



PRELIMINARY SITE ASSESSMENT

SUSAN ASHLEY MARION PROPERTY (PARCEL #026)

5829 High Point Road

Greensboro, NC

State Project: U-2412B

WBS Element: 34802.1.1

August 17, 2011

Prepared for:

North Carolina Department of Transportation

Geotechnical Engineering Unit

1020 Birch Ridge Drive

Raleigh, NC 27610



FROEHLING & ROBERTSON, INC.

Engineering Stability Since 1881

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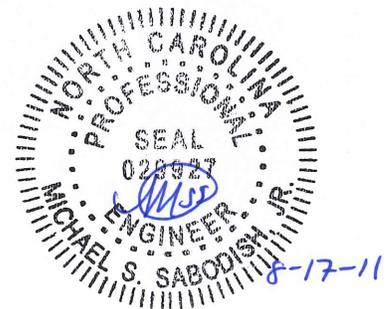
August 17, 2011

North Carolina Department of Transportation
Geotechnical Engineering Unit
1020 Birch Ridge Drive
Raleigh, North Carolina 27610

Attn.: Mr. Terry Fox, L.G.
GeoEnvironmental Project Manager

Re: State Project: U-2412B
WBS Element: 3802.1.1
Jamestown Bypass, Highpoint Road, Greensboro

Subject: Preliminary Site Assessment
Ruth S. Marion Property (Parcel #026)
5829 High Point Road
Greensboro, NC



Dear Mr. Fox:

Froehling and Robertson, Inc. (F&R) has completed the authorized Preliminary Site Assessment at the Ruth S. Marion Property in Greensboro, North Carolina. The work was performed in general accordance with F&R's Proposal No. 1266-061E dated June 2, 2011. This report documents our field activities, presents the results of laboratory analysis and provides recommendations regarding the property.

Please do not hesitate to contact us if you should have any questions regarding this report.

Sincerely,

FROEHLING & ROBERTSON, INC.

Michael S. Sabodish, Jr., Ph.D., P.E.
Engineering and Remediation Services Manager

Christopher J. Burkhardt
Environmental Department Manager



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**Preliminary Site Assessment Report
Susan Ashley Marion Property (Parcel #026)
Greensboro, Guilford County, North Carolina
F&R Project No. 66N-0055**

1.0 Introduction

Froehling and Robertson, Inc. (F&R) has prepared this Preliminary Site Assessment Report (PSA) to document soil assessment activities performed at the Ruth S. Marion Property (Parcel #026) addressed as 5829 High Point Road, Greensboro, Guilford County, North Carolina. The site is located on the south side of High Point Road approximately 0.23 miles southwest from the Suttonwood Drive Intersection (Appendix I, Figure 1). Currently, the site is vacant but has recently been utilized as Coffee & Roses Express (coffee shop, restaurant and flower shop). As indicated in the Request for Proposal (RFP), a gas station type metal sign is located in the right of way in front of the existing building. Obvious evidence of a pump island or USTs was not observed at the site. The parcel may have been subdivided from the adjacent parcel #177. This work was performed in general accordance with F&R's Proposal No. 1266-061E dated June 2, 2011. The purpose of this report is to document field activities, present the results of laboratory analysis, and provide recommendations regarding the property.

Based on conversations and information provided by the NCDOT, it has been determined that the proposed utility installation and roadway construction will impact the project site (See Figure No.3). As such, the NCDOT requested a Preliminary Site Assessment be performed to assess the possibility of encountering petroleum impacted soil from known or unknown USTs which may exist/existed at the project site. As previously mentioned, the site is currently vacant. The site contains one building which is surrounded by asphalt parking and drive way areas. In addition, an above ground storage tank (AST) is present at the southeast corner of the building. Photos detailing existing site features are attached as Appendix IV of this report.

2.0 Geophysical Survey

Prior to F&R's soil assessment activities, Schnabel Engineering conducted a geophysical survey of the project site to locate suspect metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement. The geophysical work was conducted on January 9 and 15, 2011 under Schnabel's 2009 contract with NCDOT.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies



were investigated using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart, while the GPR data were collected along survey lines spaced 1 to 2 feet apart in orthogonal directions. The data was reviewed in the field to evaluate the possible presence of USTs and later transferred to a desktop computer for further review.

Based on the results of the geophysical survey, anomalies apparently caused by reinforced concrete, buried utilities and known site features were encountered. The GPR data collected at the site did not indicate the presence of metallic USTs within the areas surveyed. The complete geophysical report is attached as Appendix II.

3.0 Site Assessment Activities

F&R visited the site on July 5, 2011 to perform the Preliminary Site Assessment. The assessment consisted of advancing 5 borings into the soils at the project site. Borings B-1 through B-4 were advanced at asphalt covered locations, while Boring B-5 was advanced in a grassed covered area at the northwest corner of the site. The borings were advanced between the planned PUE and High Point Road (Appendix I, Figure 3). The borings were advanced using direct-push technology (Geoprobe) to a depth of 12 feet below ground surface (bgs). Boring locations were determined by F&R staff based on the results of the geophysical survey, site features and proposed construction activities. Boring B-4 was moved from its preliminary location (southeast corner of the property) upon discovery of an AST located at the southeast building corner. Boring B-4 was advanced approximately six feet east off the southeast building corner.

Soil sample cores from the borings (B-1 through B-5) were collected in disposable, 4-foot long acetate sleeves. The soil samples were visually/manually classified and screened in the field using a photo-ionization detector (PID) for evidence of petroleum hydrocarbons. Evaluation of VOC concentrations were performed using a MiniRae 2000 PID which produces results in parts per million (ppm). A representative soil sample was collected from one foot sections of each sleeve and placed in a re-sealable plastic bag and the vapors were then allowed to equilibrate in the headspace of the bag for approximately ten minutes prior to measurement with the PID. The measurements were collected by placing the probe tip into the headspace of the bag. PID measurements can be found in the Environmental Borings Logs in Appendix III.

The soil sample which exhibited the highest PID concentration or the sample at boring termination was submitted for laboratory analysis for diesel range organics (DRO) by EPA Method 3510 and gasoline range organics (GRO) by EPA Method 5030 with preparation by EPA Method 8015C.



The samples were collected in laboratory-supplied sample containers, placed in a cooler with ice, and delivered by courier to SGS North America, Inc. (SGS) in Wilmington, North Carolina following standard chain-of custody procedures.

4.0 Subsurface Conditions

As indicated in the attached Environmental Boring Logs (Appendix III), subsurface conditions from existing ground surface to boring termination at a depth of twelve feet included various layers of moist, red/brown and orange/red silty and sandy clays (USCS – CL); moist, red/orange clayey silts (USCS – MH) and moist, brown sandy silts and red/white silts (USCS – ML). The groundwater table was not encountered within the depths of the drilled borings, however, the soil samples appeared to be moist.

5.0 Analytical Results

As shown in the following table, petroleum hydrocarbons identified as DRO were encountered at one of the boring locations (B-4) at a depth ranging of 1 to 2 feet below ground surface. The laboratory results indicate the soil samples collected from Boring B-4 exceed the NC DENR Action level of 10 mg/kg for DRO. The laboratory analytical results can be found in the attached Appendix V of this report.

Table 1
Soil Sampling Analytical Results
Susan Ashley Marion Property (Parcel #026)
Guilford County, Greensboro, North Carolina

Sample ID	Sample Date	Sample Depth (ft bgs)	PID Reading (ppm)	EPA Method 8015B	
				DRO (mg/kg)	GRO (mg/kg)
B-1	7/5/11	0-1	5.7	ND	ND
B-2	7/5/11	5-6	3.4	ND	ND
B-3	7/5/11	5-6	3.3	ND	ND
B-4	7/5/11	1-2	22.4	138	ND
B-5	7/5/11	1-2	2.7	ND	ND
NC DENR Action Level				10	10

Notes:

- ft bgs = feet below ground surface
- ppm = parts per million
- DRO = Diesel Range Organics



GRO = Gasoline Range Organics

ND = Not Detected

Bold indicates soil analytical results above NCDENR Action Levels

NCDENR Action Level determined from the North Carolina UST Section Guidelines for Assessment and Corrective Action

6.0 Conclusions and Recommendations

F&R conducted a PSA at the Ruth S. Marion LLC Property located at 5829 High Point Road, Greensboro, Guilford County, North Carolina. A geophysical investigation was performed by Schnabel Engineering to investigate the existence of unknown USTs at the site. Based on the results of the geophysical survey, it was determined that USTs were not present at the site. Five geoprobe borings were advanced in the vicinity of the proposed drainage areas surrounding the existing building and within the PUE. Based on the results of laboratory testing, it has been determined that petroleum impacted soils exist in the vicinity of Boring B-4 at concentrations above the NC DENR Action Level of 10 mg/kg.

In regards to the proposed construction, it is estimated that petroleum impacted soils may exist to an average depth of approximately four feet below existing ground surface based on laboratory analysis, PID readings and the soil sampling results at the adjacent Prime Investment Partners LLC Property. Without knowing the invert elevations for the proposed drainage in these areas, it is difficult to accurately calculate the volume of petroleum impacted soil which may be encountered during construction. For estimating purposes, F&R assumes a utility excavation approximately four feet in width, 50 feet long and a depth of four feet below ground surface. The four foot depth was chosen based on the average depth of soil contamination observed at Parcels #177 and #026. Using the above dimensions, it can be approximated that the volume of petroleum impacted soil which may be encountered on Parcel #026 to be 50 tons. Petroleum impacted soils that are removed should be properly managed and disposed of in accordance with all NCDENR rules and regulations.

It should be noted that a delineation of the soil contamination was not performed, as this was not included in the proposed scope of work. The above estimates are based on interpretations of soil analytical results, PID readings and our experience with similar petroleum UST releases. The amount of impacted soil can only be determined after excavation or by advancing additional borings at the site to possibly delineate the extents (horizontal and vertical) of contamination.



7.0 Limitations

These services have been performed, under authorization of the North Carolina Department of Transportation for specific application on this project. These services have been performed in accordance with generally accepted environmental and hydrogeological practices. No other warranty, expressed or implied is made. As with any subsurface investigation, actual conditions exist only at the precise locations from which samples were taken. Certain inferences are based on the results of sampling and related testing to form a professional opinion of conditions in areas beyond those from which samples were taken. Our conclusions and recommendations are based upon information provided to us by others, our sampling and testing results and our site observations. We have not verified the completeness or accuracy of the information provided by others, unless otherwise noted. Our observations are based upon conditions readily visible at the site at the time of our site visits.

Froehling & Robertson, Inc. by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local, state or federal public agencies any conditions at the site that may present a potential danger to public health, safety or the environment. In areas that require notification of local, state, or federal public agencies as required by law, it is the Client's responsibility to so notify.



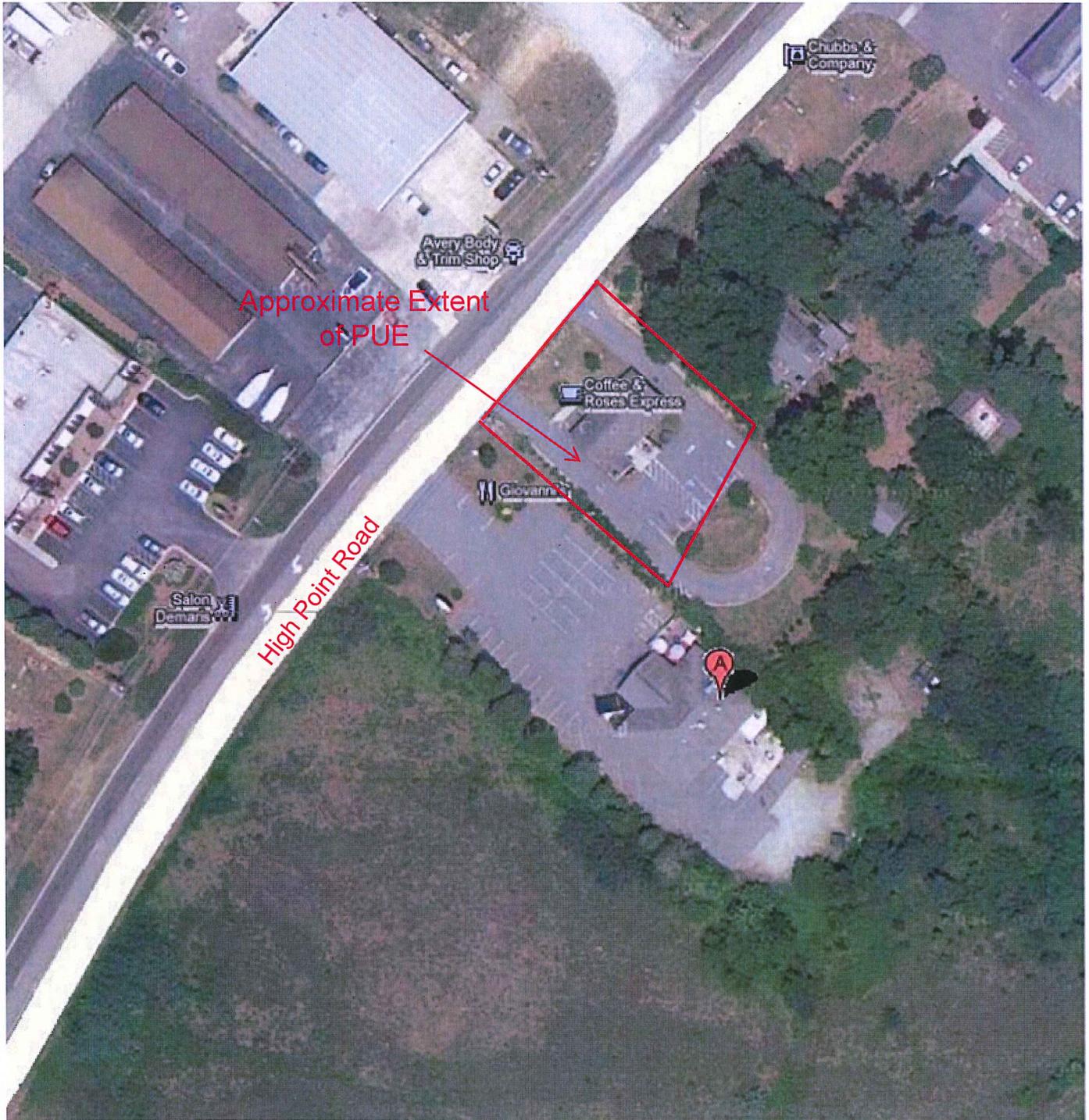
APPENDIX I

Figure No. 1 – SITE VICINITY MAP

Figure No. 2 – TOPOGRAPHIC MAP

Figure No. 3 – BORING LOCATION PLAN

Figure No. 4 – ESTIMATED EXTENT OF SOIL CONTAMINATION



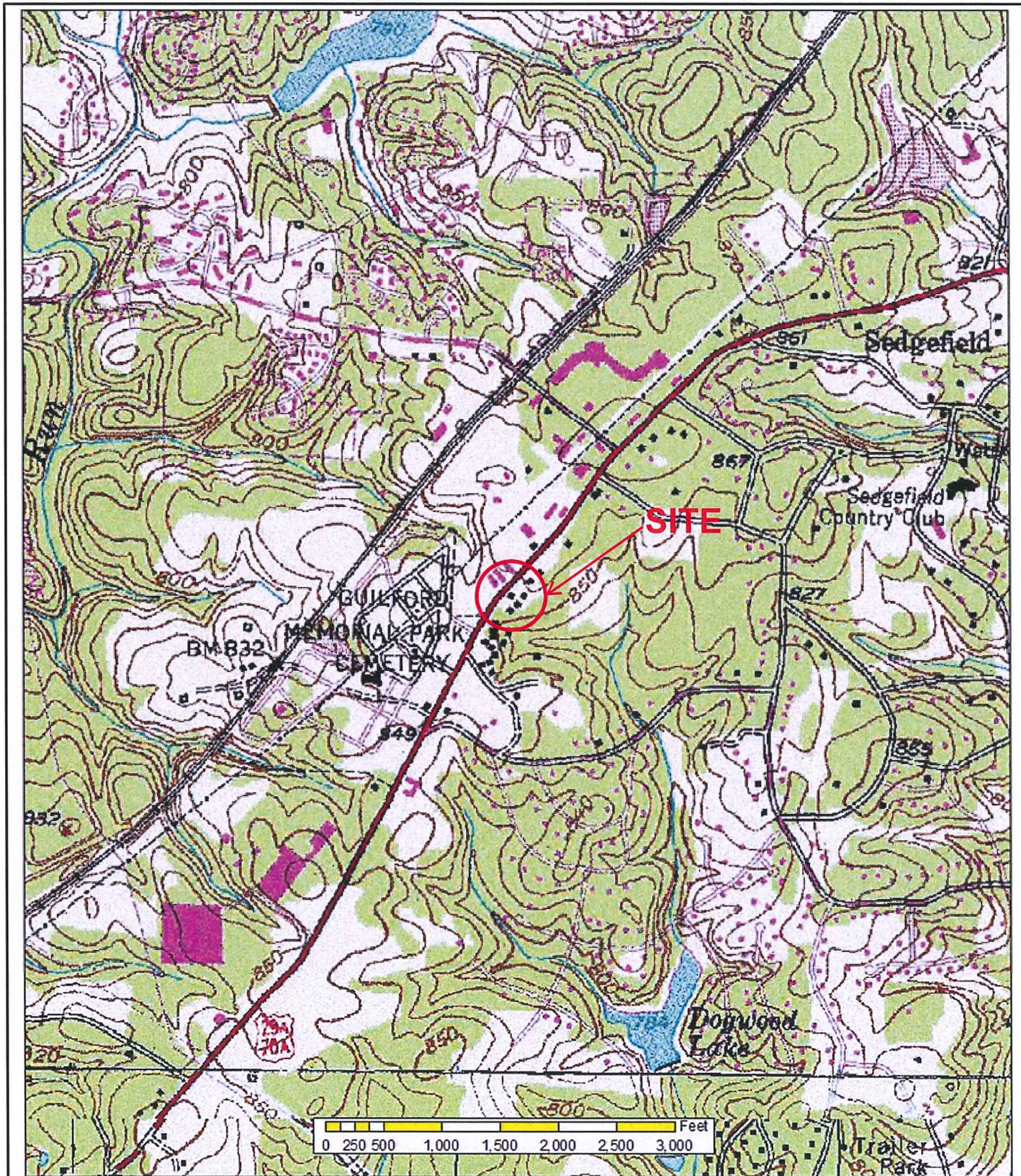
SITE VICINITY MAP

North



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CLIENT: NCDOT		FIGURE No.: 1
PROJECT: Susan Ashley Marion Property (Parcel #026)		
LOCATION: Greensboro, Guilford County, North Carolina		
F&R PROJECT No.: 66M-0055		
DRAWN BY: M. Sabodish		
DATE: August 2011	SCALE: Not to scale	



1 inch = 1,000 feet

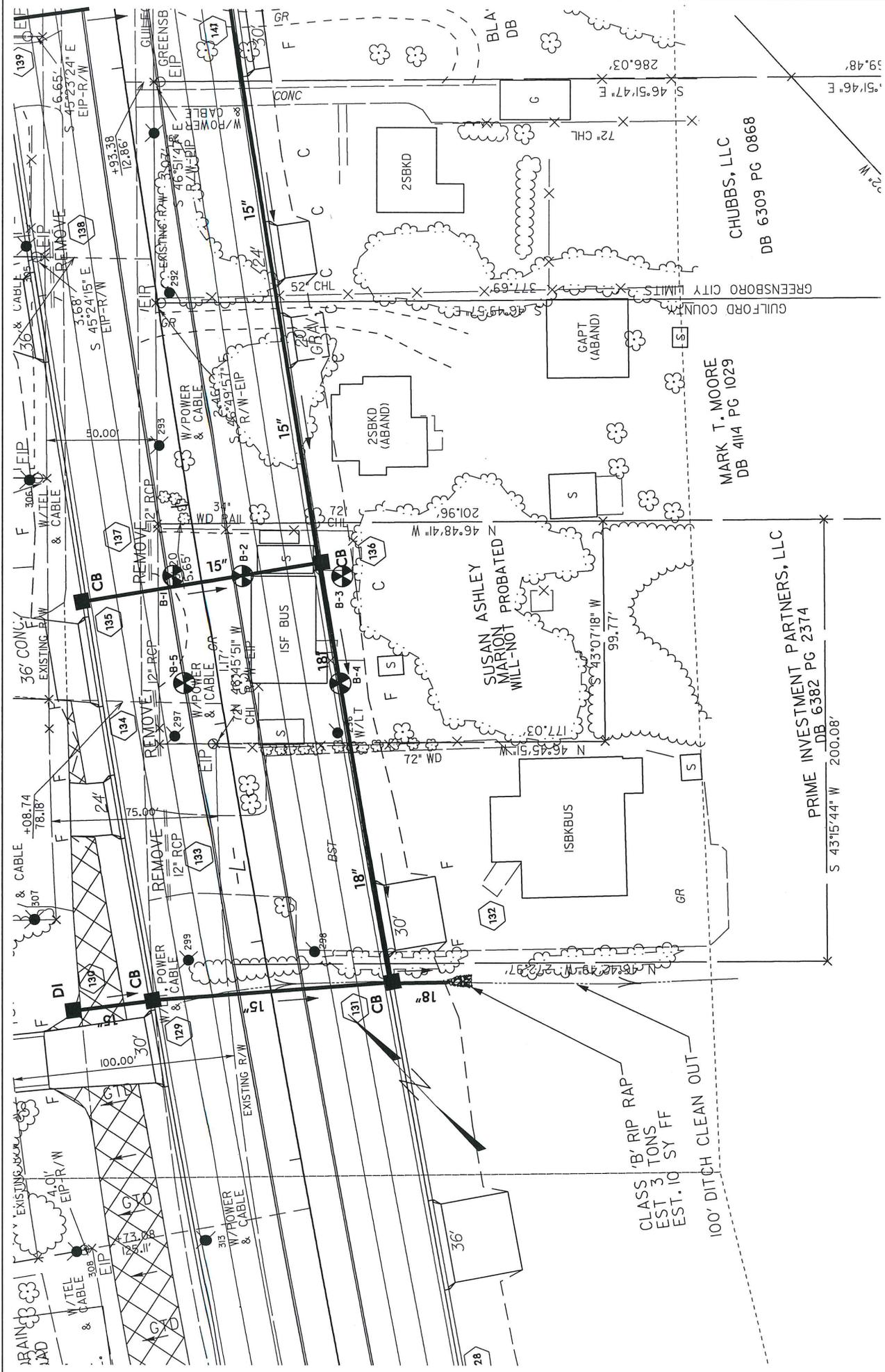
TOPOGRAPHIC MAP

North

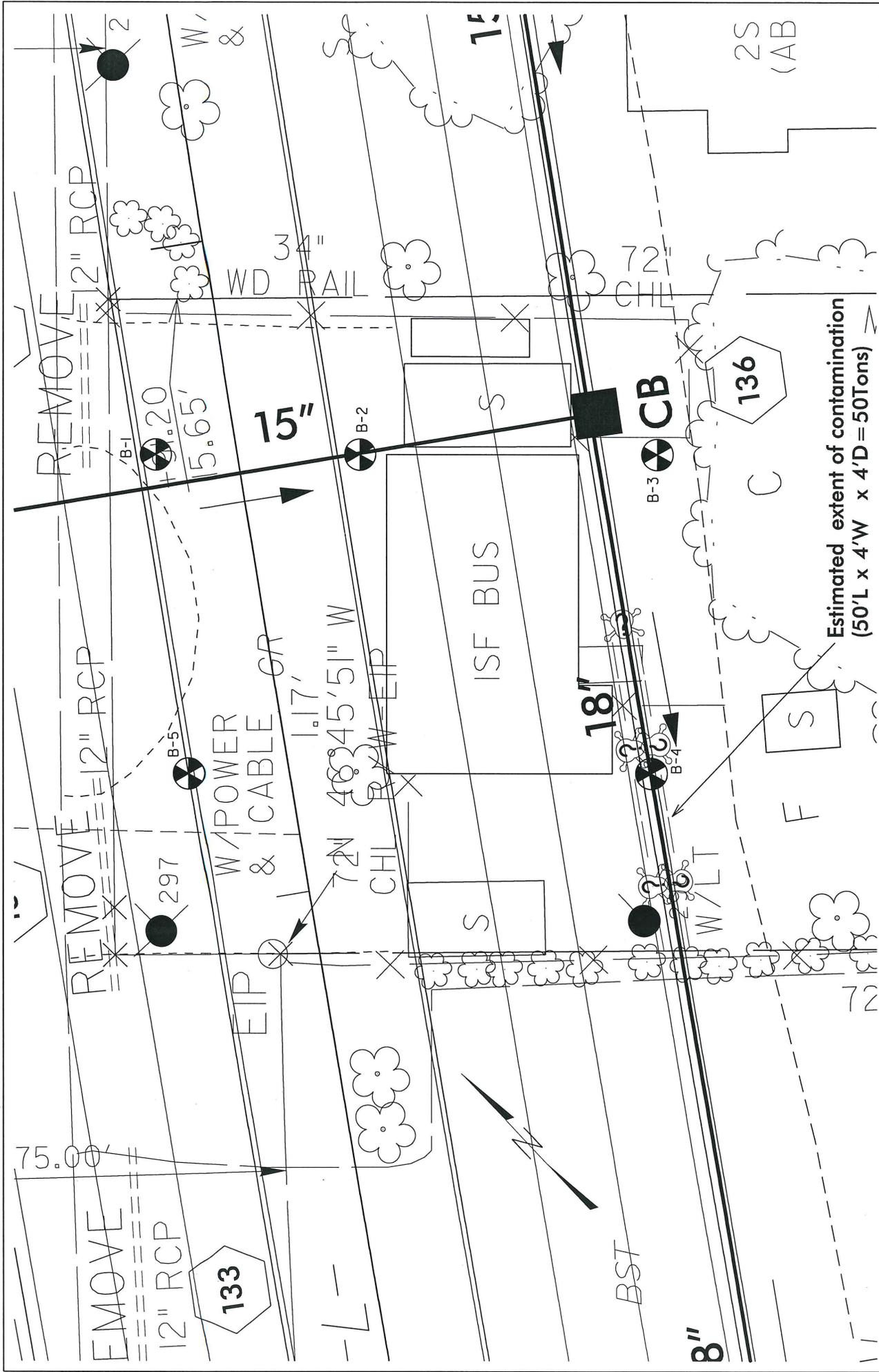
SINCE

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CLIENT: NCDOT		FIGURE No.: 2
PROJECT: Susan Ashley Marion Property (Parcel #026)		
LOCATION: Greensboro, Guilford County, North Carolina		
F&R PROJECT No.: 66M-0055		
DRAWN BY: M. Sabodish		
DATE: August 2011	SCALE: Not to scale	



BORING LOCATION PLAN	
CLIENT: NCDOT	CLIENT: NCDOT
PROJECT: Susan Ashley Marion Property (Parcel #026)	
LOCATION: Greensboro, Guilford County, North Carolina	
F&R PROJECT No.: 66N-0055	
DRAWN BY: D. Racey	CHECKED BY: M. Sabodish, P.E.
DATE: August 2011	SCALE: 1"=60'
LEGEND	
 Approximate Geoprobe Boring Location	
 SCALE (FEET) 0 30' 60' 1"=60'	
FROEHLING & ROBERTSON, INC. Engineering • Environmental • Geotechnical 310 Hubert Street Raleigh, North Carolina 27603-2302 USA T 919.828.3441 F 919.828.5751 www.fandr.com	
FIGURE 3 No.:	



<p>ESTIMATED EXTENT OF SOIL CONTAMINATION</p> <p>CLIENT: NCDOT</p> <p>PROJECT: Susan Ashley Marion Property (Parcel #026)</p> <p>LOCATION: Greensboro, Guilford County, North Carolina</p> <p>F&R PROJECT No.: 66N-0055</p> <p>DRAWN BY: D. Racey</p> <p>DATE: August 2011</p>	<p>LEGEND</p> <p>SCALE (FEET)</p> <p>0 10' 20'</p> <p>1"=20'</p>	<p>ESTIMATED EXTENT OF SOIL CONTAMINATION</p> <p>Estimated extent of contamination (50'L x 4'W x 4'D = 50Tons)</p>
<p>FIGURE No.: 4</p>		<p>1881</p>



APPENDIX II

GEOPHYSICAL REPORT PREPARED BY SCHNABEL ENGINEERING



August 5, 2011

Mr. Christopher Burkhardt
Froehling & Robertson, Inc.
310 Hubert Street
Raleigh, NC 27603

RE: State Project: U-2412B
WBS Element: 34802.1.1
County: Guilford
Description: Jamestown Bypass, High Point Road, Greensboro

**Subject: Project 09210013.42, Report on Geophysical Surveys (Revised)
Parcel 26, Susan Ashley Marion Property, Guilford County, North Carolina**

Dear Mr. Burkhardt:

SCHNABEL ENGINEERING SOUTH, PC (Schnabel) is pleased to present this report on the geophysical surveys we conducted on the subject property. The report includes two 11x17 color figures and two 8.5x11 color figures.

INTRODUCTION

The work described in this report was conducted on June 9 and 15, 2011, by Schnabel under our 2009 contract with the NCDOT. The work was conducted over the accessible areas of the property as indicated by the NCDOT to support their environmental assessment of the subject property. Photographs of the property are included on Figure 1. The property is located on the south side of High Point Road approximately 0.23 miles southwest from the Suttonwood Drive intersection in Greensboro, NC. The purpose of the geophysical surveys was to locate suspect metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. The EM61 metal detector is used to locate metal objects buried up to about eight feet below ground surface. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies, including areas of reinforced concrete, were conducted using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. Photographs of the equipment used are shown on Figure 2.

FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble Pro-XRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 83 datum, with units in US survey feet. The locations of existing site features (monitoring wells, signs, etc.) were recorded for later correlation with the geophysical data and for location references to the NCDOT drawings.

The EM61 data were collected along parallel survey lines spaced approximately 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over areas of reinforced concrete and anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of USTs. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

DISCUSSION OF RESULTS

The contoured EM61 data collected over Parcel 26 are shown on Figures 3 and 4. The EM61 early time gate results are plotted on Figure 3. The early time gate data provide the more sensitive detection of metal objects. Figure 4 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as USTs.

The early time gate and differential results show anomalies apparently caused by reinforced concrete, buried utilities, or known site features (Figures 3 and 4). The GPR data collected at the site do not indicate the presence of metallic USTs within the areas surveyed.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project U-2412B in Greensboro, NC indicates the following:

The geophysical data do not indicate the presence of metallic USTs in the areas surveyed on the subject property.

LIMITATIONS

These services have been performed and this report prepared for Froehling & Robertson, Inc. and the North Carolina Department of Transportation in accordance with generally accepted guidelines for conducting geophysical surveys. It is generally recognized that the results of geophysical surveys are non-unique and may not represent actual subsurface conditions.

**NCDOT, Geotechnical Engineering Unit
State Project U-2412B, Guilford County**

We appreciate the opportunity to have provided these services. Please call if you need additional information or have any questions.

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC



Jeremy S. Strohmeyer, LG
Project Manager



Edward D. Billington, LG
Senior Vice President

JS:NB

Attachments: Figures (4)

FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.42 (U-2412B, GUILFORD COUNTY)\REPORT\PARCEL 26\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 26 (U-2412B).DOCX



Parcel 26 – Ruth S. Marion Property, looking southeast



Parcel 26 – Ruth S. Marion Property, looking east



STATE PROJECT U-2412B
NC DEPT. OF TRANSPORTATION
GUILFORD CO., NORTH CAROLINA
PROJECT NO. 09210013.42

PARCEL 26
SITE PHOTOS

FIGURE 1



Geonics EM61-MK2



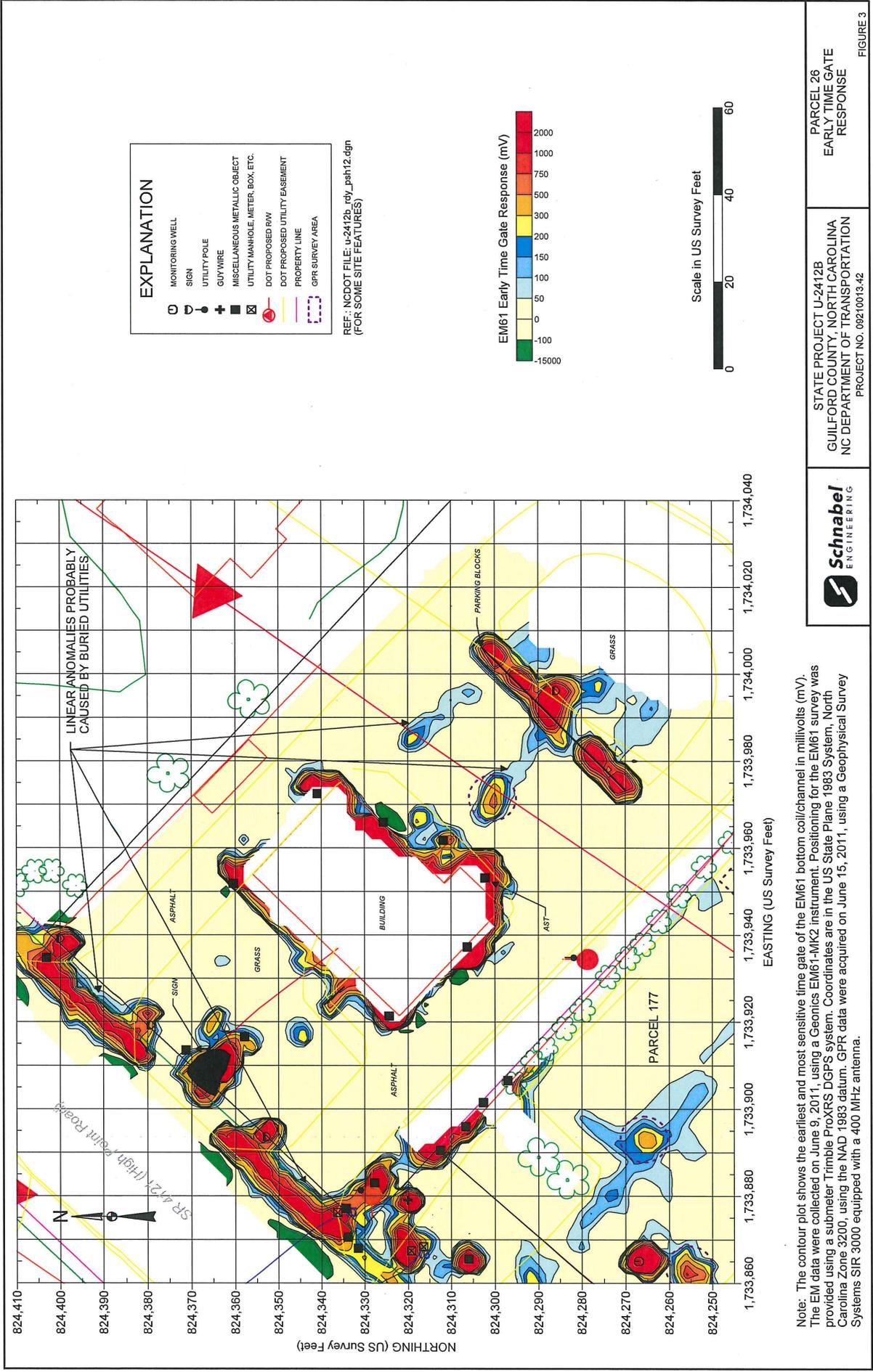
GSSI SIR-3000



STATE PROJECT U-2412B
NC DEPT. OF TRANSPORTATION
GUILFORD CO., NORTH CAROLINA
PROJECT NO. 09210013.42

PHOTOS OF
GEOPHYSICAL
EQUIPMENT USED

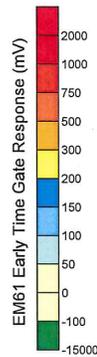
FIGURE 2



EXPLANATION

	MONITORING WELL
	SIGN
	UTILITY POLE
	GUY WIRE
	MISCELLANEOUS METALLIC OBJECT
	UTILITY MANHOLE, METER, BOX, ETC.
	DOT PROPOSED RWY
	DOT PROPOSED UTILITY EASEMENT
	PROPERTY LINE
	GPR SURVEY AREA

REF.: NCDOT FILE: u-2412b_rdy_psh12.dgn
(FOR SOME SITE FEATURES)



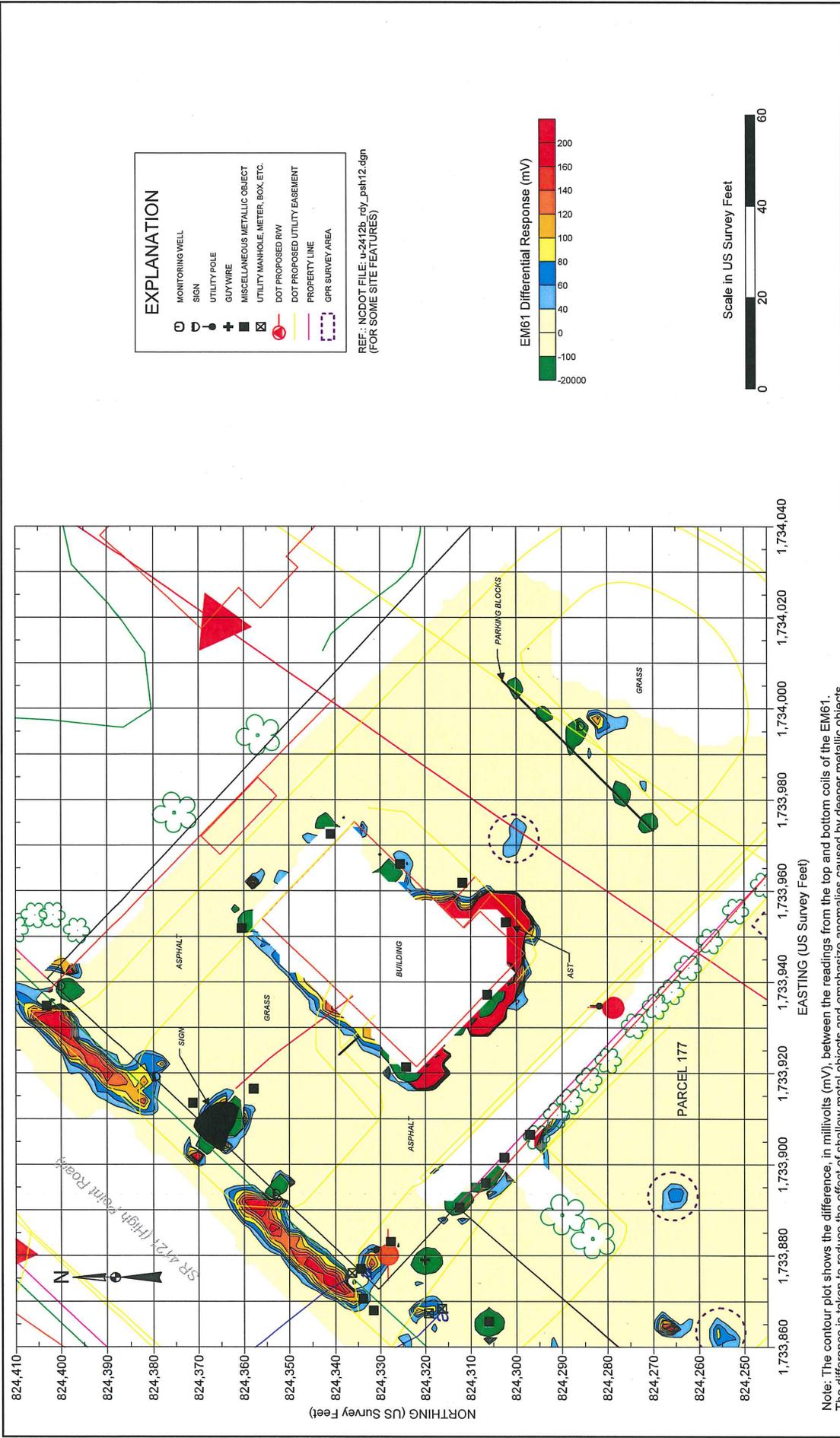
Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on June 9, 2011, using a Geonics EM61-WK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXR DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on June 15, 2011, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.



STATE PROJECT U-2412B
GUILDFORD COUNTY, NORTH CAROLINA
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 09210019.42

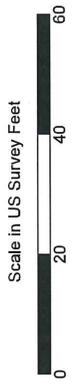
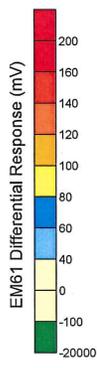
PARCEL 26
EARLY TIME GATE
RESPONSE

FIGURE 3



REF.: NCDOT FILE: u-2412b_rdy_psh12.dgn
(FOR SOME SITE FEATURES)

EXPLANATION	
	MONITORING WELL
	SIGN
	UTILITY POLE
	GUY WIRE
	MISCELLANEOUS METALLIC OBJECT
	UTILITY MANHOLE, METER, BOX, ETC.
	DOT PROPOSED RW
	DOT PROPOSED UTILITY EASEMENT
	PROPERTY LINE
	GPR SURVEY AREA



Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on June 9, 2011, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXR5 DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on June 15, 2011, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.



STATE PROJECT U-2412B
GUILFORD COUNTY, NORTH CAROLINA
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 09210013-42

PARCEL 26
DIFFERENTIAL
RESPONSE



APPENDIX III

ENVIRONMENTAL BORING LOGS



Project No: 34802.1.1 (U-2412B)
Client: NCDOT
Project: Jamestown Bypass, Highpoint Road
City/State: Greensboro, Guilford Co., NC

Elevation:
Total Depth: 12.0'
Boring Location: Parcel 026

Drilling Method: Geoprobe
Hammer Type: N/A
Date Drilled: 7/5/11
Driller: Regional Probing Services

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	PID (ppm)	Remarks
		Moist, red, clayey SILT (SC).		0.0	5.7	Sample submitted for laboratory analysis for TPH DRO/GRO
				1.0	2.8	
				2.0	1.5	
	3.0	Moist, orange & red, clayey SILT (ML).		3.0	2.7	
	4.0	Moist, red, silty CLAY (CL).		4.0	3.8	
	5.0	Moist, red, clayey SILT (ML).		5.0	2.7	
				6.0	2.6	
				7.0	3.3	
				8.0	2.7	
	8.0	Moist, red, orange & white, SILT (ML).		8.0	2.7	
				9.0	2.6	
				10.0	2.1	
				11.0	2.3	
	12.0	Geoprobe Boring Terminated at 12.0 feet.		12.0		

BORING_LOG GEOPROBE_LOGS_026.GPJ F&R.GDT 8/11/11

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.



Project No: 34802.1.1 (U-2412B)

Elevation:

Drilling Method: Geoprobe

Client: NCDOT

Total Depth: 12.0'

Hammer Type: N/A

Project: Jamestown Bypass, Highpoint Road

Boring Location: Parcel 026

Date Drilled: 7/5/11

City/State: Greensboro, Guilford Co., NC

Driller: Regional Probing Services

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	PID (ppm)	Remarks
		Moist, brown, sandy SILT (ML).		0.0	0.8	
	1.0	Moist, red & orange, clayey SILT (ML).		1.0	2.5	
				2.0	2.1	
				3.0	2.8	
				4.0	1.8	
				5.0	3.4	Sample submitted for laboratory analysis for TPH DRO/GRO
				6.0	2.3	
	7.0	Moist, red, orange & white, SILT (ML).		7.0	2.8	
				8.0	1.7	
				9.0	2.2	
				10.0	1.6	
				11.0	0.1	
	12.0	Geoprobe Boring Terminated at 12.0 feet.		12.0		

BORING_LOG_GEOPROBE_LOGS_026.GPJ F&R.GDT 8/11/11

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.



Project No: 34802.1.1 (U-2412B)

Elevation:

Drilling Method: Geoprobe

Client: NCDOT

Total Depth: 12.0'

Hammer Type: N/A

Project: Jamestown Bypass, Highpoint Road

Boring Location: Parcel 026

Date Drilled: 7/5/11

City/State: Greensboro, Guilford Co., NC

Driller: Regional Probing Services

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	PID (ppm)	Remarks
		Moist, red, brown & orange, clayey SILT (ML).		0.0	0.0	Sample submitted for laboratory analysis for TPH DRO/GRO
				1.0	0.6	
				2.0	2.1	
				3.0	1.4	
				4.0	2.7	
				5.0	3.3	
				6.0	2.8	
				7.0	2.3	
				8.0	1.9	
	9.0	Moist, red & orange, SILT (ML).		9.0	1.9	
				10.0	0.9	
				11.0	0.7	
	12.0	Geoprobe Boring Terminated at 12.0 feet.		12.0		

BORING_LOG GEOPROBE_LOGS_026.GPJ F&R.GDT 8/11/11

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.



Project No: 34802.1.1 (U-2412B)

Elevation:

Drilling Method: Geoprobe

Client: NCDOT

Total Depth: 12.0'

Hammer Type: N/A

Project: Jamestown Bypass, Highpoint Road

Boring Location: Parcel 026

Date Drilled: 7/5/11

City/State: Greensboro, Guilford Co., NC

Driller: Regional Probing Services

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	PID (ppm)	Remarks
	0.0	ASPHALT & ABC (??)		0.0	3.3	Sample submitted for laboratory analysis for TPH DRO/GRO
	0.5	Dry, gray, silty SAND (SM).				
	1.0	Moist, gray, red & brown, sandy SILT (ML).		1.0	22.4	
	2.0	Moist, red, SILT (ML).		2.0	4.9	
	3.0	Moist, red, clayey SILT (ML).		3.0	4.1	
	4.0	Moist, red & gray, sandy clayey SILT (ML).		4.0	3.3	
	5.0	Moist, red & orange, clayey SILT (ML).		5.0	4.6	
	6.0	Moist, red, orange & white, SILT (ML).		6.0	4.5	
				7.0	4.0	
				8.0	4.0	
				9.0	3.9	
				10.0	2.9	
				11.0	1.6	
	12.0	Geoprobe Boring Terminated at 12.0 feet.		12.0		

BORING_LOG_GEOPROBE_LOGS_026.GPJ F&R.GDT 8/11/11

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.



Project No: 34802.1.1 (U-2412B)

Elevation:

Drilling Method: Geoprobe

Client: NCDOT

Total Depth: 12.0'

Hammer Type: N/A

Project: Jamestown Bypass, Highpoint Road

Boring Location: Parcel 026

Date Drilled: 7/5/11

City/State: Greensboro, Guilford Co., NC

Driller: Regional Probing Services

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	PID (ppm)	Remarks
		Moist, red, brown & orange, clayey SILT (ML).		0.0	1.0	Sample submitted for laboratory analysis for TPH DRO/GRO
				1.0	2.7	
				2.0	2.6	
				3.0	0.8	
	4.0	Moist, red, orange & white, SILT (ML).		4.0	0.0	
				5.0	0.0	
				6.0	0.0	
				7.0	0.0	
				8.0	1.6	
				9.0	0.1	
				10.0	0.0	
				11.0	0.3	
	12.0	Geoprobe Boring Terminated at 12.0 feet.		12.0		

BORING LOG GEOPROBE LOGS_026.GPJ F&R.GDT 8/11/11

*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.



APPENDIX IV

SITE PHOTOS



Photo #1: Existing Coffee & Roses Express located at the project site.



Photo #2: Location of Boring B-1 looking southwest.



Photo #3: Location of Boring B-2 looking south-southwest.



Photo #4: Location of Boring B-3 looking west.



Photo #5: Location of Boring B-4 looking west.



Photo #6: Location of Boring B-5 looking east-northeast.



APPENDIX V

LABORATORY ANALYTICAL RESULTS



Laboratory Report of Analysis

To: Christopher J. Burkhardt
FROEHLING & ROBERTSON, INC.
310 Hubert Street
Raleigh, NC 27603

Report Number: 31101765

Client Project: 66N-0055 Jamestown Bypass

Dear Christopher J. Burkhardt,

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. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. 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 Michael D. Page 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.

Digitally signed by Michael Page
DN: CN = Michael Page, C = US, OU = SGS
Environmental
Date: 2011.07.19 09:24:26 -04'00'

Michael D. Page
Project Manager
michael.page@sgs.com

Date

Laboratory Qualifiers

Report Definitions

DL	Method, Instrument, or Estimated Detection Limit per Analytical Method
CL	Control Limits for the recovery result of a parameter
LOQ	Reporting Limit
DF	Dilution Factor
RPD	Relative Percent Difference
LCS(D)	Laboratory Control Spike (Duplicate)
MS(D)	Matrix Spike (Duplicate)
MB	Method Blank

Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < LOD)
V	Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit
A	Amount detected is less than the Lower Method Calibration Limit
J	Amount detected is between the Method Detection Limit and the Lower Calibration Limit
O	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high
E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range
M1	Mis-identified peak
M2	Software did not integrate peak
M3	Incorrect baseline construction (i.e. not all of peak included; two peaks integrated as one)
M4	Pattern integration required (i.e. DRO, GRO, PCB, Toxaphene and Technical Chlordane)
M5	Other - Explained in case narrative

Note Results pages that include a value for "Solids (%)" have been adjusted for moisture content.



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
B1	31101765001	07/05/2011 13:07	07/07/2011 07:40	Soil-Solid as dr
B2	31101765002	07/05/2011 13:32	07/07/2011 07:40	Soil-Solid as dr
B3	31101765003	07/05/2011 14:07	07/07/2011 07:40	Soil-Solid as dr
B4	31101765004	07/05/2011 14:33	07/07/2011 07:40	Soil-Solid as dr
B5	31101765005	07/05/2011 15:12	07/07/2011 07:40	Soil-Solid as dr
B6	31101765006	07/05/2011 10:22	07/07/2011 07:40	Soil-Solid as dr
B7	31101765007	07/05/2011 10:50	07/07/2011 07:40	Soil-Solid as dr
B8	31101765008	07/05/2011 11:10	07/07/2011 07:40	Soil-Solid as dr
B9	31101765009	07/06/2011 11:43	07/07/2011 07:40	Soil-Solid as dr
B10	31101765010	07/05/2011 12:12	07/07/2011 07:40	Soil-Solid as dr

Print Date: 07/19/2011

N.C. Certification # 481

SGS North America Inc.

5500 Business Drive, Wilmington, NC 28405
t 910.350.1903 f 910.350.1557 www.us.sgs.com

Member of SGS Group



Results of B1

Client Sample ID: B1
Client Project ID: 66N-0055 Jamestown Bypass
Lab Sample ID: 31101765001-A
Lab Project ID: 31101765

Collection Date: 07/05/2011 13:07
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 75

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		4.02	mg/kg	1	07/8/2011 12:28

Surrogates

4-Bromofluorobenzene	103		70.0-130	%	1	07/8/2011 12:28
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Batch Information

Analytical Batch: VGC1299
Analytical Method: SW-846 8015C GRO
Instrument: GC4
Analyst: LMC
Analytical Date/Time: 07/08/2011 12:28

Prep Batch: VXX1740
Prep Method: SW-846 5035
Prep Date/Time: 07/08/2011 15:56
Prep Initial Wt./Vol.: 6.63 g
Prep Extract Vol: 5 mL



Results of B1

Client Sample ID: **B1**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765001-C
Lab Project ID: 31101765

Collection Date: 07/05/2011 13:07
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 75

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	ND		8.00	mg/kg	1	07/12/2011 19:27
Surrogates						
o-Terphenyl	75.6		40.0-140	%	1	07/12/2011 19:27

Batch Information

Analytical Batch: XGC1365
Analytical Method: SW-846 8015C DRO
Instrument: GC6
Analyst: DTF
Analytical Date/Time: 07/12/2011 19:27

Prep Batch: XXX1514
Prep Method: SW-846 3541
Prep Date/Time: 07/11/2011 09:23
Prep Initial Wt./Vol.: 33.31 g
Prep Extract Vol: 10 mL



Results of B2

Client Sample ID: B2
Client Project ID: 66N-0055 Jamestown Bypass
Lab Sample ID: 31101765002-A
Lab Project ID: 31101765

Collection Date: 07/05/2011 13:32
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 67

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		4.31	mg/kg	1	07/8/2011 12:55

Surrogates

4-Bromofluorobenzene	102		70.0-130	%	1	07/8/2011 12:55
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Batch Information

Analytical Batch: VGC1299
Analytical Method: SW-846 8015C GRO
Instrument: GC4
Analyst: LMC
Analytical Date/Time: 07/08/2011 12:55

Prep Batch: VXX1740
Prep Method: SW-846 5035
Prep Date/Time: 07/08/2011 16:56
Prep Initial Wt./Vol.: 6.949 g
Prep Extract Vol: 5 mL



Results of B2

Client Sample ID: **B2**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765002-C
Lab Project ID: 31101765

Collection Date: 07/05/2011 13:32
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 67

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	ND		9.20	mg/kg	1	07/12/2011 19:56

Surrogates

o-Terphenyl	74.0		40.0-140	%	1	07/12/2011 19:56
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Batch Information

Analytical Batch: XGC1366
Analytical Method: SW-846 8015C DRO
Instrument: GC6
Analyst: DTF
Analytical Date/Time: 07/12/2011 19:56

Prep Batch: XXX1514
Prep Method: SW-846 3541
Prep Date/Time: 07/11/2011 09:23
Prep Initial Wt./Vol.: 32.53 g
Prep Extract Vol: 10 mL



Results of B3

Client Sample ID: **B3**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765003-A
Lab Project ID: 31101765

Collection Date: 07/05/2011 14:07
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 73

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		3.65	mg/kg	1	07/8/2011 13:22

Surrogates

4-Bromofluorobenzene	102		70.0-130	%	1	07/8/2011 13:22
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Batch Information

Analytical Batch: VGC1299
Analytical Method: SW-846 8015C GRO
Instrument: GC4
Analyst: LMC
Analytical Date/Time: 07/08/2011 13:22

Prep Batch: VXX1740
Prep Method: SW-846 5035
Prep Date/Time: 07/08/2011 15:56
Prep Initial Wt./Vol.: 7.536 g
Prep Extract Vol: 5 mL



Results of B3

Client Sample ID: **B3**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765003-C
Lab Project ID: 31101765

Collection Date: 07/05/2011 14:07
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 73

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	ND		8.51	mg/kg	1	07/12/2011 20:23

Surrogates

o-Terphenyl	83.5		40.0-140	%	1	07/12/2011 20:23
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Batch Information

Analytical Batch: XGC1366
Analytical Method: SW-846 8015C DRO
Instrument: GC8
Analyst: DTF
Analytical Date/Time: 07/12/2011 20:23

Prep Batch: XXX1514
Prep Method: SW-846 3541
Prep Date/Time: 07/11/2011 09:23
Prep Initial Wt./Vol.: 32.32 g
Prep Extract Vol: 10 mL



Results of B4

Client Sample ID: **B4**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765004-A
Lab Project ID: 31101765

Collection Date: 07/05/2011 14:33
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 73

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		4.03	mg/kg	1	07/8/2011 13:49

Surrogates

4-Bromofluorobenzene	102		70.0-130	%	1	07/8/2011 13:49
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Batch Information

Analytical Batch: VGC1299
Analytical Method: SW-846 8015C GRO
Instrument: GC4
Analyst: LMC
Analytical Date/Time: 07/08/2011 13:49

Prep Batch: VXX1740
Prep Method: SW-846 5035
Prep Date/Time: 07/08/2011 15:56
Prep Initial Wt./Vol.: 5.769 g
Prep Extract Vol: 5 mL



Results of B4

Client Sample ID: **B4**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: **31101765004-C**
Lab Project ID: **31101765**

Collection Date: **07/05/2011 14:33**
Received Date: **07/07/2011 07:40**
Matrix: **Soil-Solid as dry weight**
Solids (%): **73**

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	138		8.33	mg/kg	1	07/12/2011 20:52
Surrogates						
o-Terphenyl	83.9		40.0-140	%	1	07/12/2011 20:52

Batch Information

Analytical Batch: **XGC1386**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC8**
Analyst: **DTF**
Analytical Date/Time: **07/12/2011 20:52**

Prep Batch: **XXX1514**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/11/2011 09:23**
Prep Initial Wt./Vol.: **32.72 g**
Prep Extract Vol: **10 mL**



Results of B5

Client Sample ID: **B5**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765005-A
Lab Project ID: 31101765

Collection Date: 07/05/2011 15:12
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 76

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		3.44	mg/kg	1	07/8/2011 14:16

Surrogates

4-Bromofluorobenzene	102		70.0-130	%	1	07/8/2011 14:16
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Batch Information

Analytical Batch: VGC1299
Analytical Method: SW-846 8015C GRO
Instrument: GC4
Analysis: LMC
Analytical Date/Time: 07/08/2011 14:16

Prep Batch: VXX1740
Prep Method: SW-846 5035
Prep Date/Time: 07/08/2011 16:56
Prep Initial Wt./Vol.: 7.671 g
Prep Extract Vol: 5 mL



Results of B5

Client Sample ID: **B5**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: **31101765005-C**
Lab Project ID: **31101765**

Collection Date: **07/05/2011 15:12**
Received Date: **07/07/2011 07:40**
Matrix: **Soil-Solid as dry weight**
Solids (%): **76**

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	ND		8.09	mg/kg	1	07/12/2011 21:20

Surrogates

o-Terphenyl	75.7		40.0-140	%	1	07/12/2011 21:20
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Batch Information

Analytical Batch: **XGC1366**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GCS**
Analyst: **DTF**
Analytical Date/Time: **07/12/2011 21:20**

Prep Batch: **XXX1514**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/11/2011 09:23**
Prep Initial Wt./Vol.: **32.61 g**
Prep Extract Vol: **10 mL**



Results of B6

Client Sample ID: **B6**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765006-A
Lab Project ID: 31101765

Collection Date: 07/05/2011 10:22
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 74

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		3.59	mg/kg	1	07/8/2011 14:43

Surrogates

4-Bromofluorobenzene	102		70.0-130	%	1	07/8/2011 14:43
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Batch Information

Analytical Batch: VGC1299
Analytical Method: SW-846 8015C GRO
Instrument: GC4
Analyst: LMC
Analytical Date/Time: 07/08/2011 14:43

Prep Batch: VXX1740
Prep Method: SW-846 5035
Prep Date/Time: 07/08/2011 15:56
Prep Initial Wt./Vol.: 7.545 g
Prep Extract Vol: 5 mL



Results of B6

Client Sample ID: **B6**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: **31101765006-C**
Lab Project ID: **31101765**

Collection Date: **07/05/2011 10:22**
Received Date: **07/07/2011 07:40**
Matrix: **Soil-Solid as dry weight**
Solids (%): **74**

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	ND		8.40	mg/kg	1	07/12/2011 21:48

Surrogates

o-Terphenyl	78.4		40.0-140	%	1	07/12/2011 21:48
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Batch Information

Analytical Batch: **XGC1366**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GCS**
Analyst: **DTF**
Analytical Date/Time: **07/12/2011 21:48**

Prep Batch: **XXX1514**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/11/2011 09:23**
Prep Initial Wt./Vol.: **32.22 g**
Prep Extract Vol: **10 mL**



Results of B7

Client Sample ID: **B7**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: **31101765007-A**
Lab Project ID: **31101765**

Collection Date: **07/05/2011 10:50**
Received Date: **07/07/2011 07:40**
Matrix: **Soil-Solid as dry weight**
Solids (%): **72**

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		4.31	mg/kg	1	07/8/2011 15:10

Surrogates

4-Bromofluorobenzene	104		70.0-130	%	1	07/8/2011 15:10
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Batch Information

Analytical Batch: **VGC1299**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **07/08/2011 15:10**

Prep Batch: **VXX1740**
Prep Method: **SW-846 6035**
Prep Date/Time: **07/08/2011 15:56**
Prep Initial Wt./Vol.: **6.425 g**
Prep Extract Vol: **5 mL**



Results of B7

Client Sample ID: **B7**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: **31101765007-C**
Lab Project ID: **31101765**

Collection Date: **07/05/2011 10:50**
Received Date: **07/07/2011 07:40**
Matrix: **Soil-Solid as dry weight**
Solids (%): **72**

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	ND		8.74	mg/kg	1	07/12/2011 22:16

Surrogates

o-Terphenyl	72.4		40.0-140	%	1	07/12/2011 22:16
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Batch Information

Analytical Batch: **XGC1388**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GCS**
Analyst: **DTF**
Analytical Date/Time: **07/12/2011 22:16**

Prep Batch: **XXX1514**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/11/2011 09:23**
Prep Initial Wt./Vol.: **31.68 g**
Prep Extract Vol: **10 mL**



Results of B8

Client Sample ID: **B8**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765008-A
Lab Project ID: 31101765

Collection Date: 07/05/2011 11:19
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 82

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		3.81	mg/kg	1	07/8/2011 15:37

Surrogates

4-Bromofluorobenzene	103		70.0-130	%	1	07/8/2011 15:37
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Batch Information

Analytical Batch: VGC1299
Analytical Method: SW-846 8015C GRO
Instrument: GC4
Analyst: LMC
Analytical Date/Time: 07/08/2011 15:37

Prep Batch: VXX1740
Prep Method: SW-846 6035
Prep Date/Time: 07/08/2011 15:56
Prep Initial Wt./Vol.: 6.374 g
Prep Extract Vol: 5 mL



Results of B8

Client Sample ID: **B8**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765008-C
Lab Project ID: 31101765

Collection Date: 07/05/2011 11:19
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 82

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	40.3		7.56	mg/kg	1	07/12/2011 22:44

Surrogates

o-Terphenyl	69.4		40.0-140	%	1	07/12/2011 22:44
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Batch Information

Analytical Batch: XGC1366
Analytical Method: SW-846 8015C DRO
Instrument: GC8
Analyst: DTF
Analytical Date/Time: 07/12/2011 22:44

Prep Batch: XXX1514
Prep Method: SW-846 3541
Prep Date/Time: 07/11/2011 09:23
Prep Initial Wt./Vol.: 32.12 g
Prep Extract Vol: 10 mL



Results of B9

Client Sample ID: **B9**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765009-A
Lab Project ID: 31101765

Collection Date: 07/06/2011 11:43
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 75

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		3.63	mg/kg	1	07/8/2011 16:04

Surrogates

4-Bromofluorobenzene	102		70.0-130	%	1	07/8/2011 16:04
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Batch Information

Analytical Batch: VGC1299
Analytical Method: SW-846 8015C GRO
Instrument: GC4
Analyst: LMC
Analytical Date/Time: 07/08/2011 16:04

Prep Batch: VXX1740
Prep Method: SW-846 5035
Prep Date/Time: 07/08/2011 15:56
Prep Initial Wt./Vol.: 7.39 g
Prep Extract Vol: 5 mL



Results of B9

Client Sample ID: **B9**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765009-C
Lab Project ID: 31101765

Collection Date: 07/06/2011 11:43
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 75

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	9.88		8.47	mg/kg	1	07/12/2011 23:13

Surrogates

o-Terphenyl	62.9		40.0-140	%	1	07/12/2011 23:13
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Batch Information

Analytical Batch: XGC1386
Analytical Method: SW-846 8015C DRO
Instrument: GC8
Analyst: DTF
Analytical Date/Time: 07/12/2011 23:13

Prep Batch: XXX1514
Prep Method: SW-846 3541
Prep Date/Time: 07/11/2011 09:23
Prep Initial Wt./Vol.: 31.64 g
Prep Extract Vol: 10 mL



Results of B10

Client Sample ID: **B10**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: 31101765010-A
Lab Project ID: 31101765

Collection Date: 07/05/2011 12:12
Received Date: 07/07/2011 07:40
Matrix: Soil-Solid as dry weight
Solids (%): 73

Results by SW-846 8015C GRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Gasoline Range Organics (GRO)	ND		4.49	mg/kg	1	07/8/2011 16:31

Surrogates

4-Bromofluorobenzene	101		70.0-130	%	1	07/8/2011 16:31
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Batch Information

Analytical Batch: VGC1299
Analytical Method: SW-846 8015C GRO
Instrument: GC4
Analyst: LMC
Analytical Date/Time: 07/08/2011 16:31

Prep Batch: VXX1740
Prep Method: SW-846 5035
Prep Date/Time: 07/08/2011 15:56
Prep Initial Wt./Vol.: 6.125 g
Prep Extract Vol: 5 mL



Results of B10

Client Sample ID: **B10**
Client Project ID: **66N-0055 Jamestown Bypass**
Lab Sample ID: **31101765010**
Lab Project ID: **31101765**

Collection Date: **07/05/2011 12:12**
Received Date: **07/07/2011 07:40**
Matrix: **Soil-Solid as dry weight**
Solids (%): **73**

Results by SW-846 8015C DRO

<u>Parameter</u>	<u>Result</u>	<u>Qual</u>	<u>LOQ/CL</u>	<u>Units</u>	<u>DF</u>	<u>Date Analyzed</u>
Diesel Range Organics (DRO)	10.7		8.55	mg/kg	1	07/16/2011 0:23

Surrogates

o-Terphenyl	70.9		40.0-140	%	1	07/16/2011 0:23
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Batch Information

Analytical Batch: **XGC1378**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GCS**
Analyst: **DTF**
Analytical Date/Time: **07/16/2011 00:23**

Prep Batch: **XXX1525**
Prep Method: **SW-846 3541**
Prep Date/Time: **07/13/2011 16:16**
Prep Initial Wt./Vol.: **32.17 g**
Prep Extract Vol: **10 mL**



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1 CLIENT: **FROEHLING & ROBERTSON**
 CONTACT: **CHRISTOPHER BURCHARDT** (PHONE NO. (919) 630 1369)
 PROJECT: **66N-0055** SITE/PWSID#: **NC DOT U-241A/B**
 REPORTS TO: **C BURKHARDT** JAMESTOWN BYPS
 INVOICE TO: **NC DOT** FAX NO.:()
 QUOTE #: P.O. NUMBER: :

SGS Reference: **31101765** PAGE **1** OF **1**

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	CONTAINERS	SAMPLE TYPE	Preservatives Used	Analysis Required	REMARKS
B1		7-5-11	1:07	Soil	3	G			
B2		7-5-11	1:32	Soil	3	G			
B3		7-5-11	2:07	Soil	3	G			
B4		7-5-11	2:33	Soil	3	G			
B5		7-5-11	3:12	Soil	3	G			
B6		7-5-11	10:22	Soil	3	G			
B7		7-5-11	10:50	Soil	3	G			
B8		7-5-11	11:19	Soil	3	G			
B9		7-8-11	11:49	Soil	3	G			
B10		7-5-11	12-12	Soil	3	G			

Shipping Carrier: **COVINGTON** Samples Received Cold? (Circle) YES NO
 Shipping Ticket No.: **414** Temperature C: **4.4**
 Special Deliverable Requirements: Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
 Special Instructions: Requested Turnaround Time: RUSH STD Date Needed

2

Collected/Relinquished By: (1) <i>Christopher Burchardt</i>	Date 7/6/11	Received By: <i>NR</i>
Relinquished By: (2)	Date	Received By:
Relinquished By: (3) <i>NR</i>	Date 7/7/11	Received By: <i>Jamaral Moore</i>
Relinquished By: (4)	Date	Received By:

SINCE



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