PRELIMINARY SITE ASSESSMENT ARNOLD AND MARJORIE ROBBINS PROPERTY 801 WILSON LEE BOULEVARD STATESVILLE, NORTH CAROLINA STATE PROJECT: B-2576 WBS ELEMENT: 32669.1.1

Prepared for:
NC Department of Transportation
Geotechnical Engineering Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Prepared by: Solutions-IES 1101 Nowell Road Raleigh, North Carolina 27607

Solutions-IES Project No. 3610.07A3.NDOT

Robert P. Rogero, P.G. Senior Hydrogeologist

Project Manager

TABLE OF CONTENTS

APPENDIX D

BORING LOGS

APPENDIX E LABORATORY ANALYTICAL REPORT

1.0	INTRODUCTIO	ON
2.0	BACKGROUNI	O AND SITE DESCRIPTION1
3.0	FIELD ACTIVI	ΓΙΕS
4.0	LABORATORY	Y RESULTS
5.0	DISCUSSION	3
TAB	BLES	
	TABLE 1	SUMMARY OF FIELD SCREENING RESULTS FOR SOIL
	TABLE 2	SUMMARY OF SOIL ANALYTICAL RESULTS
EIG	uped	
FIG	URES	
	FIGURE 1	SITE LOCATION MAP
	FIGURE 2	SITE MAP
	FIGURE 3	SOIL BORING LOCATIONS AND
APP	PENDICES	
	ADDENIDIY A	PHOTOGRAPH
	APPENDIX B	GEOPHYSICAL REPORT
	APPENDIX C	GPS COORDINATES

 $T: \label{thm:project} T: \label{thm:projec$

Preliminary Site Assessment State Project: B-2576, WBS Element: 32669.1.1

1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is planning to replace Bridges 513 and 514 over the Norfolk Southern Railroad along Wilson Lee Boulevard in Statesville, Iredell County, North Carolina, and the NCDOT is interested in acquiring additional property for new bridge construction in that area. The Arnold and Marjorie Robbins property (i.e. the Arnold Robbins property), located in line with the railroad bridges, is one of the properties considered for acquisition. The location of the parcel is shown on **Figures 1** and **2**. This report summarizes the results of field and laboratory activities conducted during the Preliminary Site Assessment (PSA) of the Arnold Robbins property. The scope of work executed at the site was performed in general accordance with Solutions-IES proposal NC0661P dated May 29, 2007, and was initiated based on a Notice to Proceed issued by the NCDOT Geotechnical Engineering Unit on May 30, 2007 under contract 7000007053, dated June 5, 2006.

2.0 BACKGROUND AND SITE DESCRIPTION

The PSA was performed on the parcel that encompasses the Arnold Robbins property (Study Area), at 801 Wilson Lee Boulevard in Statesville, Iredell County, North Carolina. The subject property is located on the east side of Wilson Lee Boulevard across from the Church of the Living God in Statesville. The PSA was performed over the entire subject property site. Because the building on the property resembles an old gas station, the PSA focused on petroleum-related impacts. A photograph of the vacant building on the site is included in **Appendix A**.

3.0 FIELD ACTIVITIES

Prior to mobilizing to the site to conduct work, Solutions-IES contacted North Carolina One Call and KCI Associates of North Carolina to locate underground utilities at the site. Pyramid Environmental & Engineering, P.C. (Pyramid) was contracted to perform a geophysical survey, and mobilized to the Study Area on June 4, 2007. The electromagnetic survey equipment (EM61) used by Pyramid identified various magnetic anomalies within the Study Area, and so Pyramid returned to the Study Area to perform a ground penetrating radar (GPR) survey utilizing a "Geophysical Survey Systems SIR 2000" instrument. Results of the surveys did not suggest the presence of buried metallic underground storage tanks (USTs). Images of the EM61 and GPR findings are included in the geophysical report included as **Appendix B**. After a review of the geophysical report, Solutions-IES mobilized to the site on June 18, 2007 to collect soil samples. Ten soil borings were advanced to a depth of 12 feet below ground surface (ft bgs) using a

Geoprobe[®]. The borings were generally spaced approximately 12 to 30 feet apart at the approximate locations displayed in **Figure 3.** The GPS coordinates are included in **Appendix C**.

A MacroCore® sampler fitted with a dedicated polyvinyl chloride (PVC) liner was used to collect samples at 2-foot intervals. Each soil sample was split into two aliquots. Each aliquot was placed in a separate resealable plastic bag. One bag was placed on ice for possible laboratory analysis, while the other bag was sealed and placed at ambient temperature for field screening with a flame ionization detector (FID). After approximately 20 minutes to allow accumulation of volatile organic compounds (VOCs) in the headspace of the bag, each sealed bag was scanned with the FID. The FID measurements were entered on the boring logs along with the soil description and any indications of petroleum staining or odor. The boring logs are provided in **Appendix D** and the field screening results are summarized in **Table 1**. The field screening results are also summarized on the boring logs where the field screening results are rounded to the nearest whole number.

The subsurface at the site generally consisted of red to brown silty clays and clayey silts (Unified Soil Classification CL/ML). Some gravel was also identified in some of the borings. Soils were dry and groundwater was not encountered in the borings to a depth of 12 ft bgs.

Table 1 shows the field screening results of the soils ranged from not detected to 3.4 parts per million (ppm). A soil sample was collected from each boring at the interval identified in **Table 1** and was placed in laboratory-supplied jars and stored on ice pending shipment to Pace Analytical Laboratories, Inc. in Huntersville, NC. Sample information was recorded on the chain-of-custody form, and the samples were submitted for analysis of gasoline range organics (GRO) and diesel range organics (DRO) total petroleum hydrocarbons (TPH) by EPA Modified Method 8015 with preparation methods 5030 and 3545, respectively.

4.0 LABORATORY RESULTS

Laboratory analytical results do not indicate the presence of TPH in soil samples collected from Borings GP-1, GP-2, GP-3, GP-5, GP-8, GP-9 and GP-10. However, TPH (DRO) was detected in the soil samples collected from borings GP-4, GP-6 and GP-7 at a concentration of 61 mg/kg, 22 mg/kg and 30 mg/kg, respectively. The analytical results are summarized in **Table 2**, and the laboratory report is included in **Appendix E**. **Appendix E** includes the laboratory report for work discussed in this report and for the James Hunter Property which is reported under a separate cover.

Solutions-IES Project No. 3610.07A3.NDOT July 30, 2007

Preliminary Site Assessment State Project: B-2576, WBS Element: 32669.1.1

DISCUSSION

Solutions-IES advanced ten soil borings at the Study Area to a depth of 12 ft bgs. The highest FID reading measured 3.4 ppm in the sample collected from boring GP-3 at a depth of 10 to 12 ft bgs; however, this sample did not contain concentrations of TPH GRO or TPH DRO above the laboratory reporting limit.

TPH concentrations did not exceed the laboratory reporting limits in any soil samples collected during site work except for the soil samples collected from borings GP-4, GP-6 and GP-7. TPH DRO was detected in soil samples collected from borings GP-4 (61 mg/kg), GP-6 (22 mg/kg) and GP-7 (30 mg/kg) at concentrations which exceed the tank closure screening level of 10 mg/kg in *Underground Storage Tank Section Guidelines for Site Checks, Tank Closure, and Initial Response and Abatement, (State of North Carolina Department of Environment and Natural Resources [NCDENR], Division of Waste Management [DWM], Underground Storage Tank [UST] Division, July 1, 2007) (Closure Guidelines).* The screening levels provided in the *Closure Guidelines* are used to determine if a release has occurred and to guide response and abatement actions for UST releases. The source of the contamination is currently unknown. However, based on the available information, the impacted areas appear to be isolated, and compact, and so the source of contamination may be attributed to poor petroleum waste disposal practices, or surface spills.

A release identified by an exceedance of the 10 mg/kg TPH screening level may require further assessment as provided in the *Guidelines for Assessment and Corrective Action, North Carolina UST Section, NCDENR, July, 2001(Corrective Action Guidelines)*. The *Corrective Action Guidelines* action level is used as a cleanup level, and requires soils from a confirmed release to be cleaned up to a level of 40 mg/kg TPH DRO. Only the shallow soil sample (0 to 2 ft bgs) from boring G-4 is above the 40 mg/kg cleanup goal.

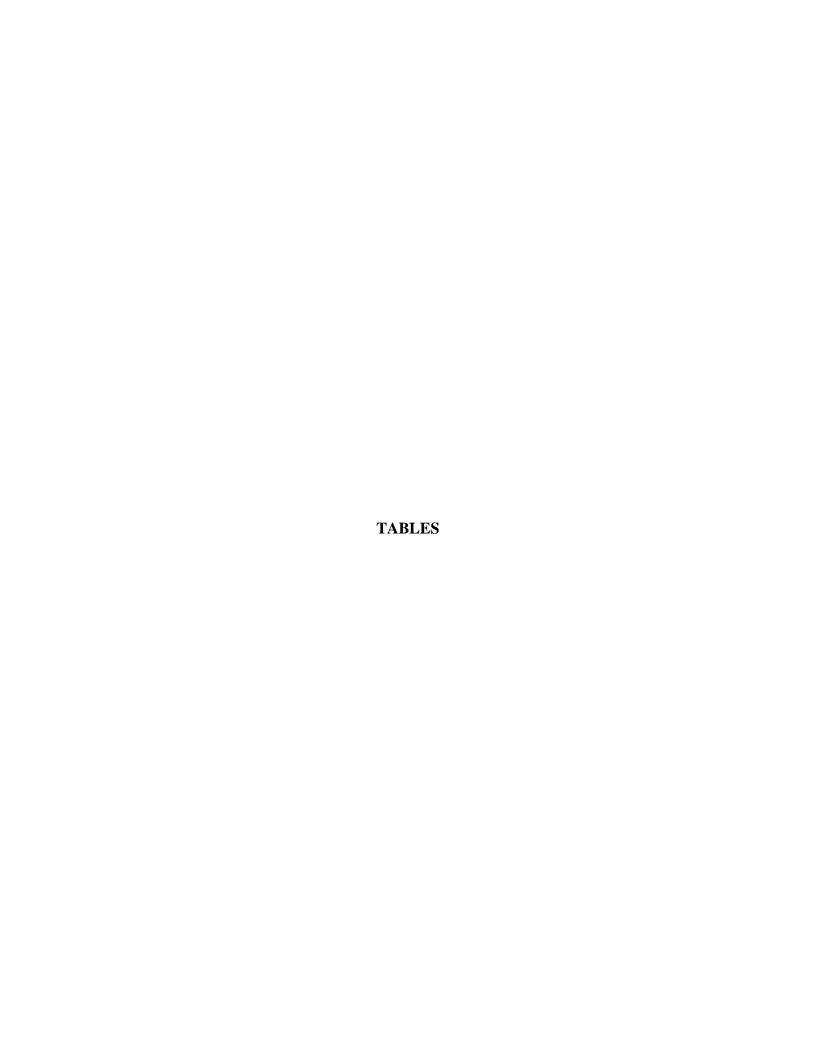


Table 1 Summary of Field Screening Results

Arnold Robbins Property

Statesville, Iredell County, NC

WBS Element: 32669.1.1

Solutions-IES Project No. 3610.07A3.NDOT

Sample Collection Date: June 18, 2007 to June 19, 2007

Comple Donth				Soil Boring l	dentification			
Sample Depth (ft bgs)	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	GP-8
(It bgs)				FID Read	ling (ppm)			
0 - 2	0.1	0.6	2.2	1.0	2.1	0.0	ND	ND
2 - 4	0.4	ND	2.8	0.8	0.3	0.2	ND	ND
4 - 6	0.8	2.1	2.5	ND	1.1	0.4	ND	ND
6 - 8	2.1	2.1	3.2	0.3	1.6	0.8	0.1	ND
8 - 10	2.5	2.6	3.2	0.1	2.1	1.2	1.0	ND
10 - 12	2.9	2.8	3.4	0.1	2.4	0.2	0.2	0.0

Comple Donth	Soil Boring l	dentification	
Sample Depth (ft bgs)	GP-9	GP-10	
(It bgs)	FID Reading (ppm)		
0 - 2	ND	ND	
2 - 4	ND	ND	
4 - 6	ND	ND	
6 - 8	ND	ND	
8 - 10	ND	ND	
10 - 12	ND	ND	

NOTES:

FID = Flame Ionization detector; FID readings were obtained with Photovoic Micro FID Flame Ionization Detector

ppm = parts per million

Samples denoted by shaded cells were submitted for laboratory analysis

ND = not detected

ft bgs = feet below ground surface

Table 2

Summary of Field Screening Results

Arnold Robbins Property

Statesville, Iredell County, NC

WBS Element: 32669.1.1

Solutions-IES Project No. 3610.07A3.NDOT

Sample Collection Date: June 18, 2007 to June 19, 2007

	TPH DRO and TPH GRO (Method 8015B)									
Sample ID		GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	GP-8	
De	epth (ft bgs)		10 - 12	10 - 12	10 - 12	0-2	10 - 12	8 - 10	8 - 10	10 - 12
Da	te Collected		6/18/2007	6/18/2007	6/18/2007	6/18/2007	6/18/2007	6/18/2007	6/18/2007	6/19/2007
Parameter	Regulatory Limit ¹	Units								
TPH DRO	10	mg/kg	<6.3	<6.8	<6.6	61	<6.2	22	30	<6.4
TPH GRO	10	mg/kg	<4.8	< 5.4	< 5.9	<5.7	<5.1	< 5.4	<4.7	< 5.4

TPH DRO and TPH GRO (Method 8015B)						
S	ample ID		GP-9	GP-10		
Dej	pth (ft bgs)		10 - 12	10 - 12		
Dat	e Collected		6/19/2007	6/19/2007		
Parameter	Regulatory Limit ¹	Units				
TPH DRO	10	mg/kg	< 6.4	< 5.9		
TPH GRO	10	mg/kg	< 5.0	< 5.8		

NOTES:

ft bgs = feet below ground surface

Bold values indicate detected concentrations above reporting limit

Shaded values indicate concentrations above the regulatory limit

TPH = Total Petroleum Hydrocarbons

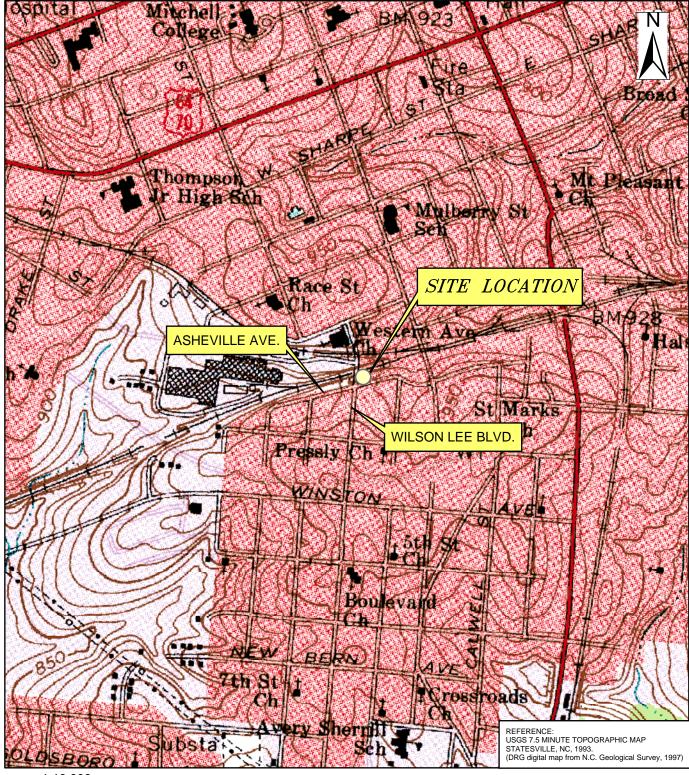
DRO = Diesel Range Organics

GRO = Gasoline Range Organics

mg/kg = milligrams per kilogram

¹ Regulatory Limits are the screening levels from NCDENR "Underground Storage Tank Section Guidelines for Site Checks, Tank Closure, and Initial Response and Abatement", July 1, 2007.



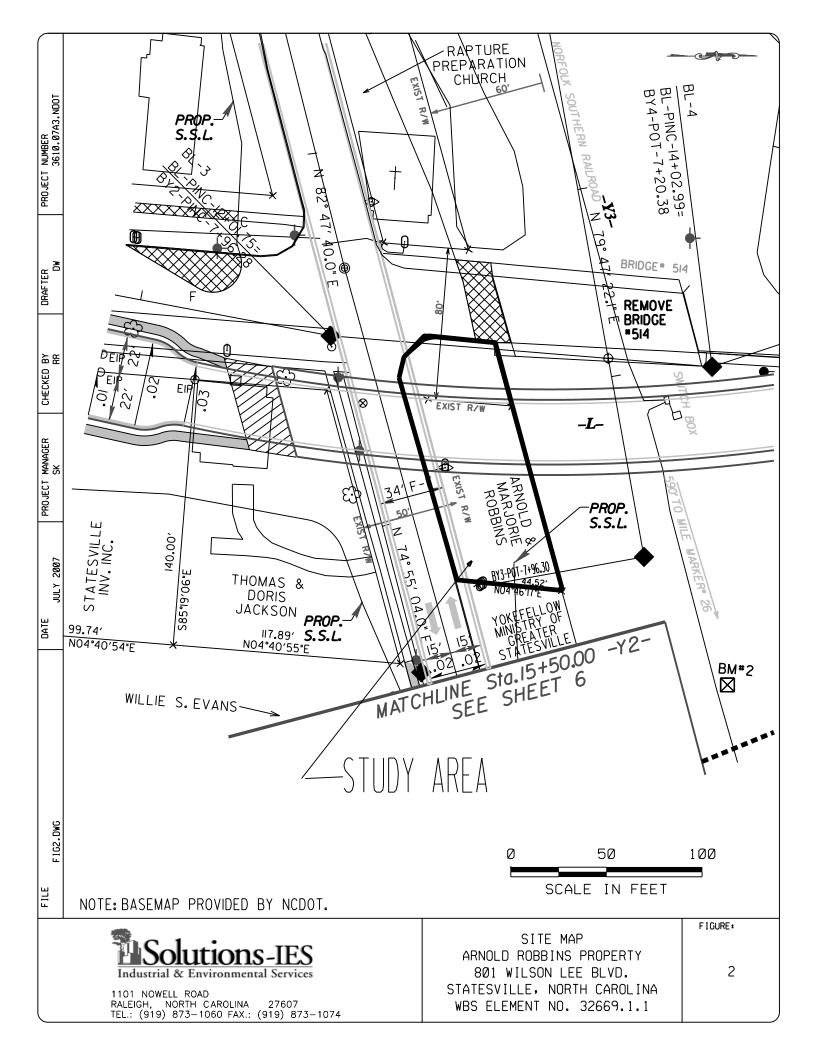


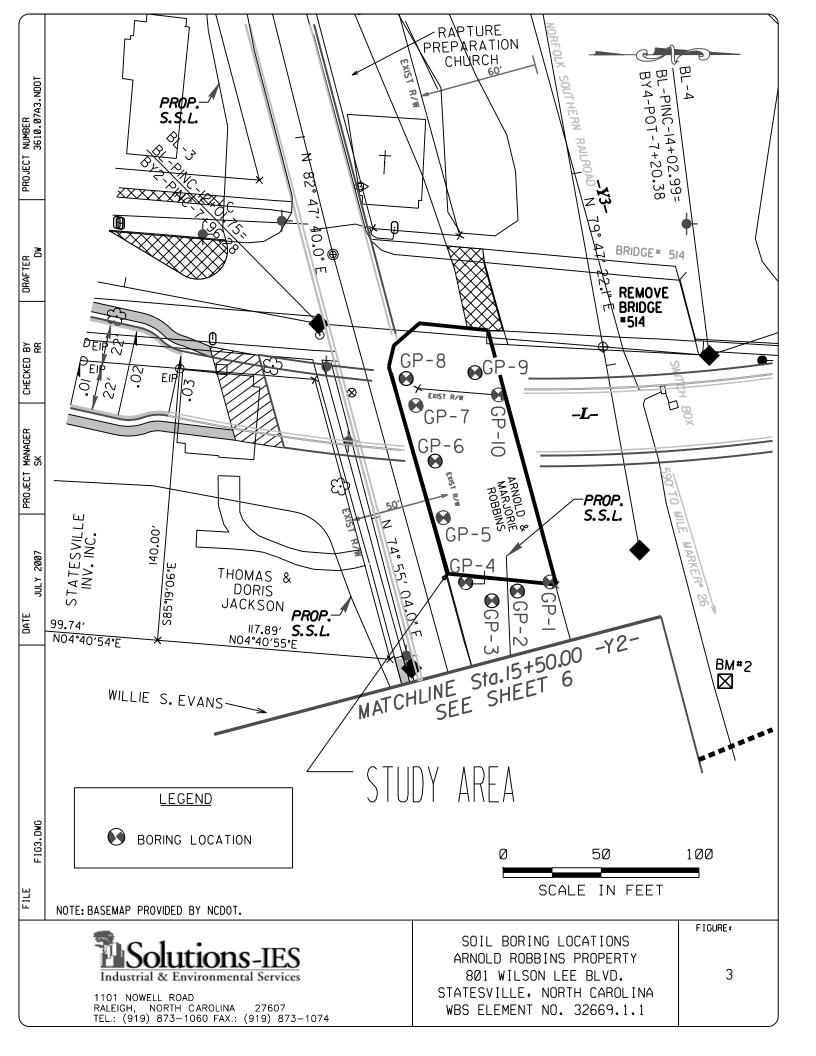
1:10,000

SITE LOCATION MAP ARNOLD ROBBINS PROPERTY 801 WILSON LEE BLVD. STATESVILLE, NORTH CAROLINA WBS ELEMENT# 32669.1.1



1101 Nowell Road, Raleigh, NC 27609 Phone (919) 873-1060, Fax (919) 873-1074				
Created by: DW Checked by: RR File: Figure 1 mxd	Project: 3610.07A3.NDOT Date: JULY 2007			
File: Figure 1.mxd Software: ESRI ArcMap 9.2	FIGURE	1		





APPENDIX A PHOTOGRAPH



Photograph 1 - View of the west side of the vacant building on the Arnold Robbins property.

APPENDIX B GEOPHYSICAL REPORT

GEOPHYSICAL INVESTIGATION REPORT

GEOPHYSICAL SURVEYS FOR THE DETECTION OF METALLIC USTS

James Hunter & Marjorie C. Robbins Properties Statesville, North Carolina

June 18, 2007

Report prepared for:

Robert Rogero, PG

Solutions-IES 1101 Nowell Rd. Raleigh, NC 27607

Prepared by:

Mark J. Denil PG

Reviewed by:

Doug Canavello, PG

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C. 700 NORTH EUGENE ST. GREENSBORO, NC 27401 (336) 335-3174

Solutions-IES

GEOPHYSICAL SURVEYS FOR THE DETECTION OF METALLIC USTS James Hunter & Marjorie C. Robbins Properties

Statesville, North Carolina

TABLE OF CONTENTS

1.0	INTRODU	CTION	1
2.0	FIELD ME	THODOLOGY	1
3.0	3.1 Ja	ON OF RESULTS umes Hunter Property Iarjorie C. Robbins Property	2
4.0	SUMMARY	Y & CONCLUSIONS	4
5.0	LIMITATIO	ONS	4
		<u>FIGURES</u>	
Figu		Photographs of Geophysical Equipment & Survey Areas	
Figu		Geophysical Survey Line Locations – Hunter Site	
Figu		EM61 Bottom Coil Results – Hunter Site	
Figu		EM61 Differential Results – Hunter Site	
Figu		Geophysical Survey Line Locations – Robbins Site	
Figui	re 6	EM61 Bottom Coil Results – Robbins Site	
Figui	re 7	EM61 Differential Results – Robbins Site	

1.0 INTRODUCTION

Pyramid Environmental & Engineering, PC conducted geophysical investigations for Solutions-IES on June 4-5, 2007, across the front portion of the James Hunter property and around the accessible portions of the Marjorie C. Robbins property. The Hunter property is located along the northwest corner of the Charlotte Street and Wilson Lee Boulevard intersection and the Robbins property is located along the northeast corner of the Asheville Avenue and Wilson Lee Boulevard intersection in Statesville, North Carolina. The work was done as part of a North Carolina Department of Transportation road-widening project (NCDOT WBS Element No. 32669.1.1). The geophysical surveys were conducted to determine if unknown metallic underground storage tanks (USTs) are present beneath the front portion of the Hunter site and the accessible portions of the Robbins site.

Solutions-IES representative Mr. Robert Rogero, PG provided information and a site map during the week of May 28, 2007 that outlined the geophysical survey area of each site.

2.0 FIELD METHODOLOGY

Prior to conducting the geophysical investigations, a 10-foot by 10-foot survey grid was established across the survey areas using water-based marking paint. These marks were used as X-Y coordinates for location control when collecting the geophysical data and establishing base maps for the geophysical results.

The EM surveys were performed 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 to 10 feet. Objects less than one foot in size can only be detected to a maximum depth of 4 or 5 feet. All of the EM61 data were digitally collected at the Hunter site along the X-axis (northerly-southerly trending) survey lines spaced 5 feet apart. The EM61 data were collected at the Robbins site along the X-axis or Y-axis survey lines spaced 5 feet apart. The EM61 data from both sites 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.

GPR surveys were conducted across selected EM61 differential anomalies, steel-reinforced concrete and along the perimeter of the buildings at each site using a Geophysical Survey Systems SIR-2000 unit equipped with a 400 MHz antenna. GPR data were digitally collected in a continuous mode along the X-axis and/or Y-axis survey lines spaced 2.5 to 5 feet apart, using a vertical scan of 512 samples, at a sampling rate of 32 scans per second. An 80 MHz high pass filter and an 800 MHz low pass filter were used during data acquisition with the 400 MHz antenna. GPR data were collected to a maximum investigating depth of approximately 6 feet based on an estimated two-way travel time of 9 nanoseconds per foot.

The GPR data were downloaded to a computer and viewed in the field in real time and reviewed in the office using the Radan 5.0 software program. Photographs of the geophysical equipment used for the investigations and the survey areas are presented in **Figure 1**. The locations of the EM61 and GPR survey lines acquired across the Hunter site are shown as red dots and solid purple lines, respectively in **Figure 2**. The locations of the EM61 and GPR survey lines acquired across the Robbins site are shown as red dots and solid purple lines, respectively in **Figure 5**. Each individual red dot represents an EM61 data point. Due to the thick brush and debris present along portions of the Robbins site, GPR scanning (or reconnaissance) was conducted. These GPR reconnaissance areas are shown as dashed purple polygons in Figure 5.

3.0 DISCUSSION OF RESULTS

3.1 James Hunter Property

Contour plots of the EM61 bottom coil results and the EM61 differential results for the Hunter site are presented in **Figures 3 and 4**, respectively. 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 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 debris/objects.

GPR surveys suggest the high amplitude EM61 bottom coil anomalies (contours shaded in red) centered near grid coordinates X=10 Y=37, X=27 Y=37 and X=35 Y=55 are probably in response to the building and/or steel reinforced concrete. GPR data also suggest that the linear EM61 anomalies centered near grid coordinates X=30 Y=16, X=65 Y=16 and X=65 Y=70 are probably in response to buried utility lines.

The EM61 differential results also show the anomalies that are probably in response to the building and utility lines. However, no other EM61 anomalies were recorded across the survey area suggesting that this portion of the Hunter site does <u>not</u> contain metallic USTs.

3.2 Marjorie C. Robbins Property

Contour plots of the EM61 bottom coil results and the EM61 differential results for the Robbins site are presented in **Figures 6 and 7**, respectively. GPR data suggest that the linear EM61 bottom coil anomalies centered near grid coordinates X=30 Y=28, X=35 Y=50, X=40 Y=64, X=50 Y=19, and X=90 Y=20 are probably in response to buried utility lines. GPR data also suggest that the high amplitude EM61 anomaly centered near grid coordinates X=55 Y=45 is probably in response to steel reinforced concrete and/or the building canopy

Similarly, the bottom coil anomalies centered near grid coordinates X=124 Y=22, X=135 Y=22 and X=156 Y=28 are probably in response to the building and stairs. The EM61 anomalies centered near X=154 Y=44 and X=154 Y=54 are probably in response to the metal support poles.

The EM61 differential results show several anomalies that are probably in response to steel reinforced concrete, the building or other known cultural features. No other differential anomalies were recorded suggesting that that the surveyed portion of the site does <u>not</u> contain metallic USTs.

4.0 SUMMARY & CONCLUSIONS

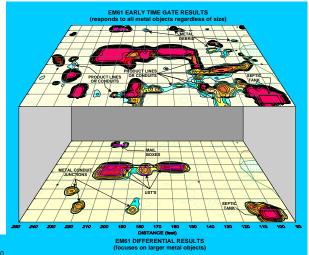
Our evaluation of the EM61 and GPR data collected across the surveyed portions of the James Hunter property and the Marjorie C. Robbins property located along Wilson Lee Boulevard in Statesville, North Carolina, provides the following summary and conclusions:

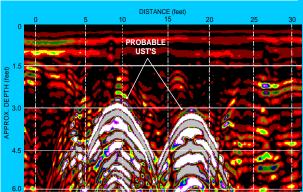
- The combination of EM61 and GPR surveys provided reliable results for the detection of metallic USTs and other buried metal objects within the depth interval of 0 to 8 feet.
- At the Hunter site, GPR surveys suggest the high amplitude EM61 bottom coil anomalies (contours shaded in red) centered near grid coordinates X=10 Y=37, X=27 Y=37 and X=35 Y=55 are probably in response to the building and/or steel reinforced concrete. GPR data also suggest that the linear EM61 anomalies centered near grid coordinates X=30 Y=16, X=65 Y=16 and X=65 Y=70 are probably in response to buried utility lines.
- At the Robbins site, GPR data suggest that the linear EM61 bottom coil anomalies centered near grid coordinates X=30 Y=28, X=35 Y=50, X=40 Y=64, X=50 Y=19, and X=90 Y=20 are probably in response to buried utility lines. The remaining EM61 anomalies are probably in response to known cultural features or steel reinforced concrete.
- The geophysical investigation conducted at the Hunter and Robbins sites suggest that the surveyed portions of the sites do not contain metallic USTs.

5.0 <u>LIMITATIONS</u>

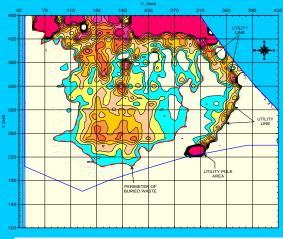
EM61 and GPR surveys have been performed and this report prepared for Solutions-IES in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the geophysical surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project do not conclusively

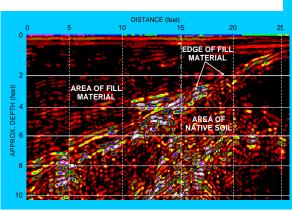
determine that the surveyed portion of the site does <u>not</u> contain buried metallic USTs, but that none were detected. Some of the EM61 and GPR anomalies interpreted as probable or possible small, miscellaneous, metal objects/debris may be attributed to other surface or subsurface features and/or interference from cultural features.





Figures (on following pages)





The photograph shows the Geonics EM61 metal detector that was used to conduct the metal detection survey at the Hunter and Robbins sites on June 4, 2007.





The photographs show the SIR-2000 GPR system equipped with a 400 MHz antenna that were used to conduct the ground penetrating radar investigation at the Hunter and Robbins sites on June 4 and 5, 2007.



The photograph shows a portion of the geophysical survey area located at the Hunter site. The photograph is viewed in a northwesterly direction.

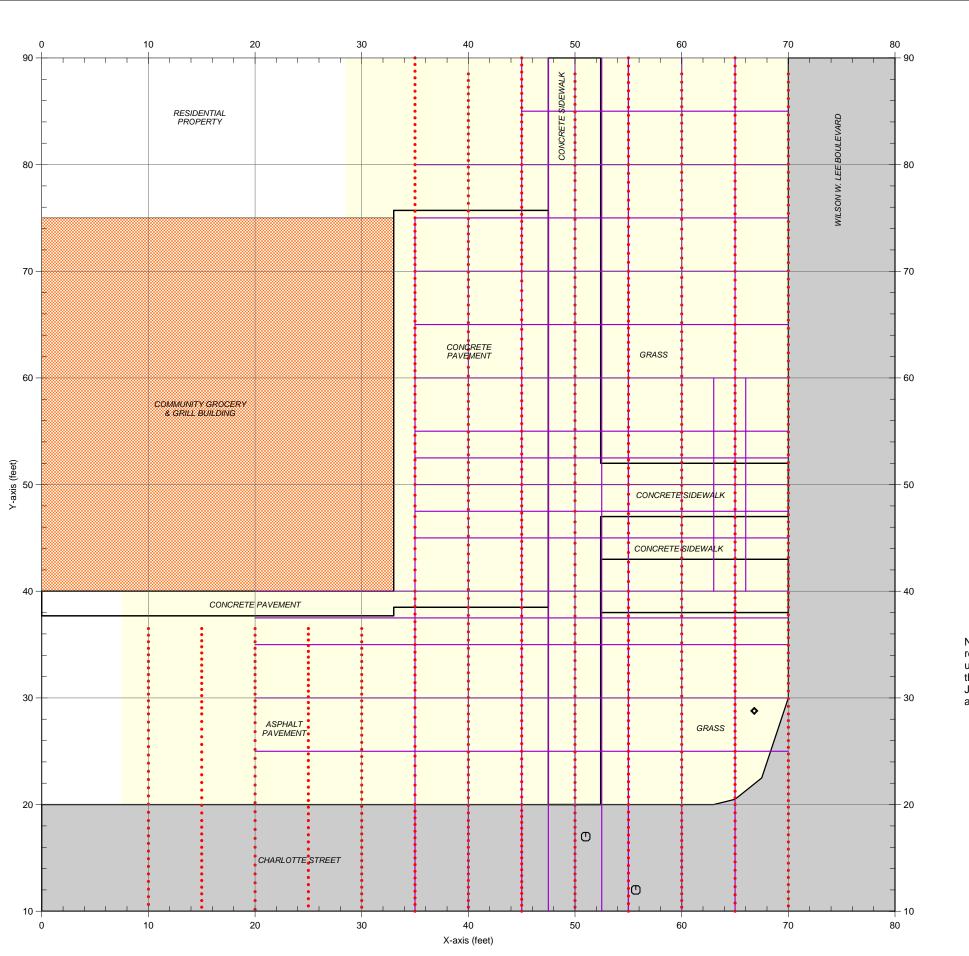


The photograph shows a portion of the geophysical survey area located at the Robbins site. The photograph is viewed in a northeasterly direction.



CLIENT	SOLUT	IONS-IES	06/18/07 MJD	
STE	HUNTER & RO	OBBINS SITES	OH/KD OH/KD	ALE IN FEET
CITY CITY	STATESVILLE	NORTH CAROLINA	DMG	GRAPHIC SC.
тте	GEOPHYSIC <i>i</i>	AL RESULTS	हुं 2007-153	GR

PHOTOGRAPHS OF GEOPHYSICAL EQUIPMENT & SURVEY AREAS





<u>LEGEND</u>

SURVEY AREA: EM61 DATA ACQUIRED ALONG NORTHERLY-SOUTHERLY TRENDING PARALLEL LINES SPACED 5 FEET APART

★ WATER METER COVER

STREET MONUMENT

****** EM61 METAL DETECTION SURVEY LINE

GPR SURVEY LINE

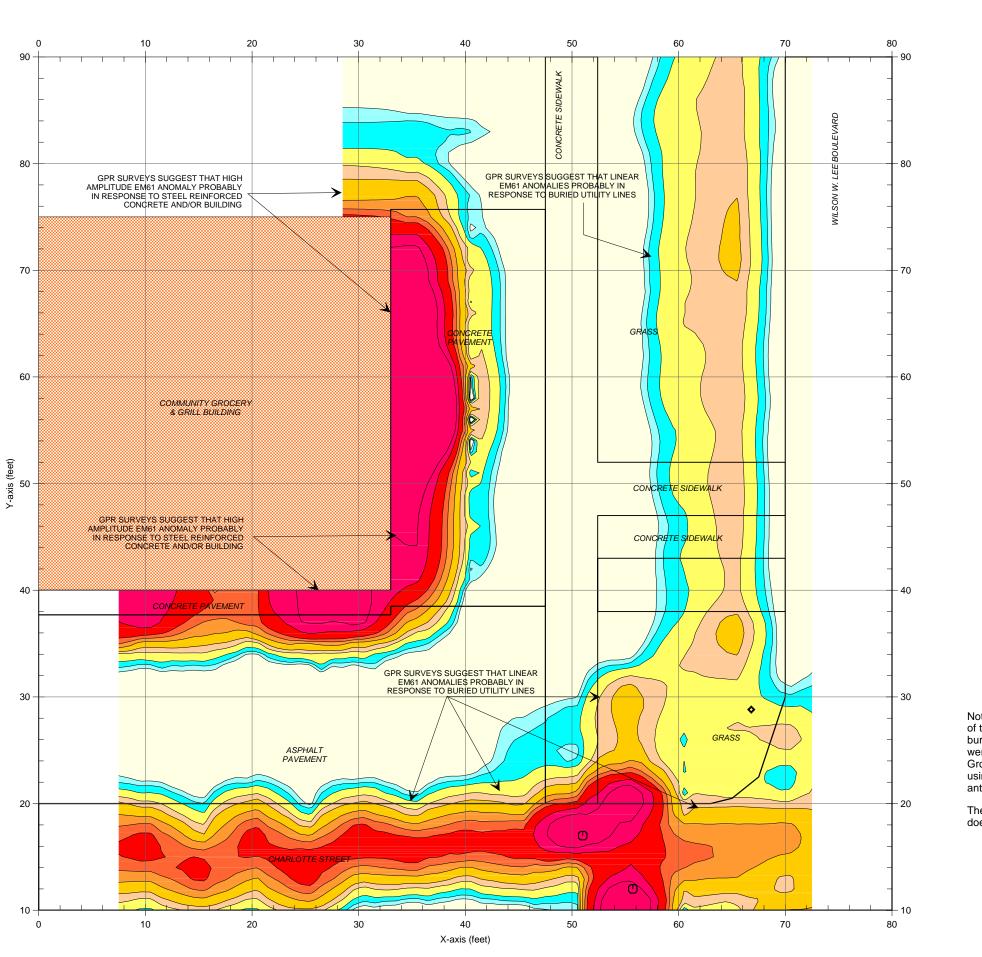
Note: The map shows the geophysical survey area at the Hunter site. The red dots represent the EM61 survey lines that were acquired on June 4, 2007 using a Geonics EM61 metal detection instrument. The purple lines represent the ground penetrating radar (GPR) survey lines that were also acquired on June 4, 2007 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.



GRAPHIC SCALE IN FEET

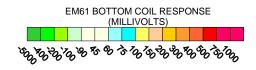
MJD			
ияа	СН.КD		FIGURE
06/18/07			2007-153
.Va	YAJ	DMG	J-NO.
SOLUTIONS - IES	JAMES HUNTER PROPERTY	NORTH CAROLINA	ESULTS
	NTE	STATE	SAL F
SOLU	JAMES HU	STATESVILLE	GEOPHYSICAL RESULTS
CLIE	SITE	ΥПЭ	ЭЛПТ











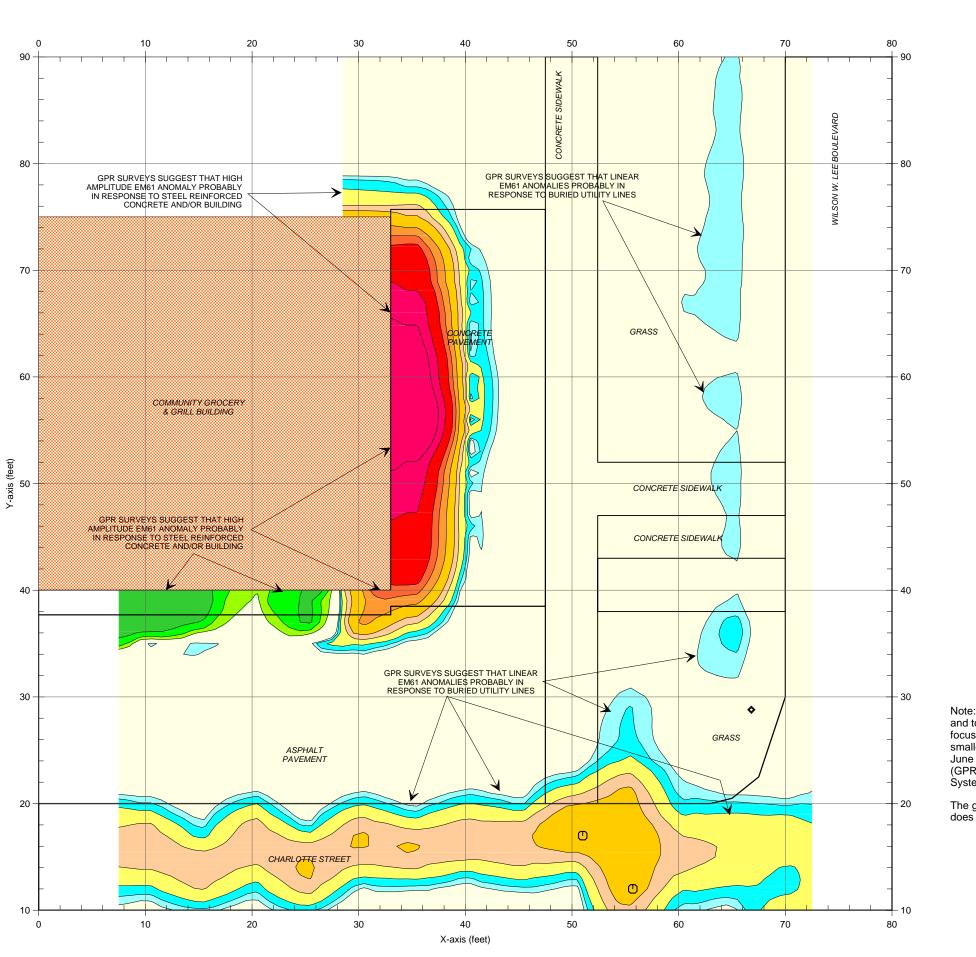
Note: The contour plot shows the bottom coil (most sensitive) response of the EM61 instrument in millivolts (mV). The bottom coil response shows buried metallic objects regardless of size. The EM metal detection data were collected on June 4, 2007 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were also acquired on June 4, 2007 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical investigation suggest that the surveyed portion of the site does not contain metallic USTs.

EM61 BOTTOM COIL RESULTS

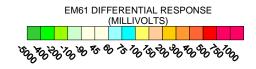
GRAPHIC SCALE IN FEET					
MJD					
рви	СН.КD		FIGURE		
06/18/0/			2007-153		
Ad	YAJ	DMC	J-NO.		
NS - IES	HUNTER PROPERTY	NORTH CAROLINA	RESULTS		
ō∣	世	3TAT2	ابا		
SOLUTIONS -	JAMES HUNT	STATESVILLE	GEOPHYSICAL RESULTS		
CLIE	SITE	УТІЭ	ЭЛПТ		
=					











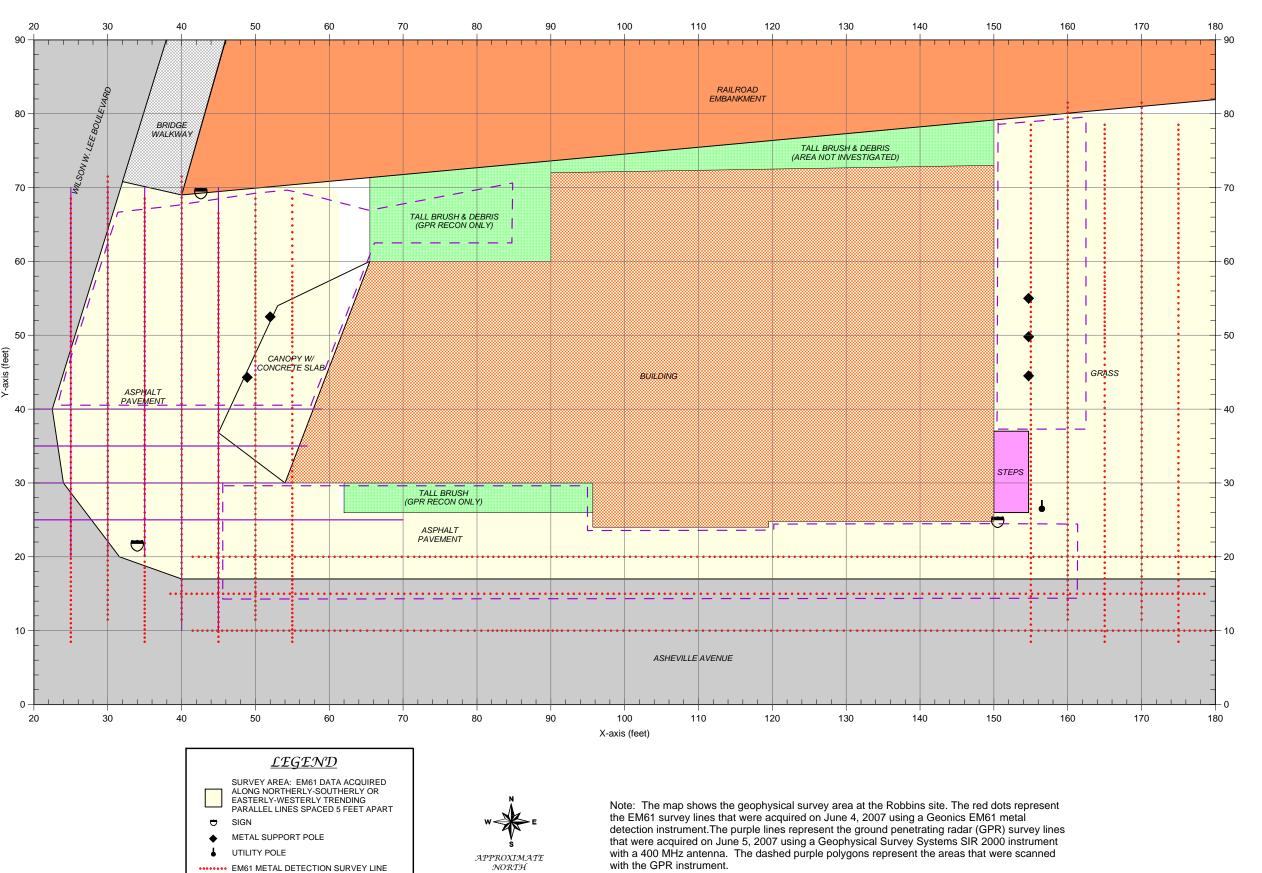
Note: The contour plot shows the differential response between the bottom and top coils of the EM61 instrument in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and UST's and ignores smaller miscellaneous, buried, metal debris. The EM61 data were collected on June 4, 2007 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were also acquired on June 4, 2007 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical investigation suggest that the surveyed portion of the site does not contain metallic USTs.

EM61 DIFFERENTIAL RESULTS

13	LE IN FEI	APHIC SCA	ЯЭ
MJD			
рви	СН.КD		FIGURE
U6/ 18/U/			2007-153
.Va	YAJ	DMG	J-NO.
S - IES	PROPERTY	NORTH CAROLINA	ESULTS
록∣	R	STATE	~
SOLUTIONS	JAMES HUNTER PROPERTY	E STATESVILLE	GEOPHYSICAL RESULTS
CLIE	SITE	YTIO	3.1111



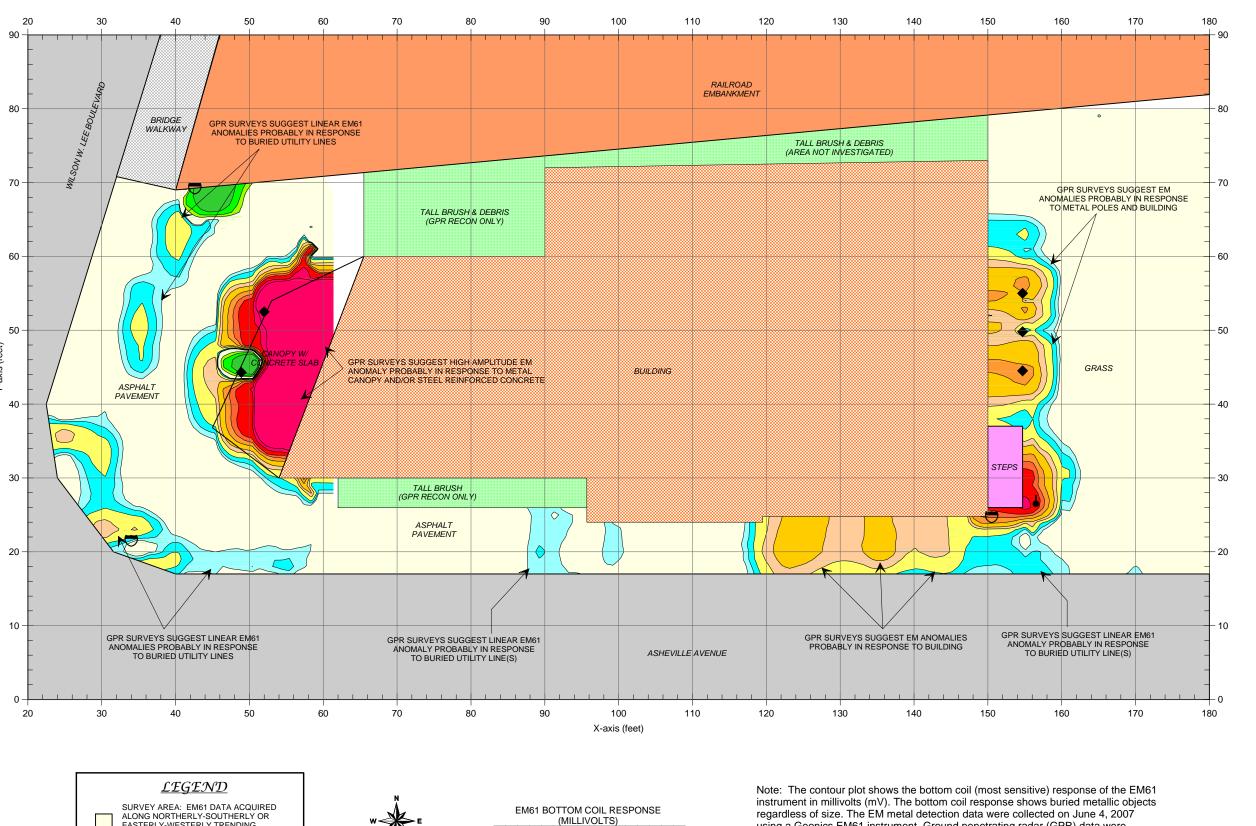


— GPR SURVEY LINE AREA SCANNED BY GPR GEOPHYSICAL SURVEY LINE LOCATIONS

J-NO. DWG LAY DATE NORTH CAROLINA ROBBINS PROPERTY **SOLUTIONS - IES STATS** C. MARJORIE STATESVILLE TITLE CITY SITE CLIENT



with the GPR instrument.



APPROXIMATE

EASTERLY-WESTERLY TRENDING

METAL SUPPORT POLE

UTILITY POLE

PARALLEL LINES SPACED 5 FEET APART

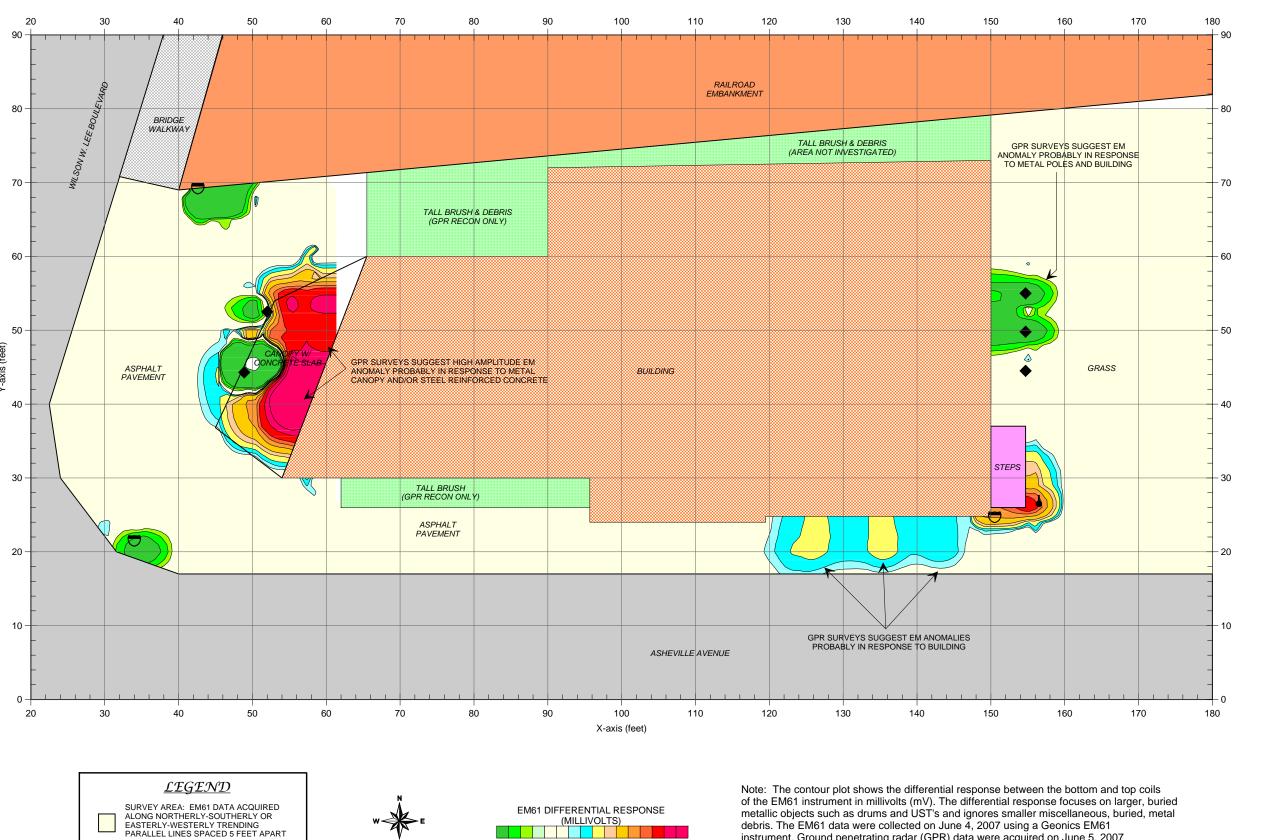
NORTH CAROLINA ROBBINS PROPERTY **SOLUTIONS - IES 3TAT2** GEOPHYSICAL C. MARJORIE TESVILLE ST TITLE CITY SITE CLIENT

J-NO. DWG LAY DATE

EM61 BOTTOM COIL RESULTS

regardless of size. The EM metal detection data were collected on June 4, 2007 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on June 5, 2007 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

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



ઌૢૢૹૢઌ૽ૢૺઌૢૹઙઌ૽૽૽૽ઌ૽ૹ૽૽ઌ૾ઌ૾ઌ૽૽ઌ૽૽

APPROXIMATE

METAL SUPPORT POLE

UTILITY POLE

debris. The EM61 data were collected on June 4, 2007 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on June 5, 2007 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

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

EM61 DIFFERENTIAL RESULTS

GRAPHIC SCALE IN FEET

MJD			
ркми	СН.КВ		FIGURE
_	一		3
%			15
06/18/07			007-153
90			20
BATE	YAJ	DMC	J-NO.
SOLUTIONS - IES	MARJORIE C. ROBBINS PROPERTY	STATE NORTH CAROLINA	AL RESULTS
SOLUT	MARJORIE C.	STATESVILLE	GEOPHYSICAL RESULTS
СГІЕИТ	SITE	ΥПЭ	элпт



APPENDIX C GPS COORDINATES

Boring Location GPS Coordinates Arnold Robbins Property 801 Wilson Lee Boulevard Statesville, Iredell County, North Carolina

	Latitude	Longitude
GP-1	35.77457746	-80.89027899
GP-2	35.77457914	-80.89027933
GP-3	35.77455148	-80.89027229
GP-4	35.7744965	-80.89025787
GP-5	35.77445542	-80.89029936
GP-6	35.77442491	-80.89038586
GP-7	35.77439357	-80.89048527
GP-8	35.77437119	-80.89059348
GP-9	35.77440103	-80.89065308
GP-10	35.77442961	-80.8906519

APPENDIX D

BORING LOGS

Log of Soil Boring: GP-1

Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-1

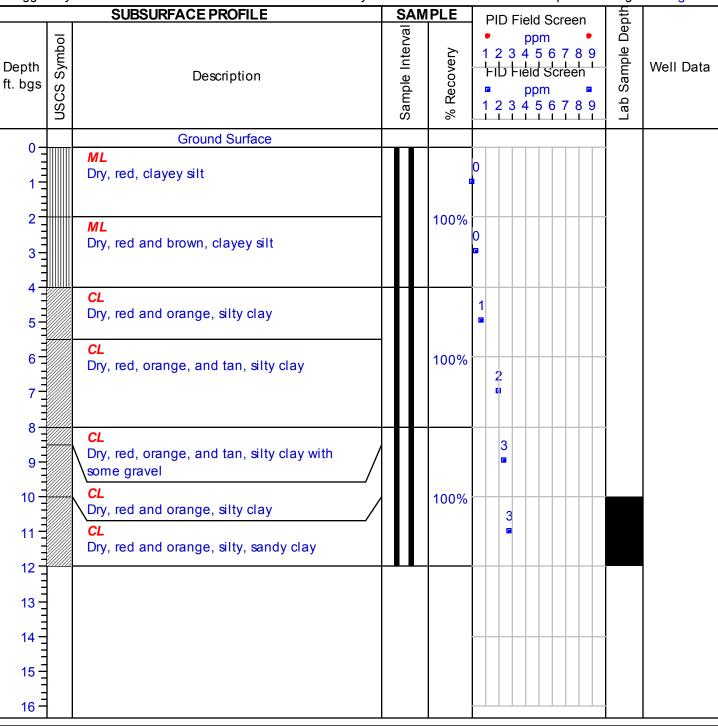
Client: NCDOT

WBS # 32669.1.1 Initial Water Level: N/A
State Project # B-2576 County: Iredell Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/18/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.



Solutions-IES, Inc. 1101 Nowell Road Raleigh, NC 27607 (919) 873-1060



Log of Soil Boring: GP-2

Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-2

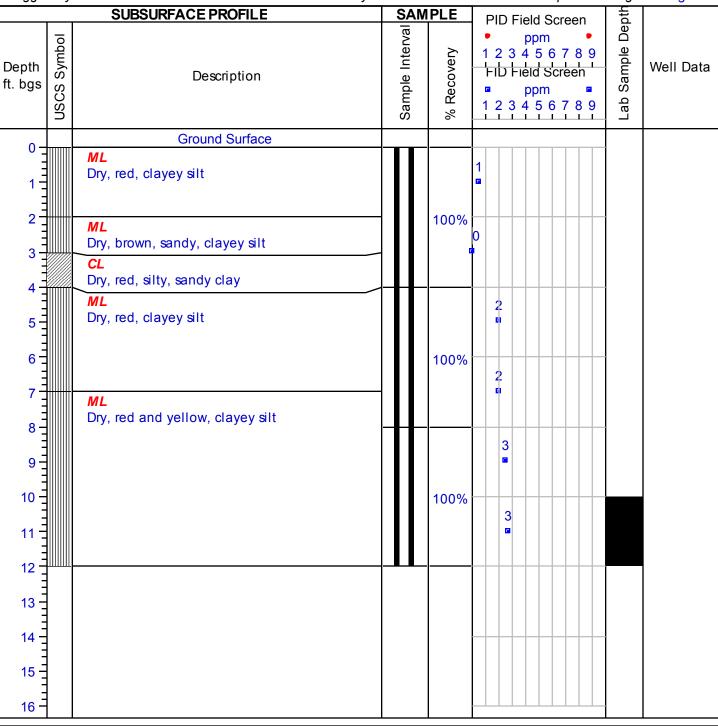
Client: NCDOT

WBS # 32669.1.1 Initial Water Level: N/A
State Project # B-2576 County: Iredell Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/18/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.



Solutions-IES, Inc. 1101 Nowell Road Raleigh, NC 27607 (919) 873-1060



Log of Soil Boring: GP-3

Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-3

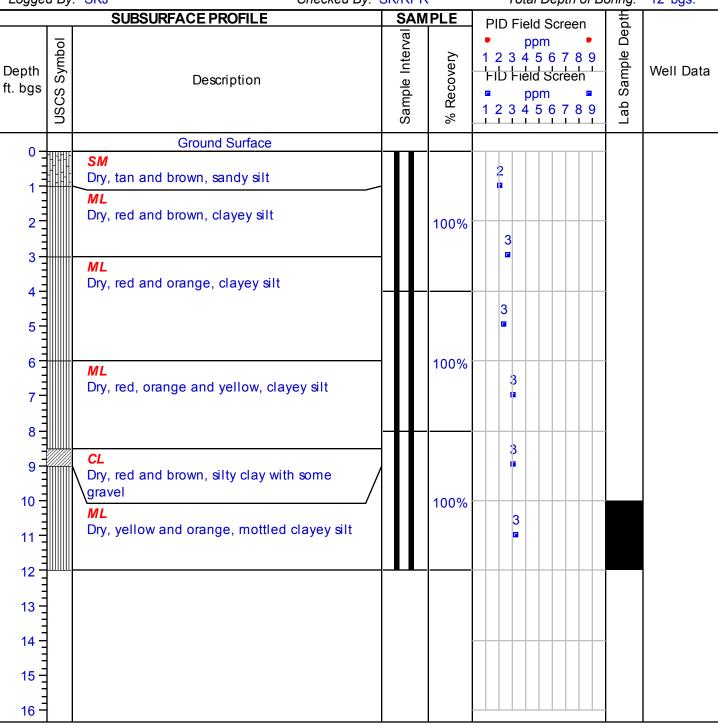
Client: NCDOT

WBS # 32669.1.1 Initial Water Level: N/A
State Project # B-2576 County: Iredell Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/18/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.



Solutions-IES, Inc. 1101 Nowell Road Raleigh, NC 27607 (919) 873-1060



Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-4

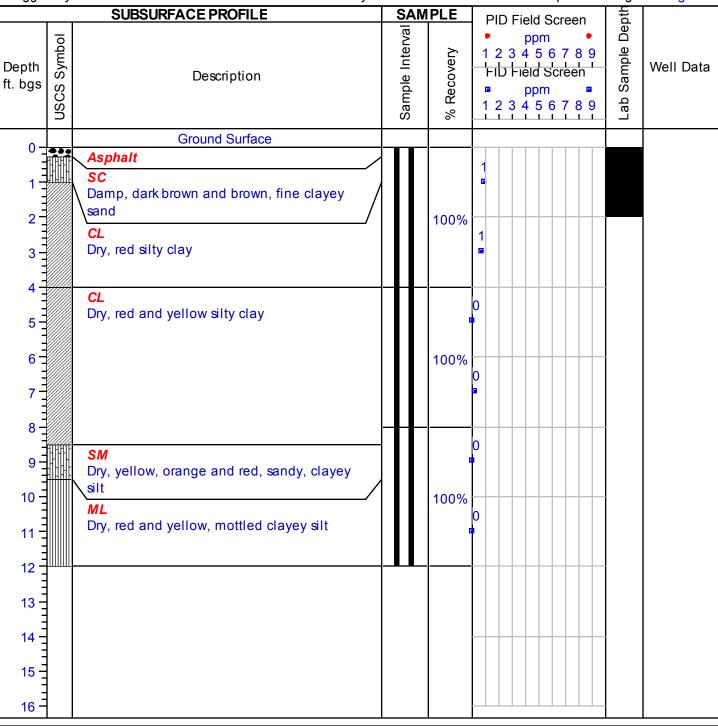
Client: NCDOT

WBS # 32669.1.1 Initial Water Level: N/A
State Project # B-2576 County: Iredell Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/18/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.





Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-5

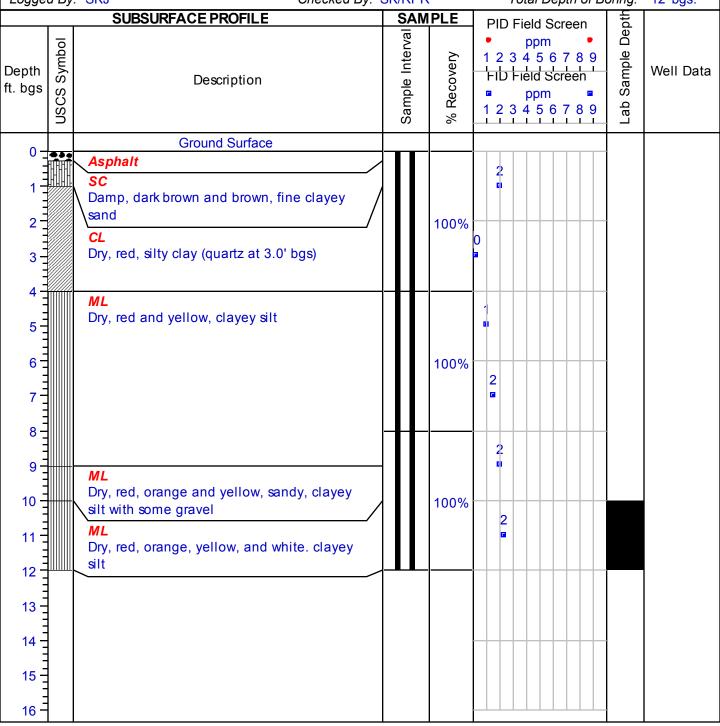
Client: NCDOT

WBS # 32669.1.1 Initial Water Level: N/A
State Project # B-2576 County: Iredell Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/18/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.





Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-6

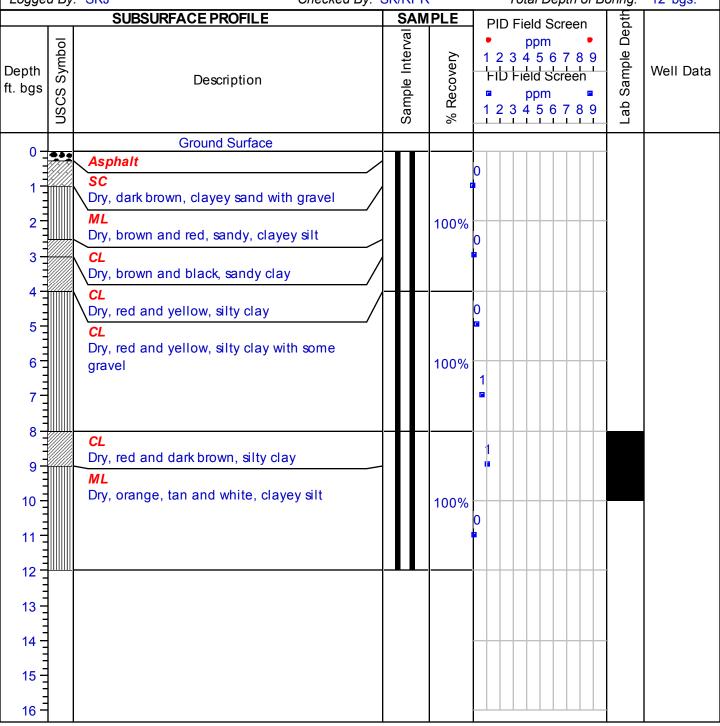
Client: NCDOT

WBS # 32669.1.1 Initial Water Level: N/A
State Project # B-2576 County: Iredell Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/18/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.





Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-7

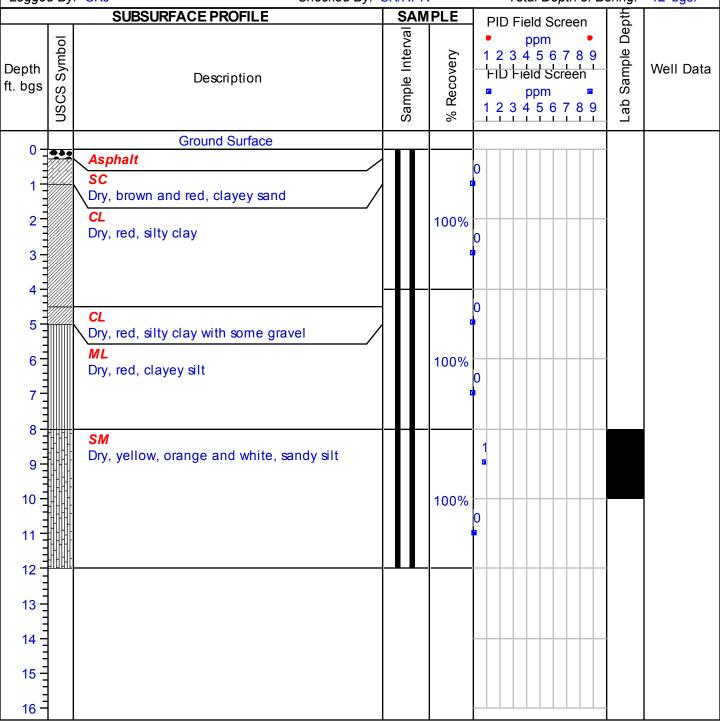
Client: NCDOT

WBS # 32669.1.1 Initial Water Level: N/A
State Project # B-2576 County: Iredell Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/18/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.





Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-8

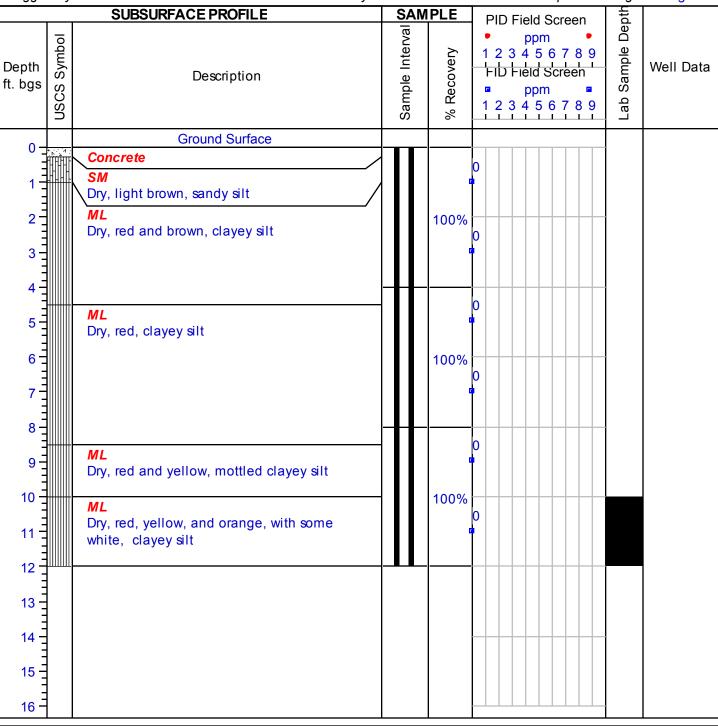
Client: NCDOT

WBS # 32669.1.1 Initial Water Level: N/A
State Project # B-2576 County: Iredell Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/19/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.





Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-9

Client: NCDOT

WBS # 32669.1.1

State Project # B-2576

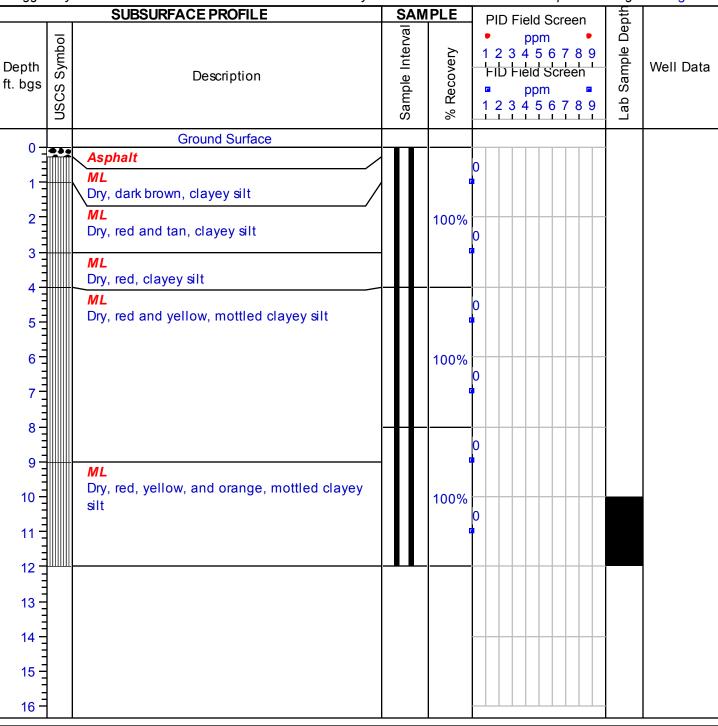
County: Iredell

Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/19/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.





Project: 3610.07A3.NDOT Solutions-IES Project No.: 3610.07A3.NDOT Boring Number: GP-10

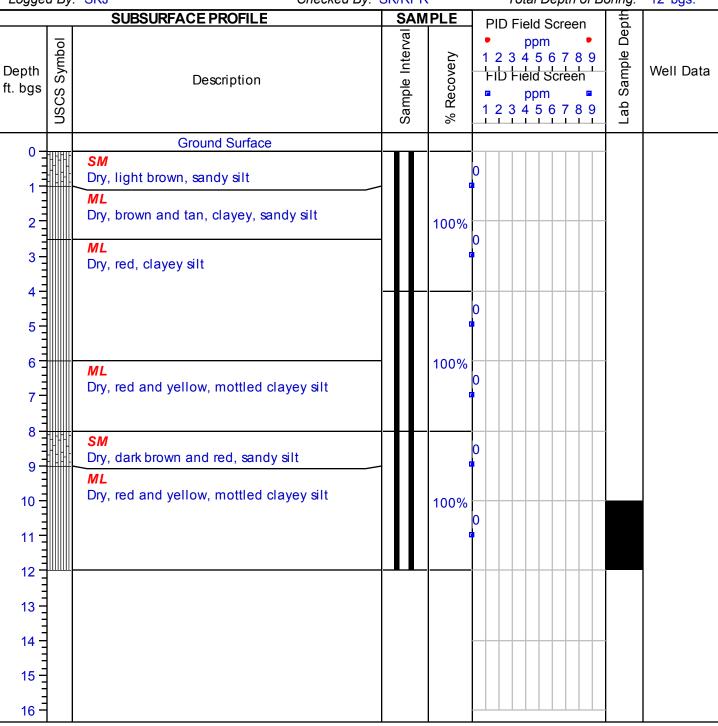
Client: NCDOT

WBS # 32669.1.1 Initial Water Level: N/A
State Project # B-2576 County: Iredell Stabilized Water Level: N/A

Drilling Method: Direct Push Boring Date: 6/19/2007 Cave In Depth: N/A

Sampler Type: MC

Logged By: SKJ Checked By: SK/RPR Total Depth of Boring: 12' bgs.





APPENDIX E

LABORATORY ANALYTICAL REPORT (Combined: James Hunter and Arnold Robbins Properties)





July 05, 2007

Mr. Brian Rebar Solutions-IES 1101 Nowell Road Raleigh, NC 27607

RE: Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Dear Mr. Rebar:

Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2007. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals Analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Charlotte laboratory unless otherwise footnoted.

The results relate only to samples in this report.

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

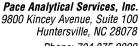
Sincerely,

Bonnie McKee

bonnie.mckee@pacelabs.com (704) 875-9092 ext. 234

Project Manager

Enclosures





Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Solid results are reported on a dry weight basis

Lab Sample No: 928540129 Project Sample Number: 92147161-001 Date Collected: 06/18/07 12:35

:00

Client Sample ID: GP-1-10-12	Matrix: Soil					Date Received: 06/21/07 14:			
Parameters	Results	Units	Report Limit	Analyzed	Bv	CAS No.	Qual RegLmt		
Wet Chemistry	Reduieb		Report Himre	maryzea			Qual Regime		
Percent Moisture	Method: % Mo	oisture							
Percent Moisture	20.7	%		06/26/07 11:17	TNM				
GC Semivolatiles									
TPH in Soil by 3545/8015	Prep/Method:	EPA 3545 /	' EPA 8015						
Diesel Fuel	ND	mg/kg	6.3	06/28/07 16:18	CAH	68334-30-5			
n-Pentacosane (S)	88	%		06/28/07 16:18	CAH	629-99-2			
Date Extracted	06/25/07			06/25/07					
GC Volatiles									
GAS, Soil, North Carolina	Method: EPA	8015							
Gasoline	ND	mg/kg	4.8	06/29/07 03:14	DHW	8006-61-9			
4-Bromofluorobenzene (S)	84	%		06/29/07 03:14	DHW	460-00-4			

Date: 07/05/07 Page: 1 of 26





Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540145 Project Sample Number: 92147161-002 Date Collected: 06/18/07 13:00

Client Sample ID: GP-2-10-12 Matrix: Soil Date Received: 06/21/07 14:00 <u> Units Report Limit</u> <u>Analyzed</u> By CAS No. Qual RegLmt <u>Parameters</u> Results Wet Chemistry Percent Moisture Method: % Moisture Percent Moisture 26.7 06/26/07 11:18 TNM GC Semivolatiles TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015 Diesel Fuel 06/28/07 16:45 CAH 68334-30-5 ND mg/kg 6.8 n-Pentacosane (S) 78 % 06/28/07 16:45 CAH 629-99-2 Date Extracted 06/25/07 06/25/07 GC Volatiles GAS, Soil, North Carolina Method: EPA 8015 Gasoline ND 5.4 06/26/07 18:23 DHW 8006-61-9 mg/kg 4-Bromofluorobenzene (S) 87 % 06/26/07 18:23 DHW 460-00-4

Date: 07/05/07 Page: 2 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

By CAS No. Qual RegLmt

Lab Sample No: 928540152 Project Sample Number: 92147161-003 Date Collected: 06/18/07 13:50

<u> Units Report Limit</u> <u>Analyzed</u>

06/26/07

Client Sample ID: GP-3-10-12 Matrix: Soil

Results

Wet Chemistry Percent Moisture Method: % Moisture

Percent Moisture 24.4 06/26/07 11:18 TNM

GC Semivolatiles

<u>Parameters</u>

TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015

Diesel Fuel 07/03/07 11:57 CAH 68334-30-5 ND mg/kg 6.6 n-Pentacosane (S) 101 % 07/03/07 11:57 CAH 629-99-2

Date Extracted 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND 5.9 06/26/07 03:42 DHW 8006-61-9 mg/kg 4-Bromofluorobenzene (S) 106 % 06/26/07 03:42 DHW 460-00-4

Date: 07/05/07 Page: 3 of 26





Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540160 Project Sample Number: 92147161-004 Date Collected: 06/18/07 14:35 Date Received: 06/21/07 14:00

Client Sample ID: GP-4-10-12 Matrix: Soil

<u> Units Report Limit</u> <u>Analyzed</u> By CAS No. Qual RegLmt <u>Parameters</u> Results

Wet Chemistry Percent Moisture Method: % Moisture

Percent Moisture 17.3 06/26/07 11:19 TNM

GC Semivolatiles

TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015

Diesel Fuel 07/03/07 12:23 CAH 68334-30-5 61. mg/kg 6.0 n-Pentacosane (S) 78 % 07/03/07 12:23 CAH 629-99-2

Date Extracted 06/26/07 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND 5.7 06/26/07 04:08 DHW 8006-61-9 mg/kg 4-Bromofluorobenzene (S) 85 % 06/26/07 04:08 DHW 460-00-4

Date: 07/05/07 Page: 4 of 26

12

37706

99006

E87627





Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540186 Project Sample Number: 92147161-005 Date Collected: 06/18/07 15:40 Date Received: 06/21/07 14:00

Client Sample ID: GP-5-10-12 Matrix: Soil

Results

<u> Units Report Limit</u> <u>Analyzed</u> By CAS No. Qual RegLmt

Wet Chemistry Percent Moisture Method: % Moisture

Percent Moisture 18.8 06/26/07 11:19 TNM

GC Semivolatiles

<u>Parameters</u>

TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015

Diesel Fuel 6.2 07/03/07 12:50 CAH 68334-30-5 ND mg/kg n-Pentacosane (S) 84 % 07/03/07 12:50 CAH 629-99-2

Date Extracted 06/26/07 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND 5.1 06/26/07 05:25 DHW 8006-61-9 mg/kg 4-Bromofluorobenzene (S) 97 % 06/26/07 05:25 DHW 460-00-4

Date: 07/05/07 Page: 5 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540194 Project Sample Number: 92147161-006 Date Collected: 06/18/07 16:30

Client Sample ID: GP-6-8-10 Matrix: Soil

Results <u> Units Report Limit</u> <u>Analyzed</u> By CAS No. Qual RegLmt <u>Parameters</u> Wet Chemistry Percent Moisture Method: % Moisture Percent Moisture 18.5 06/26/07 11:26 TNM GC Semivolatiles TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015 Diesel Fuel 22. 6.1 07/04/07 12:02 CAH 68334-30-5 mg/kg n-Pentacosane (S) 67 % 07/04/07 12:02 CAH 629-99-2 Date Extracted 06/26/07 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND 5.4 06/26/07 05:51 DHW 8006-61-9 mg/kg 4-Bromofluorobenzene (S) 92 % 06/26/07 05:51 DHW 460-00-4

Date: 07/05/07 Page: 6 of 26





Gasoline

4-Bromofluorobenzene (S)

Lab Project Number: 92147161

06/26/07 06:17 DHW 8006-61-9

06/26/07 06:17 DHW 460-00-4

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540202 Project Sample Number: 92147161-007 Date Collected: 06/18/07 17:15

4.7

Client Sample ID: GP-7-8-10 Matrix: Soil

ND

94

Matrix: Soil Date Received: 06/21/07 14:00

Results <u>Units</u> Report Limit Analyzed By CAS No. Qual RegLmt <u>Parameters</u> Wet Chemistry Percent Moisture Method: % Moisture Percent Moisture 10.6 06/26/07 11:27 TNM GC Semivolatiles TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015 Diesel Fuel 30. 5.6 07/03/07 13:43 CAH 68334-30-5 mg/kg n-Pentacosane (S) 111 % 07/03/07 13:43 CAH 629-99-2 Date Extracted 06/26/07 06/26/07 GC Volatiles GAS, Soil, North Carolina Method: EPA 8015

mg/kg

%

Date: 07/05/07 Page: 7 of 26





Gasoline

4-Bromofluorobenzene (S)

Lab Project Number: 92147161

06/26/07 06:42 DHW 8006-61-9

06/26/07 06:42 DHW 460-00-4

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540210 Project Sample Number: 92147161-008 Date Collected: 06/19/07 08:05 Date Received: 06/21/07 14:00

5.4

Client Sample ID: GP-8-10-12 Matrix: Soil

ND

91

Results <u>Units</u> Report Limit Analyzed By CAS No. Qual RegLmt <u>Parameters</u> Wet Chemistry Percent Moisture Method: % Moisture Percent Moisture 22.1 06/26/07 11:28 TNM GC Semivolatiles TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015 Diesel Fuel 6.4 07/03/07 14:10 CAH 68334-30-5 ND mg/kg n-Pentacosane (S) 92 % 07/03/07 14:10 CAH 629-99-2 Date Extracted 06/26/07 06/26/07 GC Volatiles GAS, Soil, North Carolina Method: EPA 8015

mg/kg

%

Date: 07/05/07 Page: 8 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Gasoline

4-Bromofluorobenzene (S)

Date: 07/05/07

Lab Project Number: 92147161

06/26/07 07:09 DHW 8006-61-9

06/26/07 07:09 DHW 460-00-4

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540228 Project Sample Number: 92147161-009 Date Collected: 06/19/07 08:50

Client Sample ID: GP-9-10-12 Matrix: Soil

ND

90

mg/kg

%

Results <u> Units Report Limit</u> <u>Analyzed</u> By CAS No. Qual RegLmt <u>Parameters</u> Wet Chemistry Percent Moisture Method: % Moisture Percent Moisture 22.2 06/26/07 11:28 TNM GC Semivolatiles TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015 Diesel Fuel 6.4 07/04/07 12:29 CAH 68334-30-5 ND mg/kg n-Pentacosane (S) 84 % 07/04/07 12:29 CAH 629-99-2 Date Extracted 06/26/07 06/26/07 GC Volatiles GAS, Soil, North Carolina Method: EPA 8015

5.0

Page: 9 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540236 Project Sample Number: 92147161-010 Date Collected: 06/19/07 09:45

Client Sample ID: GP-10-10-12 Matrix: Soil

Results <u> Units Report Limit</u> <u>Analyzed</u> By CAS No. Qual RegLmt <u>Parameters</u> Wet Chemistry Percent Moisture Method: % Moisture Percent Moisture 15.1 06/26/07 11:28 TNM GC Semivolatiles TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015 Diesel Fuel 5.9 07/03/07 16:03 CAH 68334-30-5 ND mg/kg n-Pentacosane (S) 89 % 07/03/07 16:03 CAH 629-99-2 Date Extracted 06/26/07 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND mg/kg 5.8 06/27/07 03:54 DHW 8006-61-9 4-Bromofluorobenzene (S) 89 % 06/27/07 03:54 DHW 460-00-4

Date: 07/05/07 Page: 10 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540244 Project Sample Number: 92147161-011 Date Collected: 06/19/07 11:30

Client Sample ID: GP-11-10-12 Matrix: Soil

<u>Parameters</u> <u>Results</u> <u>Units</u> <u>Report Limit</u> <u>Analyzed</u> <u>By</u> <u>CAS No.</u> <u>Qual</u> <u>RegLmt</u> Wet Chemistry

Percent Moisture Method: % Moisture

Percent Moisture 15.5 % 06/26/07 11:28 TNM

GC Semivolatiles

Diesel Fuel ND mg/kg 5.9 07/03/07 17:03 CAH 68334-30-5 n-Pentacosane (S) 81 % 07/03/07 17:03 CAH 629-99-2

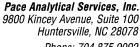
Date Extracted 06/26/07 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND mg/kg 5.0 06/27/07 04:46 DHW 8006-61-9 4-Bromofluorobenzene (S) 86 % 06/27/07 04:46 DHW 460-00-4

Date: 07/05/07 Page: 11 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540251 Project Sample Number: 92147161-012 Date Collected: 06/19/07 12:15

Client Sample ID: GP-12-6-8 Matrix: Soil

Parameters Wet Chemistry	Results	Units	Report Limit	Analyzed	Ву	CAS No.	Qual RegLmt
Percent Moisture	Method: % Moisture						
Percent Moisture	14.7	8		06/26/07 11:2	8 TNM		
GC Semivolatiles							
TPH in Soil by 3545/8015	Prep/Method:	EPA 3545 /	EPA 8015				
Diesel Fuel	ND	mg/kg	5.9	07/03/07 17:3	2 CAH	68334-30-5	
n-Pentacosane (S)	83	%		07/03/07 17:3	2 CAH	629-99-2	
Date Extracted	06/26/07			06/26/07			
GC Volatiles							
GAS, Soil, North Carolina	Method: EPA	8015					
Gasoline	ND	mg/kg	4.9	06/27/07 05:3	7 DHW	8006-61-9	
4-Bromofluorobenzene (S)	87	%		06/27/07 05:3	7 DHW	460-00-4	

Date: 07/05/07 Page: 12 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540269 Project Sample Number: 92147161-013 Date Collected: 06/19/07 12:35

Client Sample ID: GP-13-6-8 Matrix: Soil

Parameters Results Units Report Limit Analyzed By CAS No. Qual RegLmt
Wet Chemistry

Notice Weights Results Validation Va

Percent Moisture Method: % Moisture

Percent Moisture 14.5 % 06/26/07 11:29 TNM

GC Semivolatiles

Date Extracted 06/26/07 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND mg/kg 5.2 06/27/07 06:03 DHW 8006-61-9 4-Bromofluorobenzene (S) 84 % 06/27/07 06:03 DHW 460-00-4

Date: 07/05/07 Page: 13 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540277 Project Sample Number: 92147161-014 Date Collected: 06/19/07 13:45

Client Sample ID: GP-14-6-8 Matrix: Soil

Results

Wet Chemistry
Percent Moisture Method: % Moisture

Percent Moisture 11.2 % 06/26/07 11:29 TNM

GC Semivolatiles

<u>Parameters</u>

TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015

Diesel Fuel 50. mg/kg 5.6 07/03/07 18:25 CAH 68334-30-5 n-Pentacosane (S) 106 % 07/03/07 18:25 CAH 629-99-2

Date Extracted 06/26/07 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND mg/kg 4.7 06/27/07 06:29 DHW 8006-61-9 4-Bromofluorobenzene (S) 86 % 06/27/07 06:29 DHW 460-00-4

Date: 07/05/07 Page: 14 of 26





Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540285 Project Sample Number: 92147161-015 Date Collected: 06/19/07 14:25 Date Received: 06/21/07 14:00

Client Sample ID: GP-15-6-8 Matrix: Soil

Results <u> Units Report Limit</u> <u>Analyzed</u> By CAS No. Qual RegLmt <u>Parameters</u> Wet Chemistry Percent Moisture Method: % Moisture Percent Moisture 25.3 06/26/07 11:29 TNM GC Semivolatiles

TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015

Diesel Fuel 07/03/07 18:52 CAH 68334-30-5 ND mg/kg 6.7 n-Pentacosane (S) 88 % 07/03/07 18:52 CAH 629-99-2 Date Extracted 06/26/07 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND 6.0 06/27/07 06:55 DHW 8006-61-9 mg/kg 4-Bromofluorobenzene (S) 85 % 06/27/07 06:55 DHW 460-00-4

Date: 07/05/07 Page: 15 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540293 Project Sample Number: 92147161-016 Date Collected: 06/19/07 15:00

<u>Units</u> Report Limit Analyzed

Client Sample ID: GP-16-6-8 Matrix: Soil

Results

By CAS No. Qual RegLmt

Wet Chemistry
Percent Moisture Method: % Moisture

Percent Moisture 21.4 % 06/26/07 11:30 TNM

GC Semivolatiles

TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015

Diesel Fuel ND mg/kg 6.4 07/03/07 19:19 CAH 68334-30-5 n-Pentacosane (S) 85 % 07/03/07 19:19 CAH 629-99-2

Date Extracted 06/26/07 06/26/07

GC Volatiles

<u>Parameters</u>

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND mg/kg 6.0 06/27/07 07:22 DHW 8006-61-9 4-Bromofluorobenzene (S) 84 % 06/27/07 07:22 DHW 460-00-4

Date: 07/05/07 Page: 16 of 26





Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540301 Project Sample Number: 92147161-017 Date Collected: 06/19/07 15:20

Matrix: Soil

Client Sample ID: GP-17-6-8 Date Received: 06/21/07 14:00 Results <u> Units Report Limit</u> <u>Analyzed</u> By CAS No. Qual RegLmt <u>Parameters</u> Wet Chemistry Percent Moisture Method: % Moisture Percent Moisture 25.8 06/26/07 11:30 TNM GC Semivolatiles TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015 Diesel Fuel 07/03/07 19:46 CAH 68334-30-5 ND mg/kg 6.7 n-Pentacosane (S) 93 % 07/03/07 19:46 CAH 629-99-2 Date Extracted 06/26/07 06/26/07 GC Volatiles GAS, Soil, North Carolina Method: EPA 8015 Gasoline ND 6.1 06/27/07 07:48 DHW 8006-61-9 mg/kg 4-Bromofluorobenzene (S) 84 % 06/27/07 07:48 DHW 460-00-4

Date: 07/05/07 Page: 17 of 26



Phone: 704.875.9092 Fax: 704.875.9091



Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

Lab Sample No: 928540319 Project Sample Number: 92147161-018 Date Collected: 06/19/07 16:05

Client Sample ID: GP-18-6-8 Matrix: Soil

Parameters Results Units Report Limit Analyzed By CAS No. Qual RegLmt Wet Chemistry

Percent Moisture Method: % Moisture

Percent Moisture 19.6 % 06/26/07 11:30 TNM

GC Semivolatiles

TPH in Soil by 3545/8015 Prep/Method: EPA 3545 / EPA 8015

Diesel Fuel ND mg/kg 6.2 07/03/07 20:13 CAH 68334-30-5 n-Pentacosane (S) 74 % 07/03/07 20:13 CAH 629-99-2

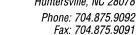
Date Extracted 06/26/07 06/26/07

GC Volatiles

GAS, Soil, North Carolina Method: EPA 8015

Gasoline ND mg/kg 5.4 06/27/07 08:14 DHW 8006-61-9 4-Bromofluorobenzene (S) 85 % 06/27/07 08:14 DHW 460-00-4

Date: 07/05/07 Page: 18 of 26





Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

PARAMETER FOOTNOTES

Method 9071B modified to use ASE.

All pH, Free Chlorine, Total Chlorine and Ferrous Iron analyses conducted outside of EPA recommended immediate hold time.

Depending on the moisture content the PRLs can be elevated for all soil samples reported on a dry weight basis.

2-Chloroethyl vinyl ether has been shown to degrade in the presence of acid.

ND Not detected at or above adjusted reporting limit

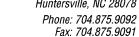
NC Not Calculable

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

MDL Adjusted Method Detection Limit

(S) Surrogate

Date: 07/05/07 Page: 19 of 26





QUALITY CONTROL DATA

Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

QC Batch: 192315 Analysis Method: EPA 8015

QC Batch Method: EPA 3545

Analysis Description: TPH in Soil by 3545/8015

Associated Lab Samples: 928540129 928540145

METHOD BLANK: 928552983

Associated Lab Samples: 928540129 928540145

Blank Reporting

 Parameter
 Units
 Result
 Limit
 Footnotes

 Diesel Fuel
 mg/kg
 ND
 5.0

n-Pentacosane (S) % 90

LABORATORY CONTROL SAMPLE: 928552991

Spike LCS LCS

<u>Parameter</u> <u>Units</u> <u>Conc.</u> <u>Result</u> <u>% Rec</u> <u>Footnotes</u>

Diesel Fuel mg/kg 166.70 139.9 84 n-Pentacosane (S) 91

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 928553007 928553015

928548213 Spike MS MSD MS MSD

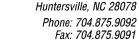
Parameter Units Result Conc. Result Result %_Rec %_Rec RPD Footnotes 87 80 Diesel Fuel mg/kg 2.511 176.80 155.8 143.6 8

n-Pentacosane (S) 96 88

Date: 07/05/07

REPORT OF LABORATORY ANALYSIS

Page: 20 of 26





QUALITY CONTROL DATA

Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

QC Batch: 192440 Analysis Method: EPA 8015 QC Batch Method: EPA 3545 Analysis Description: TPH in Soil by 3545/8015 Associated Lab Samples: 928540152 928540160 928540186 928540194 928540202 928540210 928540228 928540236 928540244 928540251 928540269 928540277 928540285 928540293 928540301 928540319 METHOD BLANK: 928556109 Associated Lab Samples: 928540152 928540160 928540186 928540194 928540210 928540228 928540202 928540236 928540244 928540251 928540269 928540277 928540285 928540293 928540301 928540319 Reporting Blank Parameter Units Result Limit Footnotes Diesel Fuel mg/kg ND 5.0 n-Pentacosane (S) % 95 LABORATORY CONTROL SAMPLE: 928556117 Spike LCS LCS <u>Parameter</u> <u>Units</u> Conc. Result % Rec Footnotes Diesel Fuel mg/kg 166.70 175.0 105 n-Pentacosane (S) 105 MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 928556125 928556133 928540327 Spike MS MSD MS MSD <u>Parameter</u> <u>Units</u> Result Conc. Result Result %_<u>Rec</u> %<u>Rec</u> <u>RPD</u> Footnotes Diesel Fuel 4.826 189.00 169.4 141.5 87 72 18

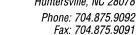
Date: 07/05/07 Page: 21 of 26

mg/kg

n-Pentacosane (S)

87

76





QUALITY CONTROL DATA

Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

QC Batch: 192367 Analysis Method: EPA 8015 QC Batch Method: EPA 8015 Analysis Description: GAS, Soil, North Carolina Associated Lab Samples: 928540129 928540145 928540152 928540160 928540186 928540194 928540202 928540210 928540228 METHOD BLANK: 928554609 928540129 928540145 928540152 928540160 Associated Lab Samples: 928540186 928540194 928540202 928540210 928540228 Blank Reporting <u>Parameter</u> <u>Units</u> Result Limit Footnotes Gasoline mg/kg ND 5.0 90 4-Bromofluorobenzene (S) % LABORATORY CONTROL SAMPLE: 928554617 Spike LCS LCS % Rec Parameter Units Conc. Result Footnotes Gasoline 25.00 31.75 127 mg/kg 4-Bromofluorobenzene (S) 95 MATRIX SPIKE: 928554625 928548544 Spike MS MS Conc. Parameter <u>Units</u> Result Result % Rec Footnotes Gasoline 1.828 25.01 132 mg/kg 34.93 4-Bromofluorobenzene (S) 89 SAMPLE DUPLICATE: 928554633 928548346 DUP <u>Parameter</u> <u>Units</u> Result Result RPDFootnotes Gasoline 4600 mg/kg 4000 15

Date: 07/05/07 Page: 22 of 26

104

%

100

4-Bromofluorobenzene (S)



QUALITY CONTROL DATA

Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

QC Batch: 192497 Analysis Method: EPA 8015 QC Batch Method: EPA 8015 Analysis Description: GAS, Soil, North Carolina Associated Lab Samples: 928540236 928540244 928540251 928540269 928540277 928540285 928540293 928540301 928540319 METHOD BLANK: 928558428 928540236 928540244 928540251 928540269 Associated Lab Samples: 928540277 928540285 928540293 928540301 928540319 Blank Reporting <u>Parameter</u> <u>Units</u> Result Limit Footnotes Gasoline mg/kg ND 5.0 4-Bromofluorobenzene (S) % 83 LABORATORY CONTROL SAMPLE: 928558436 Spike LCS LCS % Rec Parameter Units Conc. Result Footnotes Gasoline 25.00 33.00 132 mg/kg 4-Bromofluorobenzene (S) 95 MATRIX SPIKE: 928558444 928540236 Spike MS MS Conc. Parameter <u>Units</u> Result Result % Rec Footnotes Gasoline 2.758 29.04 125 mg/kg 39.14 4-Bromofluorobenzene (S) 87 SAMPLE DUPLICATE: 928558451 928540244 DUP

Date: 07/05/07 Page: 23 of 26

Result

ND

84

RPD

NC

Footnotes

<u>Units</u>

mg/kg

%

Result

ND

86

<u>Parameter</u>

4-Bromofluorobenzene (S)

Gasoline





QUALITY CONTROL DATA

Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

QC Batch: 192422 Analysis Method: % Moisture

QC Batch Method: Analysis Description: Percent Moisture

Associated Lab Samples: 928540129 928540145 928540152 928540160 928540186

SAMPLE DUPLICATE: 928555994

928546415 DUP

 Parameter
 Units
 Result
 Result
 RPD
 Footnotes

 Percent Moisture
 %
 29.50
 28.30
 4

Date: 07/05/07 Page: 24 of 26





QUALITY CONTROL DATA

Lab Project Number: 92147161

8

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

QC Batch: 192423 Analysis Method: % Moisture

QC Batch Method: Analysis Description: Percent Moisture

Associated Lab Samples: 928540194 928540202 928540210 928540228 928540236 928540244 928540251 928540269 928540277 928540285

928540293 928540301 928540319

SAMPLE DUPLICATE: 928555937

928540194 DUP

Parameter Units Result Result RPD Footnotes

Percent Moisture % 18.50 17.20

Date: 07/05/07 Page: 25 of 26





Lab Project Number: 92147161

Client Project ID: STATESVILLE PSA-WBS#32669.1.1

QUALITY CONTROL DATA PARAMETER FOOTNOTES

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

LCS(D) Laboratory Control Sample (Duplicate)

MS(D) Matrix Spike (Duplicate)

DUP Sample Duplicate

ND Not detected at or above adjusted reporting limit

NC Not Calculable

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

MDL Adjusted Method Detection Limit RPD Relative Percent Difference

(S) Surrogate

Date: 07/05/07 Page: 26 of 26