

PRELIMINARY SITE ASSESSMENT

**PARCEL #19, B&B FOOD MART
3921 LEGION ROAD, HOPE MILLS, NORTH CAROLINA**

**FAYETTEVILLE – SR 1132 (LEGION ROAD) FROM SR 1363 (ELK ROAD)
TO SR 1007 (OWEN ROAD)
CUMBERLAND COUNTY, NORTH CAROLINA**

**NCDOT WBS ELEMENT 34865.2.3
STATE PROJECT U-2809B**

December 20, 2010

Prepared for:

**Ethan J. Caldwell, 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.
313 Gallimore Dairy Road
Greensboro, North Carolina 27409**

Kleinfelder Project No. 113754

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PROJECT FOR WHICH THIS REPORT WAS PREPARED.**



December 20, 2010
File No. 113754 | GSO10R250

Ethan J. Caldwell, L.G., P. E.
North Carolina Department of Transportation
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Reference: **Preliminary Site Assessment**
WBS Element No. 34865.2.3, State Project U-2809B
Parcel # 19, B&B Food Mart
3921 Legion Road, Hope Mills
Cumberland County, North Carolina

Dear Mr. Caldwell:

Please find enclosed a report summarizing the sampling activities for the preliminary site assessment conducted at the referenced site. Laboratory analysis of soil samples collected at the site did not detect petroleum hydrocarbon concentrations above the method detection limits of the laboratory methods. 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.



Peter F. Pozzo, L.G.
Staff Professional II



John M. Stewart, L.G.
Senior Professional

PFP/JMS:cas
Enclosure

PRELIMINARY SITE ASSESSMENT

Site Name and Location: Parcel #19, B&B Food Mart
3921 Legion Road (formerly 3303 Legion
Road, Fayetteville)
Hope Mills, Cumberland County, North
Carolina

Latitude and Longitude: 34° 59' 15" N, 78° 55' 31" W

Incident Number: FA-1922

Property Owner: Rang Van Lu
4307 Bridge Street
Hope Mills, North Carolina 28348

UST Owner Edward Schwack, Jr.

NCDOT Project No.: NCDOT WBS Element 34865.2.3
State Project U-2809B

Date of Report: December 20, 2010

Consultant: Kleinfelder
313 Gallimore Dairy Road
Greensboro, North Carolina 27409
Attn: Mr. John M. Stewart
Phone: 336.668.0093 X115

Seal and Signature of Certifying Licensed Geologist

I, John M. Stewart, 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.



John M. Stewart L.G.
NC License No. 046



TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	SITE DESCRIPTION.....	1
1.2	SITE LOCATION.....	1
1.3	NCDENR FILE REVIEW.....	2
2.0	SITE ASSESSMENT	2
2.1	GEOPHYSICAL INVESTIGATION.....	2
2.2	SOIL SAMPLING	2
3.0	RESULTS	3
3.1	GEOPHYSICAL INVESTIGATION.....	3
3.2	SOIL SAMPLE	3
4.0	CONCLUSIONS.....	4
5.0	LIMITATIONS	4

TABLES

- 1 Soil Sample PID Results
- 2 Soil Sample Analytical Summary

FIGURES

- 1 Site Location Map
- 2 Site Map
- 3 Boring Location Map

APPENDICES

- A Site Photographs
- B Regulatory Correspondence
- C Pyramid Environmental & Engineering, P.C. Geophysical Survey Report
- D Boring Logs
- E Laboratory Report

1.0 INTRODUCTION

Kleinfelder Southeast, Inc. (Kleinfelder) has prepared this Preliminary Site Assessment (PSA) report documenting assessment activities performed at the B&B Food Mart (Rang Van Lu Property – Parcel 19) located at 3921 Legion Road (formerly 3303 Legion Road) in Hope Mills, Cumberland County, North Carolina (Figure 1). This assessment was conducted on behalf of the North Carolina Department of Transportation (NCDOT) in accordance with Kleinfelder's October 7, 2010 proposal.

NCDOT is proposing to widen SR 1132 (Legion Road) from SR 1363 (Elk Road) to SR 1007 (Owen Road). The proposed right-of-way/easement is located along the west side of the property (Figure 2). 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/easement construction areas related to the widening of SR 1132 (Legion Road) from SR 1363 (Elk Road) to SR 1007 (Owen Road).

1.1 Site Description

The proposed right-of-way/easement is located along west side of the property owned by Rang Van Lu and at the time of our site reconnaissance, this parcel was occupied by the B&B Food Mart. The building on the property was reportedly used as a grocery/convenience store. A building was located at the rear (east side) of the property. Site photographs are shown in Appendix A.

1.2 Site Location

The store is located in the southeast corner of the intersection of Legion Road and Mantis Street. An automobile garage is located north of the property and residences are located east of the property. Legion Road and a sports bar and farm equipment store are located west of the property and a mobile home park is located south-southeast of the property.

1.3 NCDENR File Review

Kleinfelder reviewed incident files at the North Carolina Department of Environment and Natural Resources (NDENR) Fayetteville Regional Office. The site reportedly used a UST(s) at some time in the past; however, there is no record of a UST being registered for the site. A letter reviewed in the file indicates a UST was likely removed from the site sometime in late 1992 and that contaminated soil was removed and confirmation soil samples were collected in January 1993. After reviewing the UST Soil Assessment report, the NCDENR did not require any additional soil removal. There was no additional information in the file, so the location of the UST(s) and soil removal is not known. A copy of the letter is included in Appendix B.

2.0 SITE ASSESSMENT

2.1 Geophysical Investigation

Pyramid Environmental & Engineering, P.C (Pyramid) conducted a geophysical investigation of the proposed right-of-way on the west side of the property on October 22, 2010. Pyramid utilized electromagnetic (EM) induction technology to identify potential geophysical anomalies and potential USTs at the site. A more detailed description of their scope of work is explained in their Geophysical Investigation Report included in Appendix C. Prior to drilling the soil borings, buried utilities were marked by NC One Call and Northstate Utility Locating, Inc. (Northstate).

2.2 Soil Sampling

To determine if contaminated soil may be encountered during the proposed construction activities, soil samples were collected along the west side of the property. A Kleinfelder geologist and direct push rig crew met at the property on November 18, 2010. Kleinfelder advanced three soil borings (SS-1 to SS-3) by direct push technology (DPT). The approximate location of the borings is shown on Figure 3.

Soil borings were advanced to a depth of six feet below the ground surface (bgs). The borings were located along the proposed right-of-way/easement. Soil samples were collected by driving a macrocore sampler in 4-foot intervals in each boring. Each 4-foot

sample sleeve was divided in half and screened for volatile organic compounds in the field using a MiniRae 2000 photoionization detectors (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 D.

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 SGS, a NCDOT contract laboratory for chemical analysis.

3.0 RESULTS

3.1 Geophysical Investigation

Pyramid's results indicate that the EM investigation did not detect unknown metallic USTs within the survey area. Pyramid's report is included in Appendix C.

3.2 Soil Sample

Diesel range organics (DRO) and gasoline range organics (GRO) were not detected at concentrations above the method detection limits in the soil samples. 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 E.

4.0 CONCLUSIONS

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

- ◆ Groundwater was encountered at a depth of six feet; and
- ◆ TPH were not detected in the soil samples at concentrations above the method detection limits.

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	1.5 - 2.0	1.2
	3.5 - 4.0	1.5
	5.5 - 6.0	NR
SS-2	0.0 - 2.0	0.0
	2.0 - 4.0	1.6
	4.0 - 6.0	NR
SS-3	0.0 - 2.0	1.0
	2.0 - 4.0	2.6
	4.0 - 6.0	NR

Notes:

Samples were collected on November 18, 2010.

Readings reported in parts per million

feet bgs = feet below ground surface

Bold = Selected for laboratory analysis

NR = No reading - water encountered

TABLE 2: SOIL SAMPLE ANALYTICAL SUMMARY

SAMPLE ID	COLLECTION DATE	DRO	GRO
SS-1 4.0 ft	11/18/2010	BQL	BQL
SS-2 4.0 ft	11/18/2010	BQL	BQL
SS-3 4.0 ft	11/18/2010	BQL	BQL
State Action Level		10	10

Notes:

Sample collection depth is indicated in Sample ID, following sequential soil sample number

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

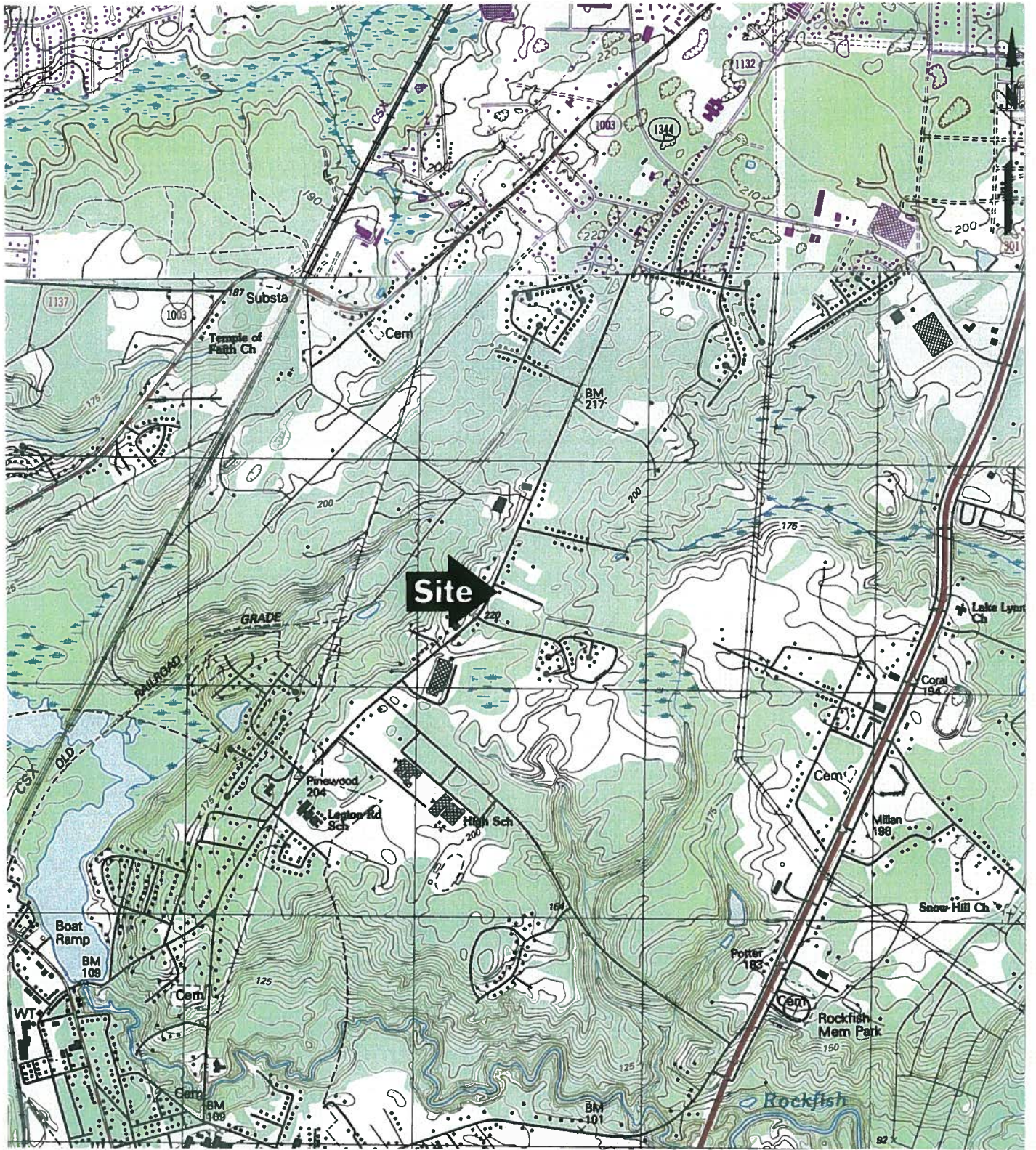
DRO = Diesel Range Organics

GRO = Gasoline Range Organics

BQL = Below quantitation limit

Bold denotes concentration exceeds the State Action Level

FIGURES



Site



www.kleinfelder.com

**FIGURE 1
SITE LOCATION MAP
PARCEL # 19, B&B FOOD MART
3921 LEGION ROAD
CUMBERLAND COUNTY, NORTH CAROLINA**

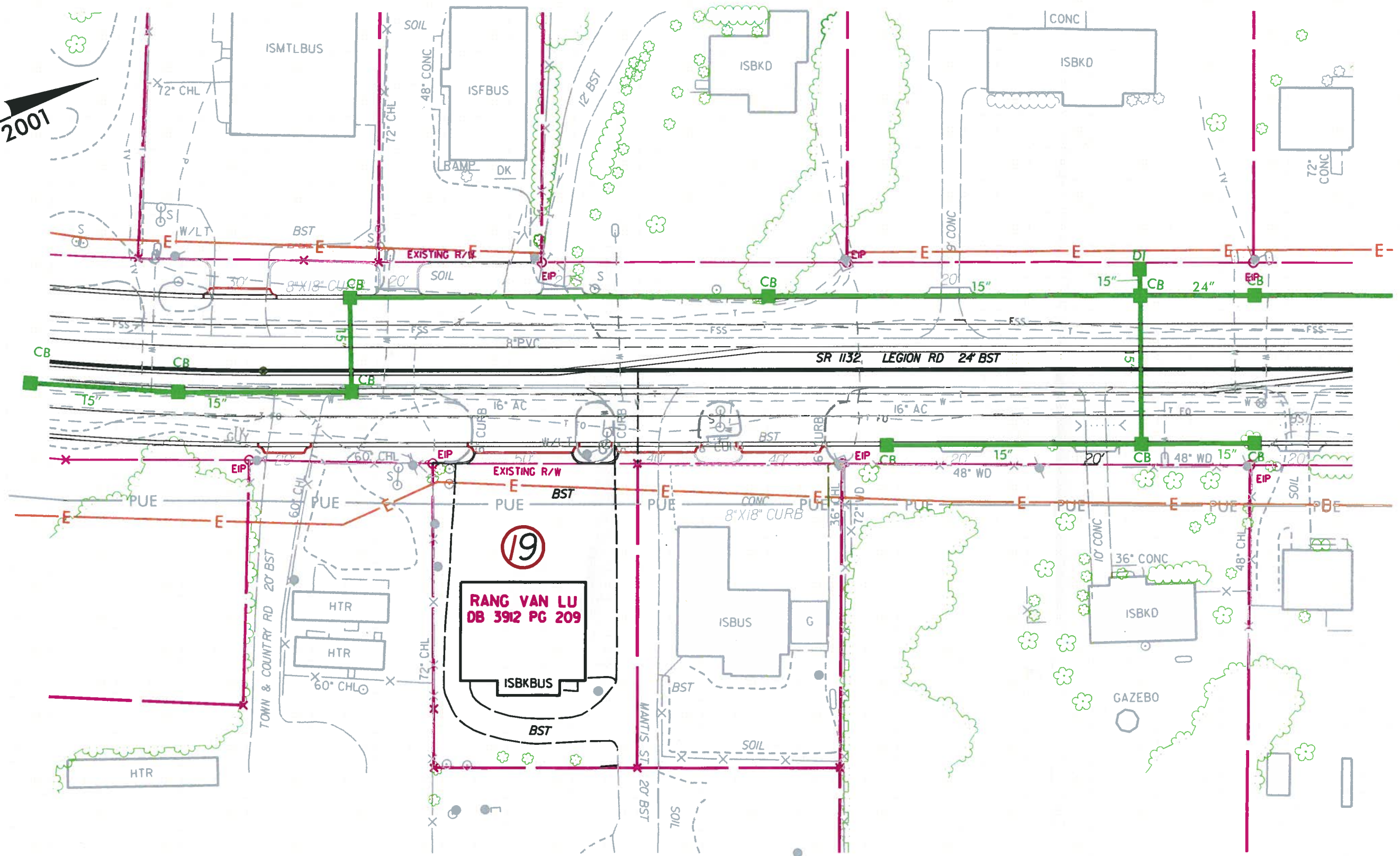
DATE: December 17, 2010

APPROVED BY:

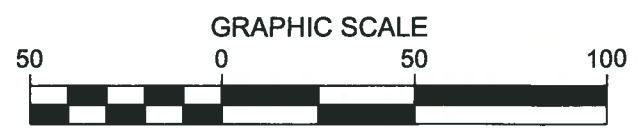
SCALE: 1" to 24,000'

SOURCE: USGS 7.5' Topographic Map, Fayetteville & Hope Mills Quadrangle

PROJECT NO. 113754



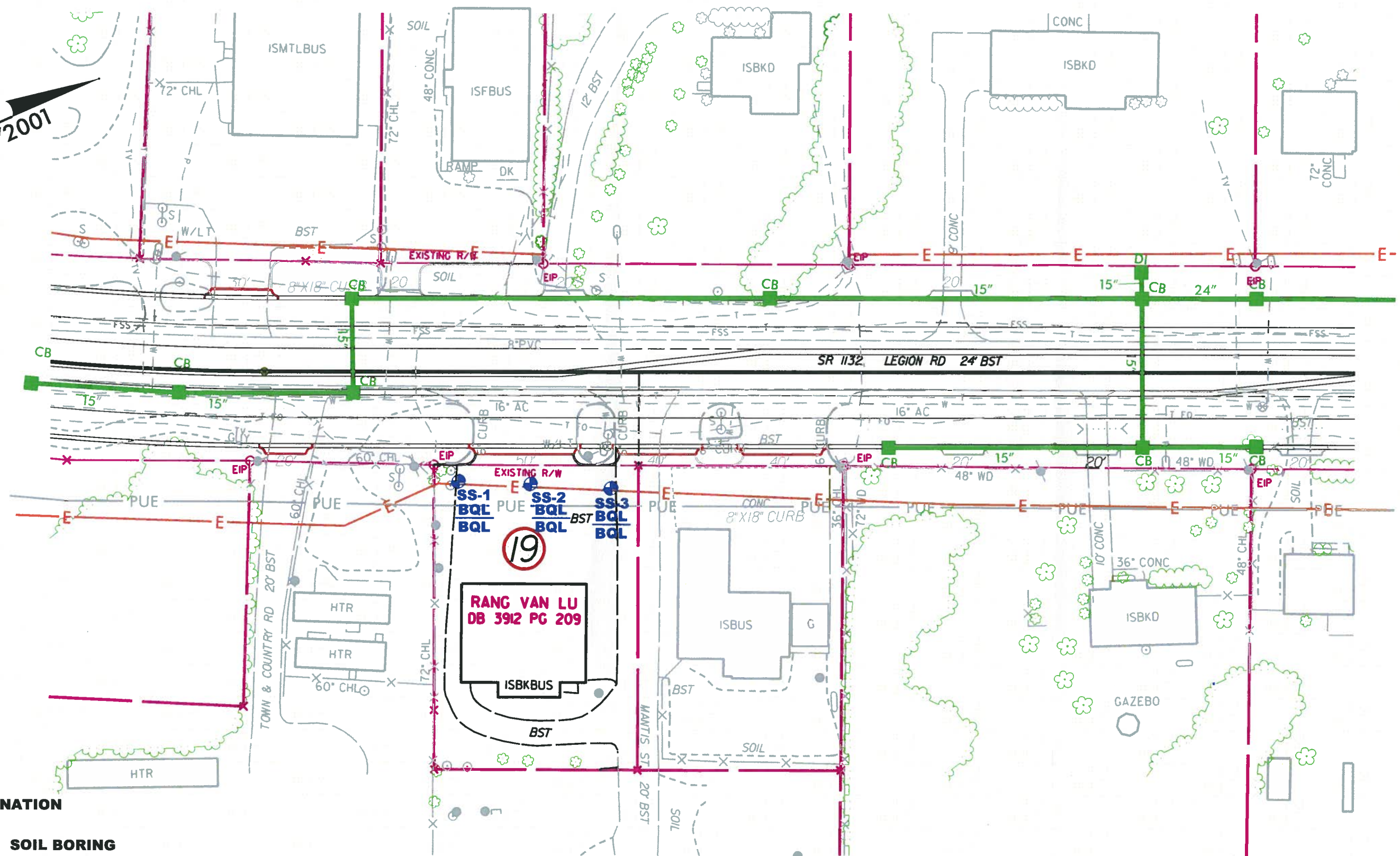
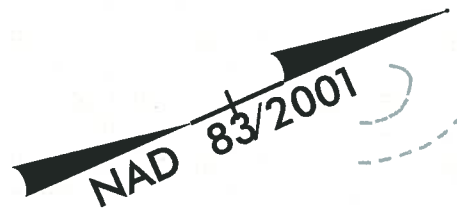
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PROJECT NO.	113754
DRAWN:	11/24/2010
DRAWN BY:	DJH
CHECKED BY:	JMS
SCALE:	1" = 50'

SITE MAP	
PARCEL #19	
RANG VAN LU PROPERTY	
3921 LEGION ROAD	
TIP NO.	U-2809B
WBS ELEMENT NO.	34865.2.3
CUMBERLAND COUNTY	
NORTH CAROLINA	

FIGURE:
2

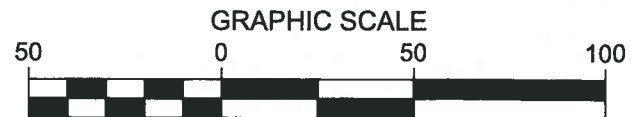


EXPLANATION

-  **SS-1** SOIL BORING
-  **BQL** GRO IN PPM
-  **BQL** DRO

NOTE: BRL - BELOW QUANTITATION LIMIT
GRO - GASOLINE RANGE ORGANICS
DRO - DIESEL RANGE ORGANICS

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PROJECT NO.	113754
DRAWN:	11/24/2010
DRAWN BY:	DJH
CHECKED BY:	JMS
SCALE:	1" = 50'

BORING LOCATION MAP	
PARCEL #19	
RANG VAN LU PROPERTY	
3921 LEGION ROAD	
TIP NO.	U-2809B
WBS ELEMENT NO.	34865.2.3
CUMBERLAND COUNTY	
NORTH CAROLINA	

FIGURE:
3

APPENDIX A

**SITE PHOTOGRAPHS
KLEINFELDER PROJECT NO. 113754
PARCEL NO. 19 COUNTRY B&B FOOD MART PROPERTY**



Photograph 1 – View looking south in the area where two soil samples were collected.



Photograph 2 – View looking north towards parcel #22

APPENDIX B

a: B+B FOOD. CL

✓
FA-1922

DIVISION OF ENVIRONMENTAL MANAGEMENT

February 8, 1993

Mr. and Mrs. Joseph Bauer
B&B Food Mart
1842 Roxie Avenue
Fayetteville, NC 28304

SUBJECT: Review of Lab Results
UST Soil Assessment
B&B Food Mart
3303 Legion Road
Hope Mills, Cumberland County

Dear Mr. and Mrs. Bauer:

This is to acknowledge receipt of the above mentioned soil assessment dated January 22, 1993, and received by the Fayetteville Regional Office on February 4, 1993.

Based on review of the lab results and a site sensitivity evaluation (enclosed), no additional soil excavation and removal is required. Should new information become available concerning this matter, we reserve the right to reverse this finding.

Should you have any questions or need clarification, please contact Ms. Cindy Hegg of this office at (919) 486-1541.

Sincerely,

original signed by

H. J. Noland
H. J. Noland, P.E.

Regional Supervisor

CAH
MJN/CAH
Enclosure

APPENDIX C

Pyramid Project # 2010258

GEOPHYSICAL INVESTIGATION REPORT

EM61 SURVEYS

**RANG VAN LU PROPERTY
PARCEL 19
Fayetteville, North Carolina**

November 5, 2010

**Report prepared for: John Stewart P.G.
Kleinfelder
313 Gallimore Dairy Road
Greensboro, NC 27409**

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**

Kleinfelder
GEOPHYSICAL INVESTIGATION REPORT
RANG VAN LU PROPERTY
PARCEL 19
Fayetteville, North Carolina

<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
1.0 INTRODUCTION	1
2.0 FIELD METHODOLOGY	1
3.0 DISCUSSION OF RESULTS	2
4.0 SUMMARY & CONCLUSIONS	3
5.0 LIMITATIONS	3

FIGURES

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

1.0 INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Kleinfelder across the western portion (proposed Right-of-Way area) of the Rang Van Lu property (Parcel 19) located along the southeasterly corner of Legion Road and Mantis Drive in Fayetteville, North Carolina. Conducted on October 22, 2010 the geophysical investigation was performed as part of the North Carolina Department of Transportation (NCDOT) preliminary site assessment project to determine if unknown, metallic, underground storage tanks (USTs) were present beneath the area of interest at Parcel 19.

Kleinfelder representative Mr. John Stewart, P.G. provided site maps to Pyramid Environmental personnel during the week of September 30, 2010, which identified the geophysical survey area of the Rang Van Lu property. The geophysical survey area had a maximum length and width of 110 feet and 70 feet, respectively. Photographs of the geophysical equipment used in this investigation and a portion of the geophysical survey area at Parcel 19 are shown in **Figure 1**.

2.0 FIELD METHODOLOGY

Prior to conducting the geophysical investigation, a 10-foot by 10-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 October 22, 2010 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 northerly-southerly (X-axis), 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.

Due to an absence of metal detection anomalies that may represent potential USTs, ground penetrating radar (GPR) surveys were not conducted at this site. 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.

Preliminary geophysical results obtained from Parcel 19 were reported to Mr. Stewart on November 2, 2010.

3.0 DISCUSSION OF RESULTS

The EM61 bottom coil anomalies centered near grid coordinates X=20 Y=93 are probably in response to steel reinforced concrete curbing and a buried utility line(s). The high amplitude bottom coil anomaly centered near grid coordinates X=41 Y=89 is probably in response to a metal cover which lies over a vault containing a utility line junction. The EM61 anomalies centered near grid coordinates X=35 Y=20 and X=55 Y=12 are probably in response to a metal sign frame, metal sign poles, concrete curbing, and other surface objects.

The linear EM61 bottom coil anomaly intersecting grid coordinates X=15 Y=8 is possibly in response to a buried line or conduit. The isolated bottom coil anomalies located near coordinates X=25 Y=35, X=38 Y=52 and X=35 Y=64 are probably in response to small, miscellaneous, metal objects or debris.

Due to the absence of EM61 differential anomalies that are not in response to known objects, ground penetrating radar surveys were not conducted at this site and the EM61 results suggest that the surveyed portion of Parcel 19 does not contain metallic USTs.

4.0 SUMMARY & CONCLUSIONS

Our evaluation of the EM61 data collected across the geophysical survey area at the Rang Van Lu property (Parcel 19) located in Fayetteville, North Carolina, provides the following summary and conclusions:

- The EM61 surveys provided reliable results for the detection of metallic USTs within the surveyed portion of the site.
- The EM61 bottom coil anomalies centered near grid coordinates X=20 Y=93 are probably in response to steel reinforced curbing and a buried utility line(s). The high amplitude bottom coil anomaly centered near grid coordinates X=41 Y=89 is probably in response to a metal cover which lies over a vault containing a utility line junction.
- The EM61 anomalies centered near grid coordinates X=35 Y=20 and X=55 Y=12 are probably in response to a metal sign frame, metal sign poles, concrete curbing, and other surface objects.
- The EM61 results suggest that the surveyed portion of Parcel 19 does not contain metallic USTs.

5.0 LIMITATIONS

EM61 surveys have been performed and this report prepared for Kleinfelder in accordance with generally accepted guidelines for EM61 metal detection surveys. It is generally recognized that the results of the EM61 survey are non-unique and may not represent actual subsurface conditions. The

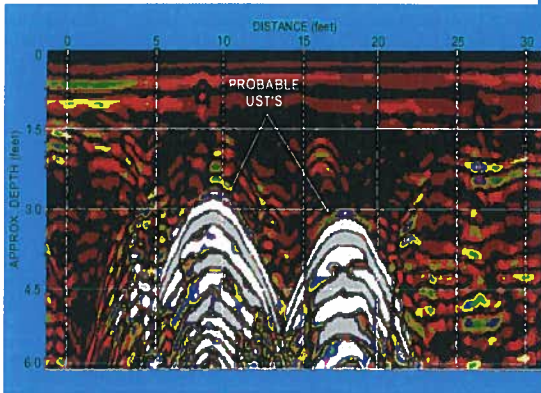
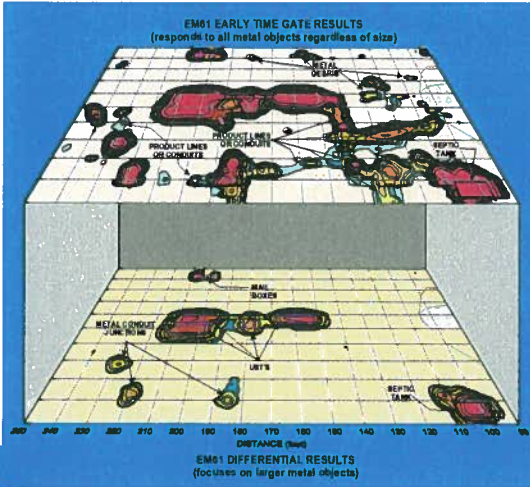
EM61 results obtained for this project have not conclusively determined that the surveyed portion of the site does not contain unknown, buried, metallic USTs, but that none were detected.



The photograph shows the Geonics EM61 metal detector that was used to conduct the metal detection survey across Parcel 19 on October 22, 2010.



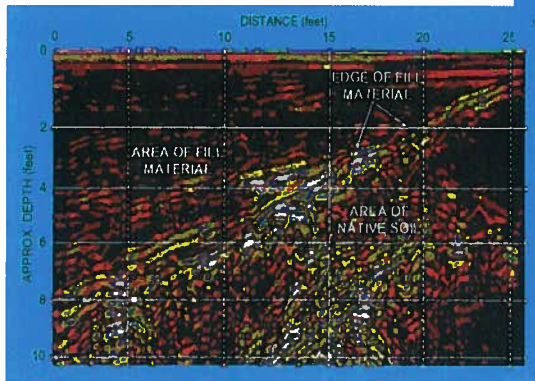
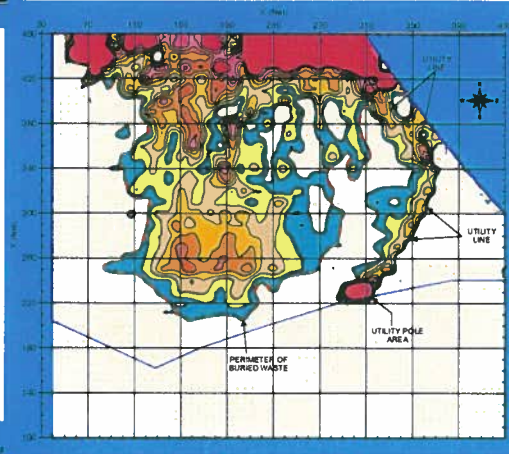
The photograph shows the front portion of the Rang Van Lu property (Parcel 19) located at the intersection of Legion Road and Mantis Drive in Fayetteville, North Carolina. The photograph is viewed in an easterly direction.

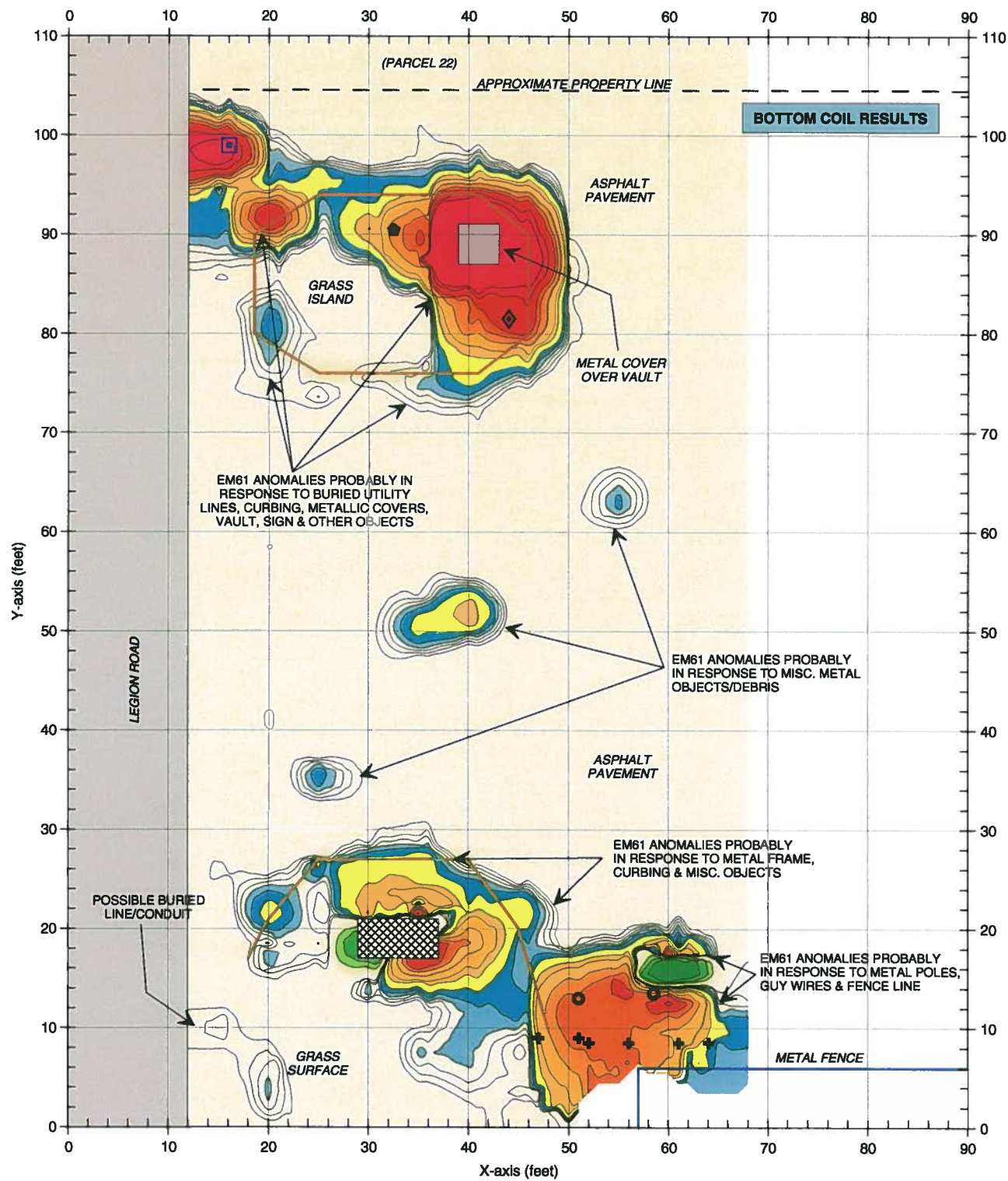


FIGURES

(on the following pages)

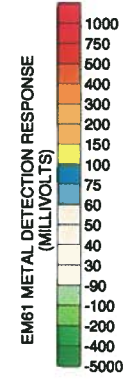
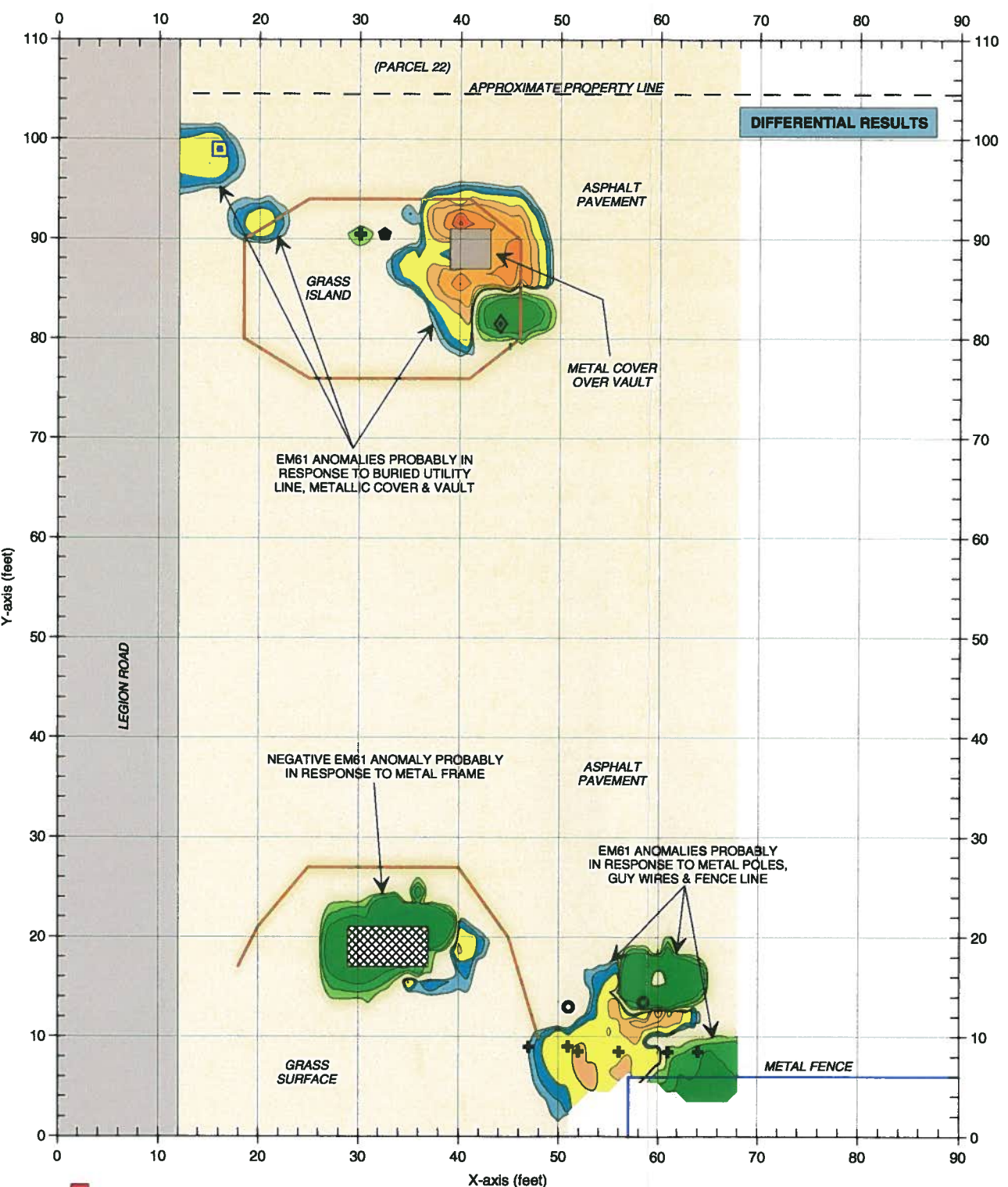
Figures shown on this page are for esthetic purposes only and are not related to the geophysical results discussed in this report.





LEGEND

<ul style="list-style-type: none"> SURVEY AREA: EM61 OR GPR DATA ACQUIRED ALONG X-AXIS TRENDING LINES SPACED 5 FEET APART METAL BUSINESS SIGN METAL SIGN FRAME DUMPSTER GUY WIRE METAL SIGN POLE MAIL BOX 	<ul style="list-style-type: none"> ROAD SIGN UTILITY LINE BOX UTILITY OR LAMP POLE WATER METER BOX METAL COVER OVER VAULT PARKED VEHICLE METAL FENCE CONCRETE CURBING
---	---



The contour plot shows 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 October 22, 2010 using a Geonics EM61 instrument. Due to an absence of differential EM61 anomalies, ground penetrating radar (GPR) surveys were not conducted at Parcel 19.

The geophysical investigation suggests that the surveyed portion of the property does not contain metallic USTs.

EM61 METAL DETECTION RESULTS

FIGURE 2

CLIENT	KLEINFELDER	DATE	11/02/10	PROJECT	2010-258
MJD		LAYER		DRAWN	
DATE		STATE		CITY	
TITLE	GEOPHYSICAL RESULTS				
PROJECT	RANG VAN LU PROPERTY (PARCEL 19)				
CITY	FAYETTEVILLE				
STATE	NORTH CAROLINA				

APPENDIX D

LOG OF BORING SS-1

SHEET 1 OF 1

Client NCDOT

Drill Contractor Kleinfelder

Project Name U-2809B

Drill Method 2 inch Direct Push

Elevation -

Number 113754

Drilling Started 11/18/10 Ended 11/18/10

Total Depth 6.0


Location Van Lu Property #19

Logged By P. Pozzo

Depth To Water

DEPTH FEET	SAMPLE NO.	BLOWS/FT	PID ppm	USCS	LITHOLOGY	DESCRIPTION	DEPTH FEET
5	SS 1-4'			SW	[Dotted Pattern]	Tan Gray SAND	5
				SW		White Tan SAND	
				SW		White SAND in Water Table	
				NR		Boring Terminated at 6 feet in RESIDUAL	
10							10
15							15
20							20
25							25
30							30

LOG A EWN05 113754B.GPJ LOG A EWN05.GDT 12/16/10



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

Remarks Sample SS-1 collected at 4 ft. submitted for laboratory analysis.
 NR - No Reading

See key sheet for symbols and abbreviations used above.

LOG OF BORING SS-2

SHEET 1 OF 1

Client NCDOT

Drill Contractor Kleinfelder

Project Name U-2809B

Drill Method 2 inch Direct Push

Elevation --

Number 113754




Drilling Started 11/18/10 Ended 11/18/10

Total Depth 6.0

Location Van Lu Property #19

Logged By P. Pozzo

Depth To Water

DEPTH FEET	SAMPLE NO.	BLOWS/FT	PID ppm	USCS	LITHOLOGY	DESCRIPTION	DEPTH FEET
			0	SW		Tan SAND	
			1.6	SW		Tan SAND	
5	SS 2-4'		NR	SW		White SAND in Water Table	5
						Boring Terminated at 6 feet in RESIDUAL	
10							10
15							15
20							20
25							25
30							30

LOG A EWIN05 113754B.GPJ LOG A EWIN05.GDT 12/16/10



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

Remarks Sample SS-2 collected at 4 ft. submitted for laboratory analysis.
 NR - No Reading

See key sheet for symbols and abbreviations used above.

LOG OF BORING SS-3

SHEET 1 OF 1

Client NCDOT
 Project Name U-2809B
 Number 113754
 Location Van Lu Property #19

Drill Contractor Kleinfelder
 Drill Method 2 inch Direct Push
 Drilling Started 11/18/10 Ended 11/18/10
 Logged By P. Pozzo

Elevation --
 Total Depth 6.0
 Depth To Water

DEPTH FEET	SAMPLE NO.	BLOWS/FT	PID ppm	USCS	LITHOLOGY	DESCRIPTION	DEPTH FEET
5	SS 3-4'		1	SW	Tan SAND		
			2.6	SW	Tan SAND		
			NR	SW	White SAND in Water Table		5
6					Boring Terminated at 6 feet in RESIDUAL		
10							10
15							15
20							20
25							25
30							30

LOG A EWN05 113754B.GPJ LOG A EWN05.GDT 12/16/10



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

Remarks Sample SS-3 collected at 4 ft. submitted for laboratory analysis.
 NR - No Reading

See key sheet for symbols and abbreviations used above.

APPENDIX E



Peter Pozzo
Trigon/Kleinfelder
313 Gallimore Dairy Road
Greensboro, NC 27409

Report Number: G118-597

Client Project: NCDOT Fayetteville PSA

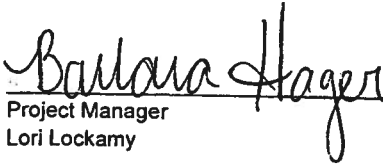
Dear Peter Pozzo,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Lori Lockamy at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America, Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America, Inc.

for:

Project Manager
Lori Lockamy

12/10/10
Date

SGS North America, Inc.

List of Reporting Abbreviations
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

UJ = Target analytes with recoveries that are $10\% < \%R < LCL$; # of MEs are allowable and compounds are not detected in the sample.

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% solids = Percent Solids

Special Notes:

- 1) Metals and mercury samples are digested with a hot block; see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 19 SS-1 4'
Client Project ID: NCDOT Fayetteville PSA
Lab Sample ID: G118-597-4A
Lab Project ID: G118-597
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/18/2010 7:59
Date Received: 11/19/2010
Matrix: Soil
Solids 93.55

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.86	mg/Kg	1	11/29/10 21:05

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	94.2	94.2		70-130

Comments:

Batch Information

Analytical Batch: VP112910
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 5.47 g
Final Volume: 5 mL

Analyst: LMC

**Results for Total Petroleum Hydrocarbons
by GC/FID 8015**

Client Sample ID: 19 SS-1 4'
 Client Project ID: NCDOT Fayetteville PSA
 Lab Sample ID: G118-597-4D
 Lab Project ID: G118-597

Date Collected: 11/18/2010 7:59
 Date Received: 11/19/2010
 Matrix: Soil
 Solids 93.55
 Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.65	mg/Kg	1	11/22/10 05:15

Surrogate Spike Results	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	29.7	74.3

Comments:

Batch Information

Analytical Batch: EP112110
 Analytical Method: 8015
 Instrument: GC6
 Analyst: DTF

Prep batch: 17790
 Prep Method: 3541
 Prep Date: 11/19/10
 Initial Prep Wt/Vol: 32.13 G
 Prep Final Vol: 10 mL

Analyst: FX

NC Certification #481

N.C. Certification #481

Reviewed By: [Signature]

DRO.XLS

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 19 SS-2 4'
Client Project ID: NCDOT Fayetteville PSA
Lab Sample ID: G118-597-5A
Lab Project ID: G118-597
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/18/2010 8:08
Date Received: 11/19/2010
Matrix: Soil
Solids 93.81

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.16	mg/Kg	1	11/30/10 07:23

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	96.6	96.6		70-130

Comments:

Batch Information

Analytical Batch: VP112910
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 6.2 g
Final Volume: 5 mL

Analyst: LMC

**Results for Total Petroleum Hydrocarbons
by GC/FID 8015**

Client Sample ID: 19 SS-2 4'
 Client Project ID: NCDOT Fayetteville PSA
 Lab Sample ID: G118-597-5D
 Lab Project ID: G118-597

Date Collected: 11/18/2010 8:08
 Date Received: 11/19/2010
 Matrix: Soil
 Solids 93.81
 Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.60	mg/Kg	1	11/22/10 05:43
Surrogate Spike Results		Spike Added	Control Limits	Spike Result	Percent Recovery
OTP		40	40-140	29.2	73

Comments:

Batch Information

Analytical Batch: EP112110
 Analytical Method: 8015
 Instrument: GC6
 Analyst: DTF

Prep batch: 17790
 Prep Method: 3541
 Prep Date: 11/19/10
 Initial Prep Wt/Vol: 32.31 G
 Prep Final Vol: 10 mL

Analyst: FA

NC Certification #481

N.C. Certification #481

Reviewed By: 
 DRO.XLS
 Page 77 of 118

**Results for Total Petroleum Hydrocarbons
by GC/FID 8015**

Client Sample ID: 19 SS-3 4'
Client Project ID: NCDOT Fayetteville PSA
Lab Sample ID: G118-597-6A
Lab Project ID: G118-597
Report Basis: Dry Weight

Analyzed By: LMC
Date Collected: 11/18/2010 8:24
Date Received: 11/19/2010
Matrix: Soil
Solids 95.44

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.53	mg/Kg	1	11/30/10 07:50

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	93.4	93.4		70-130

Comments:

Batch Information

Analytical Batch: VP112910
Analytical Method: 8015
Instrument ID: GC4
Analyst: LMC

Prep Method: 5035
Initial Wt/Vol: 5.68 g
Final Volume: 5 mL

Analyst: LMC

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: 19 SS-3 4'
Client Project ID: NCDOT Fayetteville PSA
Lab Sample ID: G118-597-6D
Lab Project ID: G118-597

Date Collected: 11/18/2010 8:24
Date Received: 11/19/2010
Matrix: Soil
Solids 95.44
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	6.28	mg/Kg	1	11/22/10 06:11
Surrogate Spike Results		Spike Added	Control Limits	Spike Result	Percent Recovery
OTP		40	40-140	28.5	71.2

Comments:

Batch Information

Analytical Batch: EP112110
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 17790
Prep Method: 3541
Prep Date: 11/19/10
Initial Prep Wt/Vol: 33.39 G
Prep Final Vol: 10 mL

Analyst: FK

NC Certification #481

N.C. Certification #481

Reviewed By: 

DRO.XLS
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099436

1 CLIENT: Klenfeldor
 CONTACT: Peter Pozzo PHONE NO: 336 668 0093
 PROJECT: NCDOT Fayetteville SITE/PROJECT ID: 4-2809-B
 REPORTS TO: Peter Pozzo
 INVOICE TO: John Stewart FAX NO.:
 QUOTE #: NCDOT
 P.O. NUMBER: WBS 34865.2.3

SGS Reference: WBS 34865.2.3 PAGE 1 OF 5

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	CONTAINERS	SAMPLE TYPE	Preservatives Used	Analysis Required	REMARKS
43	SS-3 4'	11/17/10	1500	Soil	3	G	✓	✓	
43	SS-4 6'	11/17/10	1509	Soil	3	G	✓	✓	
43	SS-5 6'	11/17/10	1517	Soil	3	G	✓	✓	
19	SS-1 4'	11/18/10	759	Soil	3	G	✓	✓	
19	SS-2 4'		808		3	G	✓	✓	
19	SS-3 4'		824		3	G	✓	✓	
22	SS-4 2'		829		6	G	✓	✓	
22	SS-5 2'		910		6	G	✓	✓	
22	SS-6 4'		851		6	G	✓	✓	
147	SS-1 8'		1017		6	G	✓	✓	

2

Collected/Relinquished By: (1)	Date	Time	Received By:
<u>[Signature]</u>	11/19/10	1735	FedEx
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:
	11/19/10	9:55	<u>[Signature]</u>

3

Shipping Carrier: DPO GPO FedEx

Shipping Ticket No: _____

Special Deliverable Requirements: _____

Special Instructions: _____

Requested Turnaround Time: RUSH STD Date Needed _____

4

Samples Received Cold? (Circle) YES NO

Temperature °C: 4.65

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT



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1 CLIENT: Kleinfelder
 CONTACT: Peter Porzo PHONE NO.: (336) 668 0093
 PROJECT: NCDOT Fayetteville, BA I/SITE/PWSID#: 4-28-09B
 REPORTS TO: Peter Porzo
 INVOICE TO: John Stewart FAX NO.: ()
Carol Shore QUOTE #: NCDOT
 P.O. NUMBER: WBS 346652.3

2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	REMARKS
168	SS-1	11/17/10	9:50	SO.1	
168	SS-2		10:19		
168	SS-3		10:06		
168	SS-5		9:34		
168	SS-6		10:35		
168	SS-7		10:44		
168	SS-8		10:58		
168	SS-9		11:06		
168	SS-10		11:21		
168	SS-11		11:32		

3 PRESERVATION: NO ANALYSIS REQUIRED: 3
 SAMPLE TYPE: NO CONTAINERS
 C= COMP G= GRAB

4 SHIPPING CARRIER: FEDEX
 SHIPPING TICKET NO.:
 SPECIAL DELIVERABLE REQUIREMENTS:
 SPECIAL INSTRUCTIONS:
 REQUESTED TURNAROUND TIME: RUSH STD Date Needed

5 COLLECTED/RELINQUISHED BY: (1) [Signature] DATE: 11/18/10 TIME: 1735
 RELINQUISHED BY: (2) DATE: TIME:
 RELINQUISHED BY: (3) DATE: TIME:
 RELINQUISHED BY: (4) DATE: 11/19/10 TIME: 9:55

SGS Reference: WBS 34665 2.3 PAGE 2 OF 5

Samples Received Cold? (Circle) YES NO
 Temperature °C: 4.6, 5.1
 Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT



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1 CLIENT: Kleinfield PHONE NO: 336 668 0043 PGS Reference: WBS 34865.2.3 PAGE 3 OF 5

CONTACT: Peter Pozzo

PROJECT: NCDOT Fayetteville BUE/PWSID#: 12-80913

REPORTS TO: Peter Pozzo

INVOICE TO: John Stewart FAX NO.:() QUOTE #: NCDOT

P.O. NUMBER: WBS 34865.2.3

2

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	CONTAINERS		REMARKS
					No	Analysis Required	
	168 SS-12	11/17/10	1148	Soil	3	6	
	142 SS-1		1404				
	142 SS-2		1352				
	142 SS-3		1339				
	142 SS-4		1326				
	142 SS-5		1314				
	142 SS-6		1301				
	142 SS-7		1250				
	43 SS-1		1437				
	43 SS-2		1447				

3 PRESERVATIVES USED: MEM GWA

ANALYSIS REQUIRED: 3

4 SHIPPING CARRIER: DRD GRL

SAMPLES RECEIVED COLD? (Circle YES) NO

TEMPERATURE °C: 46.5.1

CHAIN OF CUSTODY SEAL: (Circle) INTACT BROKEN ABSENT

5 COLLECTED/RELINQUISHED BY: (1) [Signature] RECEIVED BY: Fed Ex

RELINQUISHED BY: (2) [Signature] RECEIVED BY: [Signature]

RELINQUISHED BY: (3) [Signature] RECEIVED BY: [Signature]

RELINQUISHED BY: (4) [Signature] RECEIVED BY: [Signature]

Requested Turnaround Time: RUSH STD Date Needed

SGS North America, Inc.

White - Retained by Lab
Pink - Retained by Client

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557



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099431

1 CLIENT: Kleinfelder PHONE NO.: ()

CONTACT: Peter Bozza

PROJECT: NC DOT Fayetteville SITE/PROJECT ID#: WBS 34965.2.3

REPORTS TO: WBS 34965.2.3

INVOICE TO: WBS 34965.2.3

SGS Reference: G118-597 PAGE 4 OF 5

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	CONTAINERS	SAMPLE TYPE	Preservatives Used	Analysis Required	REMARKS
147	SS-2	2/11/10	1024	Soil	6	6			
147	SS-3	4/11/10	1040		6				
147	SS-4	6/11/10	1107		6				
147	SS-5	8/11/10	1124						
147	SS-6	2/11/10	1252						
147	SS-7	4/11/10	1304						
147	SS-8	8/11/10	1320						
147	SS-9	8/11/10	1338						
147	SS-10	4/11/10	1406						
147	1A-12	4/11/10	1500						sample is changed 12 PER P. POPE. 11/11

2 Collected/Relinquished By: (1) [Signature] Date: 11/18/10 Time: 1735 Received By: FedEx Received By: [Signature]

Relinquished By: (2) [Signature] Date: 11/19/10 Time: 9:55 Received By: [Signature]

Relinquished By: (3) [Signature] Date: 11/19/10 Time: 9:55 Received By: [Signature]

Relinquished By: (4) [Signature] Date: 11/19/10 Time: 9:55 Received By: [Signature]

Shipping Carrier: 465 Shipping Ticket No: 465 Samples Received Cold? (Circle) YES / NO

Temperature C: 4.65 Chain of Custody Seal: (Circle) INTACT / BROKEN / ABSENT

Special Deliverable Requirements: INTACT Special Instructions: INTACT

Requested Turnaround Time: STD Date Needed: STD

White - Retained by Lab
Pink - Retained by Client

200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

