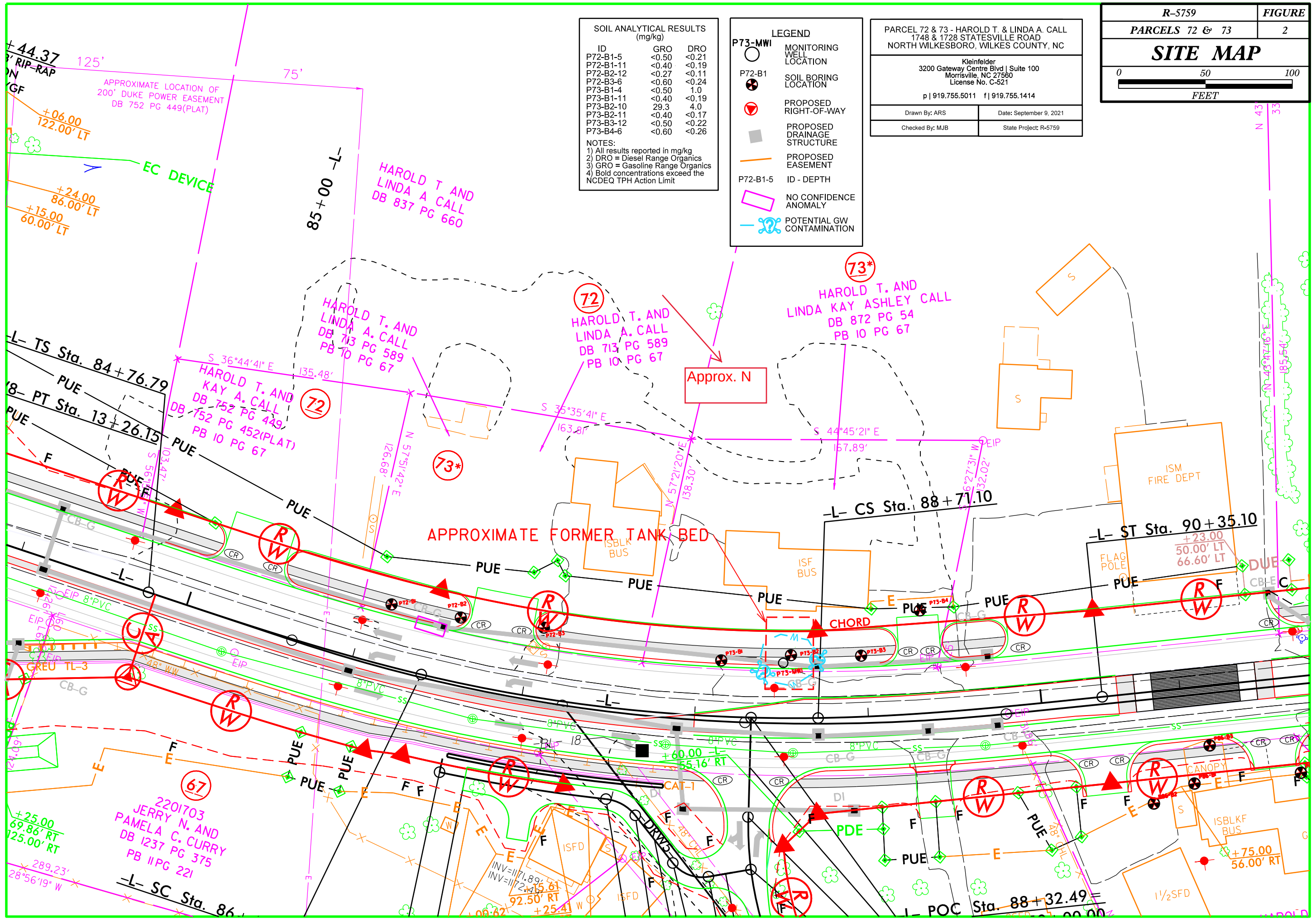
UVF = Ultraviolet Fluorescence

FIGURES



R-5759	FIGURE
PARCEL 72 & 73	1
SITE LOCATION	
0 1500 3000 FEET	

PARCEL 72 & 73 - HAROLD T. & LINDA A. CALL 1748 & 1728 STATESVILLE ROAD NORTH WILKESBORO, WILKES COUNTY, NC	
Kleinfelder 3200 Gateway Centre Blvd Suite 100 Morrisville, NC 27560 License No. C-521 p 919.755.5011 f 919.755.1414	
Drawn By: ARS	
Checked By: MJB	Date: September 9, 2021



APPENDIX A

SITE PHOTOGRAPHS



View facing north from the southern portion of the Project Study Area depicting Parcel 72 into Parcel 73 along NC 115 southbound.



View facing north from the eastern portion of the Project Study Area, in the vicinity of the “no confidence anomaly,” depicting Parcel 72 proceeding into Parcel 73 along NC 115 southbound.

Original in Color

 KLEINFELDER <i>Bright People. Right Solutions.</i> www.kleinfelder.com	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-1
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcels 72 & 73, Harold T. and Linda Kay Call AKA Call, Harold T & Linda A 1728 & 1748 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing north from the eastern portion of Parcel 73 along NC 115 southbound across the road from Eagle Lane, depicting overhead electric and sewer utilities.



View facing north from the eastern portion of Parcel 73 along NC 115 southbound, towards the northern boundary of the Project Study Area.

Original in Color

 KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS Preliminary Site Assessment Report R-5759 – Parcels 72 & 73, Harold T. and Linda Kay Call AKA Call, Harold T & Linda A 1728 & 1748 Statesville Road North Wilkesboro, Wilkes County, NC 28659	FIGURE A-2
	DRAWN: August 2021		
	DRAWN BY: EDA		
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing west from the northeastern portion of Parcel 73 depicting an automotive store and groundwater monitoring well.



View facing west from the northeastern portion of Parcel 73, depicting an automotive garage.

Original in Color

	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS Preliminary Site Assessment Report R-5759 – Parcels 72 & 73, Harold T. and Linda Kay Call AKA Call, Harold T & Linda A 1728 & 1748 Statesville Road North Wilkesboro, Wilkes County, NC 28659	FIGURE A-3
	DRAWN: August 2021		
	DRAWN BY: EDA		
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing south from the northeastern corner of the Project Study Area along NC 115.



View facing southwest from the northern boundary of the Project Study Area.

Original in Color

	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-4
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcels 72 & 73, Harold T. and Linda Kay Call AKA Call, Harold T & Linda A 1728 & 1748 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		

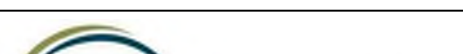


View facing northwest from the northern boundary of the Project Study Area.



Surface staining in the northwestern portion of Parcel 73 west of the Project Study Area.

Original in Color

 KLEINFELDER <i>Bright People. Right Solutions.</i> www.kleinfelder.com	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-5
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcels 72 & 73, Harold T. and Linda Kay Call AKA Call, Harold T & Linda A 1728 & 1748 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		



View facing southwest from the western boundary of the Project Study Area. Vehicles are beyond the Project Study Area.

Original in Color

 www.kleinfelder.com	PROJECT NO:20221238.001A	SITE PHOTOGRAPHS	FIGURE A-6
	DRAWN: August 2021		
	DRAWN BY: EDA	Preliminary Site Assessment Report R-5759 – Parcels 72 & 73, Harold T. and Linda Kay Call AKA Call, Harold T & Linda A 1728 & 1748 Statesville Road North Wilkesboro, Wilkes County, NC 28659	
	CHECKED BY: MB		
	FILE NAME: Photo Pages		

APPENDIX B

GEOPHYSICAL SURVEY REPORT



PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2021-190)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCELS 72 & 73 NCDOT PROJECT U-5759

1748 & 1728 STATESVILLE ROAD, NORTH WILKESBORO, NC

August 6, 2021

Report prepared for: Michael Burns, P.G.
Kleinfelder, Inc.
3200 Gateway Centre Blvd., Suite 100
Morrisville, NC 27560

Prepared by: _____

A handwritten signature in black ink, appearing to read "E. Cross".

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

Reviewed by: _____

A handwritten signature in black ink, appearing to read "Doug Canavella".

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

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P: 336.335.3174 F: 336.691.0648

C257: GEOLOGY

C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcels 72 & 73 - 1748 & 1728 Statesville Road
North Wilkesboro, Wilkes County, North Carolina

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Executive Summary	1
Introduction.....	2
Field Methodology.....	2
Discussion of Results.....	3
<i>Discussion of EM Results</i>	3
<i>Discussion of GPR Results</i>	4
Summary & Conclusions	5
Limitations	5

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- Figure 1 – Parcels 72 & 73 - Geophysical Survey Boundaries and Site Photographs
- Figure 2 – Parcels 72 & 73 - EM61 Metal Detection Contour Map
- Figure 3 – Parcels 72 & 73 - GPR Transect Locations and Select Images
- Figure 4 – Parcels 72 & 73 - Location and Size of One No Confidence Anomaly
- Figure 5 – Overlay of Metal Detection Results and One No Confidence Anomaly on
NCDOT Engineering Plans

Appendices

- Appendix A – GPR Transect Images

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 (Pyramid) conducted a geophysical investigation for Kleinfelder, Inc. at Parcels 72 & 73, located at 1748 & 1728 Statesville Road, in North Wilkesboro, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5759). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted on July 15-16, 2021, 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 five 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. It should be noted that shallow soil conditions resulted in very limited GPR depth penetration (~12 inches).

A no confidence anomaly was identified southeast portion of the survey area. Subsurface conditions prevented GPR investigation of the feature due to poor signal penetration. Based on the results of the metal detection survey, No Confidence Anomaly #1 is approximately 16 feet long by 7 feet wide. Collectively, the geophysical data recorded evidence of one no confidence anomaly at Parcels 72 & 73. No evidence of unknown USTs was observed.

INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Kleinfelder, Inc. at Parcels 72 & 73, located at 1748 & 1728 Statesville Road, in North Wilkesboro, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project U-5759). The survey was designed to extend from the existing edge of pavement into the proposed ROW and/or easements, whichever distance was greater. Conducted on July 15-16, 2021, 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 heavy equipment sales facility surrounded by asphalt, concrete, and grass 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 16, 2021, 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 SIR 4000 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	Building	✓
2	Vehicles	✓
3	Water Meter	
4	Sign/Mailboxes	
5	One No Confidence Anomaly	✓

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including a building, vehicles, a water meter, a sign, and mailboxes. EM Anomaly 5 was investigated with GPR to examine whether the anomaly was the result of a significant structure such as a UST. GPR was performed around the building and vehicles 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 twelve formal GPR transects were performed at the site.

GPR Transect 1 was performed across EM Anomaly 5. Subsurface conditions prevented the GPR from penetrating more than approximately 12 inches below the surface. Given the size and amplitude of the EM anomaly and the lack of information from the GPR investigation due to subsurface conditions, this feature has been classified as a no confidence anomaly. Based on the metal detection results, No Confidence Anomaly #1 is approximately 16 feet long by 7 feet wide. **Figure 4** provides the location and size of the no confidence anomaly, overlain on an aerial. The remaining transects showed evidence of possible utilities and/or buried debris and Transect 12 confirmed the presence of reinforcement within the concrete slab. No evidence of significant structures such as USTs was observed.

Collectively, the geophysical data recorded evidence of one no confidence anomaly at Parcels 72 & 73. No evidence of unknown USTs was observed. **Figure 5** provides an overlay of the metal detection results and one no confidence anomaly on the NCDOT engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcels 72 & 73 in North Wilkesboro, 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. It should be noted that shallow soil conditions resulted in very limited GPR depth penetration (~12 inches).
- The geophysical survey identified evidence of utilities and/or buried debris.
- A no confidence anomaly was identified southeast portion of the survey area. Subsurface conditions prevented GPR investigation of the feature due to poor signal penetration. Based on the metal detection results, No Confidence Anomaly #1 is approximately 16 feet long by 7 feet wide.
- Collectively, the geophysical data recorded evidence of one no confidence anomaly at Parcels 72 & 73. No evidence of unknown USTs was observed.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Kleinfelder, Inc. 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 North)



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PROJECT
PARCELS 72 & 73
NORTH WILKESBORO, NORTH CAROLINA
NCDOT PROJECT U-5759

TITLE
PARCELS 72 & 73 -
GEOPHYSICAL SURVEY BOUNDARIES
AND SITE PHOTOGRAPHS

DATE 7/19/2021

CLIENT Kleinfelder

PYRAMID PROJECT #: 2021-190

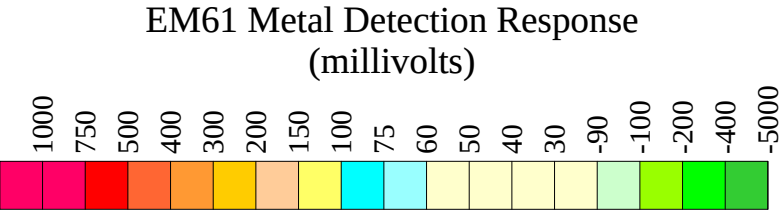
FIGURE 1

EM61 METAL DETECTION RESULTS



EVIDENCE OF ONE NO CONFIDENCE ANOMALY 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 15, 2021, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI SIR 4000 instrument with a 350 MHz HS antenna on July 16, 2021.



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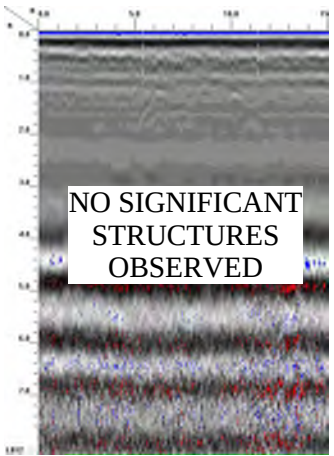
PROJECT
PARCELS 72 & 73
NORTH WILKESBORO, NORTH CAROLINA
NCDOT PROJECT U-5759

TITLE
PARCELS 72 & 73 -
EM61 METAL DETECTION CONTOUR MAP

DATE
7/19/2021
PYRAMID PROJECT #:
2021-190

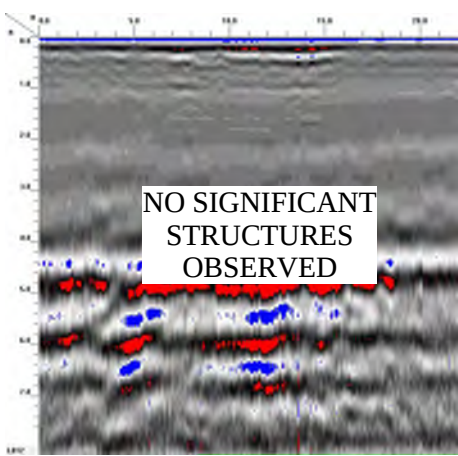
CLIENT
Kleinfelder
FIGURE 2

GPR TRANSECT LOCATIONS



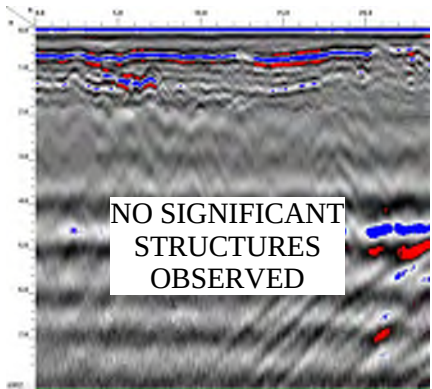
NO SIGNIFICANT
STRUCTURES
OBSERVED

GPR TRANSECT 1 (T1)



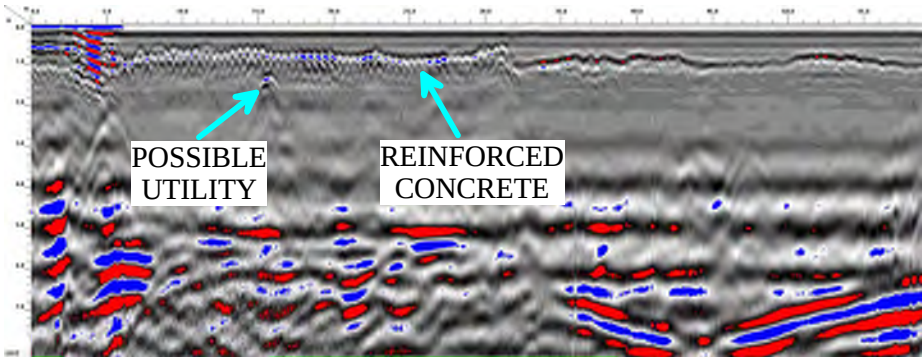
NO SIGNIFICANT
STRUCTURES
OBSERVED

GPR TRANSECT 2 (T2)



NO SIGNIFICANT
STRUCTURES
OBSERVED

GPR TRANSECT 6 (T6)



POSSIBLE
UTILITY

REINFORCED
CONCRETE

GPR TRANSECT 12 (T12)



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PARCELS 72 & 73
NORTH WILKESBORO, NORTH CAROLINA
NCDOT PROJECT U-5759

TITLE
PARCELS 72 & 73 -
GPR TRANSECT LOCATIONS AND SELECT IMAGES

DATE
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PROJECT #:
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CLIENT
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FIGURE 3

LOCATION OF ONE NO CONFIDENCE ANOMALY



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PROJECT
PARCELS 72 & 73
NORTH WILKESBORO, NORTH CAROLINA
NCDOT PROJECT U-5759

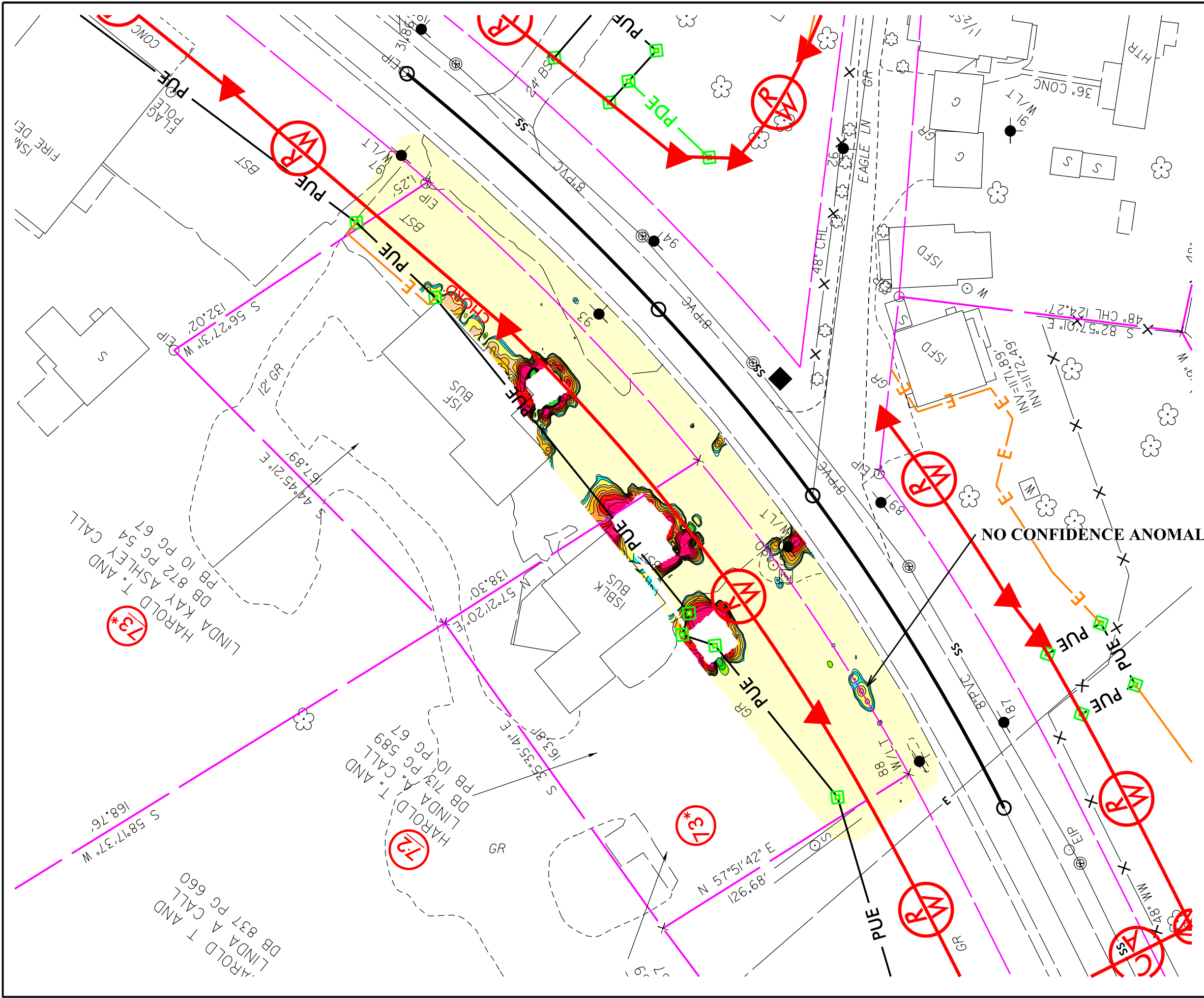
TITLE
PARCEL 72 & 73 -
LOCATION AND SIZE OF ONE NO
CONFIDENCE ANOMALY

DATE
7/19/2021

CLIENT
Kleinfelder

PYRAMID
PROJECT #:
2021-190

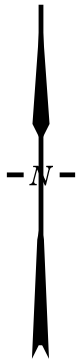
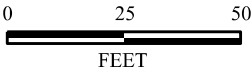
FIGURE 4



LEGEND

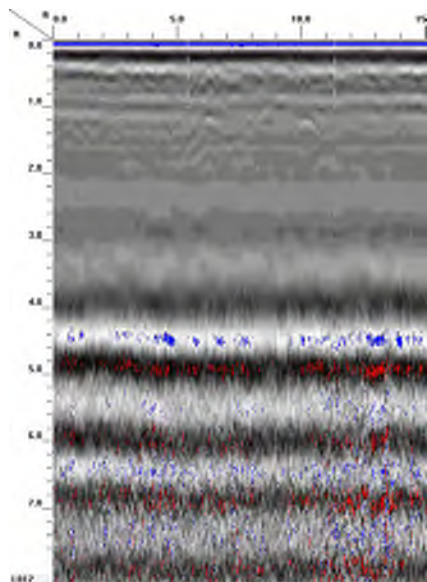
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PUE
- PROPOSED PERMANENT UTILITY
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE

EM61 Metal Detection Response (millivolts)

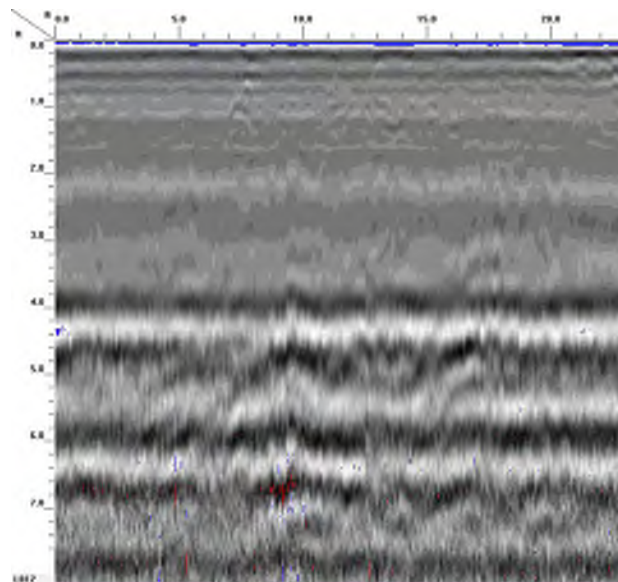


TITLE OVERLAY OF METAL DETECTION RESULTS AND ONE NO CONFIDENCE ANOMALY ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 72/73 WILKESBORO, NORTH CAROLINA NCDOT PROJECT R-5759	
 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
DATE: 8-9-2021	REVISION NO. 0
PYRAMID PROJECT NO. 2021-190	FIGURE NO. 5

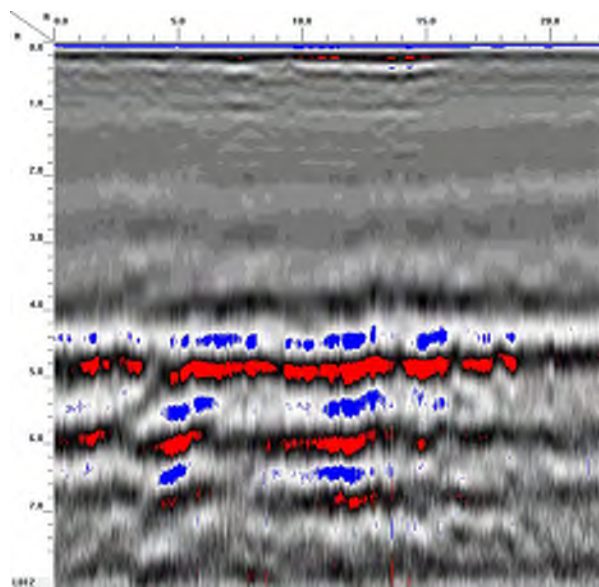
Appendix A – GPR Transect Images



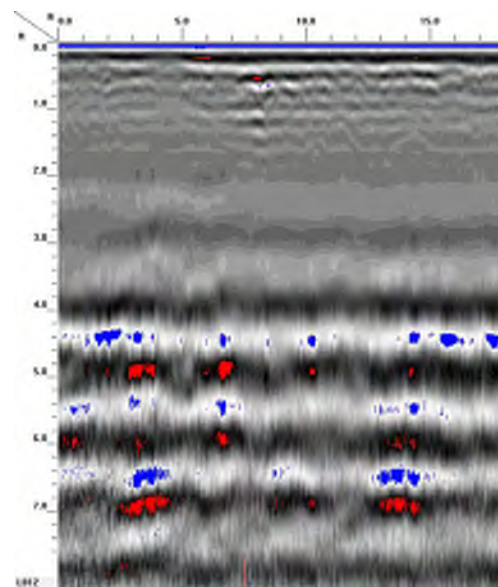
GPR TRANSECT 1



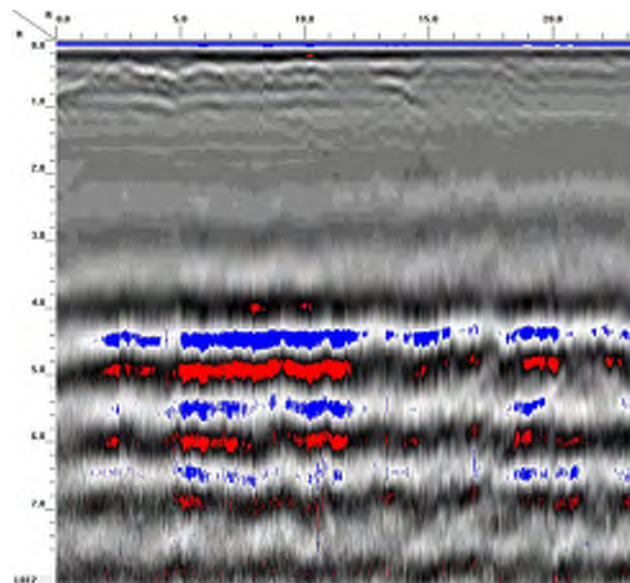
GPR TRANSECT 3



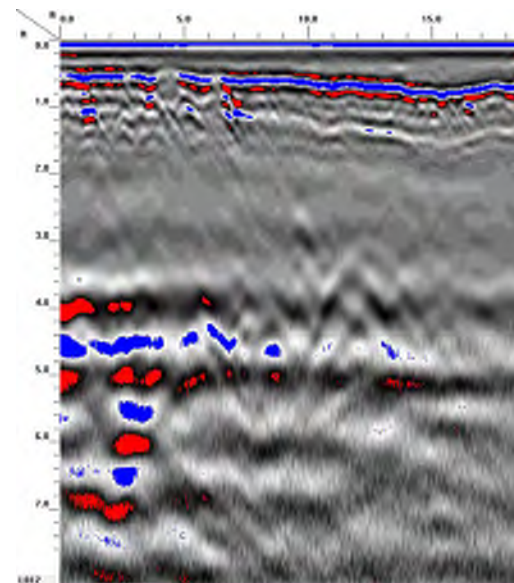
GPR TRANSECT 2



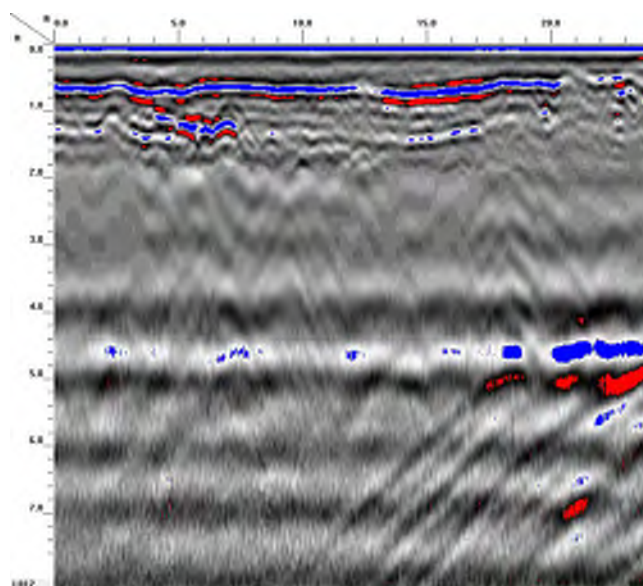
GPR TRANSECT 4



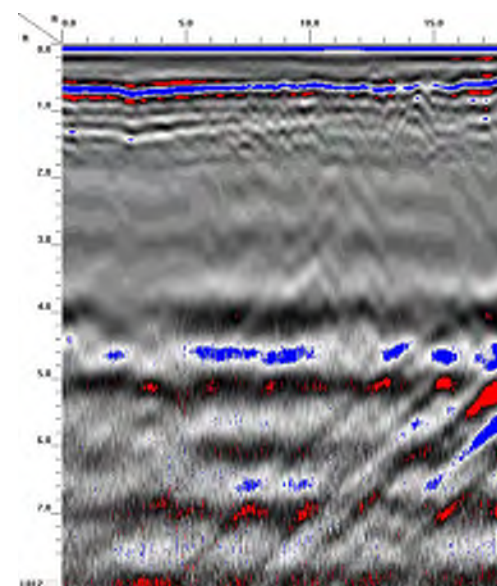
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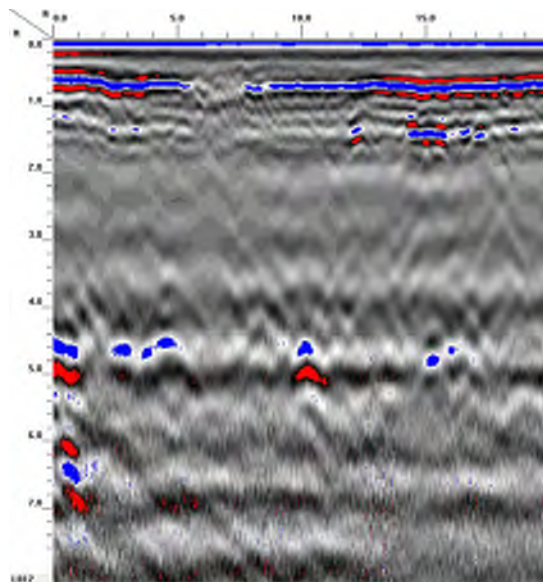
GPR TRANSECT 7



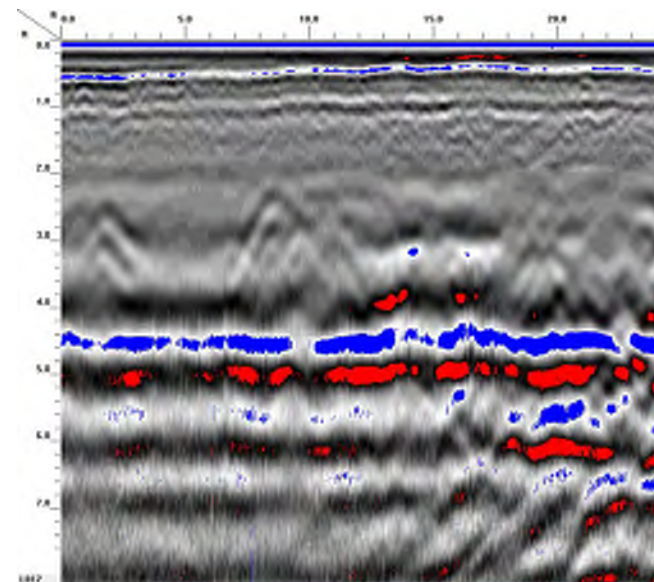
GPR TRANSECT 6



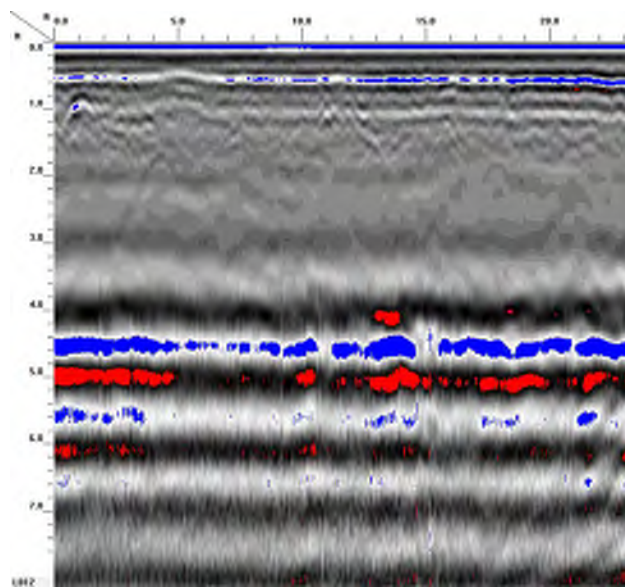
GPR TRANSECT 8



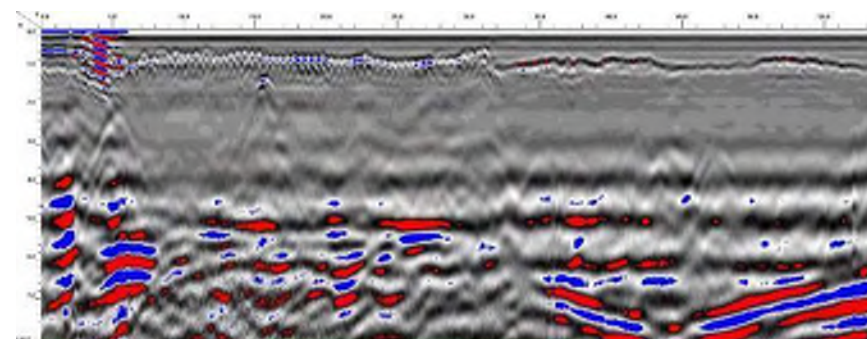
GPR TRANSECT 9



GPR TRANSECT 11



GPR TRANSECT 10



GPR TRANSECT 12

APPENDIX C

BORING LOGS

Date Begin - End: 8/03/2021		Drilling Company: SAEDACCO		ENVIRONMENTAL BORING LOG P72-B1				
Logged By: E. AMBER		Drill Crew: S. HUNT						
Hor.-Vert. Datum: Not Available		Drilling Equipment: 6620DT GeoProbe						
Plunge: -90 degrees		Drilling Method: See Drilling Method Column						
Weather: RAIN		Bore Diameter:						
FIELD EXPLORATION								
Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Bare Earth and Grass	
							Lithologic Description	
5 10	Geoprobe				0.7 0.3 0.3 0.6 0.6 0.1 0.0 0.0 0.0 0.0 0.6 0.2		SILT: red, slightly micaceous	
							SILT: reddish brown	
							SILT: white and red	
The borehole was terminated at approximately 12 ft. below ground surface.						<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not observed during drilling or after completion. <u>GENERAL NOTES:</u> The environmental boring was backfilled with bentonite.		
						PROJECT NO.: 20221238.001A		
						DRAWN BY: EA CHECKED BY: MJB DATE: 8/12/2021		
ENVIRONMENTAL BORING LOG P72-B1						NCDOT R-5759 PSAs North Wilkesboro, NC		

Date Begin - End: 8/03/2021		Drilling Company: SAEDACCO		ENVIRONMENTAL BORING LOG P72-B2									
Logged By: E. AMBER		Drill Crew: S. HUNT											
Hor.-Vert. Datum: Not Available		Drilling Equipment: 6620DT GeoProbe											
Plunge: -90 degrees		Drilling Method: See Drilling Method Column											
Weather: RAIN		Bore Diameter:											
FIELD EXPLORATION													
Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Gravel						
							Lithologic Description						
5 10	Geoprobe				0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		GRAVEL: gray						
							Clayey SILT: red, slightly micaceous						
							SILT: reddish brown						
							SILT: red and reddish yellow and white						
							The borehole was terminated at approximately 12 ft. below ground surface.						
							GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion. GENERAL NOTES: The environmental boring was backfilled with bentonite.						
									PROJECT NO.: 20221238.001A		ENVIRONMENTAL BORING LOG P72-B2		
									DRAWN BY: EA				
									CHECKED BY: MJB				
							DATE: 8/12/2021		NCDOT R-5759 PSAs North Wilkesboro, NC				

Date Begin - End:	8/03/2021	Drilling Company:	SAEDACCO	ENVIRONMENTAL BORING LOG P72-B3
Logged By:	E. AMBER	Drill Crew:	S. HUNT	
Hor.-Vert. Datum:	Not Available	Drilling Equipment:	6620DT GeoProbe	
Plunge:	-90 degrees	Drilling Method:	See Drilling Method Column	
Weather:	RAIN	Bore Diameter:		

Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	FIELD EXPLORATION	
							Surface Condition: Gravel	Lithologic Description
								GRAVEL: gray
					0.0			Clayey SILT: reddish brown
					0.3			SILT: yellowish brown
					0.7			
					0.4			SILT: pink and white and brown
					0.3			
					1.5			
					0.0			
					1.3			
					0.0			SILT: yellowish brown
					0.4			
					0.1			
					0.2			
The borehole was terminated at approximately 12 ft. below ground surface.								GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion. GENERAL NOTES: The environmental boring was backfilled with bentonite.



PROJECT NO.:
20221238.001A

DRAWN BY: EA

CHECKED BY: MJB

DATE: 8/12/2021

**ENVIRONMENTAL BORING LOG
P72-B3**

NCDOT R-5759 PSAs
North Wilkesboro, NC

Date Begin - End: 8/03/2021		Drilling Company: SAEDACCO		ENVIRONMENTAL BORING LOG P73-B1			
Logged By: E. AMBER		Drill Crew: S. HUNT					
Hor.-Vert. Datum: Not Available		Drilling Equipment: 6620DT GeoProbe					
Plunge: -90 degrees		Drilling Method: See Drilling Method Column					
Weather: RAIN		Bore Diameter:					
FIELD EXPLORATION							
Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Asphalt
							Lithologic Description
5 10	Geoprobe				0.5 0.8 0.6 2.9 1.5 0.6 2.3 1.8 2.6 2.9 3.5 2.3		ASPHALT: black
							SILT: yellowish brown and reddish brown with pink
The borehole was terminated at approximately 12 ft. below ground surface.							<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not observed during drilling or after completion. <u>GENERAL NOTES:</u> The environmental boring was backfilled with bentonite.
		PROJECT NO.: 20221238.001A		ENVIRONMENTAL BORING LOG P73-B1			
		DRAWN BY: EA		NCDOT R-5759 PSAs North Wilkesboro, NC			
		CHECKED BY: MJB					
		DATE: 8/12/2021					

Date Begin - End:	8/03/2021	Drilling Company:	SAEDACCO	ENVIRONMENTAL BORING LOG P73-B2
Logged By:	E. AMBER	Drill Crew:	S. HUNT	
Hor.-Vert. Datum:	Not Available	Drilling Equipment:	6620DT GeoProbe	
Plunge:	-90 degrees	Drilling Method:	See Drilling Method Column	
Weather:	RAIN	Bore Diameter:		

Depth (feet)	FIELD EXPLORATION						
	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	
5	Geoprobe						Surface Condition: Gravel
							Lithologic Description
							GRAVEL: gray
							Limited recovery 5-7 ft Sandy SILT : brown, slightly micaceous
							0.0
							3.2
							2.5
							0.7
							6.7
							NA
10							Limited recovery 7-8 ft Clayey SILT : reddish brown
							4.3
							Limited recovery 8-10 ft Sandy CLAY : brown
							NA
							35.5
							3.9
			</				

The borehole was terminated at approximately 12 ft. below ground surface.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
Limited recovery from 5-10 ft. below ground surface.
The environmental boring was backfilled with bentonite.



PROJECT NO.:
20221238.001A

DRAWN BY: EA

CHECKED BY: MJB

DATE: 8/12/2021

**ENVIRONMENTAL BORING LOG
P73-B2**

NCDOT R-5759 PSAs
North Wilkesboro, NC

Date Begin - End: 8/03/2021		Drilling Company: SAEDACCO		ENVIRONMENTAL BORING LOG P73-B3					
Logged By: E. AMBER		Drill Crew: S. HUNT							
Hor.-Vert. Datum: Not Available		Drilling Equipment: 6620DT GeoProbe							
Plunge: -90 degrees		Drilling Method: See Drilling Method Column							
Weather: RAIN		Bore Diameter:							
FIELD EXPLORATION									
Depth (feet)	Drilling Method	Sample Type	Sample Number	Recovery (NR=No Recovery)	PID / FID (ppmv)	Graphical Log	Surface Condition: Gravel		
							Lithologic Description		
5 10	Geoprobe				0.8 1.1 1.3 2.5 2.3 1.0 1.2 0.8 1.1 2.2 2.6 2.7		GRAVEL: gray		
							Sandy SILT: yellowish brown and reddish brown		
The borehole was terminated at approximately 12 ft. below ground surface.							<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not observed during drilling or after completion. <u>GENERAL NOTES:</u> The environmental boring was backfilled with bentonite.		
						PROJECT NO.: 20221238.001A		ENVIRONMENTAL BORING LOG P73-B3	
						DRAWN BY: EA CHECKED BY: MJB DATE: 8/12/2021		NCDOT R-5759 PSAs North Wilkesboro, NC	

Page: 1 of 1

APPENDIX D

ANALYTICAL REPORT AND GRAPHS

Hydrocarbon Analysis Results



Client: KLEINFELDER

Address:



Samples taken

Samples extracted

Samples analysed



Tuesday, August 3, 2021

Tuesday, August 3, 2021

Tuesday, August 3, 2021

Contact: ABI SHURTLEFF

Operator

MAX MOYER

Project: R-5759 ; PARCEL 72

T03308

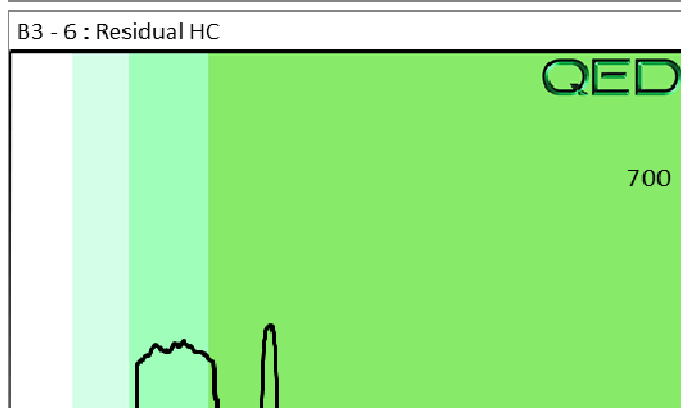
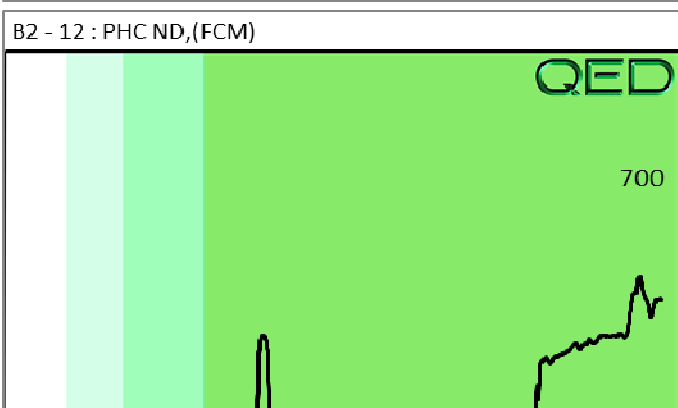
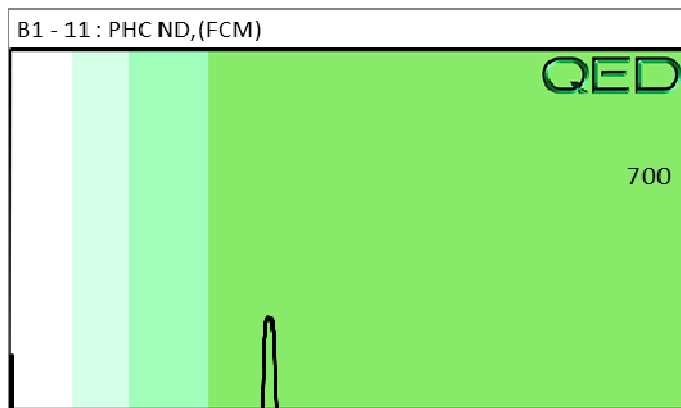
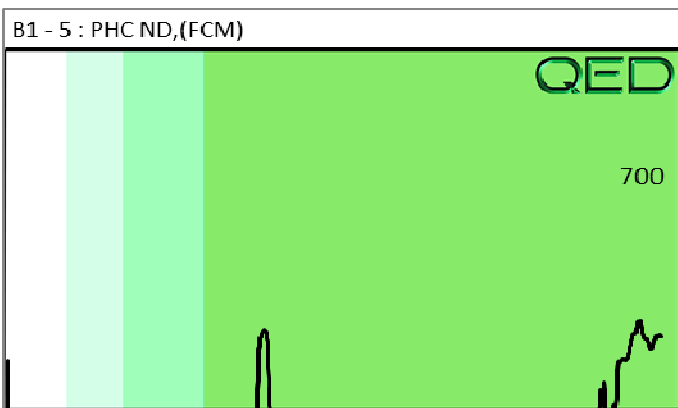
Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	B1 - 5	21.0	<0.5	<0.5	<0.21	<0.5	<0.011	<0.011	<0.006	0	0	0	PHC ND,(FCM)
Soil	B1 - 11	19.0	<0.4	<0.4	<0.19	<0.4	<0.01	<0.01	<0.006	0	0	0	PHC ND,(FCM)
Soil	B2 - 12	11.0	<0.27	<0.27	<0.11	<0.27	<0.006	<0.006	<0.003	0	0	0	PHC ND,(FCM)
Soil	B3 - 6	24.0	<0.6	<0.6	<0.24	0.023	0.023	0.001	<0.007	0	51.5	48.5	Residual HC
Initial Calibrator QC check			OK		Final FCM QC Check					OK		94.6%	

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

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

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

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



Hydrocarbon Analysis Results

QED

Client: KLEINFELDER

Address:



Samples taken

Samples extracted

Samples analysed

QED

Tuesday, August 3, 2021

Tuesday, August 3, 2021

Tuesday, August 3, 2021

Contact: ABI SHURTLEFF

Operator

MAX MOYER

Project: R-5759 ; PARCEL 73

T03308

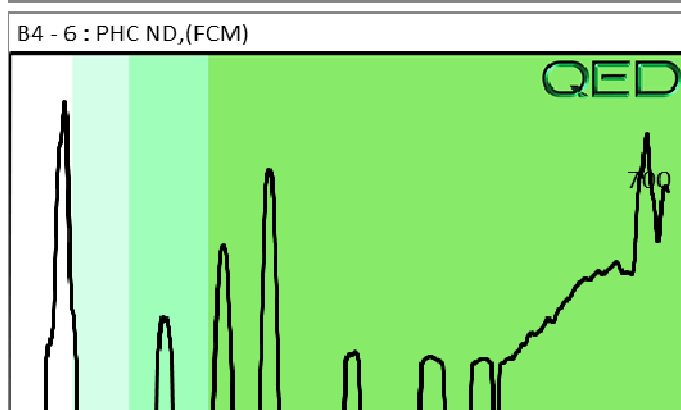
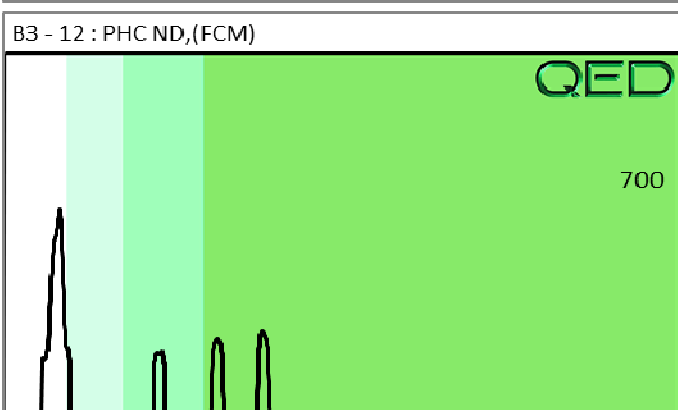
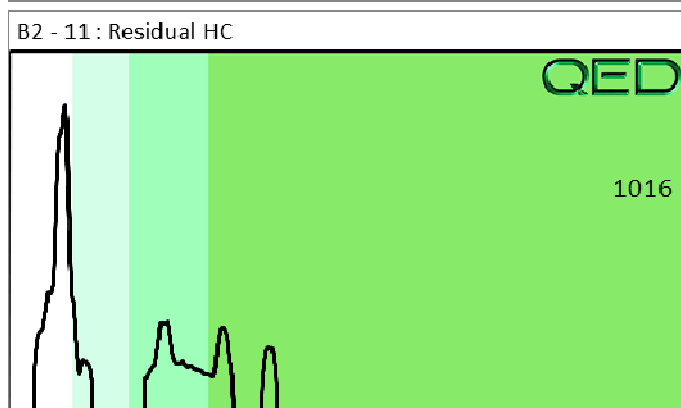
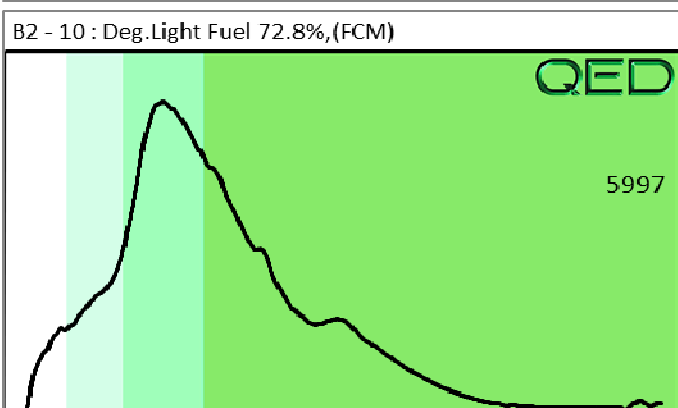
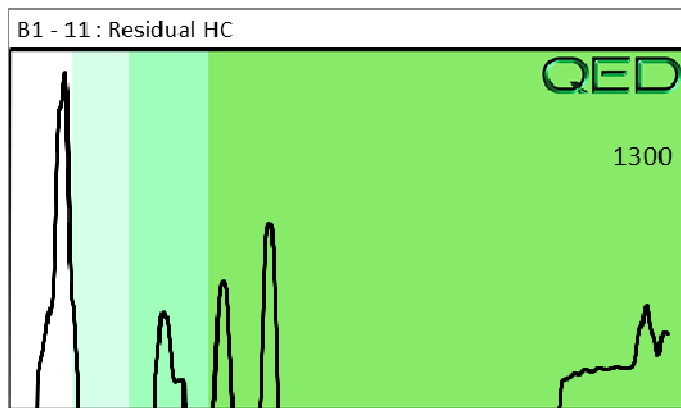
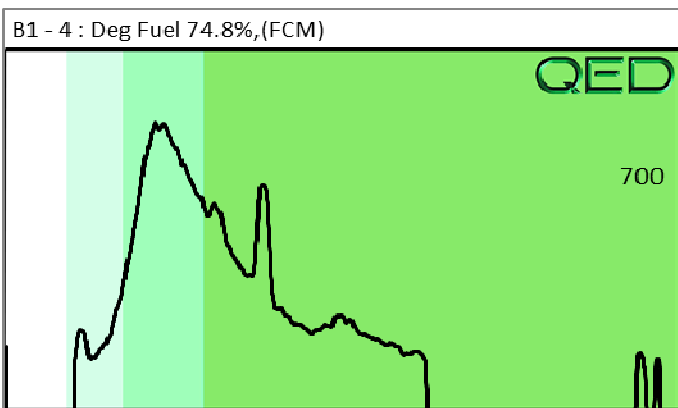
Matrix	Sample ID	Dilution used	BTEX	GRO	DRO	TPH	Total Aromatics	16 EPA PAHs	BaP	% Ratios			HC Fingerprint Match
			C6-C9	C5-C10	C10-C35	C5-C35	C10-C35			C5:10	C10:C18	C18+	
Soil	B1 - 4	22.0	<0.5	<0.5	1	1	0.31	0.018	<0.0	0	95.1	4.9	Deg Fuel 74.8%,(FCM)
Soil	B1 - 11	19.0	<0.4	<0.4	<0.19	0.019	0.019	0.001	<0.006	0	100	0	Residual HC
Soil	B2 - 10	19.0	<0.4	29.3	4	33.3	3.8	0.2	0.004	90.2	9.1	0.7	Deg.Light Fuel 72.8%,(FCM)
Soil	B2 - 11	17.0	<0.4	<0.4	<0.17	0.014	0.014	0.002	<0.005	0	100	0	Residual HC
Soil	B3 - 12	22.0	<0.5	<0.5	<0.22	<0.5	<0.011	<0.011	<0.007	0	0	0	PHC ND,(FCM)
Soil	B4 - 6	26.0	<0.6	<0.6	<0.26	<0.6	<0.013	<0.013	<0.008	0	0	0	PHC ND,(FCM)
Initial Calibrator QC check			OK		Final FCM QC Check					OK		101.0%	

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

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

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

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



APPENDIX E
LIMITED SITE ASSESSMENT REPORT

GeoScience & Technology, P.A.

"Practical Engineering & Environmental Solutions"

2050 Northpoint Drive • Suite A • Winston-Salem, NC 27106

Phone: (336) 896-1300 • Fax: (336) 896-1020

e-mail: geosci@geotec.com

RECEIVED
N.C. Dept. of ENR

OCT 12 2005

Winston-Salem
Regional Office

October 12, 2005

Mrs. Cindy Rintoul
NCDENR/DWM – UST Section
585 Waughtown Street
Winston-Salem, NC 27107-2241

Re: Phase I LSA Report
Former Queen's Garage
1728 Statesville Road
North Wilkesboro, Wilkes County, NC
UST Incident No. 30597

Dear Mrs. Rintoul:

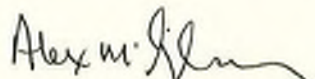
Attached is the Phase I Limited Site Assessment (LSA) Report and supporting information for the above referenced site. On June 23, 2005, three (3) 10,000 gasoline USTs were excavated and removed from the above referenced site.

The UST closure samples indicated that the soils beneath the center 10,000-gallon gasoline UST were impacted with gasoline constituents. The source of the release is suspected to be either the dispenser or the distribution piping previously located directly over this tank.

Based on the LSA investigation, this site appears to be a "Low Risk" UST incident and the site an Industrial/Commercial Property. The findings of the LSA may also provide enough information so that this incident can be "Closed Out."

Please have your staff review the attached report and determine a "Risk Classification" for this UST Incident. Should you have questions concerning this matter, please contact me. Thank you.

Sincerely,
Geoscience and Technology, P.A.



M. Alex McGilvary, P.G.
Senior Geologist

Encl./

cc: Mr. H. Call, c/o Harold's Restaurant, 1748 Statesville Road, Wilkesboro, NC 28697



2050 Northpoint Drive • Suite A • Winston-Salem, NC 27106

Phone: (336) 896-1300 • Fax: (336) 896-1020
e-mail: geosci@geotec.com

Limited Site Assessment Report Phase I

Former Queen's Garage
1728 Statesville Road
North Wilkesboro, Wilkes Co., NC 28659
October 12, 2005



A. SITE INFORMATION

1. Site Name

The former Queen's Garage Service Station site is not a currently operating UST facility. Three (3) gasoline USTs were removed from this site in June 2005. The site is located at 1728 Statesville Road in North Wilkesboro, Wilkes County, NC (Figure 1). Figure 2 shows the receptor search area and the nearby properties (Wilkes Co. Tax Map/Aerial Photograph); Figure 3 shows the receptor search area and the property identifications (Wilkes Co. Tax Map); Figure 4 is the General Site Sketch showing the former UST area relative to the on-site buildings; Figure 5 is the UST Closure Sample Map; Figure 6 is the LSA Well Location Map.

2. Incident

30597

3. Facility

ID No. 0-006960

4. UST Owner:

Mr. Harold Call
c/o Harold's Restaurant
1748 Statesville Road
Wilkesboro, NC 28697

5. UST operator:

Mr. Call did not operate these USTs. The last operator was:

Queen's Garage (Turner Oil No. 6)
1728 Statesville Road
North Wilkesboro, NC 28659

6. Owner and representative information:

Current Property Owner:

Mr. Harold Call
c/o Harold's Restaurant
1748 Statesville Road
Wilkesboro, NC 28697
(336) 667-4210

7. Consultant/Contractor Information

a. Primary Consultant:

Geoscience & Technology, P.A.
2050 Northpoint Drive, Suite A
Winston-Salem, NC 27106
336-896-1300

b. Driller:

Soil borings and monitoring wells MW1:

Mr. R. Jeff Wyatt, NCCWD #3022
Geoscience & Technology, P.A.
2050 Northpoint Drive, Suite A
Winston-Salem, NC 27106
336-896-1300

c. Analytical Laboratory:

Research and Analytical Laboratories, Inc. (R&A)
106 Short Street
Kernersville, NC 27284
NC Certification #34

8. Release information:

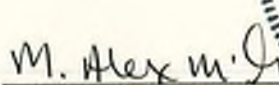
Discovery date: Suspected at tank removal June 23, 2005, later confirmed by laboratory analyses
Release reported: by "UST Leak Reporting Form" submitted to the NCDENR WSRO July 6, 2005;
Release Quantity: Unknown;
Probable Sources: Gasoline UST dispensers and/or distribution piping;
UST Sizes: 3 - 10,000 gallon gasoline USTs;
Last Contents: Gasoline;
Tanks last filled: Unknown.

9. Approximate Latitude/Longitude of release site:

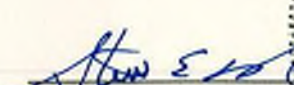
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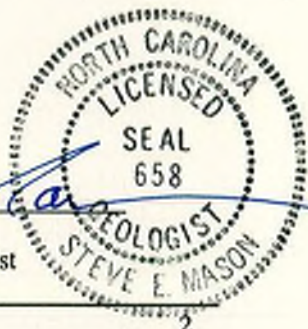
10. Seal and Signature

I hereby certify this 12th day of October 2005 that this report was prepared by me or under my direct supervision.


M. Alex McGilvary, P.G.
Senior Geologist




Steve E. Mason, P.G.
Principal Hydrogeologist



Former Queen's Garage UST
Phase I LSA Report
UST Incident No. 30597
October 2005

B. SITE HISTORY

5. UST Information

Table 1 summarizes the information about the USTs. This table was prepared from the information available in the NCDENR UST registration records.

Table 1: UST System Information

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960			
UST Reg. ID No.	1	2	3
Tank ID No	T1	T2	T3
Installation date	May 1966	May 1966	May 1966
Size in gallons	10,000 gallons	10,000 gallons	10,000 gallons
Dimensions	8 ft. Diam. X 26.5 ft. long.	8 ft. Diam. X 26.5 ft. long.	8 ft. Diam. X 26.5 ft. long.
Last contents	Gasoline	Gasoline	Gasoline
Previous contents	same	same	same
Closure Date	June 23, 2005	June 23, 2005	June 23, 2005
Release associated with UST System	No	Yes	No
Date release discovered	Suspected June 23, 2005; Reported July 6, 2005 upon receipt of lab. report.	Suspected June 23, 2005; Reported July 6, 2005 upon receipt of lab. report.	Suspected June 23, 2005; Reported July 6, 2005 upon receipt of lab. report.

2. Ownership History

1. Current land owner:

Mr. Harold Call
c/o Harold's Restaurant
1748 Statesville Road
Wilkesboro, NC 28697
(336) 667-4210

C. RISK CHARACTERIZATION

A copy of the LSA Risk classification and Land Use form is located in Appendix A.

D. RECEPTOR INFORMATION**1. Risk Characterization/Receptor Information****1. Water Supply Wells**

In September 2005, GeoSci personnel visited the Wilkes County offices and obtained the most recent aerial photographs, and tax maps for the area near the former Queen's Garage site. Using these maps as a starting point, maps of the LSA receptor search area were prepared (Figures 2 and 3). Wilkes County Tax Records were also reviewed to obtain a listing of the owners of property located within 500 feet of the former UST site. In September 2005, using this property listing, GeoSci attempted to contact the nearby landowners by mail and provided a copy of the *Request for Water Supply Information* form to them. GeoSci attempted to contact a total of thirteen (13) property owners who own a total of 22 properties within 500 feet of the subject site (Table 2). We received (17) replies (77 %) to the *Request for Water Supply Information*. Only one of the respondents, a Mr. Roger Johnson indicated that a well was present on their property and it was not in use for any purpose. Copies of the completed questionnaire forms are included in Appendix H.

**Table 2: Property Ownership within 500 feet of Subject Site
Referenced to Figure 3**

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960					
Property Tax ID No. (See Fig. 2)	Owner	Owner Address	Property Address	Direction from subject site	Survey form returned
3878-61-2105	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	1728 Statesville Rd. North Wilkesboro, NC 28659	Subject site	Yes
3878-51-9892	Mr. Leon Johnson	1535 Statesville Rd., North Wilkesboro, NC 28659	Statesville Road Property Wilkesboro, NC 28697	NE	Yes
3878-61-1374	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	1681/1695 Statesville Rd., North Wilkesboro, NC 28659	N	Yes
3878-61-1557	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	Statesville Rd., Wilkesboro, NC 28659	N	Yes
3878-61-3436	Mr. Leon Johnson	1535 Statesville Rd., North Wilkesboro, NC 28659	1709 Statesville Road, Wilkesboro, NC 28697	NE	Yes
3878-61-5553	Ms. Pamela L. Curry	2594 Old Hwy 60 Wilkesboro, NC 28697	Eagle Lane Property, Wilkesboro, NC 28697	NE	Yes
3878-61-5329	Ms. Pamela L. Curry	2594 Old Hwy 60 Wilkesboro, NC 28697	Eagle Lane Property, Wilkesboro, NC 28697	NE	Yes
3878-61-7573	Ms. Pamela L. Curry	2594 Old Hwy 60 Wilkesboro, NC 28697	Wooded property behind Eagle Lane	NE	Yes
3878-61-5109	Mr. Q. P. Johnson	1593 Sparta Rd., North Wilkesboro, NC 28659	120/138/144 Eagle Lane	NE	No

Table 2: Property Ownership within 500 feet of Subject Site (Cont.)
Referenced to Figure 3

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960

Property Tax ID No. (See Fig. 2)	Owner	Owner Address	Property Address	Direction From subject site	Survey form returned
3878-61-4041	Real World Prop., Inc.	c/o J.D Byers Law Office 105 W. Fourth St. Winston-Salem, NC 27101-3816	Statesville Rd., Wilkesboro, NC 28697	E	No
3878-60-6770	Roger P. Johnson	226 Frog Ridge Rd., North Wilkesboro, NC 28659	Statesville Rd., Wilkesboro, NC 28697	SE	Yes
3878-60-4598	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	Statesville Rd., North Wilkesboro, NC 28659	SE	Yes
3878-60-4402	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	Statesville Rd., Wilkesboro, NC 28697	SE	Yes
3878-60-1776	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	Statesville Rd., Wilkesboro, NC 28697	S	Yes
3878-60-3923	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	1748 Statesville Rd. Wilkesboro, NC 28697	SE	Yes
3878-60-4801	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	1748 Statesville Rd. Wilkesboro, NC 28697	SE	Yes
3878-50-6368	Mr. R. R. Alvarado	265 Bouchelle Road, Wilkesboro, NC 28697	Bouchelle Road, Wilkesboro, NC 28697	SW	No
3878-60-0913	Mrs. Edith Jarvis	1684 Statesville Rd., Wilkesboro, NC 28697	Statesville Rd., Wilkesboro, NC 28697	SW	Yes
3878-60-8978	Mrs. Edith Jarvis	1684 Statesville Rd., Wilkesboro, NC 28697	1684 Statesville Rd., Wilkesboro, NC 28697	SW	Yes
3878-61-0069	Broadway Fire Dept.	1690 Statesville Road, Wilkesboro, NC 28697	1690 Statesville Road, Wilkesboro, NC 28697	NW	Yes
3878-51-7195	Duke Power Co.	Property Manager 422 S. Church St. Charlotte, NC 28242- 0001	Statesville Road, Wilkesboro, NC 28697	NW	No
3878-51-7238	E.B. Burgin and A. Blackburn	3923 S. Dakota Ave. N.E. Washington, DC 20018	Statesville Road, Wilkesboro, NC 28697	NW	No

In September 2005, GeoSci personnel also performed visual reconnaissance in the area surrounding the subject site to determine land uses and look for evidence of water supply wells. The field work was conducted using a combination of windshield survey and a walkover within the 1,000 foot radial search area (Figure 2). Municipal supplies are available to the receptor search area. According to information obtained from Broadway Water Association, Inc., water service is or can be available to all properties located within 1,000 feet of the subject site and to the best of their knowledge, no one in the 1,000 foot receptor search radius uses a well as their potable water supply. This is documented by the letter from Broadway Water Association that is attached as Appendix I.

A total of seven (7) water supply wells were located within the 1,000 foot search radius. Water meters were observed on the majority of the properties located within 1,000 feet of the site. None of seven (7) wells located within 1,000 foot of the subject site are in use as water supply. The locations of all the supply wells found during the receptor survey are shown on the previously referenced Figure 2.

A listing of the well owners and the other information gathered during the receptor area reconnaissance is presented in Table 3.

Table 3: Water Supply Wells Within 1,000 Feet of Site (Referenced to Fig. 2)							
Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960							
Well No.	Property ID No. (Block Lot)	Property Address	Owner	Owner Address and Phone No.	Distance from Release (ft)	Direction	Well Status
1	3878-61- 5109	120 Eagle Lane Wilkesboro, NC	Mr. Q.P. Johnson	1593 Sparta Road, N. Wilkesboro, NC 28659 No listing	~200	NE	Not in use, Confirmed 9/12/05
2	3878-61- 4041	Statesville Rd. Wilkesboro, NC	Real World Properties	c/o J.D. Byers Law Office 105 West Fourth St. Winston-Salem, NC 27101-3816 (336) 727-1070	~220	NE	Not in use, at abandoned residence
3	3878-50- 8978	1684 Statesville Rd. Wilkesboro, NC	Mrs. Edith Jarvis	1684 Statesville Rd. Wilkesboro, NC 28697 (336) 838-4874	~380	W	Not in use
4	3878-61- 5797	220 Eagle Lane Wilkesboro, NC	Mr. William Kilby	220 Eagle Ln. Wilkesboro, NC 28697 (336) 838-1687	~800	NE	Irrigation only
5	3878-50- 6368	265 Bouchelle Rd. Wilkesboro, NC	Mr. R.R. Alvarado	265 Bouchelle Rd. Wilkesboro, NC 28697 No listing	~900	SW	Not in use
6	3878-60-6770	Statesville Rd. Wilkesboro, NC	Mr. Roger P. Johnson	226 Frog Ridge Rd., North Wilkesboro, NC 28659 (336) 667-0370	~ 570	W	Not in use
7	3878-51- 2162	220 Damascus Ch. Rd. Wilkesboro, NC	Mr. and Mrs. Brown	220 Damascus Ch. Rd. Wilkesboro, NC 28697 (336) 667-5968	~1000	W	Not in use

b. Public Water Supplies

According to information obtained from Broadway Water Association, Inc., the company that supplies potable water to the site and surrounding area, water supplies are or can be available to all properties located within 1,000 feet of the subject site (See Appendix I).

c. Surface Water

Two (2) surface water features were observed during the receptor survey. Both of the streams are shown on the U.S.G.S. Quadrangle map (Figure 1). The stream located to the northwest of the subject site is an unnamed tributary of the Yadkin River. The stream located to the southwest of the site is a tributary of Little Cub Creek, a tributary of the Yadkin River. Based on the U.S.G.S. map, the unnamed stream located to the north of the site lies within approximately 400-500 feet of the site. The tributary of Little Cub Creek is more than 500 feet from the former UST area.

According to the NC Classifications and Standards assigned to waters of the Yadkin-Pee Dee River Basin, Little Cub Creek, and tributaries of Yadkin River in the reach of the Yadkin River near the site area are classified as Class C waterways with a Benzene standard of 71.4 ug/l (ppb) [human health standard] and a Toluene standard of 11 ppb [aquatic life standard].

Neither Benzene nor Toluene were detected in MW1 during the LSA groundwater sampling event. Since neither of the regulated surface water contaminants were detected in the LSA source area well, these surface water features should not have a bearing on the site's "Risk Classification."

d. Wellhead Protection Areas

No wellhead protection areas were identified within 1,500 feet of the subject site.

e. Deep Aquifers in Coastal Plain

The site lies outside of the Coastal Plain and is not, therefore, subject to this condition.

f. Subsurface Structures

The release at this facility is thought to originate from the gasoline dispenser or dispenser piping. All of the UST system piping previously located at both dispenser islands areas was removed at tank closure. The only subsurface structure known to intersect the release area is the source area monitoring well, MW1.

g. Land Use and Zoning

Land uses within 1,000 feet of the site are a mixture of business and residential uses. Many of the properties fronting Statesville Road are commercial properties. This portion of Wilkes County falls within the jurisdiction of North Wilkesboro. All of the properties, including the subject site, fronting Statesville Road are zoned Highway Business. The remaining properties within 1,000 feet of the site are zoned for residential use.

As to future uses of the subject site and nearby area, the site and existing buildings will likely continue to be used as a commercial business due to its construction as a garage, the current zoning classification and its proximity to Statesville Road. The majority of the nearby residential properties are likely to remain in use as residential sites based on their current use and the existing structures. It is likely that some of the residential properties fronting onto Statesville Road will be converted to use as businesses.

h. Property Ownership

Table 2 contains ownership information for the subject site and surrounding properties [keyed to Figure 3 using the last four digits of the Wilkes County Property Identification Number (PIN)].

E. SITE GEOLOGY AND HYDROGEOLOGY

According to the North Carolina Geologic map (Brown et al, 1985), rocks in the site area are part of the Inner Piedmont Litho-Tectonic Province, with the subject site lying within the Czb unit. The Czb unit is further described as biotite gneiss and schist, inequigranular with locally abundant potassic feldspar and garnet, interlayered and gradational with calc-silicate rock, sillimanite-mica schist and amphibole. This unit may also contain small masses of granitic rock. No outcrops were noted on the subject site, however the saprolite soils collected from the LSA source area boring appeared to be weathered biotite gneiss or weathered granite.

Based on the U.S.G.S. topographic map of the area (Figure 1) and the Wilkes County aerial map (Figure 2), the site is located in a low-lying area in the floodplain of Bear Creek. The site building, former UST area and the useable portion of the site are located at the northeastern part of the property near Statesville Road. The property has little slope, but falls away slightly to the southwest. The rear portion of the property slopes fairly steeply to the southwest. Using the topography as a guide, surface drainage should be by sheetwash to the southwest.

One (1) groundwater monitoring well has been constructed on the subject site (Figure 6, Appendix G: Table B-7). The water table in this well is approximately 49 to 50 feet below grade. No additional information about site hydrology is known.

F. PREVIOUS WORK

1. Tank Closure Sampling

The USTs at this site were removed on June 23, 2005. Supervision of the tank excavation and soil sampling were conducted by GeoSci personnel. Samples were collected from the floor of the gasoline tank excavation at UST Closure as required by the State. These samples were analyzed for Total Petroleum Hydrocarbons by Method 5035. The results of the closure soil sample analyses are summarized in Table 4. The former UST locations and sizes are shown on Figure 4. The "Tank Closure" soil sampling locations are shown on Figure 5.

Table 4: UST Closure Soil Sample Information Summary
Total Petroleum Hydrocarbons by Method 5035

Date: September 2005 **Incident No.** 30597 **Incident Name:** Queen's Garage **Facility ID#** 0-006960

Sample ID	Contaminant of Concern - Gasoline					Method 5035 (ppm)
	Location	Date	Time	Depth	OVA	
T1-1-12	Tank T1 1 st 10k	6/23/05	1500	12	180	17.7
T1-2-12	Tank T1 1 st 10k	6/23/05	1505	12	50	40.8
T1-3-12	Tank T1 1 st 10k	6/23/05	1510	12	30	<10
T2-1-12	Tank T2 2 nd 10K	6/23/05	1725	12	420	10.5
T2-2-12	Tank T2 2 nd 10K	6/23/05	1730	12	>1000	1,270
T2-3-12	Tank T2 2 nd 10K	6/23/05	1735	12	74	11.1
T3-1-12	Tank T3 3 rd 10K	6/23/05	1900	12	32	12.9
T3-2-12	Tank T3 3 rd 10K	6/23/05	1905	12	22	<10
T3-3-12	Tank T3 3 rd 10K	6/23/05	1910	12	30	<10
NCDENR UST Section Initial Regulatory Standard						>10

The soil sample analyses indicated that a gasoline release had occurred in the center UST area. Based on the distribution of the impacted soils it appears that the release was associated with the dispenser or distribution piping. Based on these data, a LSA was requested by NCDENR.

G. LSA INVESTIGATION

In July 2005, NCDENR issued a Notice of Violation (NOV) requiring that a Limited Site Assessment (LSA) be performed. This report is the reply to the NOV. The chain of custody documents and the laboratory report for the soil samples analyses are located in Appendix B and Appendix C, respectively. Appendices D and E contain the groundwater sample chain of custody and the laboratory report.

1. LSA Soils Assessment

LSA guidelines require a soil boring/monitoring well to be installed at the location of the most petroleum impacted soils as based on the results of the UST Closure samples.

The tank closure samples collected beneath the USTs revealed that impacted soils were present in the center of the former gasoline tank area beneath the dispenser island (Sample T2-2-12). In September 2005, GeoSci personnel visited the subject site and performed the LSA "Source Area Boring," designated B1/MW1, in the former tank basin in the area where the most impacted soils were previously detected.

The soil samples collected during the LSA source area boring were generally collected at ten (10) foot intervals. Since the soils were excavated to 12 feet below grade during tank removal, LSA soil sample collection was begun at fifteen (15) feet below grade. Samples were collected from the source area boring until the water table was intersected. Five (5) LSA soil samples were submitted for laboratory analyses. Tables 5 and 6 summarize the results of the Method 8260/5035 and the MADEP VPH analyses performed on the LSA source area soil samples. The location of the source area boring/well is shown on Figure 6.

Table 5: LSA Source Area Boring Soil Sample - Summary of Risk-Based Analytical Results

Method 8260/5035 (ppm) - Detected Compounds Only							
Date: September 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960							
Sample ID	Date	Depth (ft)	Ethylbenzene	Naphthalene	1,2,4 Trimethylbenzene	1,3,5 Trimethylbenzene	Total Xylenes
B1/15-16.5	9/15/05	15-16.5 bg	0.014	0.069	0.030	0.0060	0.055
B1/20-21.5	9/15/05	20-21.5 bg	BQL	BQL	BQL	BQL	BQL
B1/30-31.5	9/15/05	30-31.5 bg	BQL	BQL	BQL	BQL	BQL
B1/40-41.5	9/15/05	40-41.5 bg	BQL	BQL	BQL	BQL	BQL
B1/50-51.5	9/15/05	50-51.5 bg	BQL	BQL	BQL	BQL	BQL
Soil to Groundwater Standard (MSCC)			0.24	0.58	8	7	5
Residential Soil Standard (MSCC)			1560	63	782	782	32,000
Industrial/Commercial Soil Standard (MSCC) mg/kg or ppm			40,000	1635	20,440	20,440	200,000

Bold type indicates exceeds Soil to Groundwater standard. Bold type and underline indicates that compound exceeds the Residential Soil Standard.

Table 6: LSA Source Area Boring Soil Sample - Summary of Risk-Based Analytical Results

MADEP VPH Method (ppm)									
Date: September 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960									
Sample ID	Phase of Work	Date	Depth Collected (ft)	C5-C8 Aliphatics	C9-C12 Aliphatics	C9-C10 Aromatics	Sum C9-C12/C9-C-18 Aliphatics	Sum C9-C10/C11-C22 Aromatics	
B1/15-16.5	LSA	9/15/05	15-16.5 bg	BQL	BQL	BQL	BQL	BQL	
B1/20-21.5	LSA	9/15/05	20-21.5 bg	BQL	BQL	BQL	BQL	BQL	
B1/30-31.5	LSA	9/15/05	30-31.5 bg	BQL	BQL	BQL	BQL	BQL	
B1/40-41.5	LSA	9/15/05	40-41.5 bg	BQL	BQL	BQL	BQL	BQL	
B1/50-51.5	LSA	9/15/05	50-51.5 bg	BQL	BQL	BQL	BQL	BQL	
Soil to Groundwater Standard (MSCC)				72	No individual standard	No individual standard	3255	34	
Residential Soil Standard (MSCC)				939	No individual standard	No individual standard	9386	469	
Industrial/Commercial Soil Standard (MSCC) mg/kg or ppm				24528	No individual standard	No individual standard	245,280	12264	

Bold type indicates exceeds Soil to Groundwater standard. **Bold** type and underline indicates that compound exceeds the Residential Soil Standard.

BQL - Below laboratory quantification limits

6. Initial LSA Groundwater Assessment

Groundwater monitoring well MW1 is a 2-inch diameter groundwater monitoring well. On September 19, 2005, the water table in well MW1 was 49.5 feet below the top of casing. After the water table was measured, this well was purged and sampled. This initial groundwater sample was analyzed by Methods 601/602 plus xylenes, MADEP-VPH, EDB by Method 504.1, and Lead by Method 3030C. Results of these analyses are summarized in Tables 7, 8, 9 and 10, respectively.

Table 7: LSA Groundwater Analyses

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960									
Method 601/602 (ppb)									
Well ID	Sample ID	Date		Benzene	Ethyl benzene	Toluene	Total Xylenes	MTBE	IPE
MW1	MW1	9/19/05	All targeted compounds BQL except as noted	BQL	9.9	BQL	41	8.3	BQL
NCAC 2L Standard (ppb)				1	29	1000	530	200	70
2L Standard x 10 (ppb)				10	290	10,000	5,300	2000	700
GCL Standard (ppb)				5,000	29,000	257,500	87,500	200,000	70,000

Bold type indicates exceeds 2L standards. BQL - Below laboratory quantification limit.

Table 8: LSA Groundwater Analyses

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960					
MADEP VPH (ppm)					
Well ID	Sample ID	Date	C5-C8 Aliphatics	C9-C12 Aliphatics	C9-C10 Aromatics
MW1	MW1	9/19/05	BQL	0.449	0.226
NCAC 2L Standard (ppm)			0.42	NS	NS
GCL Standard (ppm)			NS*	NS	NS
Well ID	Sample ID	Date	Sum C9-C12/C9-C18 Aliphatics	Sum C9-C10/C11-C22 Aromatics	
MW1	MW1	9/19/05	0.449	0.226	
NCAC 2L Standard (ppm)			4.2	0.21	
GCL Standard (ppm)			NS	NS	

Bold type indicates exceeds 2L standards. * NS - No established standard. BQL - Below lab. quantification limits.

Table 9: LSA Groundwater Analyses			
Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960			
Well ID	Sample ID	Date	EDB by Method 504.1 (ppb)
MW1	MW1	9/19/05	BQL
NCAC 2L Standard (ppb)			4.0 x 10 ⁻⁴
2L Standard x 10 (ppb)			4.0 x 10 ⁻³
GCL Standard (ppb)			50

Bold type indicates exceeds 2L standards. BQL - Below laboratory quantification limits.

Table 10: LSA Groundwater Analyses			
Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960			
Well ID	Sample ID	Date	Lead by Method 3030 C (ppb)
MW1	MW1	9/19/05	10
NCAC 2L Standard (ppb)			15
2L Standard x 10 (ppb)			150
GCL Standard (ppb)			15,000

Bold type indicates exceeds 2L standards. BQL - Below laboratory quantification limits.

Based on the MW1 groundwater analytical results, only the sum of the MADEP VPH Aromatics exceed the NCAC Subchapter 2L groundwater standards.

H. SUMMARY AND CONCLUSIONS

The samples collected at tank closure indicated that gasoline impacted soils were present beneath the center 10,000 gallon UST near center of the former dispenser island. The distribution of the impacted soils appeared to indicate that the gasoline release was associated with the center dispenser or the distribution piping in this area. The LSA source area boring B1/MW1 was sited at the location of the most impacted soils. Soil samples were collected from this boring at 15, 20, 30, 40 and 50 feet below grade and analyzed by Method 8260/5035 and the MADEP VPH Method. The laboratory analyses performed on these samples indicated that the gasoline-impacted soils are limited to the area above 20 feet. The soil sample collected at 15 feet, just below the floor of the former tank excavation indicated that gasoline constituents targeted by Method 8260/5035 were present in this area, but in concentrations that do not exceed the Residential Soil or the Soil to Groundwater Standards. The samples collected at and below 20 feet tested below the laboratory quantification limits by Method 8260/5035 and the MADEP VPH method. Soil boring B1 was converted to the source area monitoring well MW1, 58 feet in depth.

Analyses of the groundwater samples from MW1 collected in September 2005 indicated the presence of ethyl benzene (9.9 ppb), xylenes (41 ppb), MTBE (8 ppb) and compounds in the Massachusetts VPH range. EDB was not detected. A 10 mg/l concentration of Lead was detected, but this level does not exceed the State groundwater standard for Lead (15 mg/l). Only the concentrations of MADEP VPH constituents (0.226 mg/l) exceeded the NCAC 2L groundwater standards for these constituents (0.21 mg/l).

In September 2005, GeoSci personnel performed visual reconnaissance in the area surrounding the subject site to determine land uses, determine if surface water features are located nearby and to look for evidence of water supply wells. Land uses within 1,000 feet of the site were found to contain a mixture of business and residential uses. As a generalization, all properties fronting Statesville Road (NC Highway 115) are zoned for "Highway Business." Properties located away from Statesville Road are zoned for residential uses and are used as such. The subject site is rental property and the building located on the site are currently used as a computer sales and repair center and a specialty automotive shop. Access to the former UST area is not restricted.

The site area walkover indicated that two (2) surface water features are located within 1,000 feet of the subject site (Figure 1). The stream located to the northwest of the subject site is an unnamed tributary of the Yadkin River and is located within 500 feet of the subject site. The stream located to the southwest of the site is a tributary of Little Cub Creek, a tributary of the Yadkin River. This tributary of Little Cub Creek is more than 500 feet from the former UST area. According to the NC Classifications and Standards these streams are classified as Class C waterways with a Benzene standard of 71.4 ug/l (ppb) [human health standard] and a Toluene standard of 11 ppb [aquatic life standard]. Neither Benzene nor Toluene were detected in MWI during the LSA groundwater-sampling event. Since neither of the regulated surface water contaminants were detected in the LSA source area well, these surface water features should not have a bearing on the site's "Risk Classification."

As part of the receptor survey, GeoSci personnel looked for evidence of water supply wells. The fieldwork was conducted using a combination of windshield survey and a walkover within the 1,000-foot radial search area. The receptor survey indicated that seven (7) water supply wells are located within the 1,000-foot search radius. None of the seven (7) wells located within 1,000 foot of the subject site were found to be in-use as potable water supply sources. The locations of all the supply wells found during the receptor survey are shown on Figure 2. In addition to the search for private water supply wells, GeoSci personnel researched the sources for potable water used within 1,000 feet of the subject site. According to information obtained from Broadway Water Association, Inc., water service is or can be available to all properties located within 1,000 feet of the subject site and to the best of their knowledge, no one in the 1,000-foot receptor search radius uses a well as their potable water supply. The letter from Broadway Water Association, Inc., attached as Appendix I, documents the availability of this alternative potable water supply.

The results of the LSA soil sampling data combined with the findings from the September 2005 groundwater sampling event appear to indicate that the affected soils and the groundwater plume are localized in the former UST basin. The groundwater data indicate that the groundwater is minimally affected by the gasoline release. Only the MADEP VPH constituents were present in the groundwater in concentrations above the NCAC 21 Standard. Only the soils at 15-16.5 foot interval contained gasoline constituents. The detected constituents in this soil sample did not exceed the "Residential" or "Soil to Groundwater" standards. The relatively low concentrations of the dissolved phase gasoline constituents detected in MWI may indicate that either the gasoline release was initially neither areally extensive, nor of long-term duration. Another possibility is that the length of time since the release occurred (the USTs have been out of service for some time) has allowed natural processes to degrade and attenuate the released gasoline constituents.

Based on the LSA data, it seems that this site meets the criteria to be classified "Low Risk" UST Incident.

I. ENCLOSURES

Figures

1. Site Location Map
2. Receptor Survey Search Area (Wilkes County Tax Map/Aerial Photograph)
3. Site Map (Wilkes County Tax Map)
4. General Site Map
5. UST Closure Samples
6. LSA Boring and Well Locations

Tables (within body of report and in Table Appendix)

1. UST Information Summary
2. Property Ownership within 500 feet of Subject Site (Referenced to Figure 3)
3. Water Supply Wells within 1,000 feet of Site (Referenced to Figure 2)
4. UST Closure Soil Sample Information Summary
5. LSA Source Area Boring Soil Sample – Summary of Risk-Based Analytical Results (Method 8260/5035)
6. LSA Source Area Boring Soil Sample – Summary of Risk-Based Analytical Results (MADEP VPH)
7. LSA Source Area Well Groundwater Analyses - (Method 601/602)
8. LSA Source Area Well Groundwater Analyses - (MADEP VPH)
9. LSA Source Area Well Groundwater Analyses - (EDB by Method 504.1)
10. LSA Source Area Well Groundwater Analyses - (Lead by Method 3030C)
11. Well Construction Information

Appendices

- Appendix A: Limited Site Assessment Risk Classification and Land Use Form
Appendix B: Soil Sample Chain of Custody Records
Appendix C: Soil Sample Laboratory Reports
Appendix D: Groundwater Sample Chain of Custody Record
Appendix E: Groundwater Sample Laboratory Report
Appendix F: Boring Log
Appendix G: Well Construction Information Table and Well Construction Record
Appendix H: Completed Water Supply Information Questionnaires
Appendix I: Letter from Broadway Water Association, Inc.

TABLES

Table 1: UST System Information

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960			
UST Reg. ID No.	1	2	3
Tank ID No.	T1	T2	T3
Installation date	May 1966	May 1966	May 1966
Size in gallons	10,000 gallons	10,000 gallons	10,000 gallons
Dimensions	8 ft. Diam. X 26.5 ft. long.	8 ft. Diam. X 26.5 ft. long.	8 ft. Diam. X 26.5 ft. long.
Last contents	Gasoline	Gasoline	Gasoline
Previous contents	same	same	same
Closure Date	June 23, 2005	June 23, 2005	June 23, 2005
Release associated with UST System	No	Yes	No
Date release discovered	Suspected June 23, 2005; Reported July 6, 2005 upon receipt of lab. report.	Suspected June 23, 2005; Reported July 6, 2005 upon receipt of lab. report.	Suspected June 23, 2005; Reported July 6, 2005 upon receipt of lab. report.

**Table 2: Property Ownership within 500 feet of Subject Site
Referenced to Figure 3**

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960					
Property Tax ID No. (See Fig. 2)	Owner	Owner Address	Property Address	Direction from subject site	Survey form returned
3878-61-2105	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	1728 Statesville Rd. North Wilkesboro, NC 28659	Subject site	Yes
3878-51-9892	Mr. Leon Johnson	1535 Statesville Rd., North Wilkesboro, NC 28659	Statesville Road Property Wilkesboro, NC 28697	NE	Yes
3878-61-1374	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	1681/1695 Statesville Rd., North Wilkesboro, NC 28659	N	Yes
3878-61-1557	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	Statesville Rd., Wilkesboro, NC 28659	N	Yes
3878-61-3436	Mr. Leon Johnson	1535 Statesville Rd., North Wilkesboro, NC 28659	1709 Statesville Road, Wilkesboro, NC 28697	NE	Yes
3878-61-5553	Ms. Pamela L. Curry	2594 Old Hwy 60 Wilkesboro, NC 28697	Eagle Lane Property, Wilkesboro, NC 28697	NE	Yes
3878-61-5329	Ms. Pamela L. Curry	2594 Old Hwy 60 Wilkesboro, NC 28697	Eagle Lane Property, Wilkesboro, NC 28697	NE	Yes
3878-61-7573	Ms. Pamela L. Curry	2594 Old Hwy 60 Wilkesboro, NC 28697	Wooded property behind Eagle Lane	NE	Yes
3878-61-5109	Mr. Q. P. Johnson	1593 Sparta Rd., North Wilkesboro, NC 28659	120/138/144 Eagle Lane	NE	No

Table 2: Property Ownership within 500 feet of Subject Site (Cont.)
Referenced to Figure 3

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960					
Property Tax ID No. (See Fig. 2)	Owner	Owner Address	Property Address	Direction From subject site	Survey form returned
3878-61-4041	Real World Prop., Inc.	c/o J.D Byers Law Office 105 W. Fourth St. Winston-Salem, NC 27101-3816	Statesville Rd., Wilkesboro, NC 28697	E	No
3878-60-6770	Roger P. Johnson	226 Frog Ridge Rd., North Wilkesboro, NC 28659	Statesville Rd., Wilkesboro, NC 28697	SE	Yes
3878-60-4598	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	Statesville Rd., North Wilkesboro, NC 28659	SE	Yes
3878-60-4402	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	Statesville Rd., Wilkesboro, NC 28697	SE	Yes
3878-60-1776	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	Statesville Rd., Wilkesboro, NC 28697	S	Yes
3878-60-3923	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	1748 Statesville Rd. Wilkesboro, NC 28697	SE	Yes
3878-60-4801	Mr. Harold Call	c/o Harold's Restaurant 1748 Statesville Rd. Wilkesboro, NC 28697	1748 Statesville Rd. Wilkesboro, NC 28697	SE	Yes
3878-50-6368	Mr. R. R. Alvarado	265 Bouchelle Road, Wilkesboro, NC 28697	Bouchelle Road, Wilkesboro, NC 28697	SW	No
3878-60-0913	Mrs. Edith Jarvis	1684 Statesville Rd., Wilkesboro, NC 28697	Statesville Rd., Wilkesboro, NC 28697	SW	Yes
3878-60-8978	Mrs. Edith Jarvis	1684 Statesville Rd., Wilkesboro, NC 28697	1684 Statesville Rd., Wilkesboro, NC 28697	SW	Yes
3878-61-0069	Broadway Fire Dept.	1690 Statesville Road, Wilkesboro, NC 28697	1690 Statesville Road, Wilkesboro, NC 28697	NW	Yes
3878-51-7195	Duke Power Co.	Property Manager 422 S. Church St. Charlotte, NC 28242-0001	Statesville Road, Wilkesboro, NC 28697	NW	No
3878-51-7238	E.B. Burgin and A. Blackburn	3923 S. Dakota Ave. N.E. Washington, DC 20018	Statesville Road, Wilkesboro, NC 28697	NW	No

Table 3: Water Supply Wells Within 1,000 Feet of Site (Referenced to Fig. 2)							
Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960							
Well No.	Property ID No. (Block Lot)	Property Address	Owner	Owner Address and Phone No.	Distance from Release (ft)	Direction	Well Status
1	3878-61- 5109	120 Eagle Lane Wilkesboro, NC	Mr. Q.P. Johnson	1593 Sparta Road, N. Wilkesboro, NC 28659 No listing	~200	NE	Not in use, Confirmed 9/12/05
2	3878-61- 4041	Statesville Rd. Wilkesboro, NC	Real World Properties	c/o J.D. Byers Law Office 105 West Fourth St. Winston-Salem, NC 27101-3816 (336) 727-1070	~220	NE	Not in use, at abandoned residence
3	3878-50- 8978	1684 Statesville Rd. Wilkesboro, NC	Mrs. Edith Jarvis	1684 Statesville Rd. Wilkesboro, NC 28697 (336) 838-4874	~380	W	Not in use
4	3878-61- 5797	220 Eagle Lane Wilkesboro, NC	Mr. William Kilby	220 Eagle Ln. Wilkesboro, NC 28697 (336) 838-1687	~800	NE	Irrigation only
5	3878-50- 6368	265 Bouchelle Rd. Wilkesboro, NC	Mr. R.R. Alvarado	265 Bouchelle Rd. Wilkesboro, NC 28697 No listing	~900	SW	Not in use
6	3878-60-6770	Statesville Rd. Wilkesboro, NC	Mr. Roger P. Johnson	226 Frog Ridge Rd., North Wilkesboro, NC 28659 (336) 667-0370	~ 570	W	Not in use
7	3878-51- 2162	220 Damascus Ch. Rd. Wilkesboro, NC	Mr. and Mrs. Brown	220 Damascus Ch. Rd. Wilkesboro, NC 28697 (336) 667-5968	~1000	W	Not in use

Table 4: UST Closure Soil Sample Information Summary
Total Petroleum Hydrocarbons by Method 5035

Date: October 2005 **Incident No.** 30597 **Incident Name:** Queen's Garage **Facility ID#** 0-006960

Sample ID	Contaminant of Concern - Gasoline					Method 5035 (ppm)
	Location	Date	Time	Depth (ft.)	OVA	
T1-1-12	Tank T1 1 st 10k	6/23/05	1500	12	180	17.7
T1-2-12	Tank T1 1 st 10k	6/23/05	1505	12	50	40.8
T1-3-12	Tank T1 1 st 10k	6/23/05	1510	12	30	<10
T2-1-12	Tank T2 2 nd 10K	6/23/05	1725	12	420	10.5
T2-2-12	Tank T2 2 nd 10K	6/23/05	1730	12	>1000	1,270
T2-3-12	Tank T2 2 nd 10K	6/23/05	1735	12	74	11.1
T3-1-12	Tank T3 3 rd 10K	6/23/05	1900	12	32	12.9
T3-2-12	Tank T3 3 rd 10K	6/23/05	1905	12	22	<10
T3-3-12	Tank T3 3 rd 10K	6/23/05	1910	12	30	<10
NCDENR UST Section Initial Regulatory Standard						>10

Table 5: LSA Source Area Boring Soil Sample - Summary of Risk-Based Analytical Results

Method 8260/5035 (ppm) - Detected Compounds Only

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960

Sample ID	Date	Depth (ft)	Ethylbenzene	Naphthalene	1,2,4 Trimethyl- benzene	1,3,5 Trimethyl- benzene	Total Xylenes
B1/15-16.5	9/15/05	15-16.5 bg	0.014	0.069	0.030	0.0060	0.055
B1/20-21.5	9/15/05	20-21.5 bg	BQL	BQL	BQL	BQL	BQL
B1/30-31.5	9/15/05	30-31.5 bg	BQL	BQL	BQL	BQL	BQL
B1/40-41.5	9/15/05	40-41.5 bg	BQL	BQL	BQL	BQL	BQL
B1/50-51.5	9/15/05	50-51.5 bg	BQL	BQL	BQL	BQL	BQL
Soil to Groundwater Standard (MSCC) mg/kg or ppm			0.24	0.58	8	7	5
Residential Soil Standard (MSCC) mg/kg or ppm			1560	63	782	782	32,000
Industrial/Commercial Soil Standard (MSCC) mg/kg or ppm			40,000	1635	20,440	20,440	200,000

Bold type indicates exceeds Soil to Groundwater standard. **Bold** type and underline indicates that compound exceeds the Residential Soil Standard.

Table 6: LSA Source Area Boring Soil Sample - Summary of Risk-Based Analytical Results

MADEP VPH Method (ppm)									
Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960									
Sample ID	Phase of Work	Date	Depth Collected (ft)	C5-C8 Aliphatics	C9-C12 Aliphatics	C9-C10 Aromatics	Sum C9-C12/C9-C-18 Aliphatics	Sum C9-C10/C11-C22 Aromatics	
B1/15-16.5	LSA	9/15/05	15-16.5 bg	BQL	BQL	BQL	BQL	BQL	
B1/20-21.5	LSA	9/15/05	20-21.5 bg	BQL	BQL	BQL	BQL	BQL	
B1/30-31.5	LSA	9/15/05	30-31.5 bg	BQL	BQL	BQL	BQL	BQL	
B1/40-41.5	LSA	9/15/05	40-41.5 bg	BQL	BQL	BQL	BQL	BQL	
B1/50-51.5	LSA	9/15/05	50-51.5 bg	BQL	BQL	BQL	BQL	BQL	
Soil to Groundwater Standard (MSCC)				72	No individual standard	No individual standard	3255	34	
Residential Soil Standard (MSCC)				939	No individual standard	No individual standard	9386	469	
Industrial/Commercial Soil Standard (MSCC) mg/kg or ppm				24528	No individual standard	No individual standard	245,280	12264	

Bold type indicates exceeds Soil to Groundwater standard. **Bold** type and underline indicates that compound exceeds the Residential Soil Standard.

BQL - Below laboratory quantification limits.

Table 7: LSA Groundwater Analyses

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960

Method 601/602 (ppb)

Well ID	Sample ID	Date		Benzene	Ethyl benzene	Toluene	Total Xylenes	MTBE	IPE
MW1	MW1	9/19/05	All targeted compounds BQL except as noted	BQL	9.9	BQL	41	8.3	BQL
NCAC 2L Standard (ppb)				1	29	1000	530	200	70
2L Standard x 10 (ppb)				10	290	10,000	5,300	2000	700
GCL Standard (ppb)				5,000	29,000	257,500	87,500	200,000	70,000

Bold type indicates exceeds 2L standards. BQL - Below laboratory quantification limit.

Table 8: LSA Groundwater Analyses

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960

MADEP VPH (ppm)

Well ID	Sample ID	Date	C5-C8 Aliphatics	C9-C12 Aliphatics	C9-C10 Aromatics
MW1	MW1	9/19/05	BQL	0.449	0.226
NCAC 2L Standard (ppm)			0.42	NS	NS
GCL Standard (ppm)			NS*	NS	NS
Well ID	Sample ID	Date	Sum C9-C12/C9-C18 Aliphatics	Sum C9-C10/C11-C22 Aromatics	
MW1	MW1	9/19/05	0.449	0.226	
NCAC 2L Standard (ppm)			4.2	0.21	
GCL Standard (ppm)			NS	NS	

Bold type indicates exceeds 2L standards. * NS - No established standard. BQL - Below lab. quantification limits.

Cindy,
 The only contam.
 is the aromatic
 below ↓. Do
 we need a
 NORP?
 yes! we need to sample
 the aromatic.
 Karen

Table 9: LSA Groundwater Analyses

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960			
Well ID	Sample ID	Date	EDB by Method 504.1 (ppb)
MW1	MW1	9/19/05	BQL
NCAC 2L Standard (ppb)			4.0×10^{-4}
2L Standard x 10 (ppb)			4.0×10^{-3}
GCL Standard (ppb)			50

Bold type indicates exceeds 2L standards. BQL – Below laboratory quantification limits.

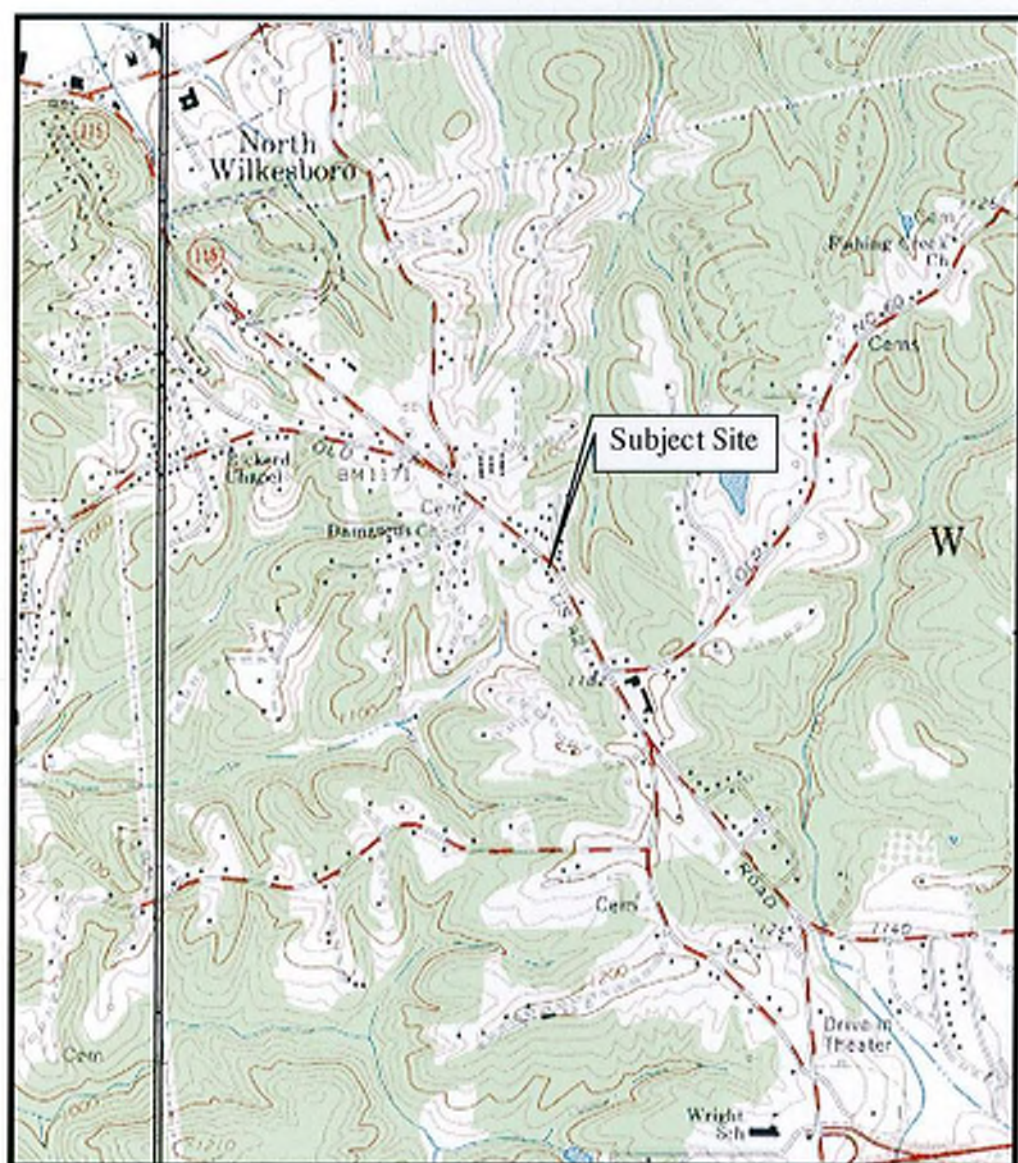
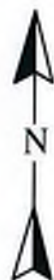
Table 10: LSA Groundwater Analyses

Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960			
Well ID	Sample ID	Date	Lead by Method 3030 C (ppb)
MW1	MW1	9/19/05	10
NCAC 2L Standard (ppb)			15
2L Standard x 10 (ppb)			150
GCL Standard (ppb)			15,000

Bold type indicates exceeds 2L standards. BQL – Below laboratory quantification limits.

Table 11 - Well Construction Information (NCDENR Format Table B-7)										
Date: October 2005 Incident No. 30597 Incident Name: Queen's Garage Facility ID# 0-006960										
Station	Date Installed	Date Water Level Measured	Well Casing Depth (ft. BGS)	Screened Interval (ft. BGS)	Bottom of Well (ft. BGS)	Top of Casing Elevation (ft.)	Depth to Water from Top of Casing (ft.)	Free Product Thickness (ft.)	Groundwater Elevation (ft)	Comments
MW1	9/16/2005	9/19/05	48	48-58'	58'	NE	49.5	None	-	LSA Source Area Well -Gasoline dispenser

FIGURES



Map Source: Roaring River, NC U.S.G.S. 7.5' topographic quadrangle map
U.S.G.S. Ref. Code 36081-B1-TF-024

Subject Site:

Latitude: 36° 09' 8.06" N

Longitude: 81° 06' 44.59" W

Title:
Site Location Map
Roaring River, NC
USGS Quadrangle
1966

Project:
Call UST - Queen's Garage

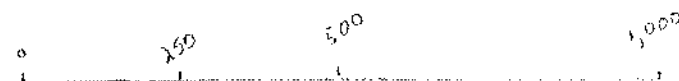
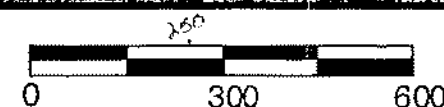
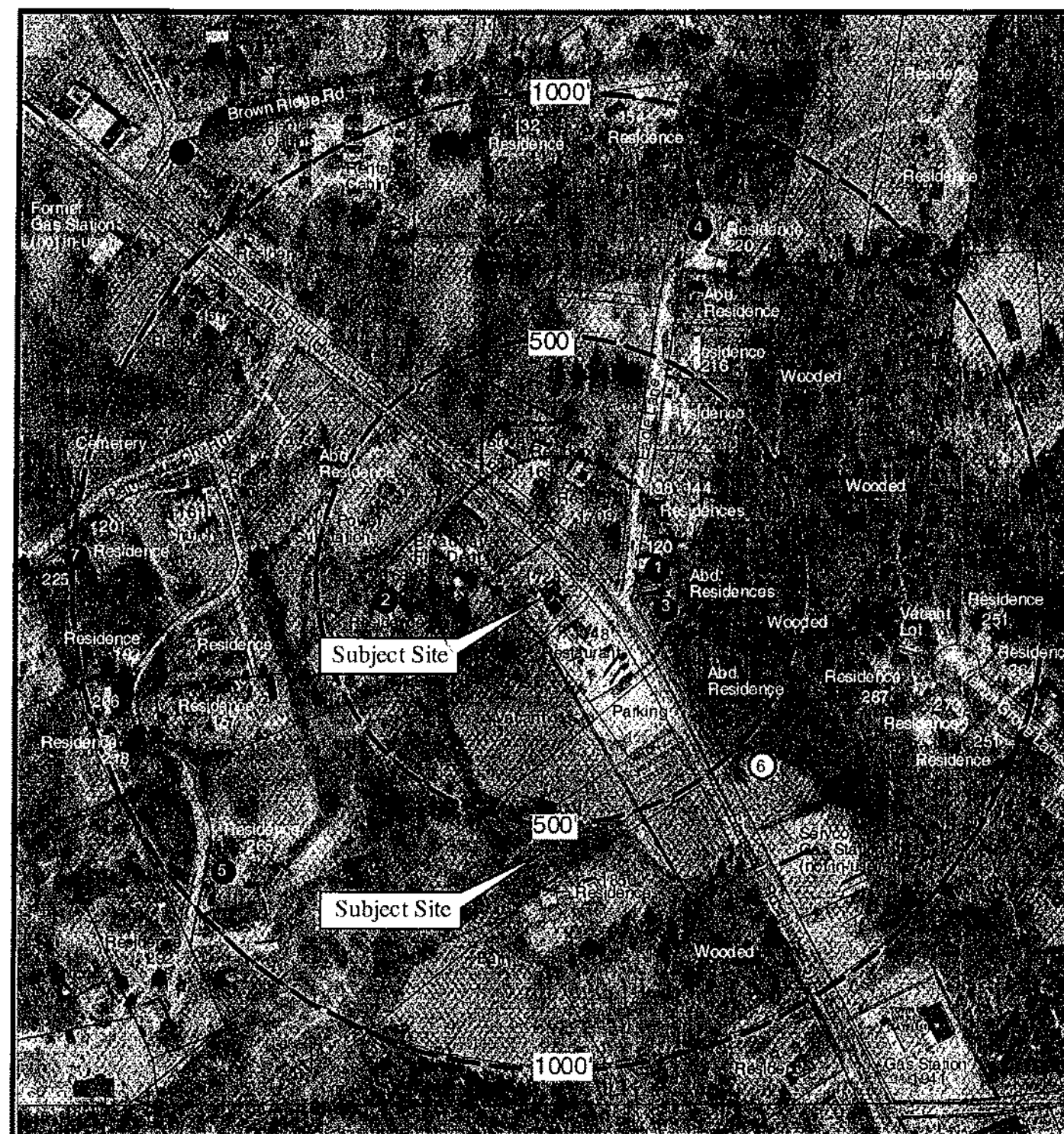
Scale:
1" = 2000'

Job No.:
05.262

Location:
1728 Statesville Rd.
Wilkesboro, NC

Figure No.:
1

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LEGEND

- ① - Water supply well location and ID Number
Wells located within 1,000 feet of UST release area
- ⑥ - Approximate location water supply well
located within 1,000 feet of UST release area
- - Water supply well location
located more than 1,000 feet from UST release area

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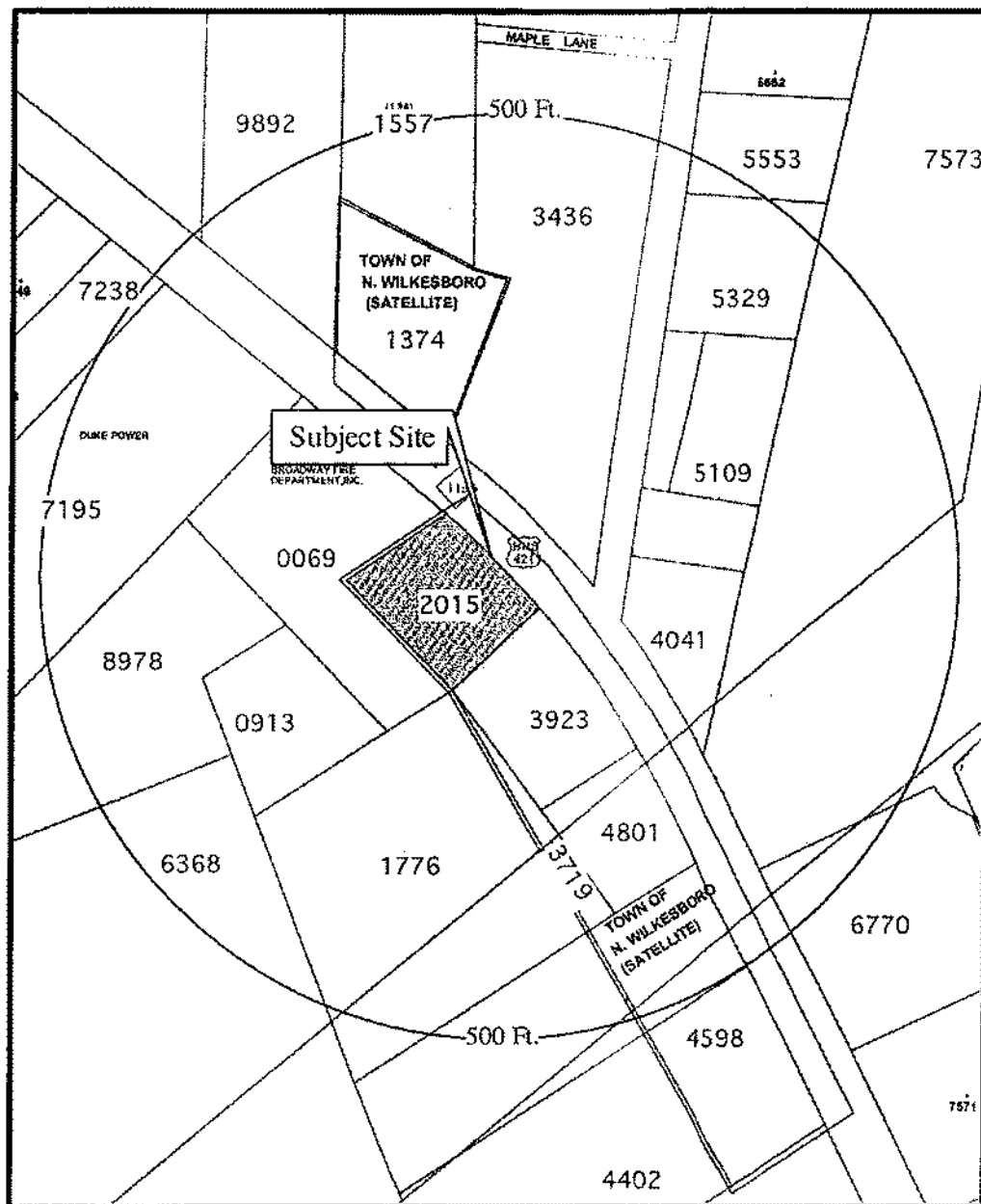
Winston-Salem, NC (336) 896-1300

Job #: 05.262
 Drawn by: MAM
 Approved by: MAM
 Scale: 1" = 300'

Former Queen's Garage, Wilkes County, NC

Receptor Survey Search Area
 Wilkes County Tax Map/Aerial Photograph

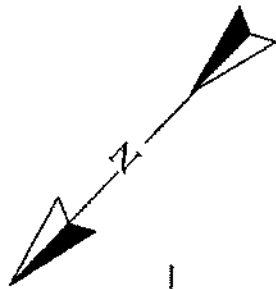
Figure 2
 Rev. 0
 10.12.05



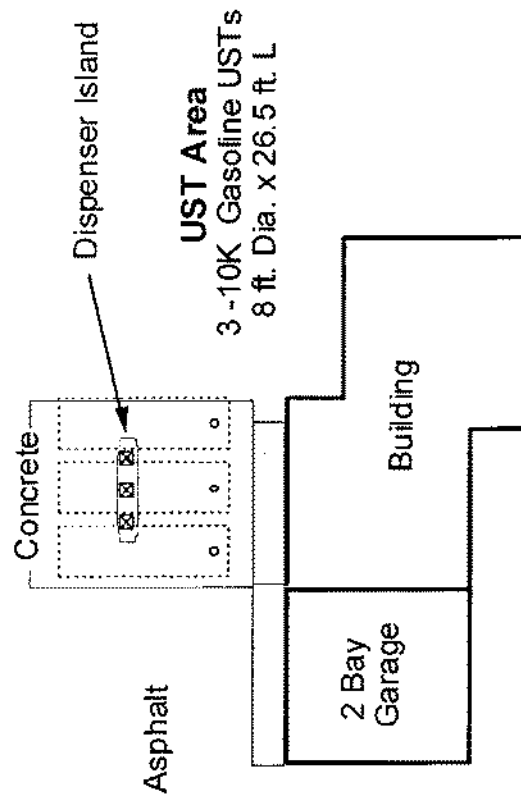
2015 - Last 4 Digits of Wilkes Co. Tax ID No.

Title: Site Map Wilkes County Tax Map	Project: Former Queen's Garage		Scale: 1 inch = 200 ft.	
	Job No.: 05.262	Location: Wilkes Co., NC	Figure No.: 3	

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Statesville Road (NC Hwy 115)



ø - Former Dispenser Location

Note: Building dimensions and UST locations based on field measurements.

Title:

General Site Map
Queen's Garage Site
1728 Statesville Road
North Wilkesboro, NC

Scale:

1" = 30'

Project:
Call UST - Queen's Garage

Location:
North Wilkesboro, NC

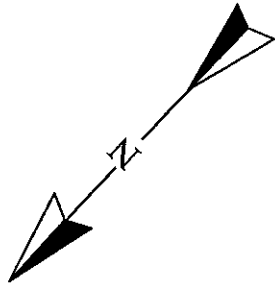
Figure No.:

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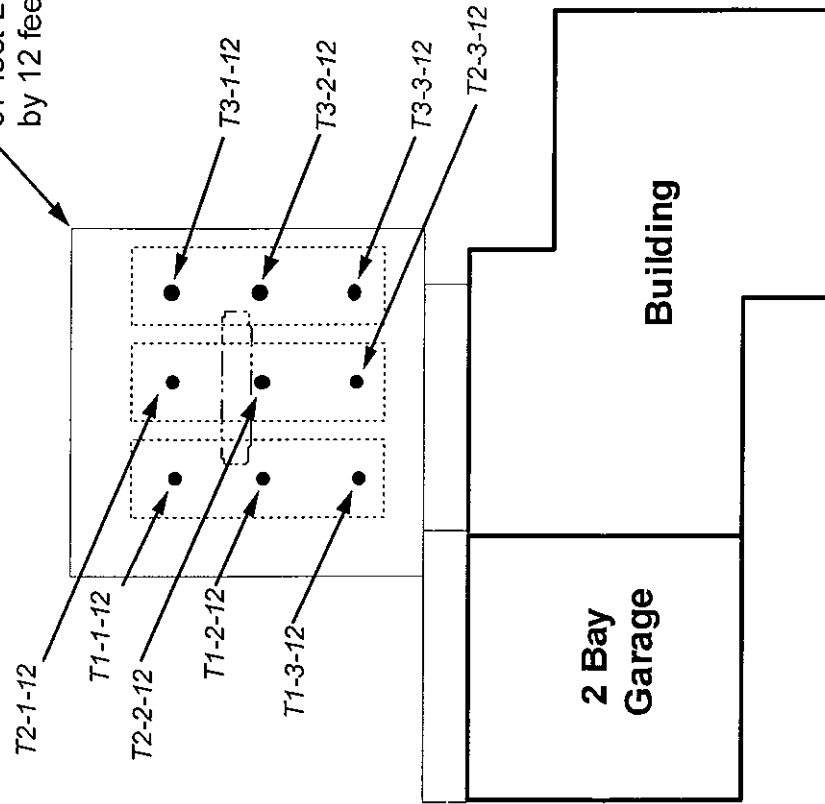
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Statesville Road (NC Hwy 115)



UST Excavation Area
37 feet L. x 36 feet Wide
by 12 feet deep



UST Closure Sample Information		
Sample No.	OVA	Method 5035
T1-1-12	180	17.7 ppm
T1-2-12	50	40.8 ppm
T1-3-12	30	<10 ppm
T2-1-12	420	10.5 ppm
T2-2-12	>1,000	1,270 ppm
T2-3-12	74	11.1 ppm
T3-1-12	32	12.9 ppm
T3-2-12	22	<10 ppm
T3-3-12	30	<10 ppm

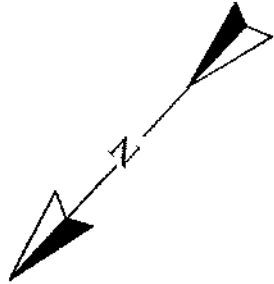
Title: **UST Closure Samples**
Queen's Garage Site
1728 Statesville Road
North Wilkesboro, NC

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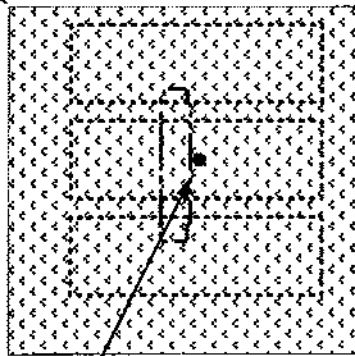
Project: Call UST - Queen's Garage		Scale: 1" = 20'
Job No.: 05.262	Location: North Wilkesboro, NC	Figure No.: 5

- - - Former dispenser island location
- - UST Closure sample location

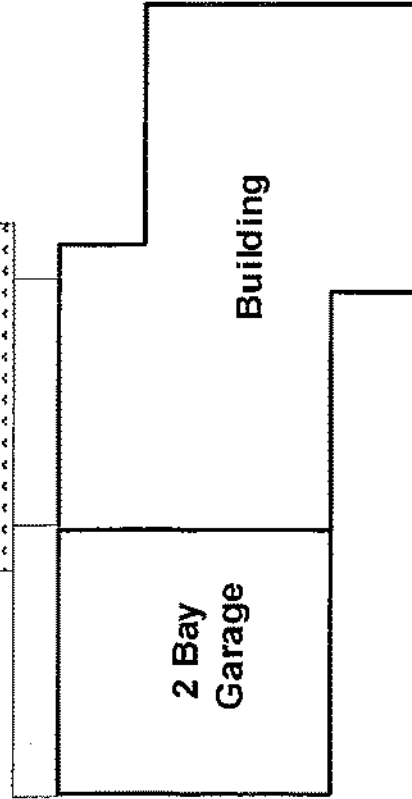
Statesville Road (NC Hwy 115)



Former UST Excavation Area
37 feet L. x 36 feet Wide
by 12 feet deep
(Now backfilled)



B1/MW1



Former dispenser island location

Title: LSA Well Location
Queen's Garage Site
1728 Statesville Road
North Wilkesboro, NC

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Winston-Salem, NC (336) 896-1300

Project: Call UST - Queen's Garage		Scale: 1" = 20'	
Job No.: 05.262	Location: North Wilkesboro, NC	Figure No.: 6	

APPENDICES

APPENDIX A
LSA Risk Classification and Land Use Form

B. Risk Characterization

Submit the following questionnaire in its entirety. Answer all questions completely. Attach additional pages as needed to fully explain answers. Base answers/explanations on information known or required to be obtained during the Limited Site Assessment.

NOTE: Source area means point of release from a UST system.

Limited Site Assessment Risk Classification and Land Use Form

Part I – Groundwater/Surface Water/Vapor Impacts

High Risk

1. Has the release contaminated any water supply well including any well used for non-drinking purposes? YES/NO
2. Is a water supply well used for drinking water located within 1,000 feet of the source area of the release? YES/NO
3. Is a water supply well not used for drinking water (e.g., irrigation, washing cars, industrial cooling water, filling swimming pools) located within 250 feet of the source area of the release? YES/NO
4. Does groundwater within 500 feet of the source area of the release have the potential for future use (there is no other source of water supply other than the groundwater)? YES/NO
5. Do vapors from the release pose a threat of explosion because of accumulation of the vapors in a confined space or pose any other serious threat to public health, public safety or the environment? YES/NO

If yes, describe.

6. Are there any other factors that would cause the release to pose an imminent danger to public health, public safety, or the environment? YES/NO

If yes, describe.

Intermediate Risk

7. Is a surface water body located within 500 feet of the source area of the release? YES/NO
- If YES, does the maximum groundwater contaminant concentration exceed the surface water quality standards and criteria found in 15A NCAC 2B .0200 by a factor of 10? YES/NO
8. Is the source area of the release located within a approved or planned wellhead protection area as defined in 42 USC 300h-7(e)? YES/NO

If yes, describe.

9. Is the release located in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985? YES/NO

If YES, is the source area of the release located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer that is being used or may be used as a source of drinking water? YES/NO

If YES, describe.

10. Do the levels of groundwater contamination for any contaminant exceed the gross contamination levels (see Table 9) established by the Department? YES/NO

Part II - Land Use

Property Containing Source Area of Release

The questions below pertain to the property containing the source area of the release.

1. Does the property contain one or more primary or secondary residences (permanent or temporary)? Describe. YES/NO

2. Does the property contain a school, daycare center, hospital, playground, park, recreation area, church, nursing home, or other place of public assembly? Describe. YES/NO

3. Does the property contain a commercial (e.g., retail, warehouse, office/business space, etc.) or industrial (e.g., manufacturing, utilities, industrial research and development, chemical/petroleum bulk storage, etc.) enterprise, an inactive commercial or industrial enterprise, or is the land undeveloped? Describe. YES/NO

- The property is used for businesses. A retail computer sales and service store and an automotive specialty garage. YES/NO

4. Do children visit the property? Explain.

Children may visit the site, but the businesses at this location do not cater to children.

Is access to the property reliably restricted consistent with its use (e.g., by fences, security personnel or both)? YES/NO

Explain.

Access to the property is not restricted.

5. Do pavement, buildings, or other structures cap the contaminated soil? Describe. YES/NO

The gasoline impacted soils are 12 feet below grade in the parking lot of the site.

If yes, what mechanisms are in place or can be put into place to ensure that the contaminated soil will remain capped in the foreseeable future?

It is not likely that the parking area of this business will be excavated to a level to intercept the impacted soils.

6. What is the zoning status of the property?

The property is zoned for Highway Business.

7. Is the use of the property likely to change in the next 20 years? YES/NO

Explain.

This a commercial retail business site and will likely remain in use as business property.

Property Surrounding Source Area of Release

The questions below pertain to the area within 1,500 feet of the source area of the release (excludes property containing source area of the release):

1. What is the distance from the source area of the release to the nearest primary or secondary residence (permanent or temporary)?
The nearest residence is 150 ft NE across Statesville Rd.
2. What is the distance from the source area of the release to the nearest school, daycare center, hospital, playground, park, recreation area, church, nursing home or other place of public assembly?
The nearest place of public assembly is Damascus Church @ 800 ft NW.
3. What is the zoning status of properties in the surrounding area?
The properties fronting Statesville Road are zoned for Highway Business. The properties away from the road frontage are zoned for residential use.
4. Briefly characterize the use and activities of the land in the surrounding area.
The properties adjacent to the subject site and south of Statesville Rd are used as businesses. The properties north of Statesville Rd are generally used as residential properties. The land used near the subject site are shown on Figure 2.

C. Receptor Information

1. Water Supply Wells (Complete and attach Table B-5 and attach map showing well locations)

2. Public Water Supplies

Are public water supplies available within 1,500 feet of the source area of the release?

YES/NO

If yes, where is the location of the nearest public water lines and the source(s) of the public water supply. (indicate on map) Describe. See LSA Report Appendix F.

3. Surface Water

Identify all surface water bodies (e.g., ditch, pond, stream, lake, river) within 1,500 feet of the source area of the release. This information must be shown on the USGS topographic map.

4. Wellhead Protection Areas

Identify all planned or approved wellhead protection areas (e.g., ditch, pond, stream, lake, river) within 1,500 feet of the source area of the release. This information must be shown on the USGS topographic map. Wellhead protection areas are defined in 42 USC 300h-7(c).

5. Describe Deep Aquifers in the Coastal Plain Physiographic Region (refer to page 19 of the guidelines):

NOTE: This requirement only pertains to releases in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985.

6. Describe Subsurface Structures (refer to page 19 of the guidelines):

No subsurface structures are known to exist within the zone of petroleum-impacted soils, except for the source area monitoring well.

7. Property Owners and Occupants

Attach Table B-6, listing the names and addresses of property owners and occupants within or contiguous to the area containing contamination and all property owners and occupants within or contiguous to the area where the contamination is expected to migrate.

- Discuss other relevant aspects of the site and nearby areas, including receptors. Provide data from available sources and/or site investigations concerning the following: Land use information, including the uses and activities (involving possible human exposure to contamination) that occur at the site and adjacent properties;
- Indicate on the site map other possible routes of exposure to contamination such as sewers, utility lines, conduits, basements, septic tanks, drainfields, etc.
- Distance to nearest body of surface water (e.g., ditch, pond, stream, river, etc.).

NOTE: See the instructions for a water supply well survey on page 4-12:

D. Site Geology and Hydrogeology

Describe the soil and geology encountered at the site. Discuss the effects of soil and geological characteristics on the migration and attenuation of contaminants. Include information obtained during assessment activities (e.g., lithologic descriptions made during drilling, probe surveys, tank closure, etc.). If a Phase II investigation is required include a discussion of groundwater flow direction and hydraulic gradient (vertical and horizontal).

The soils in the upper portion of the site are fill material. Based on the soils encountered in the LSA source area boring the soils 15-20 ft below grade are silty clays and clayey silts. These materials would tend to retard the downward migration of the released gasoline constituents.

E. Sampling Results

Phase I Investigation

NOTE: Responsible parties for all releases must perform a Phase I investigation.

A Phase I investigation includes the installation of one monitoring well in the source area of a release. Soil samples are to be collected every five feet in the unsaturated zone and should be analyzed in accordance with the methods specified in Table 5 (Analytical Methods for Petroleum Contaminated Soil). If the water table is encountered at 25 feet or greater from the land surface, samples for laboratory analysis should be collected every 10 feet in the unsaturated zone.

1. Describe all soil sampling performed during the installation of the source well(s) (use maps and tables whenever possible) and include:
 - location of soil samples;
 - type of soil samples (from excavation, borehole, geoprobe, etc.);
 - Complete and attach Table B-3.
 - If multiple source areas have been identified, use individual tables for each source well installation.
2. Describe any groundwater sampling from the source area monitoring well(s). Use maps and tables whenever possible and include:
 - location of groundwater samples/monitoring wells/water supply wells;
 - Complete and attach Table B-4.
 - If multiple source areas have been identified, use individual tables for each source well.

Note: If free product is present, do not sample the monitoring well. Report the estimated thickness, type, and quantity of free product present.

3. Monitoring well construction information
 - ☐ Complete and attach Table B-7.

Phase II Investigation (If required)

NOTE: *A Phase II investigation should only be conducted if the release is from a commercial UST and the levels of groundwater contamination detected in the source area monitoring well exceed the groundwater standards or interim standards by a factor of 10.*

The Phase II investigation includes the installation of four additional monitoring wells to be installed as follows: one upgradient of the source of contamination, two downgradient of the source of contamination, and one vertical extent well immediately downgradient of the source but within the area of contamination. The upgradient and downgradient wells must be placed so that groundwater flow direction can be determined.

1. Monitoring well construction information
 - ☐ Complete and attach Table B-7.
2. Describe any groundwater sampling from the monitoring well(s). Use maps and tables whenever possible and include:
 - ☐ location of groundwater samples/monitoring wells/water supply wells;
 - ☐ Complete and attach Table B-4.
 - ☐ If multiple source areas have been identified, use individual tables for each area.

Note: If free product is present, do not sample the monitoring well. Report the estimated thickness, type, and quantity of free product present.

F. Conclusions and Recommendations

Discuss the risk criteria that apply to the release and identify any other site-specific factors related to the release that may pose a risk to human health and the environment. Also, discuss any site-specific conditions or possible actions that could result in lowering the level of risk posed by the release.

The UST release at this site appeared to pose very little threat to human health or the environment.

G. Free Product Investigation/Recovery (if applicable)

If free product is still present or is discovered during the limited site assessment, continue or begin free product recovery immediately in accordance with 15A NCAC 2N. 0705 and submit an up-to-date Free Product Recovery Report (Report B-4).

H. Site History:

Update site history information provided in the 20-Day Report as necessary.

- ☐ Using the format in Table B-1, list all UST systems currently or previously located at the site including UST system number, product, capacity, date installed, date removed or closed, and whether a release was discovered. UST system numbers should correspond to the site map information requested below.
- ☐ Using the format in Table B-2, list the names, addresses, telephone numbers, and dates of ownership/operation of all previous UST owners and operators of the UST system(s).

I. Figures (Please attach the following figures)

- ☐ 7 1/2 minute USGS topographic quadrangle map copy showing an area within a 1,500-foot radius of the source area of the release and depicting the site location, all water supply wells, public water supplies, surface water intakes, surface water bodies, designated well head protection areas, and areas of recharge to deeper aquifers in the Coastal Plain that are or may be used as a source for drinking water.

APPENDIX B
Soil Sample Chain of Custody Records

COMPANY						JOB NO.		
Geoscience & Technology, P.A.						05.262		
STREET ADDRESS						PROJECT		
2050 Waverly Point Drive						CALL UST - Former Queens Con.		
CITY, STATE, ZIP						SAMPLER NAME (PLEASE PRINT)		
Winston-Salem, NC 27106						M. ALEX MEGILVARY		
CONTACT						SAMPLER SIGNATURE		
ALEX MEGILVARY						M. Alex M. Megilvary		
PHONE						NO. OF CONTAINERS		
896-1300								
SAMPLE NUMBER (LAB USE ONLY)	DATE	TIME	TEMP °C	RES CL	CHLORINE REMOVED (Y or N)	SAMPLE MATRIX (B or W)	SAMPLE LOCATION / I.D.	NO. OF CONTAINERS
535 876	6-23-05	1500	X	4"		S	T1-1-12, MeOH vial 7143	5
877		1505	X			I	T1-2-12, MeOH vial 7144	5
878		1510	X			I	T1-3-12, MeOH vial 7145	5
879		1725	X			I	T2-1-12, MeOH vial 7147	5
880		1730	X			I	T2-2-12, MeOH vial 7148	5
881		1735	X			I	T2-3-12, MeOH vial 7149	5
882		1900	X			I	T3-1-12, MeOH vial 7150	5
883		1905	X			I	T3-2-12, MeOH vial 7151	5
884		1910	X			I	T3-3-12, MeOH vial 7152	5
885 LAB						I	MeOH Blank	1

RELINQUISHED BY		DATE/TIME	RECEIVED BY	DATE/TIME
M. Alex M. Megilvary		6/24/05	SSC	6/24/05
RELINQUISHED BY		DATE/TIME	RECEIVED BY	DATE/TIME

WATER / WASTEWATER		MISC.
2L G (BA, Herb / Pest)		
250ml Vials (VOA) HCL		
250ml G (TOX)		
1L G (BOQ, TSS, Unpreserved etc.)		
1L P.G (COD, N, P) H ₂ SO ₄		
1L P.G (Phenol Oil & Grease) H ₂ SO ₄		
1L P.G (Metals, Hardness) HNO ₃		
1L P.G (CYANIDE) NaOH		
Stirle P.G (Coliform)		

REQUESTED ANALYSIS	
TPH by Method 5035	

REMARKS:	
Results requested by July 5, 2005. Please fax to 896-1020	

Onice

SAMPLE TEMPERATURE AT RECEIPT 27 °C

CHAIN OF CUSTODY RECORD

[illegible]

APPENDIX C
Soil Sample Laboratory Reports



RESEARCH & ANALYTICAL
LABORATORIES, INC.

Analytical/Process Consultations

FACSIMILE MESSAGE

Date: 10 November 2005

From: Jim Cheshire

Research & Analytical Laboratories, Inc.

Telephone (336) 996-2841

Fax (336) 996-0326

To: N.C.D.E.N.R.

Karen Hall

771-4632

Comments:

Re: Requested QC information

Pages to Follow: 4

Mailing Address:

PO Box 473

Kernersville, NC 27285

Shipping Address:

106 Short Street

Kernersville, NC 27284

QA/QC Summary

Method 601/602

Page 1 of 2

Project: Geoscience & Technology, P.A. - Call UST Former Queen's Garage

Sample ID	543540						
Sample Prep Method	5030						
Volume/Used	5 ML						
Final Extract Volume	N/A						
Date Analyzed	09/22/05						
% Surrogate Recovery	110	100	99				
Acceptance Limits	(70-130)	(70-130)	(70-130)				

Compound	MDL ug/L	Method Blank	Trip/Field Blank	LCS % Recovery	LCS Acceptance Range	Duplicate % Difference	MS % Rec.
Chloromethane	0.05	BQL	N/A	111	59.5-140.5	0.0	
Bromomethane	0.07	BQL	N/A	110	58.5-141.5	0.0	
Vinyl Chloride	0.06	BQL	N/A	118	68.5-131.5	0.0	
Chloroethane	0.03	BQL	N/A	107	77-123	0.0	
Methylene Chloride	0.72	BQL	N/A	106	77.5-122.5	0.0	
1,1-Dichloroethene	0.04	BQL	N/A	118	63-137	0.0	101
1,1-Dichloroethane	0.03	BQL	N/A	100	84-116	0.0	
Trans-1,2-Dichloroethene	0.01	BQL	N/A	102	64-136	0.0	
Chloroform	0.04	BQL	N/A	113	75-125	3.2	
1,2-Dichloroethane	0.01	BQL	N/A	103	71.5-128.5	0.0	
1,1,1-Trichloroethane	0.01	BQL	N/A	101	71-129	0.0	
Carbon Tetrachloride	0.02	BQL	N/A	110	68.5-131.5	0.0	
Bromodichloromethane	0.02	BQL	N/A	101	76-124	0.0	
1,2-Dichloropropane	0.01	BQL	N/A	97	74-126	0.0	
Cis-1,3-Dichloropropene	0.01	BQL	N/A	103	64-136	0.0	

N/A = Data Not Available

QA/QC Summary

Method 601/602

Page 2 of 2

Project: Geoscience & Technology, P.A. - Call UST Former Queen's Garage

Compound	MDL ug/L	Method Blank	Trip/Field Blank	LCS % Recovery	LCS Acceptance Range	Duplicate % Difference	MS % Rec.
Trichloroethene	0.04	BQL	N/A	102	77-123	0.0	
Dibromochloromethane	0.02	BQL	N/A	100	69.5-134.5	0.0	
1,1,2-Trichloroethane	0.02	BQL	N/A	97	78.5-121.5	0.0	
Trans-1,3-Dichloropropene	0.02	BQL	N/A	103	64-136	0.0	
2-Chloroethyl vinyl ether	0.10	BQL	N/A	93	60-140	0.0	
Bromoform	0.02	BQL	N/A	100	73.5-126.5	0.0	
1,1,2,2-Tetrachloroethane	0.02	BQL	N/A	109	49-151	0.0	
Tetrachloroethene	0.02	BQL	N/A	108	70-130	0.0	
Chlorobenzene	0.03	BQL	N/A	105	72-128	0.0	97
1,3-Dichlorobenzene	0.08	BQL	N/A	98	49.5-150.5	0.0	
1,2-Dichlorobenzene	0.04	BQL	N/A	102	68-132	0.0	
1,4-Dichlorobenzene	0.15	BQL	N/A	100	69.5-130.5	0.0	
Benzene	0.14	BQL	N/A	96	77-123	0.0	102
Ethylbenzene	0.10	BQL	N/A	101	63-137	0.0	
Toluene	0.17	BQL	N/A	101	77.5-122.5	0.0	100
Trichlorofluoromethane	0.05	BQL	N/A	105	66.5-133.5	0.0	
Dichlorofluoromethane	0.89	BQL	N/A	113	60-140	0.0	
Total Xylenes	0.30	BQL	N/A	100	70-130	0.0	
MTBE	0.64	BQL	N/A	104	70-130	0.0	
IPE	0.55	BQL	N/A	106	70-130	0.0	

N/A = Data Not Available

BQL = Below Quantitation Limit

MDL = Laboratory established detection limit

QA/QC Summary

Method 8260

Page 1 of 2

Project: Geoscience & Technology, P.A. - Call UST Former Queen's Garage

Sample ID	543346-50						
Extraction Method	5035						
Date Extracted	N/A						
Weight Extracted	5.26 g						
Final Extract Volume	5 ML						
Date Analyzed	09/23/05						
% Surrogate Recovery	93	106	104				
Acceptance Range	(80 - 120)	(80 - 120)	(80 - 120)				

Compound	MDL mg/kg	Method Blank	LCS % Recovery	LCS Acceptance Range	MS % Rec. *	MSD % Rec. *	Duplicate % Difference
Acetone	0.00159	ND	95	80 - 120			
Benzene	0.00038	ND	99	80 - 120			
Bromobenzene	0.00028	ND	104	80 - 120	105	100	5
Bromochloromethane	0.00049	ND	99	80 - 120			
Bromodichloromethane	0.00026	ND	101	80 - 120			
Bromoform	0.00045	ND	101	80 - 120			
Bromomethane	0.00028	ND	100	80 - 120			
2-Butanone	0.00152	ND	99	80 - 120			
N-Butylbenzene	0.00033	ND	100	80 - 120			
Sec-Butylbenzene	0.00042	ND	96	80 - 120			
Tert-Butylbenzene	0.00029	ND	99	80 - 120			
Carbon Tetrachloride	0.00081	ND	101	80 - 120			
Chlorobenzene	0.00029	ND	102	80 - 120	101	102	1
Dibromochloromethane	0.00037	ND	100	80 - 120			
Chloroethane	0.00029	ND	99	80 - 120			
Chloroform	0.00029	ND	106	80 - 120			
Chloromethane	0.00050	ND	101	80 - 120			
2-Chlorotoluene	0.00050	ND	99	80 - 120			
4-Chlorotoluene	0.00042	ND	102	80 - 120			
1,2-Dibromoethane (EDB)	0.00074	ND	103	80 - 120			
1,2-Dichlorobenzene	0.00039	ND	103	80 - 120			
1,3-Dichlorobenzene	0.00041	ND	100	80 - 120			
1,4-Dichlorobenzene	0.00042	ND	102	80 - 120			
Dichlorodifluoromethane	0.00047	ND	100	80 - 120			
1,1-Dichloroethane	0.00036	ND	99	80 - 120			
1,2-Dichloroethane	0.00055	ND	102	80 - 120			
1,3-Dichloroethane	0.00059	ND	100	80 - 120	99	100	1
Cis-1,2-Dichloroethane	0.00031	ND	100	80 - 120			
Trans-1,2-Dichloroethane	0.00107	ND	99	80 - 120			
1,2-Dichloropropane	0.00023	ND	101	80 - 120			
1,3-Dichloropropane	0.00033	ND	102	80 - 120			

N/A = Data Not Available
* Batch QC

QA/QC Summary

Page 2 of 2

Method 8260

Project: Geoscience & Technology, P.A. - Call UST Former Queen's Garage

Compound	MDL mg/kg	Method Blank	LCS % Recovery	LCS Acceptance Range	MS % Rec. *	MSD % Rec. *	Duplicate % Difference
2,2-Dichloropropane	0.00029	ND	99	80 - 120			
1,1-Dichloropropene	0.00059	ND	99	80 - 120			
Cis-1,3-Dichloropropene	0.00023	ND	101	80 - 120			
Trans-1,3-Dichloropropene	0.00052	ND	103	80 - 120			
Ethyl Acetate	0.00074	ND	100	80 - 120			
Ethyl Benzene	0.00028	ND	102	80 - 120			
2-Hexanone	0.00050	ND	100	80 - 120			
1-Propylbenzene	0.00027	ND	102	80 - 120			
Isopropyl ether (IPE)	0.00024	ND	102	80 - 120			
p-Isopropyltoluene	0.00048	ND	100	80 - 120			
Methylene Chloride	0.00138	ND	100	80 - 120			
4-Methyl-2-Pentanone	0.00052	ND	100	80 - 120			
Methyl-Tert-Butyl ether (MTBE)	0.00032	ND	98	80 - 120			
Naphthalene	0.00047	ND	98	80 - 120			
N-Propylbenzene	0.00058	ND	102	80 - 120			
Styrene	0.00037	ND	105	80 - 120			
1,1,2,2-Tetrachloroethane	0.00041	ND	100	80 - 120			
Tetrachloroethene	0.00026	ND	99	80 - 120			
Toluene	0.00027	ND	102	80 - 120	96	98	2
1,1,1-Trichloroethane	0.00028	ND	101	80 - 120			
1,1,2-Trichloroethane	0.00041	ND	100	80 - 120			
Trichloroethene	0.00028	ND	96	80 - 120	99	100	1
Trichlorofluoromethane	0.00037	ND	101	80 - 120			
1,2,3-Trichlorobenzene	0.00036	ND	100	80 - 120			
1,2,4-Trichlorobenzene	0.00025	ND	104	80 - 120			
1,2,3-Trichloropropane	0.00043	ND	102	80 - 120			
1,2,4-Trimethylbenzene	0.00056	ND	103	80 - 120			
1,3,5-Trimethylbenzene	0.00054	ND	98	80 - 120			
Vinyl Acetate	0.00035	ND	100	80 - 120			
Vinyl Chloride	0.00059	ND	100	80 - 120			
Total Xylenes	0.00056	ND	101	80 - 120			
Carbon Disulfide	0.00042	ND	101	80 - 120			
Acrylonitrile	0.00036	ND	99	80 - 120			
Trans-1,4-Dichloro-2-butene	0.00050	ND	99	80 - 120			
Methyl Iodide	0.00307	ND	102	80 - 120			
Dibromomethane	0.00043	ND	103	80 - 120			
1,1,1,2-Tetrachloroethane	0.00078	ND	102	80 - 120			
(Z)-Dibromo-3-Chloropropane(DBCP)	0.00067	ND	103	80 - 120			

N/A = Data Not Available
* Batch QC



RESEARCH & ANALYTICAL LABORATORIES, INC.

Analytical/Process Consultations



July 5, 2005

Geoscience & Technology, P.A.
2050 Northpoint Drive
Winston-Salem, NC 27106
Attention: Alex McGilvary

Chemical Analysis for Total Petroleum Hydrocarbons (TPH) Sample Identified as CALL UST former Queen's Gar.
(A Geoscience & Technology, P.A. Project #05.262, collected 23 June 2005)

Sample Identification	RAL Sample#	Date Taken	Time (hrs)	EPA Method
				5035 (mg/kg)
T1-1-12	535876	06/23/05	1500	17.7
T1-2-12	535877	06/23/05	1505	40.8
T1-3-12	535878	06/23/05	1510	<10
T2-1-12	535879	06/23/05	1725	10.5
T2-2-12	535880	06/23/05	1730	1,270
T2-3-12	535881	06/23/05	1735	11.1
T3-1-12	535882	06/23/05	1900	12.9
T3-2-12	535883	06/23/05	1905	<10
T3-3-12	535884	06/23/05	1910	<10

mg/kg = milligrams per kilogram = parts per million (ppm)

< = less than or Below Quantitation Limits

---- = Not Requested

EPA Method 5035 = Total Petroleum Hydrocarbons as Gasoline



**Chemical Analysis for Selected Parameters and Sampling Locations Identified as Call UST
(A Geoscience & Technology, P.A. Project #05.262, collected 15 and 16 September 2005)**

I. Volatile Organics EPA Method 8160 B	Quantitation Limit (mg/kg)	B1/15-16.5	B1/20-21.5	B1/30-31.5	B1/40-41.5	B1-50-51.5
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Acetone	0.100	BQL	BQL	BQL	BQL	BQL
Benzene	0.005	BQL	BQL	BQL	BQL	BQL
Bromobenzene	0.005	BQL	BQL	BQL	BQL	BQL
Bromochloromethane	0.005	BQL	BQL	BQL	BQL	BQL
Bromodichloromethane	0.005	BQL	BQL	BQL	BQL	BQL
Bromoform	0.005	BQL	BQL	BQL	BQL	BQL
Bromomethane	0.010	BQL	BQL	BQL	BQL	BQL
2-Butanone	0.100	BQL	BQL	BQL	BQL	BQL
N-Butylbenzene	0.005	BQL	BQL	BQL	BQL	BQL
Sec-Butylbenzene	0.005	BQL	BQL	BQL	BQL	BQL
Tert-Butylbenzene	0.005	BQL	BQL	BQL	BQL	BQL
Carbon Tetrachloride	0.010	BQL	BQL	BQL	BQL	BQL
Chlorobenzene	0.005	BQL	BQL	BQL	BQL	BQL
Dibromochloromethane	0.005	BQL	BQL	BQL	BQL	BQL
Chloroethane	0.010	BQL	BQL	BQL	BQL	BQL
Chloroform	0.005	BQL	BQL	BQL	BQL	BQL
Chloromethane	0.010	BQL	BQL	BQL	BQL	BQL
2-Chlorotoluene	0.005	BQL	BQL	BQL	BQL	BQL
4-Chlorotoluene	0.005	BQL	BQL	BQL	BQL	BQL
1,2-Dibromoethane (EDB)	0.005	BQL	BQL	BQL	BQL	BQL
1,2-Dichlorobenzene	0.005	BQL	BQL	BQL	BQL	BQL
1,3-Dichlorobenzene	0.005	BQL	BQL	BQL	BQL	BQL
1,4-Dichlorobenzene	0.005	BQL	BQL	BQL	BQL	BQL
Dichlorodifluoromethane	0.005	BQL	BQL	BQL	BQL	BQL
1,1-Dichloroethane	0.005	BQL	BQL	BQL	BQL	BQL
1,2-Dichloroethane	0.005	BQL	BQL	BQL	BQL	BQL
1,1-Dichloroethene	0.005	BQL	BQL	BQL	BQL	BQL
Cis-1,2-Dichloroethene	0.005	BQL	BQL	BQL	BQL	BQL
Trans-1,2-Dichloroethene	0.005	BQL	BQL	BQL	BQL	BQL
1,2-Dichloropropane	0.005	BQL	BQL	BQL	BQL	BQL
1,3-Dichloropropane	0.005	BQL	BQL	BQL	BQL	BQL
2,2-Dichloropropane	0.005	BQL	BQL	BQL	BQL	BQL
1,1-Dichloropropane	0.005	BQL	BQL	BQL	BQL	BQL
Cis-1,3-Dichloropropene	0.010	BQL	BQL	BQL	BQL	BQL
Trans-1,3-Dichloropropene	0.010	BQL	BQL	BQL	BQL	BQL
Ethyl Acetate	0.010	BQL	BQL	BQL	BQL	BQL
Ethyl Benzene	0.005	0.014	BQL	BQL	BQL	BQL
2-Hexanone	0.050	BQL	BQL	BQL	BQL	BQL
1-Propylbenzene	0.005	BQL	BQL	BQL	BQL	BQL
Isopropyl ether (IPE)	0.010	BQL	BQL	BQL	BQL	BQL
p-Isopropyltoluene	0.005	BQL	BQL	BQL	BQL	BQL
Methylene Chloride	0.020	BQL	BQL	BQL	BQL	BQL
4-Methyl-2-Pentanone	0.100	BQL	BQL	BQL	BQL	BQL
Methyl-Tert-Butyl ether	0.010	BQL	BQL	BQL	BQL	BQL
Naphthalene	0.010	0.069	BQL	BQL	BQL	BQL
N-Propylbenzene	0.005	BQL	BQL	BQL	BQL	BQL
Styrene	0.010	BQL	BQL	BQL	BQL	BQL
1,1,2,2-Tetrachloroethane	0.005	BQL	BQL	BQL	BQL	BQL
Tetrachloroethene	0.005	BQL	BQL	BQL	BQL	BQL
Toluene	0.005	BQL	BQL	BQL	BQL	BQL
1,1,1-Trichloroethane	0.005	BQL	BQL	BQL	BQL	BQL
1,1,2-Trichloroethane	0.005	BQL	BQL	BQL	BQL	BQL
Trichloroethene	0.005	BQL	BQL	BQL	BQL	BQL
Trichlorofluoromethane	0.005	BQL	BQL	BQL	BQL	BQL
1,2,3-Trichlorobenzene	0.005	BQL	BQL	BQL	BQL	BQL
1,2,4-Trichlorobenzene	0.005	BQL	BQL	BQL	BQL	BQL
1,2,3-Trichloropropane	0.015	BQL	BQL	BQL	BQL	BQL
1,2,4-Trimethylbenzene	0.005	0.030	BQL	BQL	BQL	BQL
1,3,5-Trimethylbenzene	0.005	0.0060	BQL	BQL	BQL	BQL
Vinyl Acetate	0.050	BQL	BQL	BQL	BQL	BQL
Vinyl Chloride	0.010	BQL	BQL	BQL	BQL	BQL
Total Xylenes	0.005	0.055	BQL	BQL	BQL	BQL
Carbon Disulfide	0.100	BQL	BQL	BQL	BQL	BQL
Acrylonitrile	0.200	BQL	BQL	BQL	BQL	BQL
Trans-1,4-Dichloro-2-butene	0.100	BQL	BQL	BQL	BQL	BQL
Methyl Iodide	0.010	BQL	BQL	BQL	BQL	BQL
Dibromomethane	0.010	BQL	BQL	BQL	BQL	BQL
1,1,1,2-Tetrachloroethane	0.005	BQL	BQL	BQL	BQL	BQL
1,2-Dibromo-3-Chloropropane(DBCP)	0.025	BQL	BQL	BQL	BQL	BQL
Dilution Factor		1	1	1	1	1
II. Method MADEP 98-1 VPH	Quantitation Limit (mg/kg)	B1/15-16.5	B1/20-21.5	B1/30-31.5	B1/40-41.5	B1-50-51.5
Parameter	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
C5-C8 Aliphatics	10.0	BQL	BQL	BQL	BQL	BQL
C9-C12 Aliphatics	10.0	BQL	BQL	BQL	BQL	BQL
C9-C10 Aromatics	10.0	BQL	BQL	BQL	BQL	BQL
Dilution Factor		1	1	1	1	1
Sample Number		543346	543347	543348	543349	543350
Sample Date		09/15/05	09/15/05	09/15/05	09/15/05	09/16/05
Sample Time (hrs)		1330	1355	1420	1505	1135

mg/kg = milligrams per kilogram = parts per million (ppm)

BQL = Below Quantitation Limits

MADEP VPH 98-1 = Volatile Petroleum Hydrocarbons via the Massachusetts Department of Environmental Protection Method

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name: Geoscience & Technology, P.A. Laboratory Name: Research & Analytical Laboratories, Inc
 Project Name: Call UST - #05.262 NC Certification # (Lab): 34
 Site Location: RAL #'s 543346-50 Sample Matrix: Solid

Sample Information and Analytical Results											
Method for Ranges: MADEP VPH		Sample Identification		B1/15-16.5		B1/20-21.5		B1/30-31.5		B1/40-41.5	
VPH Surrogate Standards		Collection Option		1		1		1		1	
Aliphatic: Fluorobenzene		Date Collected		09/15/05		09/15/05		09/15/05		09/16/05	
		Date Received		09/16/05		09/16/05		09/16/05		09/16/05	
Aromatic: Fluorobenzene		Date Extracted		N/A		N/A		N/A		N/A	
		Date Analyzed		09/20/05		09/20/05		09/20/05		09/20/05	
		% Dry Solids		77.7		83.2		78.1		82.5	
		Dilution Factor		1		1		1		1	
Hydrocarbon Ranges	Units of Measure	MDL	RL	Blank	N/A		N/A		N/A		N/A
C5 - C8	mg/kg	2.84	10.0	BRL	15.3		BRL		BRL		BRL
C9 - C12	mg/kg	0.90	10.0	BRL	18.3		BRL		BRL		BRL
Aliphatics C9 - C10	mg/kg	0.66	10.0	BRL	BRL		BRL		BRL		BRL
Sample Surrogate Acceptance Range		N/A	N/A	70-130%	70-130%		70-130%		70-130%		70-130%
Aliphatic Surrogate % Recovery - FID		N/A	N/A	111	112		116		90		82
Aromatic Surrogate % Recovery - FID		N/A	N/A	95	117		109		87		81
* Option 1 = Established fill line on vial Option 2 = Sampling Device (indicate brand, e.g. EnCore) Option 3 = Field weight of soil											
** Unadjusted value. Should exclude the concentration of any surrogate(s), internal standards, and/or concentrations of other ranges that elute within the specified range.											
MDL = Method Detection Limit RL = Reporting Limit Blank = Laboratory Method Blank or Trip Blank whichever is higher (indicate type)											

* Option 1 = Established fill line on vial Option 2 = Sampling Device (indicate brand, e.g. EnCore) Option 3 = Field weight of soil

** Unadjusted value. Should exclude the concentration of any surrogate(s), internal standards, and/or concentrations of other ranges that elute within the specified range.

MDL = Method Detection Limit RL = Reporting Limit Blank = Laboratory Method Blank or Trip Blank whichever is higher (indicate type)

VPH rev. 11/00

Were all performance/acceptable standards for required QA/QC procedures achieved?

☒ Yes ☐ No - Details Attached

Were any significant modifications to the VPH method made?

☒ Yes ☐ No - Details Attached

APPENDIX D
Groundwater Sample Chain of Custody Record

**RESEARCH & ANALYTICAL
LABORATORIES, INC.**

Analytical / Process Consultations
Phone (336) 996-2841

UST Trust Fund

CHAIN OF CUSTODY RECORD

[illegible]

APPENDIX E
Groundwater Sample Laboratory Report



RESEARCH & ANALYTICAL LABORATORIES, INC.

Analytical/Process Consultations



*Chemical Analysis for Selected Parameters and Water Samples Identified as Call UST - Former Queen's Gar.
(A Geoscience & Technology, P.A. Project #05,262, collected 19 September 2005)*

I. Volatile Organics		
EPA Method 601/602	Quantitation	MW-1
Parameter	Limit	
	(mg/L)	(mg/L)
Chloromethane	0.0010	BOL
Bromomethane	0.0010	BOL
Vinyl Chloride	0.0010	BOL
Chloroethane	0.0010	BOL
Methylene Chloride	0.0010	BOL
1,1-Dichloroethene	0.0010	BOL
1,1-Dichloroethane	0.0010	BOL
Trans-1,2-Dichloroethene	0.0010	BOL
Chloroform	0.0010	BOL
1,2-Dichloroethane	0.0010	BOL
1,1,1-Trichloroethane	0.0010	BOL
Carbon Tetrachloride	0.0010	BOL
Bromodichloromethane	0.0010	BOL
1,2-Dichloropropane	0.0010	BOL
Cis-1,3-Dichloropropene	0.0010	BOL
Trichloroethene	0.0010	BOL
Dibromochloromethane	0.0010	BOL
1,1,2-Trichloroethane	0.0010	BOL
Trans-1,3-Dichloropropene	0.0010	BOL
2-Chloroethyl vinyl ether	0.0010	BOL
Bromoform	0.0010	BOL
1,1,2,2-Tetrachloroethane	0.0010	BOL
Tetrachloroethene	0.0010	BOL
Chlorobenzene	0.0010	BOL
1,3-Dichlorobenzene	0.0010	BOL
1,2-Dichlorobenzene	0.0010	BOL
1,4-Dichlorobenzene	0.0010	BOL
Benzene	0.0010	BOL
Ethylbenzene	0.0010	0.0099
Toluene	0.0010	BOL
Trichlorofluoromethane	0.0010	BOL
Dichlorodifluoromethane	0.0010	BOL
Total Xylenes	0.0010	0.041
MTBE	0.0050	0.0083
IPE	0.0050	BOL
Dilution Factor		1
II. EPA Method 504.1		
Parameter	Quantitation	MW-1
	Limit	
	(mg/L)	(mg/L)
EDB	0.000020	BOL
III. MADEP 98-1		
VPH	Quantitation	MW-1
Parameter	Limit	
	(mg/L)	(mg/L)
C5-C8 Aliphatics	0.100	BOL
C9-C12 Aliphatics	0.100	0.449
C9-C10 Aromatics	0.100	0.226
Dilution Factor		1
IV. Method 3030C		
Parameter	Quantitation	MW-1
	Limit	
	(mg/L)	(mg/L)
Lead	0.005	0.010
Sample Number		543540
Sample Date		09/19/05
Sample Time (hrs)		1800

BOL = Below Quantitation Limits
mg/L = milligrams per Liter = parts per million (ppm)

NR = Not Requested

Client Name:	Geoscience & Technology, P.A.	Laboratory Name:	Research & Analytical Laboratories, Inc
Project Name:	Call UST - Former Queen's Gar. - # 05 262	NC Certification #Lab	34
Site Location:	RAL # 543540	Sample Matrix:	Water

VPRH rev. 11/00

Were all performance/acceptable standards for required QA/QC procedures achieved?

No - Details Attached		Yes
☐		☒

Were any significant modifications to the VPH method made?

☒	No
☐	Yes - Details Attached

APPENDIX F
Boring Log

Client Mr. Harold Call				Boring Number B1/MW1		Boring Started 9/15/05		Boring Completed 9/16/05	
Project Name Former Queen's Garage				Geologist/Engineer Alex McGilvary					
Site Location Wilkes County, NC				Job Number 05.262					
Depth in Feet	S a m p l e #	T y p e	Depth From- To	Surface Elevation					
				Description of Materials					
10				LSA Ph. I Boring - Soil samples collected 0 - 0.5 ft. Aggregate					
				0.5 - 12 ft. Fill material, clayey silt, strong brown color (Munsell 7.5 YR 4/6).					
		SS	15 - 16.5	15 - 16.5 ft. Silty clay, yellowish red (Munsell 5 YR 5/8), stiff.		19		38	
20		SS	20 - 21.5	20 - 21.5 ft. Clayey silt, yellowish brown (Munsell 10 YR 5/8)		12	10		
		SS	25 - 26.5	25 - 26.5 ft. Saprolite, very weathered mica schist Clayey silt, light yellowish brown (Munsell 10 YR 6/4)		28		41	
30		SS	30 - 31.5	30 - 31.5 ft. Saprolite, clayey silt, yellowish brown (Munsell 10 YR 5/4), micaceous.		17	20		
		SS	35 - 36.5	35 - 36.5 ft. Saprolite, clayey silt, yellowish brown (Munsell 10 YR 5/4), micaceous.		19	23		
40		SS	40 - 41.5	40 - 41.5 ft. Saprolite, weathered mica schist or gneiss, yellowish brown (Munsell 10 YR 5/4)		10	24		
50		SS	50 - 51.5	50 - 51.5 ft. Saprolite, weathered mica schist or gneiss, yellowish brown (Munsell 10 YR 5/4)		4	22		
60				Boring converted to monitoring well MW1 58 ft. in depth with 48 ft. casing and 10 ft. screened interval.					
70									
80									
The stratification lines represent approximate boundaries between soil types. In-situ, transitions may be gradual.									
Water Table Data: ~ 51 feet during drilling								App'd RJW	
Drilling Contractor GeoSci				Foreman AM		Rig Simco		Auger 6" auger	

APPENDIX G
Well Construction Information

Table B-7
and
Well Construction Record

Well Construction Information
(NCDENR Format Table B-7)

Date: Oct. 2005 Incident Number and Name: Former Queen's Garage, # 30597 Facility ID#: 0-006960

Station	Date Installed	Date Water Level Measured	Well Casing Depth (ft. BGS)	Screened Interval (ft. BGS)	Bottom of Well (ft. BGS)	Top of Casing Elevation (ft.)	Depth to Water from Top of Casing (ft.)	Free Product Thickness (ft.)	Groundwater Elevation (ft)	Comments
MW1	9/16/2005	9/19/05	48	48-58'	58'	NE	49.5	None	-	LSA Source Area Well -Gasoline dispenser

WELL CONSTRUCTION RECORD

WELL CONTRACTOR: GeoScience & Technology, P.A./R.J. Wyatt
WELL CONTRACTOR CERTIFICATION#: 3022
STATE WELL CONSTRUCTION PERMIT#: _____

1. WELL USE (check applicable box) Residential ☐ Municipal ☐ Industrial ☐ Agricultural ☐ Monitoring ☒
Recovery ☐ Heat Pump Water Injection ☐ Other ☐ If Other, List Use: _____

2. WELL LOCATION: (Show sketch of the location below)
Nearest Town: Wilkesboro, NC County: Wilkes
(Road, Community, or Subdivision and Lot No.)

3. OWNER: Mr. Harold Call
Address: c/o Harold's Restaurant, 1748 Statesville Rd.
(Street or Route No.)
Wilkesboro, NC 28697
City or Town State Zip Code

4. DATE DRILLED 9/15/05

5. TOTAL DEPTH 58'

6. CUTTINGS COLLECTED YES ☒ NO ☐

7. DOES WELL REPLACE EXISTING WELL? YES ☐ NO ☒

8. STATIC WATER LEVEL Below Top of Casing: 49.5' FT.

(Use "+" if Above Top of Casing)

9. TOP OF CASING IS 0' FT. Above Land Surface*

*Top of casing terminated at or below land surface requires a variance in accordance with 15A NCAC 2C .0118

10. YIELD (gpm): N/A METHOD OF TEST N/A

11. WATER ZONES (depth): N/A

12. CHLORINATION: Type None Amount _____

13. CASING:

Depth	Diameter	Wall Thickness or Weight/Ft.	Material
From <u>+0.0</u> To <u>48.0</u> Ft.	<u>2 in.</u>	<u>Sch. 40</u>	<u>PVC</u>
From _____ To _____ Ft.	_____	_____	_____
From _____ To _____ Ft.	_____	_____	_____

14. GROUT

Depth	Material	Method
From <u>+0.0</u> To <u>46</u> Ft.	<u>Neat Cement</u>	<u>Tremmie</u>
From _____ To _____ Ft.	_____	_____

15. SCREEN:

Depth	Diameter	Slot Size	Material
From <u>48</u> To <u>58</u> Ft.	<u>2 in.</u>	<u>0.10 in.</u>	<u>Sch 40 PVC</u>
From _____ To _____ Ft.	_____	_____	_____
From _____ To _____ Ft.	_____	_____	_____

16. SAND/GRAVEL PACK:

Depth	Size	Material
From <u>46</u> To <u>58</u> Ft.	<u>No. 2</u>	<u>Filter Sand</u>
From _____ To _____ Ft.	_____	_____

17. REMARKS: Bentonite 43 to 46 feet. LSA Source Area monitoring well MW1

DEPTH

From To

0 to 0.5 feet

0.5 to 12 feet

12 to 25 feet

25 to 58 feet

58 feet

If additional space is needed use back of form

DRILLING LOG

Formation Description

Aggregate

Fill, clayey silt, strong brown (Munsell 7.5 YR 4/6)

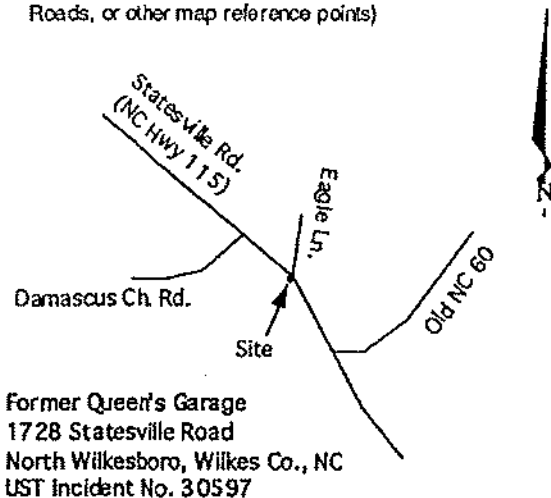
Silty clay and clayey silt, yellowish red (Munsell 5 YR 5/8)

Saprolite, mica schist, weathered to clayey silt, yellowish brown (Munsell 10 YR 5/4)

Bottom of boring

LOCATION SKETCH

(Show direction and distance from at least two State Roads, or other map reference points)



I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

FOR OFFICE USE ONLY

QUAD NO. _____

SERIAL NO. _____

SIGNATURE OF PERSON CONSTRUCTING THE WELL

Submit original to Division of Water Quality, Groundwater Section within 30 days

DATE

9-29-05

APPENDIX H
Completed Water Supply Information
Questionnaires

Incident Number: 30597 **Incident Name:** Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey HAROLD T CALL
 Telephone number of person completing the survey 336-667-4210
 Address of property receiving survey Prop. ID No. 3878-61-2015, 1728 Statesville Road
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES / ☒ NO If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐
 Other (specify) _____ You do not use the well ☐

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

Mail to M. Alex McGilvary
 Geoscience & Technology P.A.
 2050 Northpoint Drive, Winston-Salem, N.C. 27106
 Telephone 336-896-1300
 Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey Leon Johnson
 Telephone number of person completing the survey (836) 667-1014
 Address of property receiving survey Prop. ID No. 3878-51-9892, Statesville Road Property
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES ☐ NO ☒ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)
 Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐
 Other (specify) _____ You do not use the well ☐
 How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____
 What is the casing depth of the well(s)? _____
 What is the screened interval of the well(s)? _____
 Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

Mail to M. Alex McGilvary
 Geoscience & Technology P.A.
 2050 Northpoint Drive, Winston-Salem, N.C. 27106
 Telephone 336-896-1300
 Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey HAROLD T. CALL
 Telephone number of person completing the survey 336-667-4210
 Address of property receiving survey Prop. ID No. 3878-61-1374
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES ☒ NO ☐ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)
 Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐
 Other (specify) _____ You do not use the well ☐
 How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____
 What is the casing depth of the well(s)? _____
 What is the screened interval of the well(s)? _____
 Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

Mail to M. Alex McGilvary
 Geoscience & Technology P.A.
 2050 Northpoint Drive, Winston-Salem, N.C. 27106
 Telephone 336-896-1300
 Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey HAROLD T CALL
 Telephone number of person completing the survey 336-667-4210
 Address of property receiving survey Prop. ID No. 3878-61-1557
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES ☒ NO ☐ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐

Other (specify) _____ You do not use the well _____

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

Mail to M. Alex McGilvary
 Geoscience & Technology P.A.
 2050 Northpoint Drive, Winston-Salem, N.C. 27106
 Telephone 336-896-1300
 Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey Leon Johnson
 Telephone number of person completing the survey (336) 667-1014
 Address of property receiving survey Prop. ID No. 3878-61-3436, 1709 Statesville Road
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES / NO ☒ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐

Other (specify) _____ You do not use the well ☐

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

Mail to M. Alex McGilvary
 Geoscience & Technology P.A.
 2050 Northpoint Drive, Winston-Salem, N.C. 27106
 Telephone 336-896-1300
 Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey Pamela Curry
 Telephone number of person completing the survey 336-984-2062
 Address of property receiving survey Prop. ID No. 3878-61-5553, Eagle Ln. Property
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES ☒ NO ☐ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐

Other (specify) _____ You do not use the well ☐

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

Mail to M. Alex McGilvary
 Geoscience & Technology P.A.
 2050 Northpoint Drive, Winston-Salem, N.C. 27106
 Telephone 336-896-1300
 Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey Pamela Curry
Telephone number of person completing the survey 336-984-2062
Address of property receiving survey Prop. ID No. 3878-61-5329, Eagle Ln. Property
County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
☐ Other (please explain) _____

Is there a water supply well on the property? YES ☒ NO ☐ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)
Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐
Other (specify) _____ You do not use the well ☐
How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____
What is the casing depth of the well(s)? _____
What is the screened interval of the well(s)? _____
Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

Mail to M. Alex McGilvary
Geoscience & Technology P.A.
2050 Northpoint Drive, Winston-Salem, N.C. 27106
Telephone 336-896-1300
Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey Pamela Curry
 Telephone number of person completing the survey 336-984-2062
 Address of property receiving survey Prop. ID No. 3878-61-7573, behind Eagle Lane
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES ☒ NO ☐ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐

Other (specify) _____ You do not use the well ☐

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

Mail to M. Alex McGilvary
 Geoscience & Technology P.A.
 2050 Northpoint Drive, Winston-Salem, N.C. 27106
 Telephone 336-896-1300
 Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
 NCDENR - UST Section Office at 336-771-4608 Ext. 248

9

Name of person completing the survey Roger Johnston
Telephone number of person completing the survey (336) 667-0370
Address of property receiving survey Prop. ID No. 3878-60-6770, Statesville Road
County Wilkes

Is there a water supply well on the property? YES X NO If no, disregard remaining questions and return

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)
 Drinking ☒ Irrigation _____ Swimming Pool _____ Water Livestock _____
 Other (specify) _____ You do not use the well _____

How deep is the well(s)?	Date well installed	DON'T KNOW
What is the casing depth of the well(s)?		
What is the screened interval of the well(s)?	dirt	
Additional water supply well information		
well was already there when punched. I do not know the depth		

Mail to: M. Alex McGilvary
Geoscience & Technology P.A.
2050 Northpoint Drive, Winston-Salem, N.C. 27106
Telephone 336-896-1300
Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey HAROLD T. CALL
 Telephone number of person completing the survey 336-667-4210
 Address of property receiving survey Prop. ID No. 3878-60-4598, Statesville Road Property
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES ☐ NO ☒ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐

Other (specify) _____ You do not use the well ☐

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

Mail to M. Alex McGilvary
 Geoscience & Technology P.A.
 2050 Northpoint Drive, Winston-Salem, N.C. 27106
 Telephone 336-896-1300
 Fax 336-896-1020

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 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey Harold T. Call
Telephone number of person completing the survey 336-667-4210
Address of property receiving survey Prop. ID No. 3878-60-4402, Statesville Road
County Wilkes

What is the source of your drinking water? Public Water ☐ Water Supply Well ☐ Stream Intake ☐
☐ Other (please explain) _____

Is there a water supply well on the property? YES/NO ☒ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐
Other (specify) _____ You do not use the well ☐

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

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NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 **Incident Name:** Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey HAROLD T. CALL
 Telephone number of person completing the survey 336-667-4210
 Address of property receiving survey Prop. ID No. 3878-60-1776, Statesville Road Property
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES/NO ☒ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)
 Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐
 Other (specify) _____ You do not use the well ☐
 How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____
 What is the casing depth of the well(s)? _____
 What is the screened interval of the well(s)? _____
 Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

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 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 **Incident Name:** Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey HAROLD T. CALL
 Telephone number of person completing the survey 336-667-4210
 Address of property receiving survey Prop. ID No. 3878-60-3923, 1748 Statesville Road
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES / ☒ NO If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐

Other (specify) _____ You do not use the well ☐

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

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Incident Number: 30597 **Incident Name:** Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey HAROLD T. CALL
 Telephone number of person completing the survey 336-667-4210
 Address of property receiving survey Prop. ID No. 3878-60-4801, Statesville Road Property
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 Other (please explain) _____

Is there a water supply well on the property? YES ☐ NO ☒ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐
 Other (specify) _____ You do not use the well ☐

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

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If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey Edith Jarvis
 Telephone number of person completing the survey _____
 Address of property receiving survey Prop. ID No. 3878-60-0913, Statesville Road
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well _____ Stream Intake _____
 Other (please explain) _____

Is there a water supply well on the property? YES ☒ NO ☐ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)
 Drinking _____ Irrigation _____ Swimming Pool _____ Water Livestock _____
 Other (specify) _____ You do not use the well _____
 How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____
 What is the casing depth of the well(s)? _____
 What is the screened interval of the well(s)? _____
 Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

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 Geoscience & Technology P.A.
 2050 Northpoint Drive, Winston-Salem, N.C. 27106
 Telephone 336-896-1300
 Fax 336-896-1020

If you have any questions, please contact the consultant indicated above or Mr. Steven Williams of the
 NCDENR - UST Section Office at 336-771-4608 Ext. 248

Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey Edith Jarvis
 Telephone number of person completing the survey _____
 Address of property receiving survey Prop. ID No. 3878-50-8978, 1684 Statesville Road
 County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
 _____ Other (please explain) _____

Is there a water supply well on the property? YES / NO If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐

Other (specify) _____ You do not use the well _____

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

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Incident Number: 30597 Incident Name: Former Queen's Garage, GeoSci Project 05.262

Please Provide The Following Information (To The Best Of Your Knowledge)

Name of person completing the survey

Charles E. Summers Jr. (Chief)

Telephone number of person completing the survey

336-838-8757

Address of property receiving survey Prop. ID No. 3878-61-0069, 1690 Statesville Road

County Wilkes

What is the source of your drinking water? Public Water ☒ Water Supply Well ☐ Stream Intake ☐
Other (please explain) _____

Is there a water supply well on the property? YES ☒ NO ☐ If no, disregard remaining questions and return

Name and address of owner(s) of property with water supply well _____

How many water supply wells are on your property? What is the well(s) used for? (Check all that apply)

Drinking ☐ Irrigation ☐ Swimming Pool ☐ Water Livestock ☐

Other (specify) _____ You do not use the well ☐

How many residences are connected to the well? (List addresses below)

How deep is the well(s)? _____ Date well installed _____

What is the casing depth of the well(s)? _____

What is the screened interval of the well(s)? _____

Additional water supply well information _____

Please return completed survey to **Geoscience & Technology P.A.** by mail:

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APPENDIX I
Letter from
Broadway Water Association, Inc.

Broadway Water Association, Inc.
2056 Statesville Road
North Wilkesboro, NC 28659
(336) 667-1483

Re: Availability of water supply
Near Former Queen's Garage site
1728 Statesville Road,
North Wilkesboro, NC

To whom it may concern:

Geoscience and Technology, P.A. personnel have contacted Broadway Water Association, Inc. regarding the water supply available to the properties located within 1,000 feet of the former Queen's Garage UST facility referenced above. The Broadway Water Association system supplies this area with potable water.

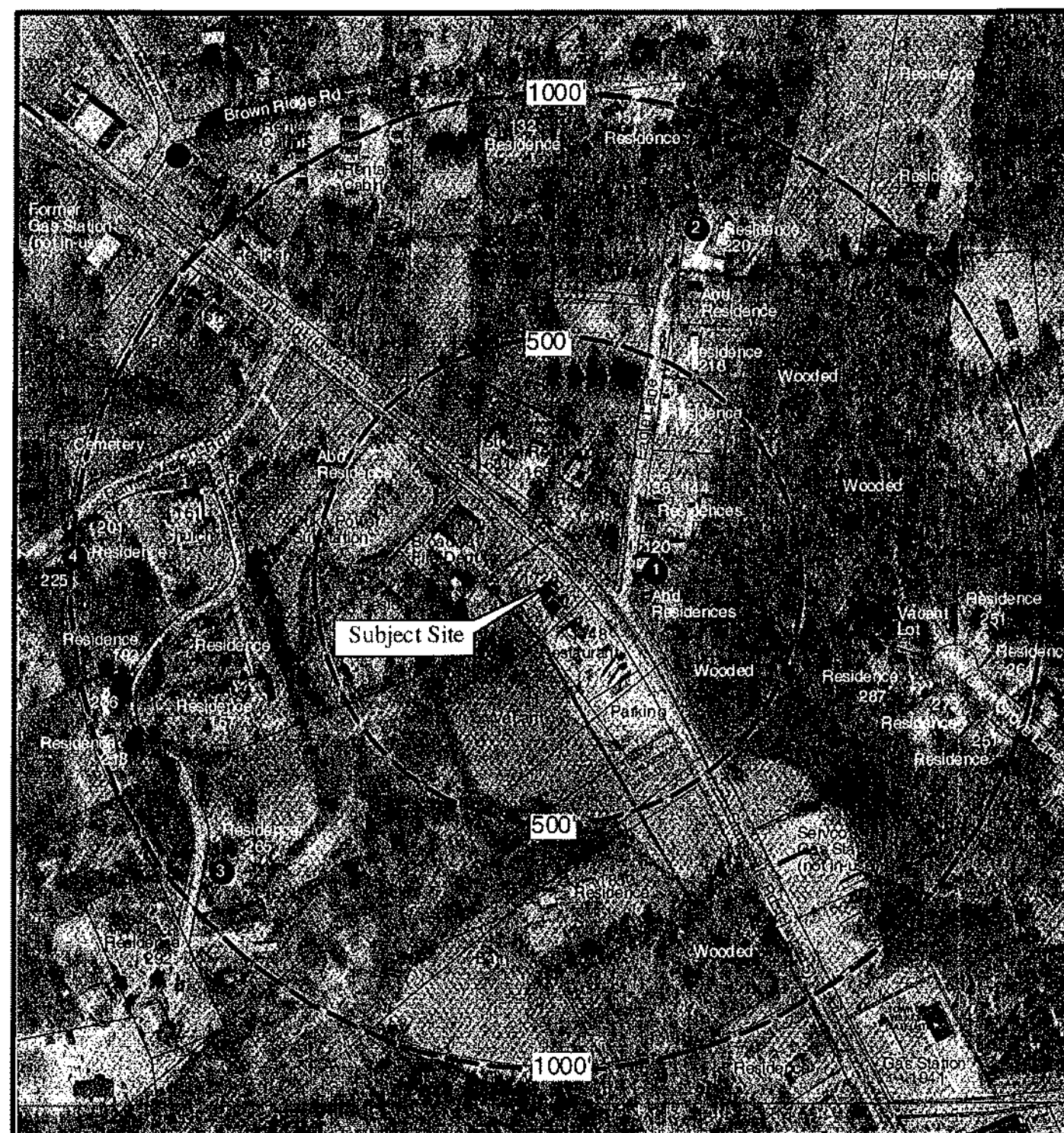
The attached map shows the area within 1,000 feet of the former Queen's Garage site. Based on review of this map, all of the area within 1,000 feet of the site is or can be served by the Broadway Water Association system. To the best of our knowledge, no one within a 1,000-foot radius of the site is using a private water supply well as his or her drinking water source.

Should you have questions regarding this matter, please contact me at (336) 667-1483.

Sincerely,



Broadway Water Association, Inc.



LEGEND

- ① - Water supply well location and ID Number
Wells located within 1,000 feet of UST release area

GeoScience & Technology, P.A.
"Practical Engineering & Environmental Solutions"
 Winston-Salem, NC (336) 896-1300

Job #: 05.262
 Drawn by: MAM
 Approved by: MAM
 Scale: 1" = 300'

Former Queen's Garage, Wilkes County, NC

Receptor Survey Search Area
 Wilkes County Tax Map/Aerial Photograph

Figure for Broadway Water Association, Inc.
 to accompany letter of Sept. 23, 2005.