

# **PRELIMINARY SITE ASSESSMENT**

**GLADE VALLEY – US HIGHWAY 21 SOUTH FROM ROARING GAP TO SPARTA  
PARCEL #197 PARKS A. DOWNING AND ANN S. DOWNING PROPERTY  
2471 US HIGHWAY 21 SOUTH  
GLADE VALLEY, ALLEGHANY COUNTY, NORTH CAROLINA**

**NCDOT WBS ELEMENT 37044.1.1  
STATE PROJECT R-3101**

**January 13, 2012**

**Prepared for:**

**Cyrus F. Parker, L.G., P.E.  
North Carolina Department of Transportation  
Geotechnical Engineering Unit  
GeoEnvironmental Section  
1589 Mail Service Center  
Raleigh, North Carolina 27699-1589**

**Prepared by:**

**Kleinfelder Southeast, Inc.  
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**Kleinfelder Project No. 123173**

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PROJECT FOR WHICH THIS REPORT WAS PREPARED.**



January 13, 2012  
123173 | CLT12R008

Cyrus F. Parker, L.G., P.E.  
North Carolina Department of Transportation  
1589 Mail Service Center  
Raleigh, North Carolina 27699-1589

Subject: **Preliminary Site Assessment**  
**WBS Element No. 37044.1.1, State Project R-3101**  
**Parcel #197, Parks A. Downing and Ann S. Downing Property**  
**2471 US Highway 21 South**  
**Glade Valley, Alleghany County, North Carolina**

Dear Mr. Parker:

Please find the enclosed report summarizing the sampling activities for the preliminary site assessment conducted at the referenced site. Laboratory analysis of soil samples collected at the site detected contaminant concentrations exceeding the State action levels in two of five samples. One sample also had an elevated reporting limit that was above the State Action levels. This report summarizes our field activities, results, laboratory report, and conclusions.

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 "Travis O'Quinn".

Travis O'Quinn  
Staff Professional I

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

Craig D Neil, P.G.  
Senior Professional

TLO/CDN:jc  
Enclosure

## PRELIMINARY SITE ASSESSMENT

**Site Name and Location:** Parcel #197 Parks A Downing and Ann S  
Downing Property  
2471 US Hwy 21 South  
Glade Valley, Alleghany County, North  
Carolina

**Latitude and Longitude:** 36° 29' 00.39" N, 81° 05' 23.61" W

**Facility ID Number:** None Identified

**NCDOT Project No.:** NCDOT WBS Element 37044.1.1  
State Project R-3101

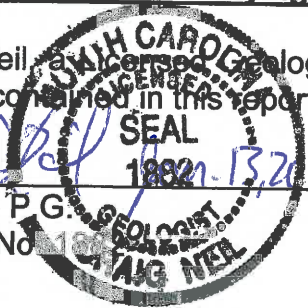
**Date of Report:** January 13, 2012

**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.  
NC License No. 10119



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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 Parks A. Downing and Ann S. Downing Property (Parcel 197) located at 2471 US Highway 21 South in Glade Valley, Alleghany County, North Carolina (Figure 1). This assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Kleinfelder's November 1, 2011 proposal.

NCDOT is proposing to widen US Highway 21 South (US 21) from Roaring Gap to Sparta. The proposed right-of-way includes a portion of Parcel 197 (Figure 2). Based on information provided by NCDOT, the site may have historically operated as a gasoline station. Therefore, 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 US 21 from Roaring Gap to Sparta.

### **1.1 Site Description**

The proposed right-of-way is approximately 15 to 20 feet on each side of the current US 21. At the time of our site reconnaissance, the site contained a vacant white wood siding building that was historically the People's Store. Based on the geophysical investigation no USTs were identified during their investigation. Site photographs are shown in Appendix A.

### **1.2 Site Location**

The facility is located at 2471 US Highway 21 South in Glade Valley, North Carolina. The property is bound to the north by wooded land with a residential development beyond. Wooded land is located to the east and west. The site is bound to the south by US 21 with farm land located beyond.

## 2.0 SITE ASSESSMENT

### 2.1 Geophysical Investigation

Pyramid Environmental & Engineering, P.C (Pyramid) conducted a geophysical investigation of the property on November 11, 2011. Pyramid utilized ground penetration radar (GPR) and electromagnetic (EM) induction technology to identify potential geophysical anomalies and potential USTs at the site. Pyramid did not identify metallic USTs during their site investigation. A copy of the Pyramid Geophysical Investigation Report is included in Appendix B. Prior to conducting soil borings, utilities were marked by NC One Call and Taylor Wiseman & Taylor (TWT).

### 2.2 Soil Sampling

To determine if contaminated soil may be encountered during the proposed construction activities, four soil samples were collected along the NCDOT proposed right-of-way. Kleinfelder met Probe Technology at the site on December 21, 2011. Probe Technology advanced four soil borings (SB-1 to SB-4) by direct push technology (DPT). The approximate location of the borings is shown on Figure 3. Copies of the boring logs are included in Appendix C.

Soil borings were advanced to a depth of ten feet below the ground surface (bgs) at each location. Soil borings SB-1 through SB-4 were located in front of the structure and along the proposed right-of-way. 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 laboratory analysis. If no organic vapors were detected, the sample collected from the bottom of the boring 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. The soil samples collected for laboratory analysis were analyzed for total petroleum hydrocarbons (TPH) similar to diesel and gasoline (DRO/GRO) using EPA Method 8015B following 3550 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 suspect metallic USTs within the survey area. Pyramid's report is included in Appendix B.

#### **3.2 Soil Sampling**

Diesel range organics (DRO) were detected at concentrations above the North Carolina action level for petroleum USTs (10 milligrams per kilogram (mg/kg)) in soil sample SB-1 (169 mg/kg) and SB-3 (10.8 mg/kg) approximately 2.5-5.0 feet bgs and 0.0-2.5 feet below ground surface (bgs), respectively. Also, SB-2 had an elevated detection limit (145 mg/kg) above the State action level, because the laboratory diluted the sample due to the presence of high levels on non-target analytes or matrix interference and the sample extract could not be concentrated to the routine final volume, resulting in an elevated reporting limit. Gasoline range organics (GRO) were not detected in soil samples above the laboratory detection limits or the North Carolina action level. The laboratory results are summarized in Table 2 and on Figure 3. The laboratory report and associated chain-of-custody document are included in Appendix D.

Based on laboratory analytical results and PID readings, petroleum impacted soils above the North Carolina action levels for petroleum USTs covers an area approximately 1,700 square feet (Figure 3). The contaminated soil extends vertically from the surface to approximately three to ten feet bgs. Based on these dimensions Kleinfelder estimates that there are approximately 500 cubic yards of impacted soil are located within the proposed right-of-way at the site.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

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

- ◆ The GPR and EM investigation did not detect suspect metallic USTs within the survey area.
- ◆ Groundwater was not encountered in the soil borings.
- ◆ GRO were not detected in borings above the laboratory detection limits and DRO were detected in boring SB-1 and SB-3 at concentrations above the North Carolina action level. Furthermore, SB-2 had an elevated reporting limit that was above the State Action levels.
- ◆ Approximately 500 cubic yards of contaminated soil was identified within the proposed right-of-way above the North Carolina action levels for petroleum USTs.

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

- ◆ If impacted soils are encountered during the road widening project, Kleinfelder recommends the soils be handled appropriately and disposed of at an approved disposal facility.



## 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**

<b>SAMPLE LOCATION</b>	<b>DEPTH (feet bgs)</b>	<b>PID READINGS</b>
SB-1	0.0 - 2.5	1.1
	2.5-5.0	<b>7.7</b>
	5.0-7.5	1.3
	7.5-10.0	0.0
SB-2	0.0 - 2.5	0.0
	2.5-5.0	0.0
	5.0-7.5	0.0
	7.5-10.0	<b>0.0</b>
SB-3	0.0 - 2.5	<b>1.1</b>
	2.5-5.0	0.0
	5.0-7.5	0.0
	7.5-10.0	0.0
SB-4	0.0 - 2.5	0.4
	2.5-5.0	0.1
	5.0-7.5	0.0
	7.5-10.0	<b>0.0</b>

**Notes:**

Samples were collected on December 21, 2011.

Readings reported in parts per million

feet bgs = feet below ground surface

**Bold** = Selected for laboratory analysis

**TABLE 2: SOIL SAMPLE ANALYTICAL SUMMARY**

<b>SAMPLE ID</b>	<b>DEPTH</b>	<b>COLLECTION DATE</b>	<b>DRO</b>	<b>GRO</b>
SB-1	2.5-5.0	12/21/2011	<b>169</b>	<6.3
SB-2	7.5-10.0	12/21/2011	<145	<5.8
SB-3	0.0-2.5	12/21/2011	<b>10.8</b>	<6.7
SB-4	7.5-10.0	12/21/2011	<6.0	<6.8
State Action Level (Petroleum UST)			10	10
State Action Level (Petroleum non- UST)			40	10

Notes:

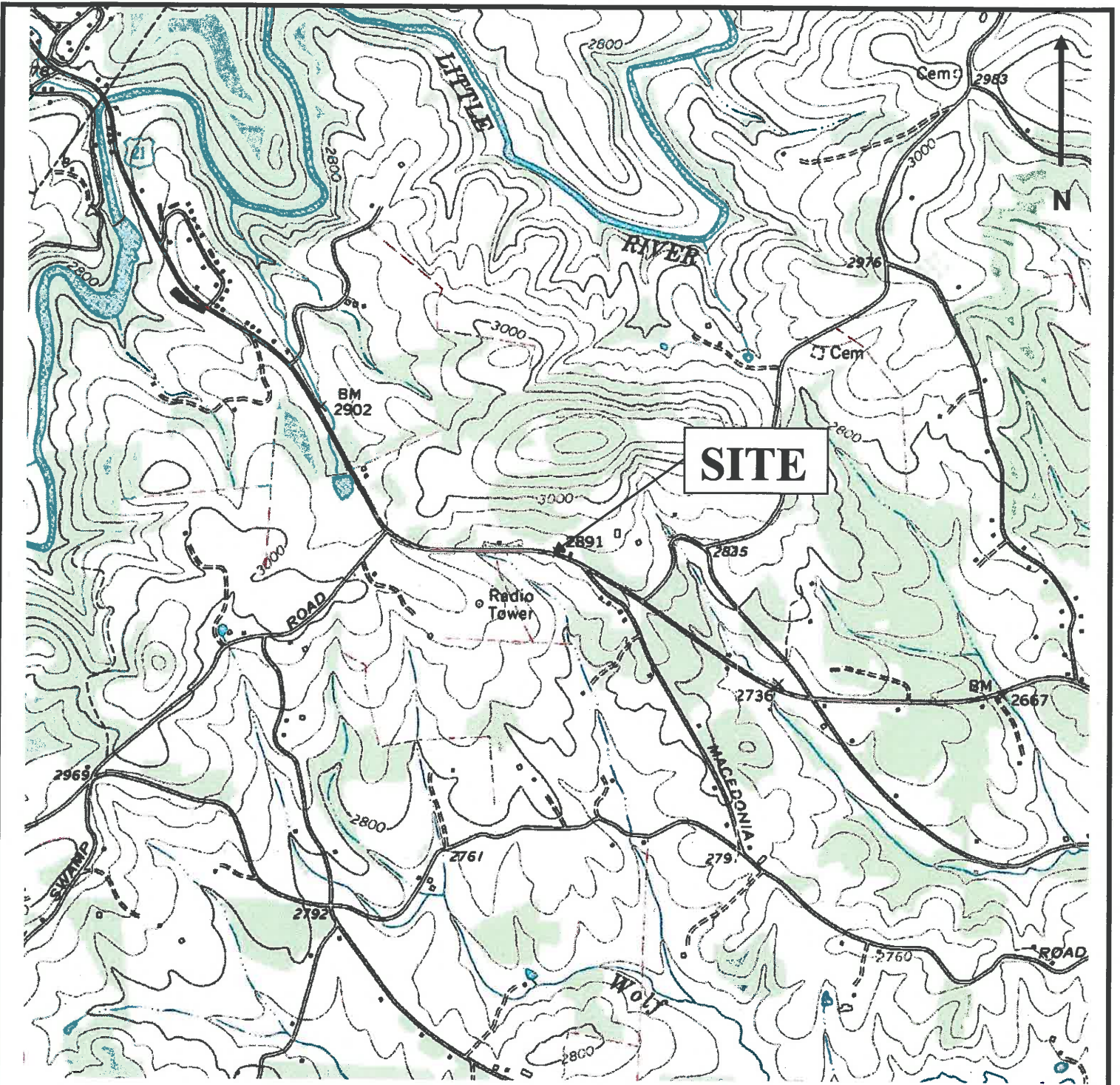
Results presented in milligrams per kilogram, analogous to parts per million

DRO = Diesel Range Organics

GRO = Gasoline Range Organics

**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 #197 – PARKS A. DOWNING  
 AND ANN S. DOWNING PROPERTY  
 2471 US HWY 21 SOUTH  
 GLADE VALLEY, NORTH CAROLINA**

DATE: 1/5/2012

APPROVED BY:

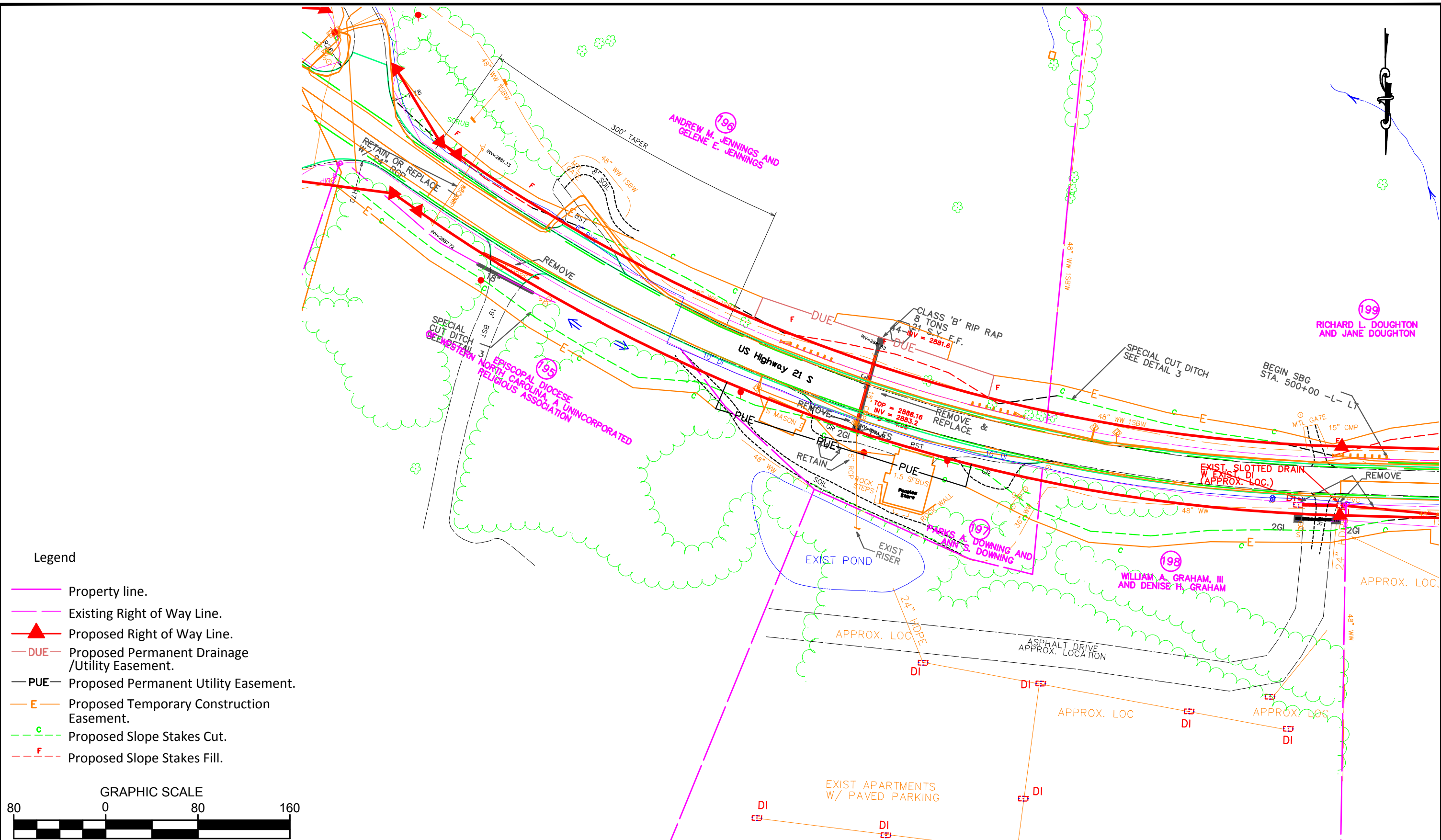
*CDN*

SCALE: as shown

SOURCE: USGS Topographic  
 Orthophoto Map, NC Glade Valley 1968

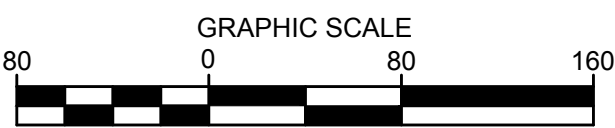
PROJECT NO: 123173

ATTACHED IMAGES: XRef: R3101\_ddc\_DRN\_110701.ddc XRef: r3101\_ddc\_ss\_shifted\_I-090624: XRef: r3101\_ddc\_dsn\_090611: XRef: r3101\_is\_pml\_081022: XRef: r3101\_is\_prl\_060321: XRef: r3101\_is\_sue\_060321  
 ATTACHED XREFS: XRef: r3101\_ddc\_ENVIRONMENTAL\Projects\Active Projects\123173\_Spartan\CD\1R3101\Figures\O\182-197\182-197\_Greensboro\general\CAD FILE: W:\share\ENVIRONMENTAL\Projects\Active Projects\123173\_Spartan\CD\1R3101\Figures\O\182-197\182-197\_Greensboro\general



**Legend**

- Property line.
- Existing Right of Way Line.
- Proposed Right of Way Line.
- DUE - Proposed Permanent Drainage /Utility Easement.
- PUE - Proposed Permanent Utility Easement.
- E - Proposed Temporary Construction Easement.
- C - Proposed Slope Stakes Cut.
- F - Proposed Slope Stakes Fill.



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PROJECT NO.	123173
DRAWN:	APR 2012
DRAWN BY:	AB
CHECKED BY:	TO
FILE NAME:	Parcel 182-197_042012.dwg

<b>SITE LOCATION MAP</b>
<b>Parcel # 197</b> <b>Parks A. &amp; Ann S. Downing Property</b>
NCDOT WBS ELEMENT 37044.1.1 STATE PROJECT R-3101 2471 US Hwy 21 South GLADE VALLEY, NORTH CAROLINA

FIGURE  
**2**





## **APPENDIX A**

**SITE PHOTOGRAPHS  
KLEINFELDER PROJECT NO. 123173  
PARCEL NO. 197**



**Photograph 1** View of the site from west looking east.



**Photograph 2** View of the proposed right-of-way from the west looking east.

## **APPENDIX B**

**GEOPHYSICAL INVESTIGATION REPORT**

***EM61 SURVEY***

**PARKS & ANN DOWNING PROPERTY (PARCEL 197)**

**2471 US Highway 21 South**

**Glade Valley, North Carolina**

**State Project R-3101 WBS Element 37044.1.1**

**December 13, 2011**

**Report prepared for: NC Department of Transportation  
GeoTechnical Engineering Unit  
GeoEnvironmental Section  
1589 Mail Service Center  
Raleigh, North Carolina 27699-1589**

**Prepared by:**   
**Mark J. Denil, P.G.**

**Reviewed by:**   
**Douglas Canavello, P.G.**

**PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.  
P.O. Box 16265  
GREENSBORO, NC 27416-0265  
(336) 335-3174**

**NC Department of Transportation  
GEOPHYSICAL INVESTIGATION REPORT  
PARKS & ANN DOWNING PROPERTY (PARCEL 197)  
2471 US Highway 21 South  
Glade Valley, North Carolina  
State Project R-2612B WBS Element 34483.1.1**

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FIGURES

- Figure 1            Geophysical Equipment & Site Photographs
- Figure 2            EM61 Metal Detection Results

## **1.0 INTRODUCTION**

Pyramid Environmental conducted a geophysical investigation for the North Carolina Department of Transportation (NCDOT) – Geotechnical Unit across the proposed right-of-way (ROW) area at the Parks and Ann Downing property (Parcel 197) located at 2471 US Highway 21 South near Glade Valley, North Carolina. Conducted on November 11, 2011, the geophysical investigation was performed as part of the NCDOT preliminary site assessment for the US Highway 21 from Roaring Gap to Sparta project (State Project R-3101, WBS Element – 37044.1.1), to determine if unknown, metallic, underground storage tanks (USTs) were present beneath the proposed ROW area of the property

The Parks and Ann Downing property consists of a residential building (used as an antique shop) and a church building. An asphalt parking area lies between the buildings and US Highway 21. Grass yards surround the remaining sides of the buildings. The proposed ROW area includes the portion of the property that lies between US Highway 21 and the buildings. The geophysical survey area has a maximum length and width of 280 feet and 30 feet, respectively.

NCDOT representative Mr. Ethan J. Caldwell, LG, PE provided site information which identified the geophysical survey area to Pyramid Environmental personnel during the week of October 17, 2011. Photographs of the geophysical equipment used in this investigation and the geophysical survey area of the Downing property are shown in **Figure 1**.

## **2.0 FIELD METHODOLOGY**

Prior to conducting the geophysical investigation, a 10-foot by 20-foot survey grid was established across the geophysical survey area using measuring tapes, pin flags 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 surveys. The EM survey was performed on November 11, 2011 using a Geonics EM61-MK1 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 northwesterly-southeasterly 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 DAT61W and Surfer for Windows Version 7.0 software programs.

Preliminary geophysical results obtained from the site were emailed to Kleinfelder representative Mr. Craig Neal, PG during the week of November 21, 2011.

### **3.0 DISCUSSION OF RESULTS**

Contour plots of the EM61 bottom coil and differential results 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.

The high-amplitude EM61 anomalies centered near grid coordinates X=165 Y=30 and X=210 Y=37 are probably in response to a storm sewer grate and a portion of the church building, respectively. The EM61 anomalies centered near grid coordinates X=255 Y=24 and X=269 Y=32 are probably in response to a utility line box and a utility pole, respectively. The remaining EM61 anomalies are probably in response to known surface objects or buried, miscellaneous, metal debris.

Due to the absence of unexplained EM61 differential anomalies, ground penetrating radar scans were not conducted at the Parks and Ann Downing property. The EM61 metal detection results

suggest that the proposed ROW area (geophysical survey area) at this site does not contain buried, metallic USTs.

#### **4.0 SUMMARY & CONCLUSIONS**

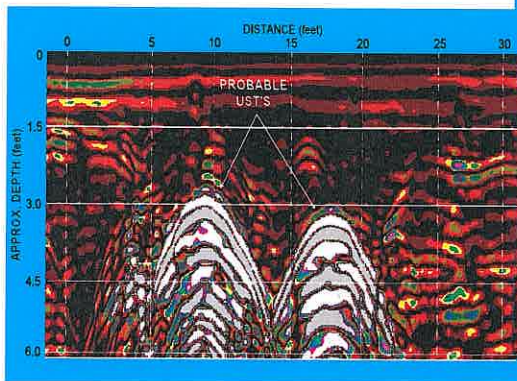
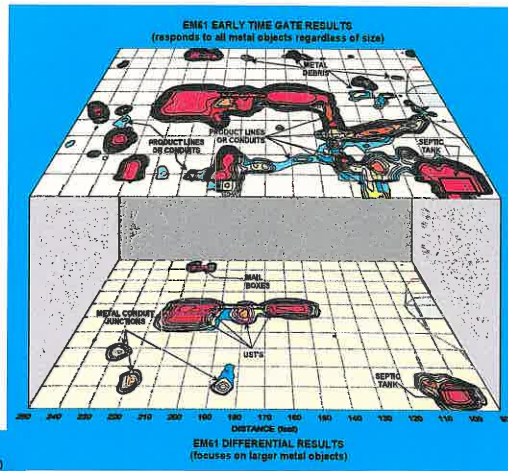
Our evaluation of the EM61 data collected across the proposed ROW area at the Parks and Ann Downing property (Parcel 197) located at 2471 US Highway 21 South near Glade Valley, North Carolina, provides the following summary and conclusions:

- The EM61 surveys provided reliable results for the detection of metallic USTs within the accessible portions of the proposed ROW area of the site.
- The high-amplitude EM61 anomalies centered near grid coordinates X=165 Y=30 and X=210 Y=37 are probably in response to a storm sewer grate and a portion of the church building, respectively.
- The remaining EM61 anomalies are probably in response to known surface objects or buried, miscellaneous, metal debris.
- The EM61 metal detection results suggest that the proposed ROW area (geophysical survey area) at this site does not contain buried, metallic USTs.

#### **5.0 LIMITATIONS**

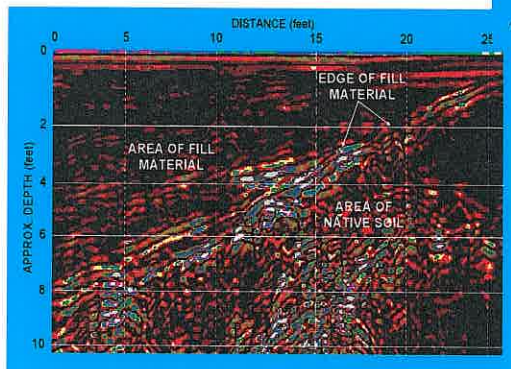
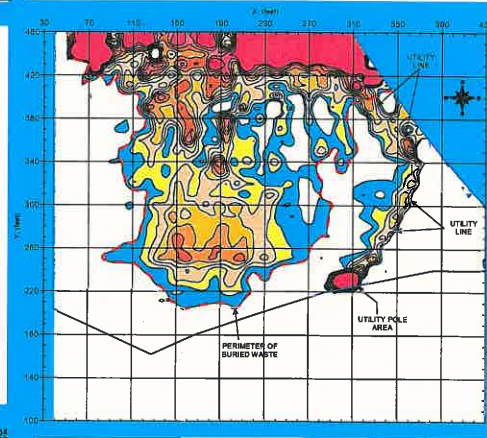
EM61 surveys have been performed and this report prepared for the NCDOT in accordance with generally accepted guidelines for EM61 surveys. It is generally recognized that the results of the EM61 survey are non-unique and may not represent actual subsurface conditions. The EM61 results obtained for this project have not conclusively determined that the surveyed portion of the site does not contain buried metallic USTs but that none were detected.





**FIGURES**  
(on the following pages)

Figures shown on this page are for esthetic purposes only and are not related to the geophysical results discussed in this report.





The photograph shows the Geonics EM61 metal detector that was used to conduct the metal detection survey across the proposed Right-of-Way area at Parcel 197 on November 11, 2011. Due to an absence of unexplained EM61 differential anomalies, ground penetrating radar scans were not performed at this site.

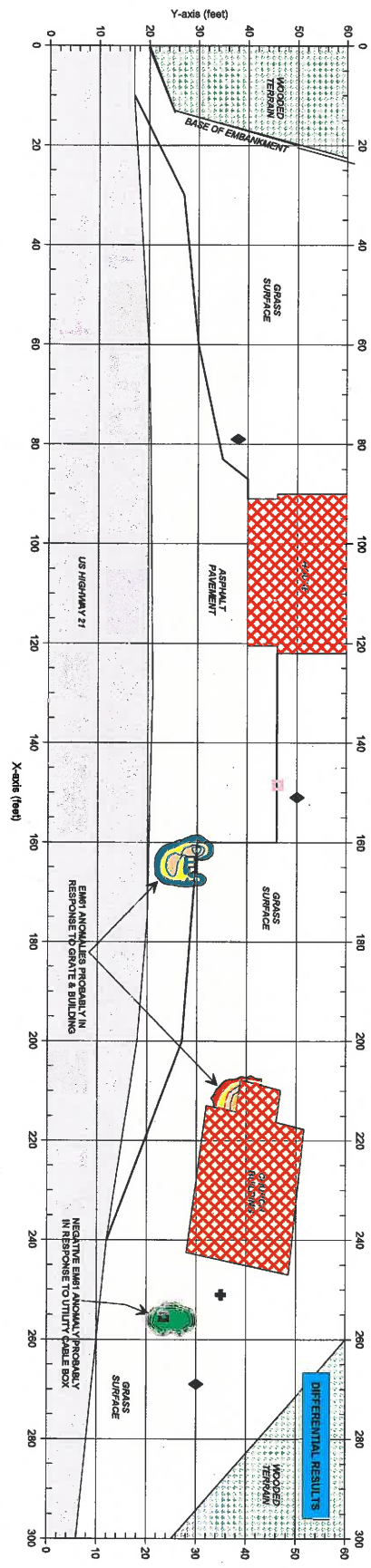
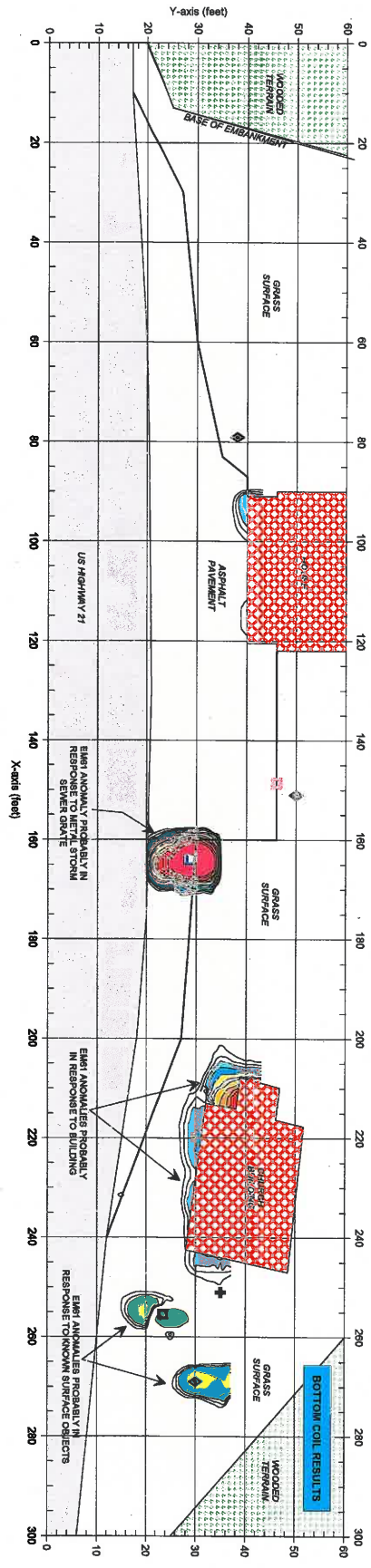


The photograph shows the front portion of the Parks and Ann Downing property (Parcel 197) located at 2471 US Highway 21 South, near Glade Valley, North Carolina. The geophysical investigation was performed across the front portion of the property. The photograph is viewed in an easterly direction.



CLIENT	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		DATE	12/13/11	BY	MJD
SITE	PARKS & ANN DOWNING PROPERTY (PARCEL 197)		SCALE		SPRNG	
CITY	GLADE VALLEY	STATE	NORTH CAROLINA	DATE		
TITLE	GEOPHYSICAL RESULTS		NO. 2011-267	PLANS		

GEOPHYSICAL EQUIPMENT  
& SITE PHOTOGRAPHS



- LEGEND**
- SURVEY AREA, EM61 OR GPR DATA
  - CONCRETE FOUNDATION TRENCHING
  - LINES BASED ON FIELD VISUALS
  - BUILDING
  - VEHICLE
  - WOODED TERRAIN
  - STORM SEWER COVER
  - WATER METER COVER
  - ◆ UTILITY POLE
  - ◆ GUY WIRE
  - ◆ METAL POLE
  - ◆ FIBER OPTICS LINE MARKER
  - ◆ UTILITY LINE CABLE BOX



The contour plot shows the bottom coil (most sensitive) and differential results of the EM61 instrument in red/black (GND). The bottom coil results are the most sensitive and are shown 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 November 11, 2011 using a Geonics EM61 instrument. Due to an absence of unexplained EM61 differential anomalies, Ground penetrating radar (GPR) scans were not performed at this site.

The geophysical investigation suggests the proposed Right-of-Way area does not contain metallic USTs.



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		DATE	12/13/11
PARKS & ANN DOWNING PROPERTY (PARCEL 197)		DRAWN	MJD
GLADE VALLEY	NORTH CAROLINA	CHECKED	
GEOPHYSICAL RESULTS		PROJECT	2011-267

EM61 METAL DETECTION RESULTS

FIGURE 2

## **APPENDIX C**

Client NCDOT  
 Project Name Sparta PSAs  
 Number 123173 Task 1  
 Location Parcel 197


Drill Contractor Geoprobe Technology  
 Drill Method Geoprobe  
 Drilling Started 12/20/11 Ended 12/20/11  
 Logged By A. Bauser

**LOG OF BORING SB-1/197**  
 SHEET 1 OF 1

Elevation -  
 Total Depth 10.0

DEPTH FEET	SAMPLE NO.	BLOWS/FT	PID ppm	USCS	LITHOLOGY	DESCRIPTION	DEPTH FEET
1.1						ASPHALT - 2 inches	
7.7	SS			SP		SAND with Silt, Trace Fine Subangular Gravel, Yellow-Orange, Mica, Slightly Moist, Non Plastic	5
1.3							
0.0				SM		Silty SAND, Brown, Slightly Moist, Non Plastic, Fine Sand	
Boring Terminated at 10 feet in RESIDUAL							10

LOG A EWMN05 SPARTA.GPJ LOG A EWMN05.GDT 1/12/12



**Kleinfelder**  
 313 Gallimore Dairy Road  
 Greensboro, NC 27409  
 Telephone: 336-668-0093  
 Fax: 336-668-3868

Remarks Sample collected from 2.5-5.0 ft. submitted for laboratory analysis

See key sheet for symbols and abbreviations used above.

Client NCDOT  
 Project Name Sparta PSAs  
 Number 123173 Task 1  
 Location Parcel 197

Drill Contractor Geoprobe Technology  
 Drill Method Geoprobe  
 Drilling Started 12/20/11 Ended 12/20/11  
 Logged By A. Bauser

**LOG OF BORING SB-2/197**  
 SHEET 1 OF 1

Elevation       
 Total Depth 10.0

DEPTH FEET	SAMPLE NO.	BLOWS/FT	PID ppm	USCS	LITHOLOGY	DESCRIPTION	DEPTH FEET
0.0			0.0	SP	ASPHALT - 2 inches		
0.0			0.0	SP	SAND with Silt and Mica, Pink, Fine Sand, Non Plastic, Slightly Moist		
5.0			0.0	GP	Poorly Graded GRAVEL with Sand, Dark Gray and Brown, Fine to Coarse Angular Gravel		5
0.0			0.0	SP	SAND, Brown-Orange with Mica Silt and Gravel		
0.0			0.0	SM	Silty SAND, Orange-Brown, Fine Sand, Slightly Moist		
0.0			0.0	SP	SAND with Silt and Mica, Yellow-Brown, Fine to Coarse Sand, Non Plastic, Slightly Moist		
10.0	SS					Boring Terminated at 10 feet in RESIDUAL	10
15.0							15
20.0							20
25.0							25
30.0							30

LOG A EWIN05 SPARTA.GPJ LOG A EWIN05.GDT 1/12/12



**Kleinfelder**  
 313 Gallimore Dairy Road  
 Greensboro, NC 27409  
 Telephone: 336-668-0093  
 Fax: 336-668-3868

Remarks Sample collected from 7.5-10.0 ft. submitted for laboratory analysis

See key sheet for symbols and abbreviations used above.

Client NCDOT  
 Project Name Sparta PSAs  
 Number 123173 Task 1  
 Location Parcel 197

Drill Contractor Geoprobe Technology  
 Drill Method Geoprobe  
 Drilling Started 12/20/11 Ended 12/20/11  
 Logged By A. Bauser

**LOG OF BORING SB-3/197**  
 SHEET 1 OF 1

Elevation --  
 Total Depth 10.0

DEPTH FEET	SAMPLE NO.	BLOWS/FT	PID ppm	USCS	LITHOLOGY	DESCRIPTION	DEPTH FEET
0.0 - 0.5	SS		1.1	GP	Gray GRAVEL, Fine to Coarse Angular, Non Plastic, Dry		0.0 - 0.5
0.5 - 2.5			0.0	SM	Silty SAND, Brown to Red-Brown, Fine to Coarse Sand, Non Plastic, Slightly Moist, with Gravel		0.5 - 2.5
2.5 - 10.0			0.0	SP	SAND with Silt and Mica, Red, Non Plastic, Fine to Coarse Sand, Slightly Moist		2.5 - 10.0
Boring Terminated at 10 feet in RESIDUAL							10.0

LOG A EWNN05 SPARTA.GPJ LOG A EWNN05.GDT 1/12/12



**Kleinfelder**  
 313 Gallimore Dairy Road  
 Greensboro, NC 27409  
 Telephone: 336-668-0093  
 Fax: 336-668-3868

Remarks Sample collected from 0.0-2.5 ft. submitted for laboratory analysis

See key sheet for symbols and abbreviations used above.

Client NCDOT  
 Project Name Sparta PSAs  
 Number 123173 Task 1  
 Location Parcel 197


Drill Contractor Geoprobe Technology  
 Drill Method Geoprobe  
 Drilling Started 12/20/11 Ended 12/20/11  
 Logged By A. Bauser

**LOG OF BORING SB-4/197**  
 SHEET 1 OF 1

Elevation --  
 Total Depth 10.0

DEPTH FEET	SAMPLE NO.	BLOWS/FT	PID ppm	USCS	LITHOLOGY	DESCRIPTION	DEPTH FEET
5			0.4	SP	GRAVEL, Gray, Fine to Coarse Angular		5
					SAND with Gravel, Orange-Brown, Fine Gravel		
					SAND with Silt, Orange-Brown, Fine to Coarse Sand, Non Plastic, Slightly Moist with Mica		
				SM	Silty SAND, Red-Brown, Fine Sand, Non Plastic, Slightly Moist with Mica		
5			0.1	SP	SAND with Silt, Fine to Coarse, Orange-Brown with Mica		5
10	SS		0.0		Partially Weathered Rock, Friable, Decomposed Rock, Tan-Yellow Sand Fine to Coarse Silt and Mica		10
Boring Terminated at 10 feet in RESIDUAL							10
15							15
20							20
25							25
30							30

LOG A EWMN05 SPARTA.GPJ LOG A EWMN05.GDT 1/12/12



**Kleinfelder**  
 313 Gallimore Dairy Road  
 Greensboro, NC 27409  
 Telephone: 336-668-0093  
 Fax: 336-668-3868

Remarks Sample collected from 7.5-10.0 ft. submitted for laboratory analysis

See key sheet for symbols and abbreviations used above.



## **APPENDIX D**



Pace Analytical Services, Inc.  
205 East Meadow Road - Suite A  
Eden, NC 27288  
(336)623-8921

Pace Analytical Services, Inc.  
2225 Riverside Dr.  
Asheville, NC 28804  
(828)254-7176

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

December 29, 2011

Chemical Testing Engineer  
NCDOT  
Materials & Tests Unit  
1801 Blue Ridge Road  
Raleigh, NC 27607

RE: Project: Parcel 197 WSB 37044.1.1  
Pace Project No.: 92109103

Dear Chemical Engineer:

Enclosed are the analytical results for sample(s) received by the laboratory on December 22, 2011. 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,

Charles Hardin

charles.hardin@pacelabs.com  
Project Manager

Enclosures

cc: Mr. Peter Pozzo, Kleinfelder, Inc.



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: Parcel 197 WSB 37044.1.1  
Pace Project No.: 92109103

### Charlotte Certification IDs

9800 Kinsey 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  
South Carolina Drinking Water Cert. #: 99006003  
Virginia Drinking Water Certification #: 00213

Connecticut Certification #: PH-0104  
Florida/NELAP Certification #: E87627  
Kentucky UST Certification #: 84  
Louisiana DHH Drinking Water # LA 100031  
West Virginia Certification #: 357  
Virginia/VELAP Certification #: 460144

## REPORT OF LABORATORY ANALYSIS

Page 2 of 13

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### SAMPLE SUMMARY

Project: Parcel 197 WSB 37044.1.1  
Pace Project No.: 92109103

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92109103001	SB-1 (197)	Solid	12/21/11 12:40	12/22/11 16:35
92109103002	SB-2 (197)	Solid	12/21/11 12:45	12/22/11 16:35
92109103003	SB-3 (197)	Solid	12/21/11 12:50	12/22/11 16:35
92109103004	SB-4 (197)	Solid	12/21/11 12:55	12/22/11 16:35

### REPORT OF LABORATORY ANALYSIS



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**SAMPLE ANALYTE COUNT**

Project: Parcel 197 WSB 37044.1.1  
 Pace Project No.: 92109103

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92109103001	SB-1 (197)	EPA 8015 Modified	RES	2	PASI-C
		EPA 8015 Modified	AW	2	PASI-C
		ASTM D2974-87	JEA	1	PASI-C
92109103002	SB-2 (197)	EPA 8015 Modified	RES	2	PASI-C
		EPA 8015 Modified	AW	2	PASI-C
		ASTM D2974-87	JEA	1	PASI-C
92109103003	SB-3 (197)	EPA 8015 Modified	RES	2	PASI-C
		EPA 8015 Modified	AW	2	PASI-C
		ASTM D2974-87	JEA	1	PASI-C
92109103004	SB-4 (197)	EPA 8015 Modified	RES	2	PASI-C
		EPA 8015 Modified	AW	2	PASI-C
		ASTM D2974-87	JEA	1	PASI-C

**REPORT OF LABORATORY ANALYSIS**

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**ANALYTICAL RESULTS**

Project: Parcel 197 WSB 37044.1.1  
 Pace Project No.: 92109103

Sample: SB-1 (197) Lab ID: 92109103001 Collected: 12/21/11 12:40 Received: 12/22/11 16:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8015 GCS THC-Diesel</b>		Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546							
Diesel Components	169 mg/kg		145	130	5	12/27/11 10:09	12/28/11 19:59	68334-30-5	D3,P3
<b>Surrogates</b>									
n-Pentacosane (S)	0 %		41-119		5	12/27/11 10:09	12/28/11 19:59	629-99-2	S4
<b>Gasoline Range Organics</b>		Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B							
Gasoline Range Organics	ND mg/kg		6.3	6.3	1	12/28/11 10:29	12/28/11 13:08	8006-61-9	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	110 %		70-167		1	12/28/11 10:29	12/28/11 13:08	460-00-4	
<b>Percent Moisture</b>		Analytical Method: ASTM D2974-87							
Percent Moisture	14.1 %		0.10	0.10	1		12/23/11 14:33		



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**ANALYTICAL RESULTS**

Project: Parcel 197 WSB 37044.1.1  
 Pace Project No.: 92109103

**Sample: SB-2 (197)** Lab ID: 92109103002 Collected: 12/21/11 12:45 Received: 12/22/11 16:35 Matrix: Solid

*Results reported on a "dry-weight" basis*

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8015 GCS THC-Diesel</b>									
Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546									
Diesel Components	ND	mg/kg	145	130	5	12/27/11 10:09	12/28/11 19:59	68334-30-5	D3,P3
<b>Surrogates</b>									
n-Pentacosane (S)	0 %		41-119		5	12/27/11 10:09	12/28/11 19:59	629-99-2	S4
<b>Gasoline Range Organics</b>									
Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B									
Gasoline Range Organics	ND	mg/kg	5.8	5.8	1	12/28/11 10:29	12/28/11 14:20	8006-61-9	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	97 %		70-167		1	12/28/11 10:29	12/28/11 14:20	460-00-4	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	14.8 %		0.10	0.10	1		12/23/11 14:33		



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### ANALYTICAL RESULTS

Project: Parcel 197 WSB 37044.1.1  
 Pace Project No.: 92109103

Sample: SB-3 (197) Lab ID: 92109103003 Collected: 12/21/11 12:50 Received: 12/22/11 16:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8015 GCS THC-Diesel</b>									
Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546									
Diesel Components	10.8	mg/kg	6.1	5.5	1	12/27/11 10:09	12/28/11 20:29	68334-30-5	
<b>Surrogates</b>									
n-Pentacosane (S)	84	%	41-119		1	12/27/11 10:09	12/28/11 20:29	629-99-2	
<b>Gasoline Range Organics</b>									
Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B									
Gasoline Range Organics	ND	mg/kg	6.7	6.7	1	12/28/11 10:29	12/28/11 14:44	8006-61-9	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	99	%	70-167		1	12/28/11 10:29	12/28/11 14:44	460-00-4	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	17.2	%	0.10	0.10	1		12/23/11 14:33		





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**ANALYTICAL RESULTS**

Project: Parcel 197 WSB 37044.1.1  
 Pace Project No.: 92109103

Sample: SB-4 (197) Lab ID: 92109103004 Collected: 12/21/11 12:55 Received: 12/22/11 16:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
<b>8015 GCS THC-Diesel</b>									
Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546									
Diesel Components	ND	mg/kg	6.0	5.4	1	12/27/11 10:09	12/28/11 20:29	68334-30-5	
<b>Surrogates</b>									
n-Pentacosane (S)	67	%	41-119		1	12/27/11 10:09	12/28/11 20:29	629-99-2	
<b>Gasoline Range Organics</b>									
Analytical Method: EPA 8015 Modified Preparation Method: EPA 5035A/5030B									
Gasoline Range Organics	ND	mg/kg	6.8	6.8	1	12/28/11 10:29	12/28/11 15:12	8006-61-9	
<b>Surrogates</b>									
4-Bromofluorobenzene (S)	92	%	70-167		1	12/28/11 10:29	12/28/11 15:12	460-00-4	
<b>Percent Moisture</b>									
Analytical Method: ASTM D2974-87									
Percent Moisture	17.4	%	0.10	0.10	1		12/23/11 14:33		



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**QUALITY CONTROL DATA**

Project: Parcel 197 WSB 37044.1.1  
 Pace Project No.: 92109103

QC Batch: GCV/5643 Analysis Method: EPA 8015 Modified  
 QC Batch Method: EPA 5035A/5030B Analysis Description: Gasoline Range Organics  
 Associated Lab Samples: 92109103001, 92109103002, 92109103003, 92109103004

METHOD BLANK: 704788 Matrix: Solid  
 Associated Lab Samples: 92109103001, 92109103002, 92109103003, 92109103004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	5.9	12/28/11 12:43	
4-Bromofluorobenzene (S)	%	104	70-167	12/28/11 12:43	

LABORATORY CONTROL SAMPLE: 704789

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	24.4	25.8	106	70-165	
4-Bromofluorobenzene (S)	%			94	70-167	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 704790 704791

Parameter	Units	92109103001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max		Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result				RPD	RPD	
Gasoline Range Organics	mg/kg	ND	26.2	29.6	26.2	34.1	111	128	47-187	14	30	
4-Bromofluorobenzene (S)	%						97	109	70-167			



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**QUALITY CONTROL DATA**

Project: Parcel 197 WSB 37044.1.1  
 Pace Project No.: 92109103

QC Batch: OEXT/16011 Analysis Method: EPA 8015 Modified  
 QC Batch Method: EPA 3546 Analysis Description: 8015 Solid GCSV  
 Associated Lab Samples: 92109103001, 92109103002, 92109103003, 92109103004

METHOD BLANK: 704485 Matrix: Solid  
 Associated Lab Samples: 92109103001, 92109103002, 92109103003, 92109103004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Components	mg/kg	ND	5.0	12/28/11 17:28	
n-Pentacosane (S)	%	79	41-119	12/28/11 17:28	

LABORATORY CONTROL SAMPLE: 704486

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Components	mg/kg	66.7	54.2	81	49-113	
n-Pentacosane (S)	%			82	41-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 704487 704488

Parameter	Units	92109101003		704488		MS % Rec	MSD % Rec	% Rec Limits	Max		Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result				MSD Result	RPD		RPD
Diesel Components	mg/kg	12.0	86	85.6	68.3	74.3	66	73	10-146	8	30	
n-Pentacosane (S)	%						80	83	41-119			



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**QUALITY CONTROL DATA**

Project: Parcel 197 WSB 37044.1.1  
 Pace Project No.: 92109103

QC Batch: PMST/4411 Analysis Method: ASTM D2974-87  
 QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture  
 Associated Lab Samples: 92109103001, 92109103002, 92109103003, 92109103004

SAMPLE DUPLICATE: 703868

Parameter	Units	92109101002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	14.1	11.9	17	25	

SAMPLE DUPLICATE: 703869

Parameter	Units	92109110004 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.4	12.0	3	25	



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## QUALIFIERS

Project: Parcel 197 WSB 37044.1.1  
Pace Project No.: 92109103

### 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.

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.

### LABORATORIES

PASI-C Pace Analytical Services - Charlotte

### ANALYTE QUALIFIERS

- D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- P3 Sample extract could not be concentrated to the routine final volume, resulting in elevated reporting limits.
- S4 Surrogate recovery not evaluated against control limits due to sample dilution.



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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Parcel 197 WSB 37044.1.1  
Pace Project No.: 92109103

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92109103001	SB-1 (197)	EPA 3546	OEXT/16011	EPA 8015 Modified	GCSV/11124
92109103002	SB-2 (197)	EPA 3546	OEXT/16011	EPA 8015 Modified	GCSV/11124
92109103003	SB-3 (197)	EPA 3546	OEXT/16011	EPA 8015 Modified	GCSV/11124
92109103004	SB-4 (197)	EPA 3546	OEXT/16011	EPA 8015 Modified	GCSV/11124
92109103001	SB-1 (197)	EPA 5035A/5030B	GCV/5643	EPA 8015 Modified	GCV/5644
92109103002	SB-2 (197)	EPA 5035A/5030B	GCV/5643	EPA 8015 Modified	GCV/5644
92109103003	SB-3 (197)	EPA 5035A/5030B	GCV/5643	EPA 8015 Modified	GCV/5644
92109103004	SB-4 (197)	EPA 5035A/5030B	GCV/5643	EPA 8015 Modified	GCV/5644
92109103001	SB-1 (197)	ASTM D2974-87	PMST/4411		
92109103002	SB-2 (197)	ASTM D2974-87	PMST/4411		
92109103003	SB-3 (197)	ASTM D2974-87	PMST/4411		
92109103004	SB-4 (197)	ASTM D2974-87	PMST/4411		



# 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:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Kleinfelder	Report To:	Travis O'Quinn	Company Name:	NCDOT
Address:	Charlotte, NC	Copy To:	Craig Neil	Address:	
Email To:	toquinn@kleinfelder.com	Purchase Order No.:		Price Quote Reference:	WSB 37044.1.1
Phone:		Project Name:	NCDOT Parcel 197	Price Project Manager:	
Requested Due Date/TAT:	STD	Project Number:	123778	Price Profile #:	
Regulatory Agency:			REGULATORY AGENCY		
<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER			Site Location: _____ STATE: <u>NC</u>		

Page: 1 of 1  
1473260

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	SAMPLE CONDITIONS
				COMPOSITE START	COMPOSITE END/GRAB							
	Matrix Codes Drinking Water Waste Water Product Soil/Solid Oil Wipe Air Tissue Other	DW WT WW P SL OL WP AR TS OT		DATE	TIME	DATE	TIME	H <sub>2</sub> SO <sub>4</sub> HNO <sub>3</sub> HCl NaOH Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> Methanol Other				Temp in °C
1	SB-1 (197)		G	12/21/11	12:40		15					
2	SB-2 (197)		G	12/22/11	12:45		16					
3	SB-3 (197)		G		12:50		16					
4	SB-4 (197)		G		12:55		16					
5												
6												
7												
8												
9												
10												
11												
12												

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
<i>[Signature]</i>	12/21/11	15:40	<i>[Signature]</i>	12/22/11	15:40
<i>[Signature]</i>	12/22/11	16:35	<i>[Signature]</i>	12/22/11	16:35
ADDITIONAL COMMENTS					
ORIGINAL					
SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER: Travis O'Quinn			DATE Signed (MM/DD/YYYY): 12/21/11		
SIGNATURE of SAMPLER: <i>[Signature]</i>			DATE Signed (MM/DD/YYYY): 12/21/11		
Received on	Temp in °C	Ice (Y/N)	Custody	Sealed Cooler	Samples Intact
16357.9	4	N	Y	Y	Y



Document Name:  
**Sample Condition Upon Receipt (SCUR)**  
 Document Number:  
**F-CHR-CS-03-rev.05**

Document Revised: July 29, 2011  
 Page 1 of 2  
 Issuing Authority:  
 Pace Huntersville Quality Office

Client Name: Kleinberg Project # 92109103

Where Received:  Huntersville  Asheville  Eden

Courier:  Fed Ex  UPS  USPS  Client  Commercial  Pace Other \_\_\_\_\_

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

Optional:  
 Prof. Due Date  
 Prof. Name

Packing Material:  Bubble Wrap  Bubble Bags  None  Other \_\_\_\_\_

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

Temp Correction Factor Add / Subtract 0 °C

Corrected Cooler Temp.: 1.9 C Biological Tissue is Frozen: Yes No N/A

Date and initials of person examining contents: 12/22/11

Temp should be above freezing to 6°C

Comments:

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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10. <u>Received one broken vial for VPH method</u>
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. <u>1 broken vial method</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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
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 type="checkbox"/> No	Initial when completed
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: CAH

Date: 12/22/11

SRF Review: Vlt

Date: 12/23/11

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)