

PRELIMINARY SITE ASSESSMENT

NC 268 FROM MULTI-LANES EAST OF NC 18
TO SR 1966 (AIRPORT ROAD)
PARCEL 47 DENNIS WHITTINGTON
RYDER TRANSPORTATION
602 ELKIN HIGHWAY
WILKESBORO, WILKES COUNTY, NORTH CAROLINA

NCDOT WBS ELEMENT 36001.1.2
STATE PROJECT R-2603

July 12, 2013

Prepared for:

Gordon H. Box, L.G.
North Carolina Department of Transportation
Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Prepared by:

Kleinfelder Southeast, Inc.
6200 Harris Technology Blvd.
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Kleinfelder Project No. 134245

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July 12, 2013
134245 | CLT13R0319

Gordon H. Box, L.G.
North Carolina Department of Transportation
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Subject: **Preliminary Site Assessment
WBS Element No. 36001.1.2, State Project R-2603
Parcel 47 Dennis Whittington
Ryder Transportation
602 Elkin Highway
Wilkesboro, North Carolina**

Dear Mr. Box:

Please find the enclosed report summarizing the sampling activities for the preliminary site assessment conducted at the referenced site. Field analysis of five soil samples collected at the site detected contaminant concentrations exceeding the State action levels in three of the soil samples. This report summarizes our field activities, field analytical report, conclusions, and recommendations.

Should questions arise or additional information be required, please contact the undersigned.

Sincerely,

KLEINFELDER SOUTHEAST, INC.

A handwritten signature in black ink, appearing to read "T. O'Quinn".

Travis L. O'Quinn
Staff Professional I

A handwritten signature in blue ink, appearing to read "Craig D. Neil".

Craig D. Neil, P.G.
Senior Professional

PRELIMINARY SITE ASSESSMENT

Site Name and Location: Parcel 47 Dennis Whittington
Ryder Transportation
602 Elkin Highway
Wilkesboro, Wilkes County, North Carolina

Latitude and Longitude: 36° 11' 04.71" N, 81° 07' 44.90" W

Facility ID Number: Not Applicable

NCDOT Project No.: NCDOT WBS Element 36001.1.2
State Project R-2603

Date of Report: July 12, 2013

Consultant: Kleinfelder Southeast, Inc.
6200 Harris Technology Blvd.
Charlotte, North Carolina 28269
Attn: Mr. Craig D. Neil
Phone: 704.598.1049 X457

Seal and Signature of Certifying Licensed Geologist

I, Craig D. Neil, a Licensed Geologist for Kleinfelder Southeast, Inc., do certify that the information contained in this report is correct and accurate to the best of my knowledge.

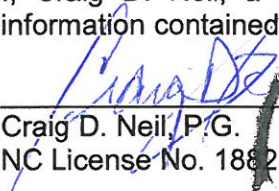

Craig D. Neil, P.G.
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1.0 INTRODUCTION

Kleinfelder Southeast, Inc. (Kleinfelder) has prepared this Preliminary Site Assessment (PSA) report documenting assessment activities performed at the Parcel 47 Dennis Whittington located at 602 Elkin Highway in Wilkesboro, Wilkes County, North Carolina (Figure 1). The site is currently developed with Ryder Transportation which is a trucking facility. This assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Kleinfelder's May 3, 2013 proposal.

NCDOT is proposing to widen NC 268 (Elkin Highway) east of NC 18 to SR 1966 (Airport Road). The proposed right-of-way includes a portion of Parcel 47 (Figure 2). Based on information provided by NCDOT, the site is currently a trucking facility with no known underground storage tanks (USTs) noted during the site visit. There is concern that contaminated soils could be encountered during the construction activities at this site.

The purpose of this assessment was to determine the presence or absence of impacted soil at the subject property in proposed right-of-way construction areas related to the widening of Elkin Highway east of NC 18 to SR 1966 (Airport Road).

1.1 Site Description

The proposed right-of-way includes the construction areas related to the widening of Elkin Highway east of NC 18 to SR 1966. At the time of our site reconnaissance, the site contained a trucking facility named Ryder Transportation. Based on information provided by NCDOT, the site contained no known USTs. No USTs or unidentified anomalies were located during the geophysical investigation within the proposed right-of-way. Site photographs are shown in Appendix A.

1.2 Site Location

The facility is located at 602 Elkin Highway in Wilkesboro, North Carolina. The property is bound to the north by Elkin Highway, to the east, south and west by wooded land.

2.0 SITE ASSESSMENT

2.1 Geophysical Investigation

Pyramid Environmental & Engineering, P.C (Pyramid) conducted a geophysical investigation of the property on May 16, 2013. Pyramid utilized ground penetrating radar (GPR) and electromagnetic (EM) induction technology to locate potential geophysical anomalies and potential USTs at the site. The geophysical investigation did not locate USTs or unidentified anomalies within the proposed right-of-way. A copy of the Pyramid Geophysical Investigation Report is included in Appendix B.

2.2 Soil Sampling

To determine if contaminated soil may be encountered during the proposed construction activities, five soil samples were collected along the NCDOT proposed easement. Prior to conducting soil borings, utilities were marked by NC One Call and Taylor Wiseman & Taylor (TWT). Kleinfelder met Probe Technology at the site on May 29, 2013. Probe Technology advanced five soil borings (SS-1 to SS-5) by direct push technology (DPT). The approximate location of the borings is shown on Figure 3.

Soil borings were advanced to a depth of ten feet below the ground surface (bgs) at each location. Soil borings SS-1 through SS-5 were located on the northern portion of the property in the vicinity of a proposed storm drain structure and along the proposed easement. Soil samples were collected by driving a macrocore sampler in five foot intervals in each boring. Each five foot sample sleeve was divided in half and screened for volatile organic compounds in the field using a MiniRae 2000 photo-ionization detector (PID). In each boring, the soil interval with the highest PID reading was collected for field analysis. If no organic vapors were detected, the sample collected from a depth within two feet of the maximum depth of a proposed storm drainage feature was submitted for analysis. The PID readings are summarized in Table 1. Copies of the boring logs are included in Appendix C.

Prior to the initial boring and after each subsequent boring, the sampling equipment was decontaminated with a pressure washer. The soil samples collected for analysis were analyzed in the field by a QED for total benzene, toluene, ethyl benzene, and xylenes (BTEX); total petroleum hydrocarbons (TPH); TPH diesel range organics (DRO); TPH gasoline range organics (GRO); total Aromatics (C10-C35); 16 EPA PAHs; and benzo(a)pyrene. The soil

samples were placed into laboratory provided containers, labeled, and were analyzed by the QED for chemical analysis.

Based on the results of the QED results, Kleinfelder selected soil sample SS-3 for laboratory analysis for TPH-DRO and TPH-GRO using EPA Method 8015B following 3546 and 5035 preparation. All soil samples were placed into laboratory provided jars, labeled, and maintained on ice until delivered to Pace Analytical, a NCDOT contract laboratory, for chemical analysis.

3.0 RESULTS

3.1 Geophysical Investigation

Pyramid concluded that the GPR and EM investigation did not detect metallic USTs or unidentified anomalies within the survey area. Pyramid's report is included in Appendix B.

3.2 Soil Sampling

TPH-DRO were detected in SS-1 (12.9 milligrams per kilogram (mg/kg)) at 4 to 5 feet below ground surface (bgs), in SS-2 (87.6 mg/kg) at 4 to 5 feet bgs, and in SS-3 (30.7 and 12.2 (laboratory results) mg/kg) at 4 to 5 feet bgs which is above the North Carolina action level (10 mg/kg). The analytical results are summarized in Table 2. The field analytical report is included in Appendix D. The laboratory analytical report is included in Appendix E.

Based on field analytical results and PID readings, petroleum impacted soils were identified in the vicinity of SS-1, SS-2, and SS-3. Based on the analytical results and the boring logs, SS-1, SS-2, and SS-3 contain petroleum impacted fill material from the surface to approximate five feet bgs. Kleinfelder estimates that the contaminated soil in the vicinity SS-1, SS-2, and SS-3, which are located along a proposed storm drain structure covers an area approximately 3,000 square feet in size. The contaminated soil vertical extent is estimated to be approximate five feet bgs in the vicinity of the proposed storm drain structure. Based on these dimensions Kleinfelder, estimates that there are approximately 112 cubic yards of impacted soil at the site. The approximate area of soil contamination is depicted on Figure 4. Kleinfelder was unable to identify a source for the impacted soils identified during the investigation.

4.0 CONCLUSIONS AND RECOMMENDATION

Based on results of the field analysis and field observations, Kleinfelder has the following conclusions:

- ◆ The GPR and EM investigation did not detect metallic USTs or unidentified anomalies within the proposed right-of-way.
- ◆ Groundwater was encountered between seven and eight feet in soil borings SS-1. Groundwater was not encountered in soil borings SS-2 through SS-5.
- ◆ TPH-DRO was detected above the North Carolina action level in boring SS-1, SS-2, and SS-3.
- ◆ Based upon the analytical results, petroleum impacted soil is located in the vicinity of SS-1, SS-2, and SS-3 between the surface and five feet bgs.
- ◆ Approximately 112 cubic yards of contaminated soil was identified at the site.
- ◆ No existing groundwater monitoring wells were observed within the survey area

Based on results of the laboratory analysis and field observations, Kleinfelder has the following recommendations:

- ◆ Kleinfelder recommends that the petroleum impacted soil in the vicinity of SS-1, SS-2, and SS-3 be removed and disposed of at an approved disposal facility prior to the start of construction activities.

5.0 LIMITATIONS

Our work has been performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services were provided. Our conclusions, opinions and recommendations are 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.

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TABLES

TABLE 1: SOIL SAMPLE PID RESULTS

SAMPLE LOCATION	DEPTH (feet bgs)	PID READINGS
SS-1	2.0-3.0	2.2
	4.0-5.0	2.3
	7.0-8.0	0.6
	9.0-10.0	0.7
SS-2	2.0-3.0	0.8
	4.0-5.0	3.1
	7.0-8.0	1.3
	9.0-10.0	1.9
SS-3	2.0-3.0	1.6
	4.0-5.0	3.0
	7.0-8.0	3.1
	9.0-10.0	1.9
SS-4	2.0-3.0	1.4
	4.0-5.0	1.2
	7.0-8.0	1.5
	9.0-10.0	1.4
SS-5	2.0-3.0	0.0
	4.0-5.0	0.6
	7.0-8.0	1.5
	9.0-10.0	0.5

Notes:

Samples were collected on May 29, 2013.

Readings reported in parts per million

feet bgs = feet below ground surface

Shaded = Selected for field analysis

Bold and Shaded = Selected for laboratory analysis

TABLE 2: SOIL SAMPLE FIELD ANALYTICAL SUMMARY

SAMPLE ID	DEPTH	COLLECTION DATE	BTEX	GRO (C5-C10)	DRO (C10-C35)	TPH (C5-C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Laboratory Analysis	
										GRO	DRO
SS-1	4.0-5.0	5/29/2013	<1	<1	12.9	12.9	9.46	0.24	<0.052	NA	NA
SS-2	4.0-5.0	5/29/2013	<2.7	<2.7	87.6	87.6	64.6	1.85	<0.136	NA	NA
SS-3	4.0-5.0	5/29/2013	<0.9	<0.9	42.8	42.8	30.17	1.08	<0.046	9.5	12.7
SS-4	7.0-8.0	5/29/2013	<0.6	<0.6	<0.6	<0.6	<0.61	<0.06	<0.031	NA	NA
SS-5	7.0-8.0	5/29/2013	<1	<1	4.5	4.5	4.39	<0.1	<0.049	NA	NA
State Action Level (Petroleum UST)			NA	10	10	NA	NA	NA	NA	10	10

Notes:

Results presented in milligrams per kilogram, analogous to parts per million

BTEX = Benzene, Toluene, Ethylbenzene, and xylenes

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

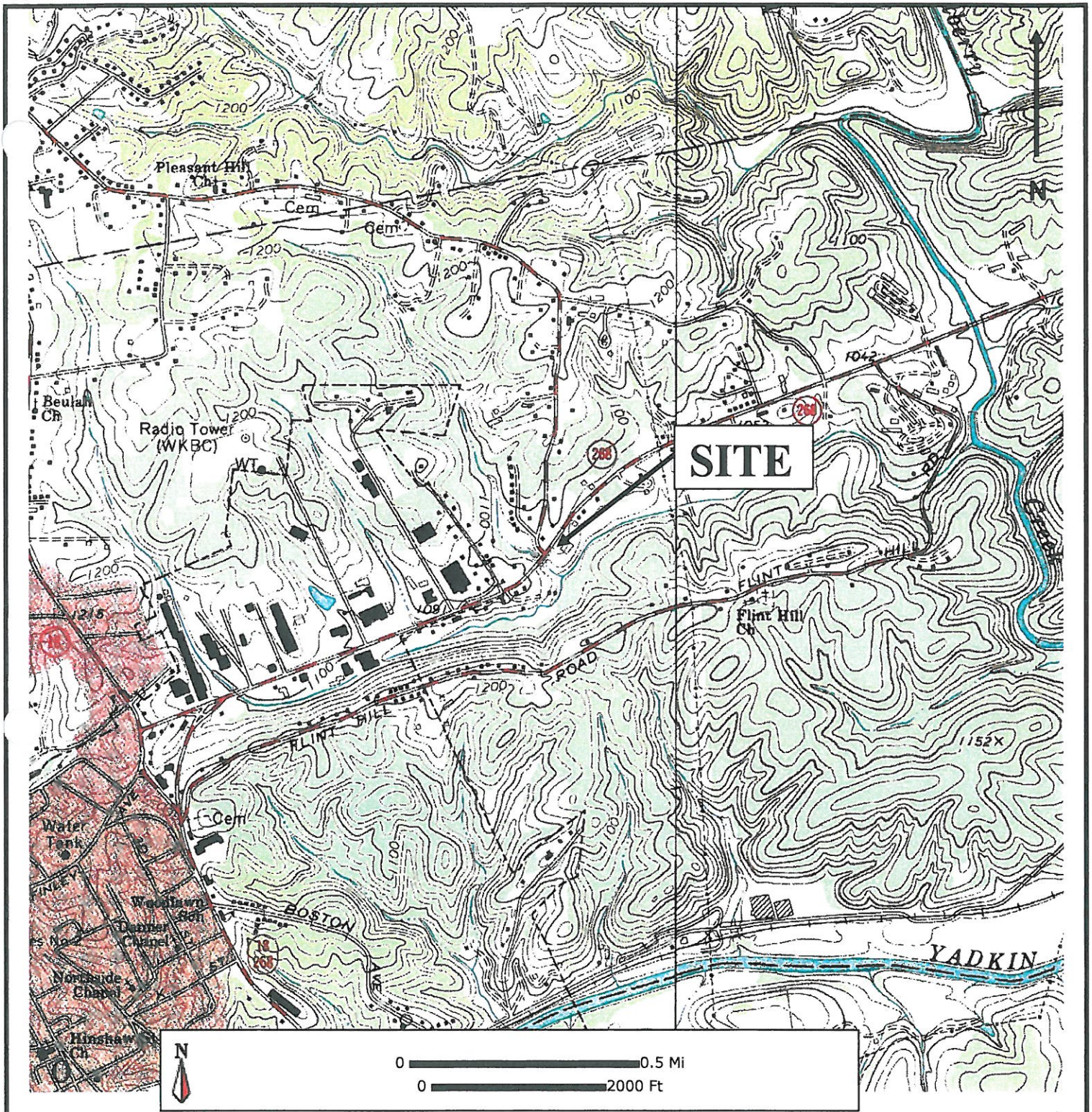
TPH = Total Petroleum Hydrocarbons

PAH = Polycyclic Aromatic Hydrocarbons

BaP = Benzo(a)pyrene

Bold denotes concentration exceeds the State Action Level for Petroleum USTs

FIGURES

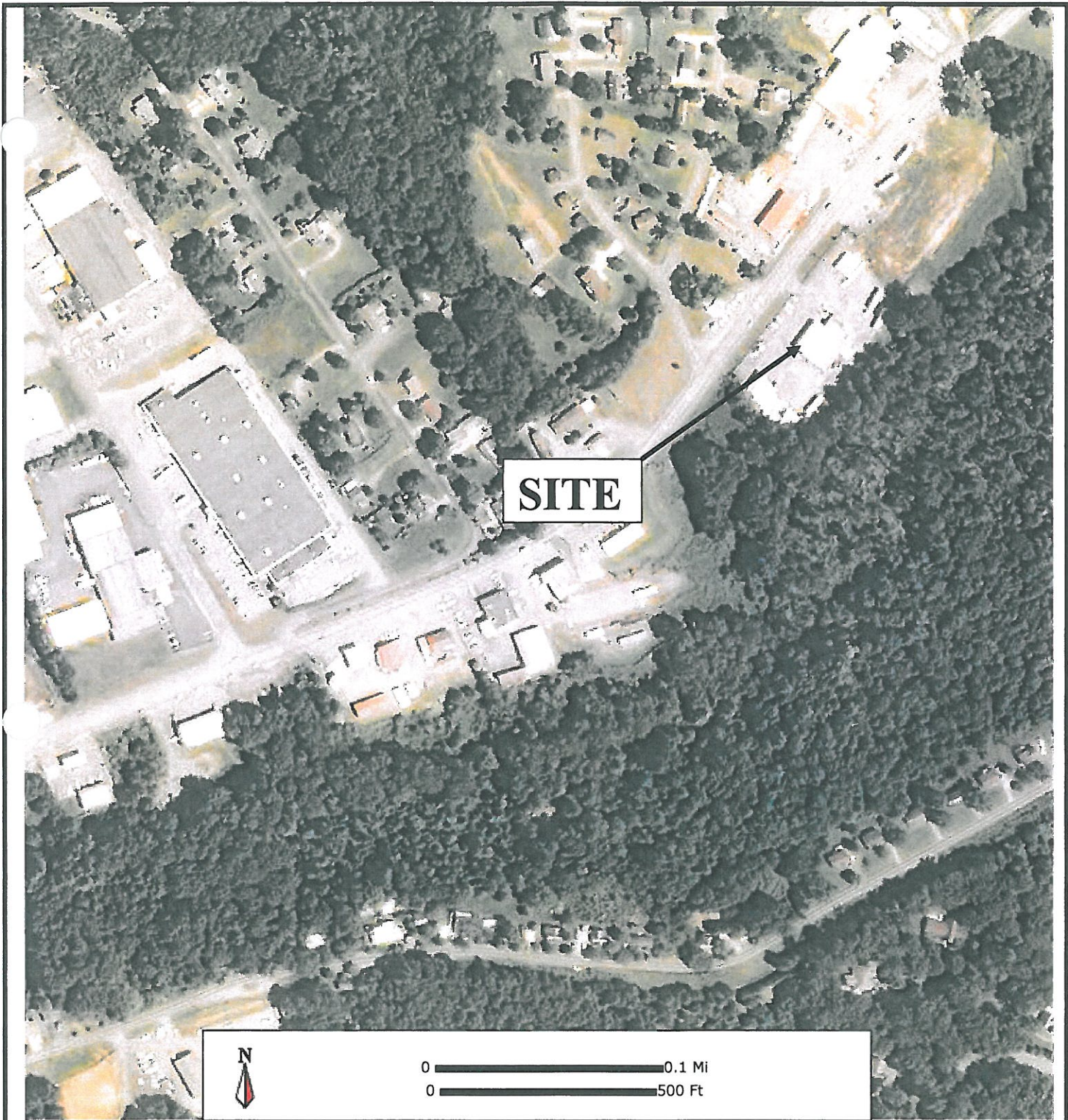


6200 HARRIS TECHNOLOGY BOULEVARD
CHARLOTTE, NORTH CAROLINA
PHONE: 704.598.1049

**FIGURE 1
SITE LOCATION MAP**

**PARCEL 47 DENNIS WHITTINGTON
RYDER TRANSPORTATION
602 ELKIN HIGHWAY
WILKESBORO, NORTH CAROLINA**

DATE: 6/4/2013	APPROVED BY:	SCALE: As Shown
SOURCE: USGS Topographic Orthophoto Map, Wilkesboro, NC 1966		PROJECT NO: 134245



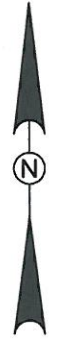
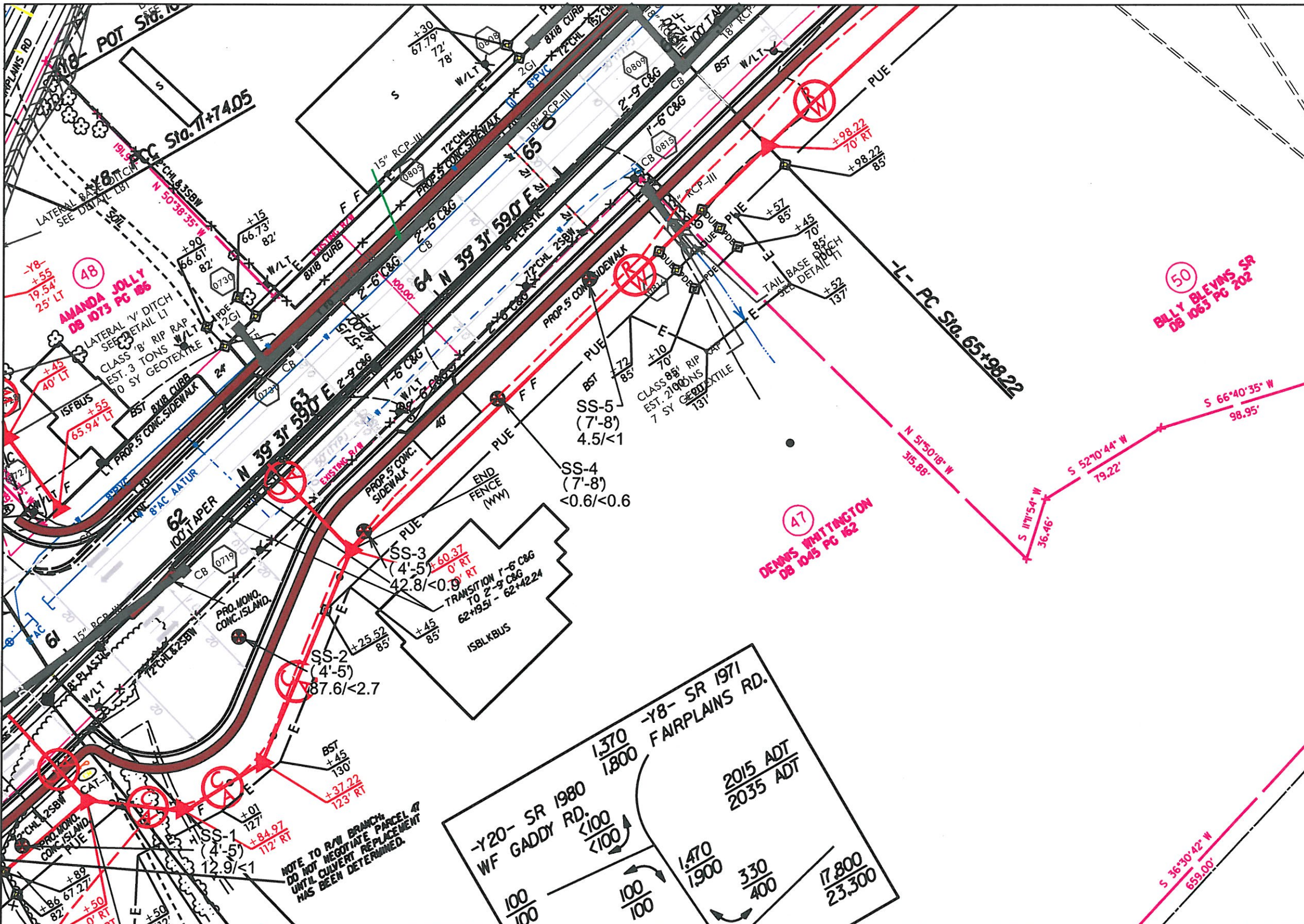
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PHONE: 704.598.1049

**FIGURE 2
SITE MAP**

**PARCEL 47 DENNIS WHITTINGTON
RYDER TRANSPORTATION
602 ELKIN HIGHWAY
WILKESBORO, NORTH CAROLINA**

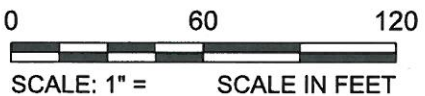
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SOURCE: MyTopo.com		PROJECT NO. 134245



LEGEND

- Existing Right of Way
- Proposed Right of Way
- Proposed Construction Easement
- Proposed Cut Line
- Proposed Transition Line
- Proposed Fill Line
- Existing Utilities Water UG Line SUE
- Existing Utilities Telephone UG Line SUE
- Exist Utilities Sanitary Sewer UG Line
- Exist Utilities Power UG Cable SUE
- Approximate Boring Location
- Sample Depth location
- Concentration of TPH-DRO/TPH-GRO mg/kg (QROS-QED data)

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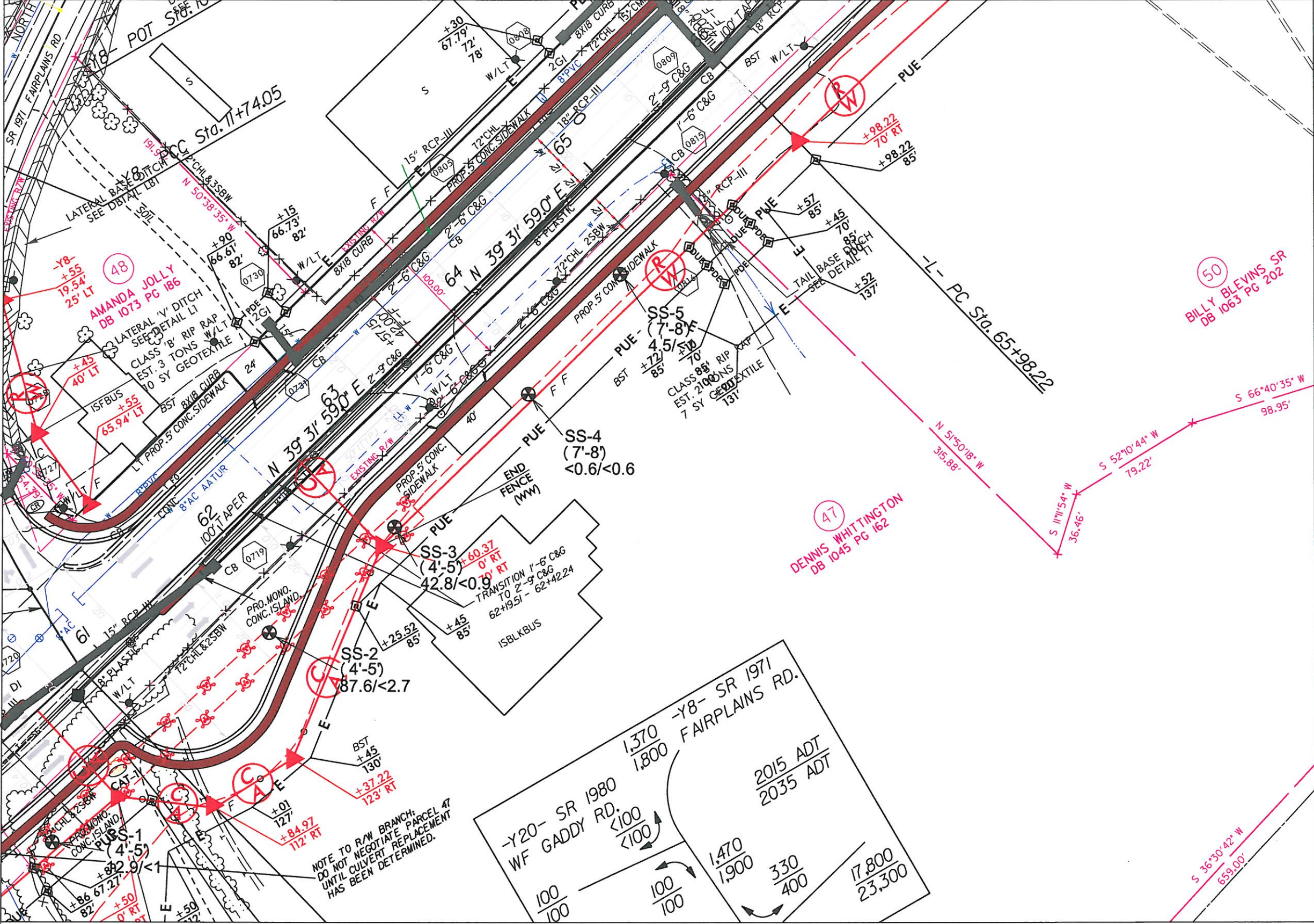
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DATE:	6/6/13

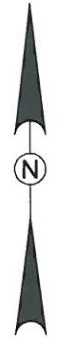
BORING LOCATION MAP PARCEL 47	
NC DEPARTMENT OF TRANSPORTATION	
TIP#: R-2603 WILKESBORO, NORTH CAROLINA	

Figure
3

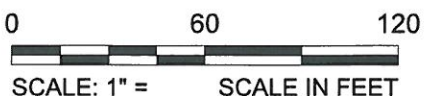
CAD FILE: W:\Share\ENVIRONMENTAL\Projects\Active Projects\1_Craig\1R-2603 N Wilkesboro\CADD_ENV\Parcel 47_Figure4.Dgn LAYOUT: Model PLOTTED: BY: greensborogenera



- LEGEND**
- Existing Right of Way
 - Proposed Right of Way
 - Proposed Construction Easement
 - Proposed Cut Line
 - Proposed Transition Line
 - Proposed Fill Line
 - Existing Utilities Water UG Line SUE
 - Existing Utilities Telephone UG Line SUE
 - Exist Utilities Sanitary Sewer UG Line
 - Exist Utilities Power UG Cable SUE
 - Approximate Boring Location
 - Sample Depth location
 - Concentration of TPH-DRO/TPH-GRO mg/kg (QROS-QED data)
 - Approximate location of soil contamination



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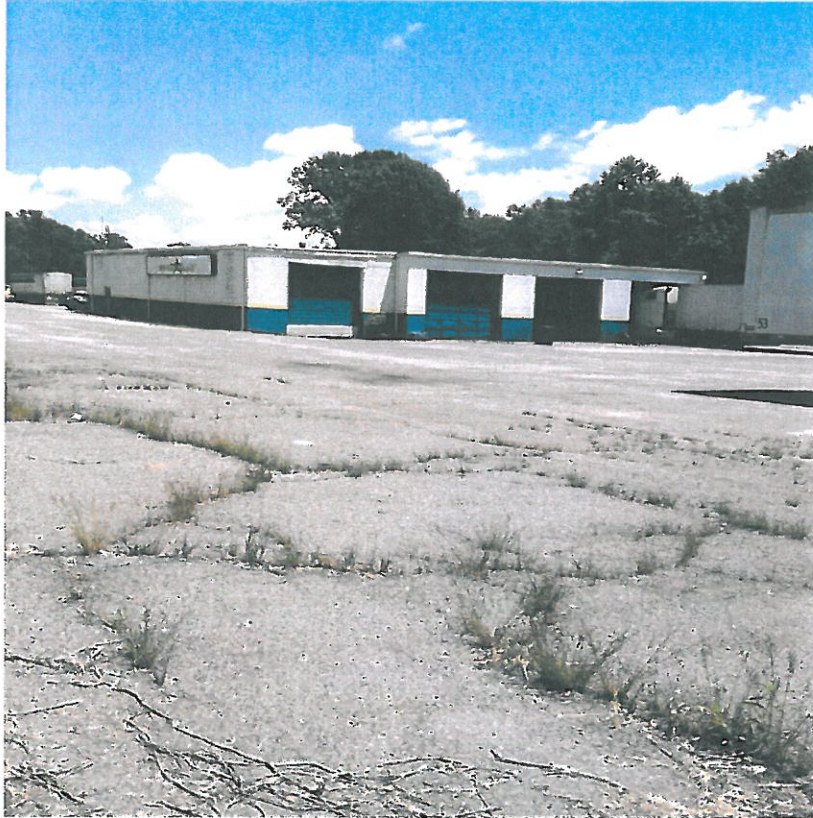
SOIL CONTAMINATION LOCATION MAP
PARCEL 47

NC DEPARTMENT OF TRANSPORTATION
TIP#: R-2603
WILKESBORO, NORTH CAROLINA

Figure
4

APPENDIX A

**SITE PHOTOGRAPHS
KLEINFELDER PROJECT NO. 134245
PARCEL NO. 47**



Photograph 1 – View from the western portion of the site looking east.



Photograph 2 – View of the northern portion of the structure.

SITE PHOTOGRAPHS
KLEINFELDER PROJECT NO. 134245
PARCEL NO. 47



Photograph 3 – View from Elkin Highway looking east.



Photograph 4 – View from Elkin Highway looking southwest.

**SITE PHOTOGRAPHS
KLEINFELDER PROJECT NO. 134245
PARCEL NO. 47**



Photograph 5 – View of the western portion of the property.

APPENDIX B

GEOPHYSICAL INVESTIGATION REPORT

EM61 & GPR SURVEYS


KLEINFELDER – NCDOT ROW GEOPHYSICAL SURVEY

PARCEL 47 – NC HWY 268


Wilkes County, North Carolina

June 7, 2013

**Report prepared for: Travis O'Quinn
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Prepared by:  _____

**Eric C. Cross, P.G.
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Reviewed by:  _____

**Douglas A. Canavello, P.G.
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NC Board for Licensing of Geologists C-257
NC Board of Examiners for Engineers & Surveyors C-1251

**GEOPHYSICAL INVESTIGATION REPORT
KLEINFELDER – NCDOT ROW GEOPHYSICAL SURVEY
PARCEL 47 – NC HWY 268
Wilkes County, North Carolina**

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3.0 DISCUSSION OF RESULTS.....	2
4.0 SUMMARY & CONCLUSIONS.....	4
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FIGURES

- | | |
|----------|---|
| Figure 1 | Site Photographs |
| Figure 2 | EM61 Metal Detection Results – Bottom Coil & Differential |

1.0 INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Kleinfelder as part of the North Carolina Department of Transportation's (NCDOT) proposed right-of-way (ROW) and easement areas for Parcel 47, NC Hwy. 268, North Wilkesboro, NC. The survey area extended across all of the accessible areas along the north property boundary, spanning a distance of approximately 420 feet from east to west. The geophysical survey area extended approximately 120 feet at its maximum from the roadway south into the property. Conducted on May 16 and 20, 2013, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the proposed ROW/easement areas of the site.

In addition to the above-described survey area, the boundaries of the parcel extended further west downslope into a heavily wooded area. Due to the limited access associated with this area of the parcel, Pyramid (after discussions with Kleinfelder) performed reconnaissance EM transects in this area to determine if any metallic objects were present that may warrant additional investigation.

The majority of the site was relatively open, and consisted primarily of an asphalt parking lot. Aerial photographs showing the survey area boundaries and ground-level photographs are shown in **Figure 1**.

2.0 FIELD METHODOLOGY

Prior to conducting the geophysical investigation, a 20-foot by 20-foot survey grid was established across the geophysical survey area using measuring tapes and water-based marking paint. These grid marks were used as X-Y coordinates for location control when collecting the geophysical data and establishing base maps for the geophysical results.

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. The EM survey was performed on May 16, 2013, using a Geonics EM6

metal detection instrument. 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. All of the EM61 data were digitally collected at approximately 0.8 foot intervals along north-south trending (west survey area) or east-west trending (north/east survey area), parallel survey lines spaced five feet apart. All of the data were downloaded to a computer and reviewed in the field and office using the Geonics DAT61 and Surfer for Windows Version 7.0 software programs.

GPR data were acquired on May 20, 2013, across selected EM61 differential anomalies using a GSSI SIR-2000 unit equipped with a 400 MHz antenna. Data were collected generally from east to west and north to south across specific EM61 anomalies. All of 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 8 feet, based on an estimated two-way travel time of 8 nanoseconds per foot. Due to the lack of any significant GPR response that could be associated with possible USTs within the proposed ROW area, only real time data were used to investigate the survey area.

3.0 DISCUSSION OF RESULTS

Contour plots of the EM61 bottom coil and differential results obtained across the proposed ROW/easement areas at the property are presented in **Figure 2**. The bottom coil results represent the most sensitive component of the EM61 instrument and detect metal objects regardless of size. The bottom coil response can be used to delineate metal conduits or utility lines, small, isolated metal objects, and areas containing insignificant metal debris. The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drum and UST-size objects and ignore the smaller insignificant metal objects.

Discussion of EM anomalies: Due to the fact that the property was utilized as a tractor/trailer repair facility, several trailers and vehicles were present at the time of the survey that could not be relocated. Inaccessible areas are noted on **Figure 2**, and the EM responses surrounding these areas of inaccessibility

were the result of the metal cars and trailers. Additionally, the EM response surrounding the edge of the office building on the south side of the survey area was a result of reinforcement within the building foundation and vehicles parked near the northeast corner of the structure and metal storm drains. The EM anomaly at X=90, Y=55 was the result of a metal power pole. The EM anomaly at X=170, Y=40 was the result of a metal mailbox. The minor EM anomaly oriented from northeast to southwest centered at X=125 was likely associated with a buried utility. The EM anomaly at X=200, Y=50 was the result of a metal power pole. The EM anomaly at X=220, Y=40 was the result of a metal water meter cover. The EM anomaly at X=430, Y=80 was the result of a metal guy wires. The EM anomaly at X=190, Y=20 was the result of a metal post. Lastly, the EM response across the majority of the survey area at an average coordinate of Y=50 was the result of a metal fence extending across the property near the road, as well as several metal posts and reinforced concrete parking barriers on the eastern half of the survey area.

GPR scans were performed across all EM61 anomalies to verify that all features observed could be directly attributed to visible objects at the ground surface. The GPR data were viewed in real time as the equipment was surveyed across the anomalies. No significant features were recorded by the GPR that would be indicative of any large objects below the ground surface, such as metallic USTs.

West Reconnaissance EM Survey: Reconnaissance EM transects were performed generally from east to west and north to south within the accessible portions of the wooded area to the west of the tractor/trailer facility. No responses were detected during the reconnaissance survey that would indicate the presence of buried metal objects.

The geophysical investigation suggests that the area of the proposed ROW/easement at Parcel 47 in North Wilkesboro, NC, does not contain metallic USTs.

4.0 SUMMARY & CONCLUSIONS

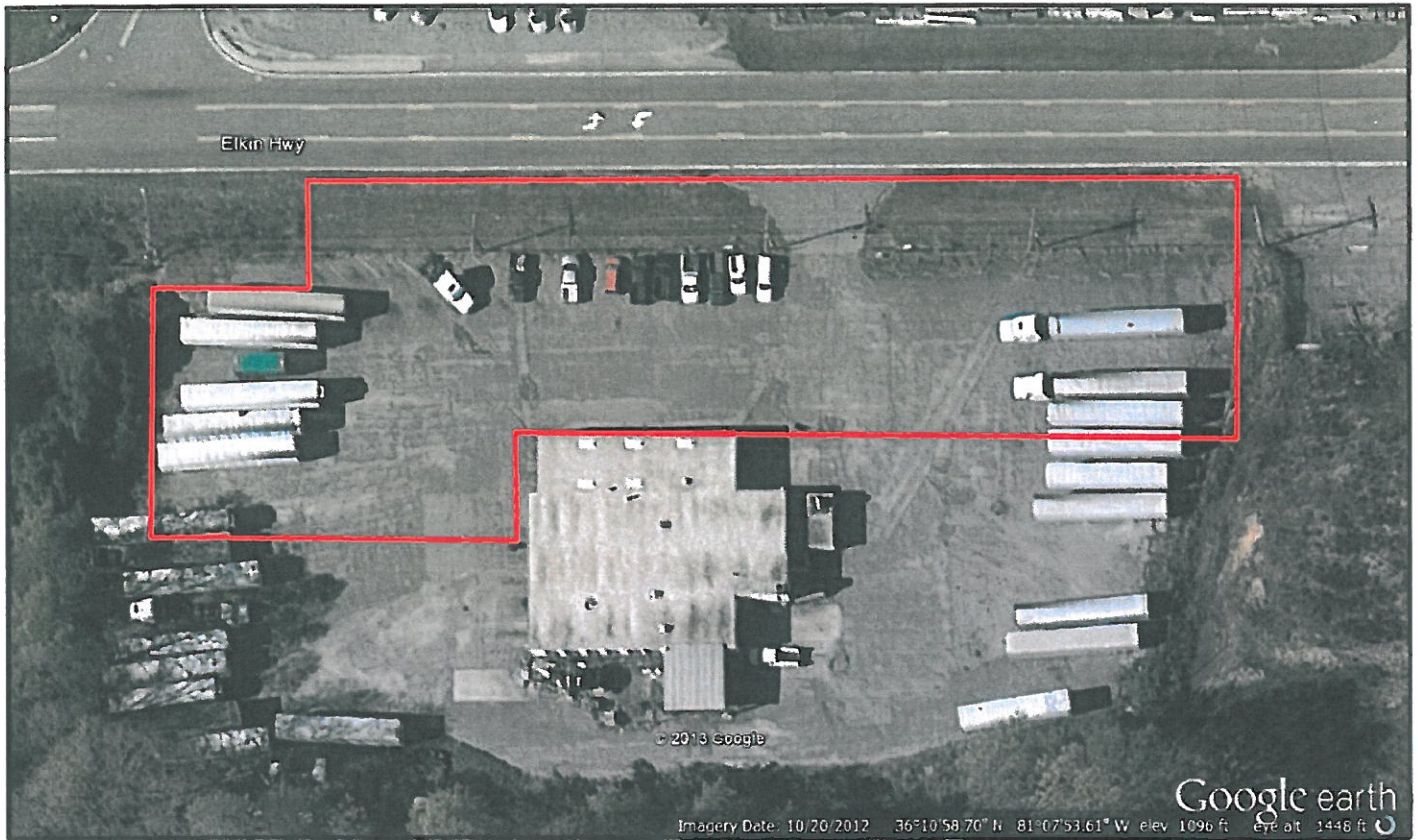
Our evaluation of the EM61 and GPR data collected across the proposed ROW/easement area at Parcel 47, North Wilkesboro, North Carolina provides the following summary and conclusions:

- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the geophysical survey area.
- All of the EM61 anomalies detected could be attributed to visible objects at the ground surface such as signs, vehicles and metal fences. The GPR surveys indicated that the features observed were all the result of visible objects at the ground surface. No evidence was observed to indicate the presence of metallic USTs within the proposed ROW/easement.
- The reconnaissance EM transects performed in the western portion of the parcel in the heavily wooded area did not record any evidence of buried metal objects that would be indicative of USTs.
- The geophysical investigation suggests that the proposed ROW/easement area at the property does not contain metallic USTs.

5.0 LIMITATIONS

Geophysical surveys have been performed and this report prepared for Kleinfelder in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined that metallic USTs do not lie within the proposed ROW/easement area of the Wilkes County property, but that none were detected. Additionally, it should be understood that areas containing vehicles or other restrictions to the accessibility of the geophysical instruments could not be investigated.

FIGURES



Aerial Photograph Showing Approximate Geophysical Survey Boundaries



View of Truck Service Building
(Photograph Facing Approximately Southwest)



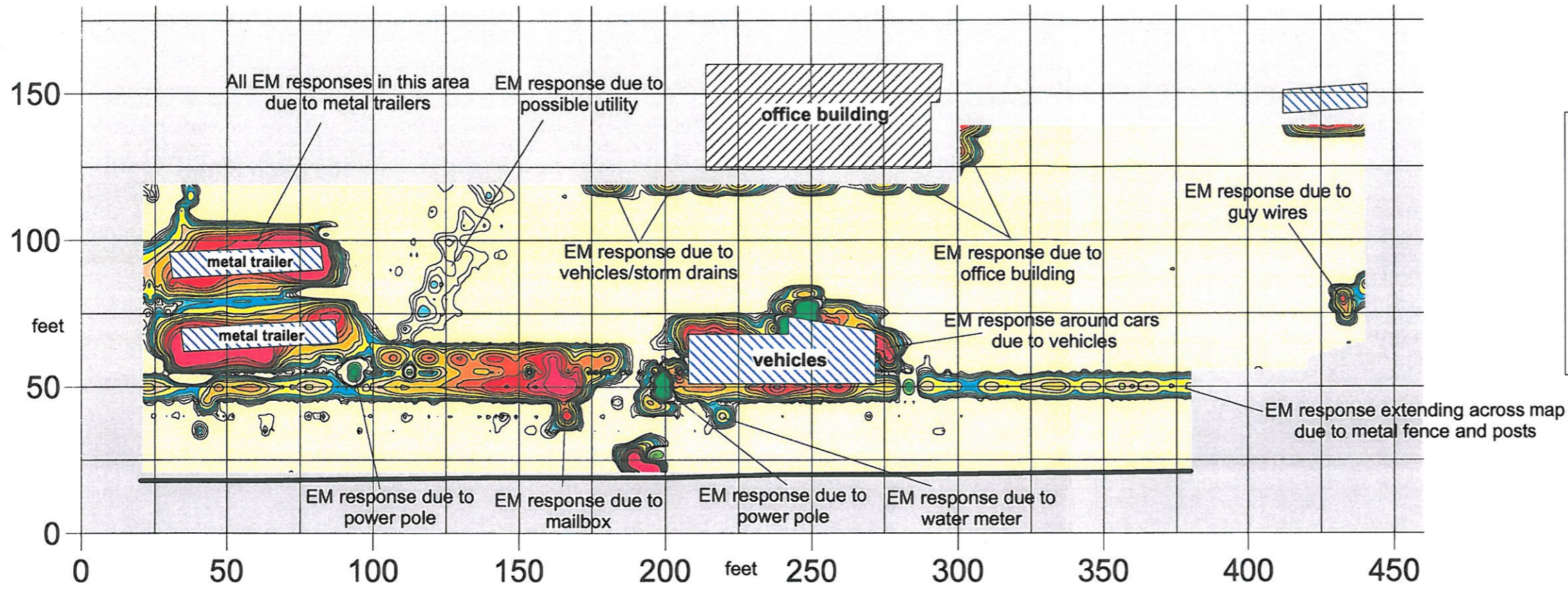
View of Geophysical Survey Area
(Photograph Facing Approximately West)



CLIENT	KLEINFELDER	DATE	05/16/13	PROJECT	ECC
FILE	PARCEL 47, WILKES COUNTY (NCDOT ROW PROJECT)	SY		DEPTH	
LOC	NORTH WILKESBORO	STATE	NORTH CAROLINA	DATE	
FILE	GEOPHYSICAL RESULTS	NO.	2013-131	ISSUE	

SURVEY BOUNDARIES &
SITE PHOTOGRAPHS

EM61 Bottom Coil Results



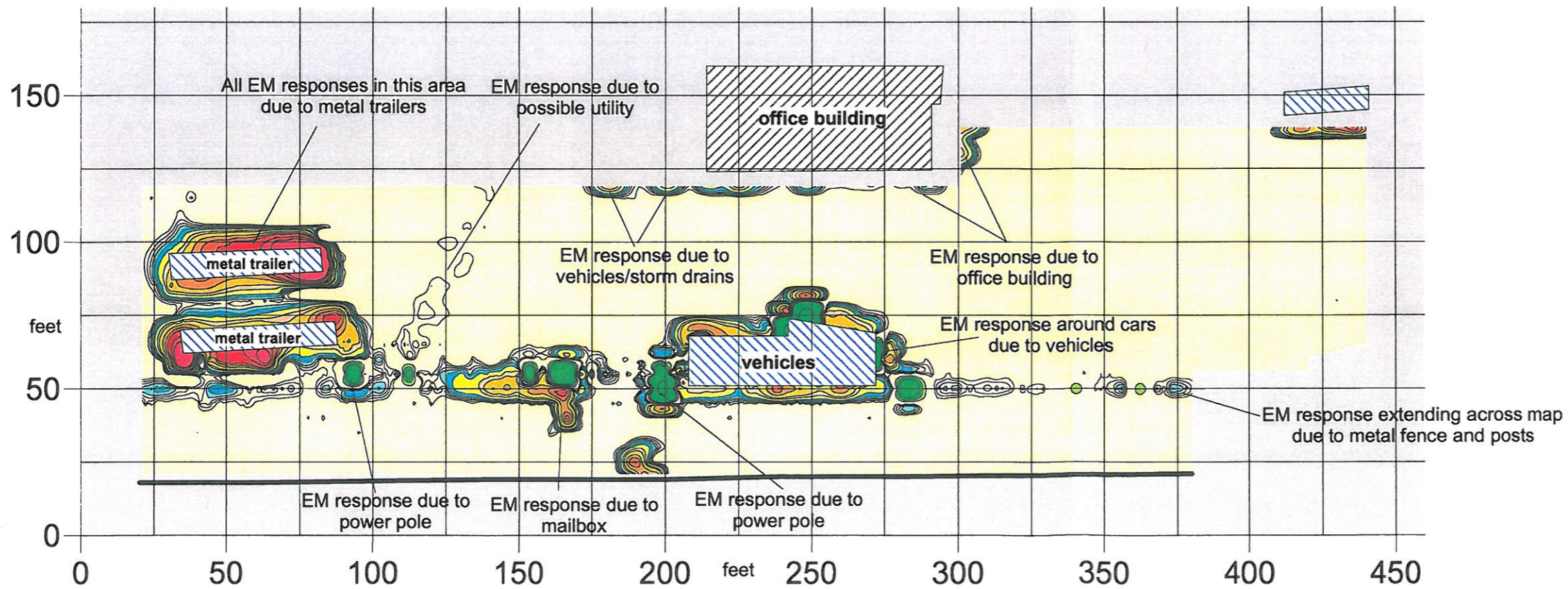
NO EVIDENCE OF METALLIC USTs OBSERVED

The contour plots show the bottom coil (most sensitive) and differential results of the EM61 instrument in millivolts (mV). The bottom coil response shows buried metallic objects regardless of size. The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous buried, metal debris. The EM61 data were collected on May 16, 2013 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were not collected due to the lack of any unexplained anomalies in the EM survey.

EM61 Metal Detection Response (millivolts)



EM61 Differential Results



TITLE		PARCEL 47 - EM61 BOTTOM COIL & DIFFERENTIAL RESULTS CONTOUR MAP	
PROJECT		NC DEPARTMENT OF TRANSPORTATION ROW IMPROVEMENT PROJECT NORTH WILKESBORO, WILKES COUNTY, NC	
		503 INDUSTRIAL AVENUE GREENSBORO, NC 27460 (336) 335-3174 (p) (336) 691-0648 (f) License # C1251 Eng. / License # C257 Geology	
DATE	06/05/2013	CLIENT	KLEINFELDER
PYRAMID PROJECT #:	2013-124	FIGURE 2	

APPENDIX C

Date Begin - End: 5/29/2013
 Logged By: Peter Pozzo
 Hor.-Vert. Datum: Not Available
 Angle from Vert.: 0 degrees
 Weather: Sunny 70's

Drill Company: Probe Technology
 Drill Crew: John Allen
 Drill Equipment: 6610DT Geoprobe
 Exploration Method: Geoprobe
 Auger Diameter: 2.25 in. O.D.

FIELD EXPLORATION

Depth (feet)	Sample Type	Sample Number	Recovery (NR=No Recovery)	blows/6 in.	PID / FID (ppmv)	Graphical Log	
							No Coordinates Available No Elevation Available
					2.2		SILT with Clay and Sand: reddish tan, dry, Fill Material
5		SS-1			2.3		SILT with Clay and Sand: tan, dry, Fill Material
					0.6		SILT with Sand: white, dry
10					0.7		SILT with Sand and Pebbles: white, dry
	The exploration was terminated at approximately 10 ft. below ground surface						<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not encountered during drilling or after completion. <u>GENERAL NOTES:</u>
15							
20							
25							
30							

GINT FILE: \\share11\environmental\project\active\project\134245_nude\wikis\src\134245.gpj R:\KLF_STANDARD_GINT_LIBRARY_SR.1.1.GLB [KLF_ENVIRONMENTAL LOG]



PROJECT NO.: 134245
 DRAWN BY: WJF
 CHECKED BY: PFP
 DATE:
 REVISED:

BORING LOG P47_SS-1

Parcel 47 - Dennis Whittington
 Ryder Transportation
 602 Elkin Highway
 Wilkesboro, NC

PLATE
 1
 PAGE: 1 of 1

Date Begin - End: 5/29/2013
 Logged By: Peter Pozzo
 Hor.-Vert. Datum: Not Available
 Angle from Vert.: 0 degrees
 Weather: Sunny 70's

Drill Company: Probe Technology
 Drill Crew: John Allen
 Drill Equipment: 6610DT Geoprobe
 Exploration Method: Geoprobe
 Auger Diameter: 2.25 in. O.D.

BORING LOG P47_SS-2

FIELD EXPLORATION

Depth (feet)	Sample Type	Sample Number	Recovery (NR=No Recovery)	blows/6 in.	PID / FID (ppmv)	Graphical Log	
							No Coordinates Available No Elevation Available
					0.8		SILT with Clay: reddish tan, dry, Fill Material
5		SS-2			3.1		SILT with Clay and Sand: reddish tan, dry, Fill Material
					1.3		SILT with Clay and Sand: white, dry
10					1.9		SILT with Clay and Sand: white, reddish and tan, dry
	The exploration was terminated at approximately 10 ft. below ground surface						<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not encountered during drilling or after completion. <u>GENERAL NOTES:</u>

G:\IN\FILE: W:\Data\env\environmental\project\active\Project\134245_ncdo\wilkesboro\134245.apj R:\KLF_STANDARD_GINT_IP\NA\RY_SR_1.1.GLB [KLF_ENVIRONMENTAL LOG]



PROJECT NO.: 134245
 DRAWN BY: WJF
 CHECKED BY: PFP
 DATE:
 REVISED:

BORING LOG P47_SS-2

Parcel 47 - Dennis Whittington
 Ryder Transportation
 602 Elkin Highway
 Wilkesboro, NC

PLATE

2

PAGE: 1 of 1

Date Begin - End: 5/29/2013
 Logged By: Peter Pozzo
 Hor.-Vert. Datum: Not Available
 Angle from Vert.: 0 degrees
 Weather: Sunny 70's

Drill Company: Probe Technology
 Drill Crew: John Allen
 Drill Equipment: 6610DT Geoprobe
 Exploration Method: Geoprobe
 Auger Diameter: 2.25 in. O.D.

BORING LOG P47_SS-3

FIELD EXPLORATION

Depth (feet)	Sample Type	Sample Number	Recovery (NR=No Recovery)	blows/6 in.	PID / FID (ppmv)	Graphical Log
						No Coordinates Available No Elevation Available
						SILT with Clay and Sand: reddish tan, dry, Fill Material
5		SS-3			1.6 3.0	SILT with Clay and Sand: tan, dry, Fill Material
10					3.1 1.9	
15	The exploration was terminated at approximately 10 ft. below ground surface					
20	<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not encountered during drilling or after completion. <u>GENERAL NOTES:</u>					
25						
30						

g:\INT FILE: W:\charu_\environmental\p\project\active Projects\134245_ncdo1_wilkesboro\134245.npl R:\KLF_STANDARD_GINT_LIB\KLFY_SR_1.1.GLB [KLF_ENVIRONMENTAL LOG]



PROJECT NO.: 134245
 DRAWN BY: WJF
 CHECKED BY: PFP
 DATE:
 REVISED:

BORING LOG P47_SS-3

Parcel 47 - Dennis Whittington
 Ryder Transportation
 602 Elkin Highway
 Wilkesboro, NC




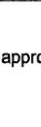
PLATE
3
 PAGE: 1 of 1

Date Begin - End: 5/29/2013
 Logged By: Peter Pozzo
 Hor.-Vert. Datum: Not Available
 Angle from Vert.: 0 degrees
 Weather: Sunny 70's


Drill Company: Probe Technology
 Drill Crew: John Allen
 Drill Equipment: 6610DT Geoprobe
 Exploration Method: Geoprobe
 Auger Diameter: 2.25 in. O.D.

BORING LOG P47_SS-4

FIELD EXPLORATION

Depth (feet)	Sample Type	Sample Number	Recovery (NR=No Recovery)	blows/6 in.	PID / FID (ppmv)	Graphical Log	
							No Coordinates Available No Elevation Available
					1.4		Clayey SILT with Sand: red, dry, Fill Material
					1.2		SILT with Clay and Sand: reddish tan, dry, Fill Material
5		SS-4			1.5		
10					1.4		
	The exploration was terminated at approximately 10 ft. below ground surface						<u>GROUNDWATER LEVEL INFORMATION:</u> Groundwater was not encountered during drilling or after completion. <u>GENERAL NOTES:</u>
15							
20							
25							
30							

d:\NF FILE: W:\shar...environmental\projects\active Project\134245_nrdol_w\kember\134245.gpj R:\KLF_STANDARD_GINT_LIB\...K\Y_SR_1.1.GLB [KLF_ENVIRONMENTAL.LOG]





 <p>KLEINFELDER Bright People. Right Solutions.</p>	PROJECT NO.: 134245 DRAWN BY: WJF CHECKED BY: PFP DATE: REVISED:	BORING LOG P47_SS-4 Parcel 47 - Dennis Whittington Ryder Transportation 602 Elkin Highway Wilkesboro, NC	PLATE 4 PAGE: 1 of 1
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Date Begin - End: 5/29/2013
 Logged By: Peter Pozzo
 Hor.-Vert. Datum: Not Available
 Angle from Vert.: 0 degrees
 Weather: Sunny 70's

Drill Company: Probe Technology
 Drill Crew: John Allen
 Drill Equipment: 6610DT Geoprobe
 Exploration Method: Geoprobe
 Auger Diameter: 2.25 in. O.D.

BORING LOG P47_SS-5

FIELD EXPLORATION

Depth (feet)	Sample Type	Sample Number	Recovery (NR=No Recovery)	blows/6 in.	PID / FID (ppmv)	Graphical Log	
							No Coordinates Available No Elevation Available
					0.0		Clayey SILT: red, dry, Fill Material
5					0.6		SILT with Clay: reddish tan, dry, Fill Material
10					1.5		SILT with Clay and Sand: reddish tan, dry
					0.5		
15							
20							
25							
30							

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

GROUNDWATER LEVEL INFORMATION:
 Groundwater was not encountered during drilling or after completion.
GENERAL NOTES:



PROJECT NO.: 134245
 DRAWN BY: WJF
 CHECKED BY: PFP
 DATE:
 REVISED:

BORING LOG P47_SS-5

Parcel 47 - Dennis Whittington
 Ryder Transportation
 602 Elkin Highway
 Wilkesboro, NC

PLATE

5

R:\KLEIN\STANDARD_GINT_Library\SR_11.CLB [KLEIN ENVIRONMENTAL LOG]

APPENDIX D



Hydrocarbon Analysis Results

Client: NCDOT
Address: Wilkesboro, NC

Samples taken Wednesday, May 29, 2013
Samples extracted Wednesday, May 29, 2013
Samples analysed Wednesday, May 29, 2013

Contact: Craig Neil

Operator Travis O'Quinn

Project: Parcel 47

Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios		HC Fingerprint Match	
										% light	% mid	% heavy	
s	P47 SS-1 4-5'	20.8	<1	<1	12.9	12.9	9.46	0.24	< 0.052	56.8	36.1	7.1	V.Deg.PHC 97.9%
s	P47 SS-2 4-5'	54.4	<2.7	<2.7	87.6	87.6	64.6	1.85	< 0.136	54.7	41.1	4.2	V.Deg.PHC 94.7%
s	P47 SS-3 4-5'	18.4	<0.9	<0.9	42.8	42.8	30.17	1.08	< 0.046	64.4	30.6	5	V.Deg.PHC 92.7%
s	P47 SS-4 7-8'	12.3	<0.6	<0.6	<0.6	<0.6	< 0.61	< 0.06	< 0.031	0	100	0	Match not possible
s	P47 SS-5 7-8'	19.7	<1	<1	4.5	4.5	4.39	< 0.1	< 0.049	60.4	35.1	4.6	V.Deg.PHC 98%

Initial Calibrator QC check Screening

Low Range Calibrator Final check

High Range Calibrator Final check

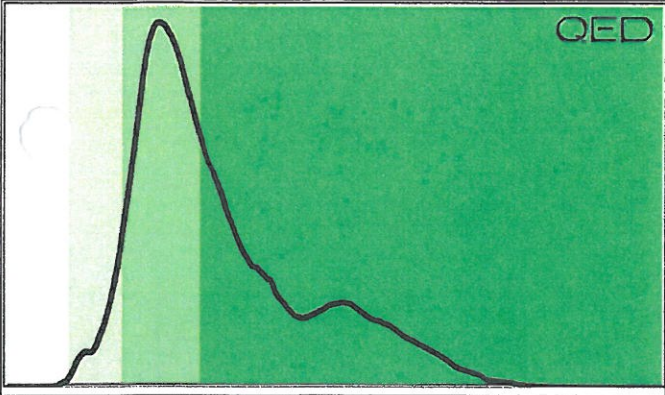
Results generated by a QED HC-1 analyser

Fingerprints provide a tentative hydrocarbon identification based on operator selected library matches

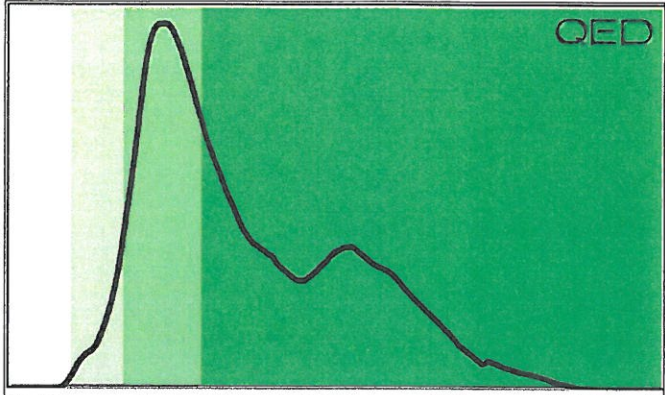
Concentration values in mg/kg for soil samples and mg/L for water samples. Fingerprint match abbreviations Est = Specific calibrator not used, result estimated (PFM)= Poor library fingerprint match

Soil values are not corrected for moisture or stone content (SBS)= site specific background subtracted (LBS)= Library background subtracted % = match confidence

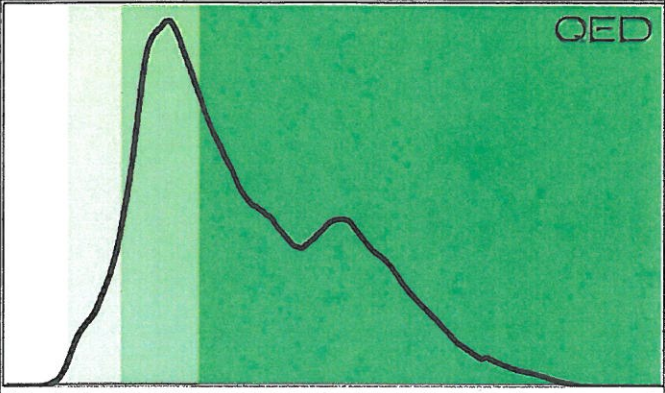
V.Deg.PHC 97.9% P47 SS-1 4-5'



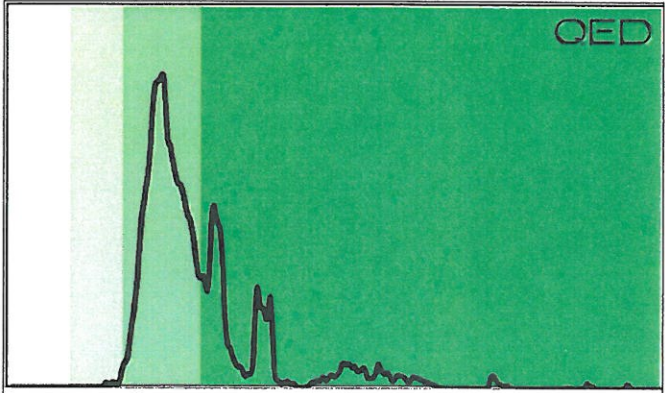
V.Deg.PHC 94.7% P47 SS-2 4-5'



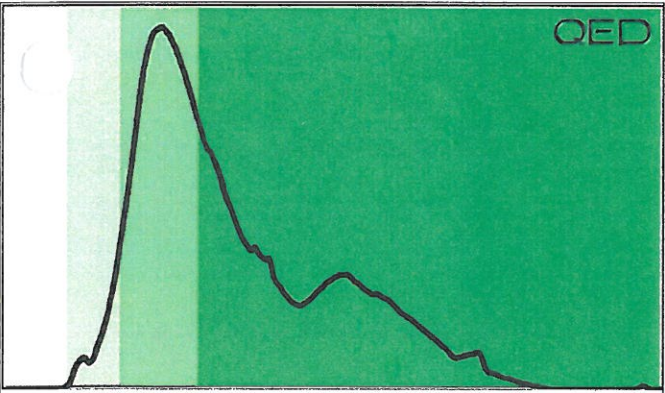
V.Deg.PHC 92.7% P47 SS-3 4-5'



Match not possible P47 SS-4 7-8'



V.Deg.PHC 98% P47 SS-5 7-8'



APPENDIX E

July 09, 2013

Travis O'Quinn
NCDOT West Central

RE: Project: P47 SS-3 4-5'
Pace Project No.: 92164242

Dear Travis O'Quinn:

Enclosed are the analytical results for sample(s) received by the laboratory on May 31, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Analyses were performed at the Pace Analytical Services location indicated on the sample analyte page for analysis unless otherwise footnoted.

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

Sincerely,

Angela M. Baioni

Angela Baioni

angela.baioni@pacelabs.com
Project Manager

Enclosures

cc: Chemical Testing Engineer, NCDOT



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: P47 SS-3 4-5'
Pace Project No.: 92164242

Charlotte Certification IDs

9800 Kincey Ave. Ste 100, Huntersville, NC 28078
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001

Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
West Virginia Certification #: 357
Virginia/VELAP Certification #: 460221

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: P47 SS-3 4-5'
Pace Project No.: 92164242

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92159930002	P47 SS-3 4-5'	Solid	05/28/13 13:58	05/31/13 13:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: P47 SS-3 4-5'
Pace Project No.: 92164242

Lab ID	Sample ID	Method	Analysts	Analytes Reported
92159930002	P47 SS-3 4-5'	EPA 8015 Modified	RES	2
		EPA 8015 Modified	GAW	2
		ASTM D2974-87	TNM	1

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ANALYTICAL RESULTS

Project: P47 SS-3 4-5'
Pace Project No.: 92164242

Sample: P47 SS-3 4-5' Lab ID: 92159930002 Collected: 05/28/13 13:58 Received: 05/31/13 13:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546							
Diesel Components	12.7	mg/kg	5.7	1	06/03/13 09:41	06/05/13 23:06	68334-30-5	
Surrogates								
n-Pentacosane (S)	93	%	41-119	1	06/03/13 09:41	06/05/13 23:06	629-99-2	
Gasoline Range Organics	Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B							
Gasoline Range Organics	9.5	mg/kg	6.4	1	06/05/13 12:11	06/05/13 19:35	8006-61-9	
Surrogates								
4-Bromofluorobenzene (S)	90	%	70-167	1	06/05/13 12:11	06/05/13 19:35	460-00-4	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	11.9	%	0.10	1		06/07/13 10:14		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: P47 SS-3 4-5'
Pace Project No.: 92164242

QC Batch: GCV/6961 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics
Associated Lab Samples: 92159930002

METHOD BLANK: 986894 Matrix: Solid
Associated Lab Samples: 92159930002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	6.0	06/05/13 13:26	
4-Bromofluorobenzene (S)	%	93	70-167	06/05/13 13:26	

LABORATORY CONTROL SAMPLE: 986895

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	49.7	44.9	90	70-165	
4-Bromofluorobenzene (S)	%			88	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 986896 986897

Parameter	Units	92159972001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	52.9	52.9	61.3	63.3	116	120	47-187	3	30
4-Bromofluorobenzene (S)	%						85	92	70-167		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: P47 SS-3 4-5'
Pace Project No.: 92164242

QC Batch: OEXT/22407 Analysis Method: EPA 8015 Modified
QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 92159930002

METHOD BLANK: 985352 Matrix: Solid
Associated Lab Samples: 92159930002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	06/05/13 19:36	
n-Pentacosane (S)	%	92	41-119	06/05/13 19:36	

LABORATORY CONTROL SAMPLE: 985353

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	54.7	82	49-113	
n-Pentacosane (S)	%			96	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 985354 985355

Parameter	Units	92159930001		MS		MSD		% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec			
Diesel Components	mg/kg	13.6	80.8	67.8	53.8	67	50	10-146	23	30
n-Pentacosane (S)	%					63	60	41-119		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: P47 SS-3 4-5'
Pace Project No.: 92164242

QC Batch: PMST/5585 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92159930002

SAMPLE DUPLICATE: 987762

Parameter	Units	92160299001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	24.8	25.0	1	25	

SAMPLE DUPLICATE: 988093

Parameter	Units	92160291002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	22.6	22.2	2	25	

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: P47 SS-3 4-5'
Pace Project No.: 92164242

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

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

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: P47 SS-3 4-5'
Pace Project No.: 92164242

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92159930002	P47 SS-3 4-5'	EPA 3546	OEXT/22407	EPA 8015 Modified	GCSV/14790
92159930002	P47 SS-3 4-5'	EPA 5035A/5030B	GCV/6961	EPA 8015 Modified	GCV/6962
92159930002	P47 SS-3 4-5'	ASTM D2974-87	PMST/5585		

REPORT OF LABORATORY ANALYSIS

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Client Name: Kleinfelder

Where Received: Huntersville Asheville Eden Raleigh

Carrier: Fed Ex UPS USPS Client Commercial Pace Other

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Packing Material: Bubble Wrap Bubble Bags None Other

Thermometer Used: IR Gun T1101 T1102 Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Temp Correction Factor T1101: No Correction T1102: No Correction

Corrected Cooler Temp.: 9.5 C Biological Tissue Is Frozen: Yes No N/A

Temp should be above freezing to 6°C

Comments:

Date and Initials of person examining contents: Comms - 5/31/13

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10. <u>Reva 1 vial broken for P59</u>
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. <u>(methanol vial)</u>
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:		
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

SCURF Review:

GW

Date:

9/31/13

SRF Review:

AMB

Date:

5/31/13

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

WO#: 92159930



92159930

CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Company: **Kleinfelder** Address: **Charlotte, NC**
 Section B Required Project Information: Report To: **Travis D Quinn** Copy To: **Craig Neil**
 Section C Invoice Information: Attention: **Craig Neil** Company Name: **Kleinfelder**
 Address: **WRS 36000, 11** Reference: **50591** Pace Project Manager: **gpt 5096-1**

Requested Due Date/TAT: **Std** Project Number: **134245** Project Name: **WCDOT-Wilkesboro**
 Purchased Order No.: **NC DOT - Wilkesboro** Site Location: **NC**
 Regulatory Agency: **UST** **GROUND WATER** **DRINKING WATER**
 Other: **Other** Pace Profile #:

Section D Required Client Information	Matrix Codes MATRIX / CODE	Matrix / CODE	Matrix Code (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB			H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other				
SAMPLE ID (A-Z, 0-9 / -)																			
P45	SS-1	14-15'	SL6	↑	5/24/13	12:22												001	
P47	SS-3	7-8'		↑	5/25/13	13:58												002	
P48	SS-4	9-10'		↑	5/29/13	09:38												003	
P51	SS-2	4-5'		↑	5/29/13	08:34												004	
P59	SS-4	14-15'		↑	5/30/13	08:54												005	

ADDITIONAL COMMENTS	REINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	T. Kleinfelder	5/30/13	13:10	Travis D Quinn - Pace	5-31-13	13:10	
	Travis D Quinn	5-31-13	13:36	Travis D Quinn	5/31/13	13:36	

ORIGINAL

SAMPLER NAME AND SIGNATURE: **Travis D Quinn**
 PRINT Name of SAMPLER: **Travis D Quinn**
 SIGNATURE of SAMPLER: **[Signature]**
 DATE Signed (MM/DD/YY): **5/30/13**

Temp in °C: _____
 Received on Ice (Y/N): _____
 Custody Sealed Cooler (Y/N): _____
 Samples Intact (Y/N): _____