PRELIMINARY SITE ASSESSMENT
PARCEL 68, JAMES PUGH PROPERTY
RICHMOND COUNTY, NORTH CAROLINA
WBS ELEMENT: 34438.1.1; NCDOT PROJECT: R-2502 B

Prepared for:
NC Department of Transportation
Geotechnical Engineering Unit
GeoEnvironmental Section
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Solutions-IES Project No. 3260.06A3.NDOT

September 28, 2006

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TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) is widening the existing alignment of US Highway 1 near the towns of Marston and Hoffman, located in Richmond County, North Carolina. Acquisition of properties within the right-of-way is necessary prior to road construction. On July 19, 2006, Solutions-IES submitted a proposal (NC06554P) to conduct Preliminary Site Assessments (PSAs) on ten parcels of land located within the proposed right-of-way that are of concern to the NCDOT. This report summarizes the results of field activities conducted during the PSA for a portion of the property identified by NCDOT as Parcel 68, James Pugh Property (**Figure 1**). The right-of-way portion of this property comprises the Study Area and is more clearly identified on **Figure 2.** The scope of work executed at the site was performed in general accordance with Solutions-IES proposal NC06554P and was initiated based on a Notice to Proceed issued by the NCDOT Geotechnical Engineering Unit on July 20, 2006 under contract 7000007053, dated June 5, 2006.

2.0 BACKGROUND AND SITE DESCRIPTION

The Pugh property (site) is located on the north side of US Highway 1, approximately 500 feet west of the Special Forces Way intersection within the Corporate Limits of Hoffman, Richmond County, North Carolina. The limited background information available for this site stated that a former pump island was identified at the site. The surface of the site is covered with dense brush and trees. Photographs of the Study Area at the site are presented in **Appendix A**.

The presence of a former pump island located approximately 15 feet north of US1 suggests that a gas station operated at the site in the past, and petroleum fuels may have been used on the property. Therefore, there is a possibility that these constituents may have been released to the subsurface in the vicinity of the proposed right-of-way.

3.0 FIELD ACTIVITIES

Prior to mobilizing to the site to conduct subsurface sampling, Solutions-IES contacted North Carolina One Call to locate underground utilities in the Study Area. Pyramid Environmental & Engineering, P.C. (Pyramid) was contracted to perform an electromagnetic survey of the subsurface in the proposed right-of-way area within the parcel. Pyramid surveyed the site with electromagnetic survey equipment (EM61)

on August 14 and August 28, 2006. The EM61 survey identified various magnetic anomalies within the Study Area, and Pyramid returned to the Study Area and performed a ground penetrating radar (GPR) survey on August 15 and August 28, 2006 utilizing a "Geophysical Survey Systems SIR 2000" instrument. Results of the surveys suggested the presence of buried miscellaneous metal objects, but did not indicate the presence of buried metallic equipment such as underground storage tanks (USTs). The geophysical survey suggested the presence of a cistern or well approximately 140 feet west of the pump island. The purpose of this cistern/well is unknown. The EM61 images are included in **Appendix B,** Figure 20. A GPR image was not included in the geophysical report for the site.

After reviewing the background information and geophysical data, Solutions-IES elected to analyze soil samples collected at designated locations within the Study Area for total petroleum hydrocarbons (TPH). The borings were located to identify contaminants (if present) related to operation of the former pump island. A boring was also installed in the approximate location of the potential cistern or well. These activities were conducted on September 7, 2006. A total of 19 soil borings (borings P68-B1 through P68-B19) were advanced in the locations depicted on **Figure 3**. These borings were labeled with the prefix "P68" to associate their locations with Parcel 68. Boring P68-B1 was advanced to a total depth of 12 feet below ground surface (ft bgs), while borings P68-B2 through P68-B19 were advanced to a total depth of 8 ft bgs. Each of these borings was advanced utilizing a truck-mounted Geoprobe®.

Soil samples were obtained from each boring using a MacroCore® sampler fitted with single-use, disposable polyvinyl chloride (PVC) liners. Each liner was 4 feet in length. Upon retrieval, a portion of each 2-foot interval was placed in separate resealable plastic bags. These bags were sealed and placed at ambient temperature for field screening with a flame ionization detector (FID). The remaining portion of each 2-foot interval was left in the PVC liner, wrapped in plastic and placed on ice for possible laboratory analysis.

Volatile organic compounds (VOCs) were allowed to accumulate in the headspace of each bag for approximately 20 minutes, after which time the headspace of each sealed bag was scanned with the FID. The FID readings were entered on the boring logs along with the soil description and indications of staining or odors, if present. Soils from the borings at the Parcel 68 Study Area generally consisted of silty sand (SM), silty clay (CL), and fine sand (SP). Logs for each boring are presented in **Appendix C.** The GPS coordinates for the boring locations are provided in **Appendix D**.

Headspace screening of the soil samples with the FID indicated the presence of volatile vapors in several of the samples. Concentrations ranged from no detection to greater than 5,000 parts per million (ppm) in soil samples from both P68-B4 and P68-B13. These measurements are presented in **Table 1**. No distinguishable odors were noted in the samples.

Soil samples for laboratory analysis were retained from each boring at the sample intervals identified in **Table 1**. All soil samples were placed in laboratory-supplied containers and stored on ice pending shipment to Prism Laboratories, Inc. (Prism) in Charlotte, NC. Sample information was recorded on the chain-of-custody and the samples were submitted for chemical analysis of TPH gasoline range organics (GRO) by Modified EPA Method 5030/8015 and TPH diesel range organics (DRO) by Modified EPA Method 3545/8015.

To determine if groundwater has been impacted by historical operations on Parcel 68, Solutions-IES advanced a stainless steel Geoprobe® Screen Point® sampler within boring P68-B4. The casing of the sampler was retracted, exposing 3 feet of screen to groundwater from 4.6 ft bgs to 7.6 ft bgs. Groundwater was measured at a depth of 5.1 ft bgs. After developing the sampler, groundwater within the sampler was purged and then sampled. Groundwater sample P68-B4-GW was collected with a peristaltic pump using 3/8-inch diameter polyethylene tubing. The sample was collected in a laboratory-supplied container, stored on ice pending shipment, and submitted to Prism under chain-of-custody control for chemical analysis of VOCs by EPA Methods 601, 602 and semivolatile organic compounds (SVOCs) by EPA Method 625 (base-neutral acid extractables with the ten largest non-target peaks identified), as well as the Massachusetts Department of Environmental Protection (MADEP) Volatile Petroleum Hydrocarbon (VPH) and Extractable Petroleum Hydrocarbon (EPH) methods.

4.0 SAMPLING RESULTS

TPH DRO was detected in 7 of 19 soil samples collected within the Study Area at concentrations ranging from an estimated 7.7 mg/kg (P68-B18 (6-8 ft bgs)) to 1,300 mg/kg (P68-B4 (0-2 ft bgs)). TPH GRO was detected in two of the 19 soil samples at concentrations ranging from 4,500 mg/kg (P68-B13 (2-4 ft bgs)) to 7,200 mg/kg (P68-B4 (0-2 ft bgs)). These data are summarized in **Table 2**. Laboratory reports associated with these samples are presented in **Appendix E**.

The analytical results for groundwater sample P68-B4-GW showed concentrations of VOCs, SVOCs, VPH and EPH above the laboratory reporting limit. These data are presented in **Table 3**. The laboratory report associated with this sample is presented in **Appendix F**.

5.0 DISCUSSION AND CONCLUSIONS

The geophysical survey conducted at the site did not reveal buried metallic objects such as USTs within the Study Area. The survey did suggest metallic anomalies suggesting miscellaneous metal debris. The outline of a former pump island was observed north of the existing shoulder of US Highway 1. An open well or cistern was noted west of the former pump island location.

According to the laboratory analytical results, TPH DRO was detected in the soil samples from borings P68-B4, P68-B9, P68-B13 and P68-B14 at concentrations greater than or equal to the action level of 10 mg/kg described for tank closure in the *Guidelines for Tank Closure, North Carolina Underground Storage Tank Section (*UST Guidelines*),* September 2003. TPH GRO was detected in the soil samples from borings P68-B4 and P68-B13 at concentrations exceeding the UST Guidelines action level for TPH GRO. The presence of TPH DRO or GRO in soil is typically associated with a release of petroleum hydrocarbons.

Two locations of soil impacts were identified within the Study Area. The first location is near the former pump island; the second area is approximately 140 feet west of the former pump island, near the well/cistern (**Figure 3**). The source of impacts for the first area is likely related to the historical operation of the pump island; the source of impact for second area is unknown at this time. The action level of 10 mg/kg provided by the UST Guidelines is a screening level utilized when completing the closure of a UST system. However, there is no readily identifiable UST system to suggest the source of impacts in the second area is related to a UST system, and there are clean soil samples located between the former pump island and the cistern/well. For soil impacts unrelated to historical UST operations, TPH screening levels provided by the NCDENR Division of Water Quality (*Groundwater Section Guidelines for the Investigation and Remediation of Soil and Groundwater, NCDENR Division of Water Quality, Groundwater Section* (DWQ Guidelines)*, July 2000)* may be applicable. Utilizing the DWQ Guidelines screening level, which is 40 mg/kg TPH DRO, the TPH DRO concentration in sample P68-B9 does not exceed the DWQ Action Level and, therefore, additional assessment is not required near the well/cistern area.

Based on detected TPH concentrations greater than the UST Guidelines action level of 10 mg/kg TPH DRO and TPH GRO, Solutions-IES estimates the dimensions of the first area of impacted soil near the pump island to measure approximately 30 feet by 50 feet, roughly centered on the location of the former pump island (**Figure 3)**. There is an additional area of impact, also likely related to historical operations of the pump island, located around soil boring P68-B4. Based on a depth to water of 5.1 feet, the volume of impacted soil is estimated at 280 cubic yards (cy) centered around the former pump island, and then another 30 cy extending 15 feet radially from soil boring P68-B4. The total estimate of impacted soil for the first area, associated with operations from the pump island, is 310 cy.

Soil samples P68-B7, P68-B12, and P68-B18 contained TPH DRO at concentrations greater than the laboratory reporting limit, and/or the method detection limit. However, these three samples did not exceed the UST Guidelines action level of 10 mg/kg. Because of these detected concentrations, proper transportation and disposal practices should be used in handling soil that may be excavated in the vicinity of these borings. During roadway construction, the NCDOT transportation/disposal contractor may use different criteria for estimating impacted soil.

As summarized in **Table 3,** groundwater sample P68-B4-GW contained several VOCs, SVOCs, and MADEP EPH and VPH in concentrations above their respective North Carolina Administrative Code (NCAC) 15A 2L .0202 2L Standards (2L Standards). The constituents that were detected are typically associated with impacts caused by the use of petroleum hydrocarbons. Additional assessment would be necessary to determine the vertical and lateral extent of groundwater impacts.

TABLES

TABLE 1
SUMMARY OF FIELD SCREENING RESULTS FOR SOIL
Parcel 68, James Pugh Property
Richmond County, North Carolina
WBS Element: 34438.1.1; State Project: R-2502B
Sample Collection Date: September 7, 2006

Sample Depth Below Ground Surface	Soil Borings																		
	P68-B1	P68-B2	P68-B3	P68-B4	P68-B5	P68-B6	P68-B7	P68-B8	P68-B9	P68-B10	P68-B11	P68-B12	P68-B13	P68-B14	P68-B15	P68-B16	P68-B17	P68-B18	P68-B19
	FID Reading (ppm)																		
0 - 2 feet	ND	0.3	1.7	5558	0.6	1.0	0.8	ND	ND	ND	ND	ND	5817	102	ND	ND	ND	ND	ND
2 - 4 feet	ND	0.3	2.0	1358	0.8	1.1	1.2	0.1	0.1	ND	ND	ND	5817	1.2	ND	ND	ND	ND	ND
4 - 6 feet	ND	1.6	40	3269	0.8	4.3	1.2	0.1	0.4	0.1	49	1.5	5050	2.0	ND	ND	ND	ND	1.1
6 - 8 feet	ND	5.0	94	5558	30.6	1.0	5.4	0.2	0.2	0.1	232	1.2	289	ND	ND	ND	ND	ND	2.6
8 - 10 feet	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
10 - 12 feet	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:

Samples denoted by shaded cells were submitted for laboratory analysis.
NS = Not sampled.
FID readings were obtained with a Photovac MicroFID Flame Ionization Detector.
ND = Not Detected
ppm = parts per million
FID = Flame Ionization Detector

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS
Parcel 68, James Pugh Property
Richmond County, North Carolina
WBS Element: 34438.1.1; State Project: R-2502B
Sample Collection Date: September 7, 2006

Sample Information		Total Petroleum Hydrocarbons	
Boring Number	**Depth (ft bgs)**	**Gasoline Range[1] (mg/kg)**	**Diesel Range[2] (mg/kg)**
P68-B1	2 - 4	< 8.2	< 8.2
P68-B2	6 - 8	< 8.6	< 8.6
P68-B3	4 - 6	<7.9	<7.9
P68-B4	0 - 2	**7,200[3]**	**1,300[3]**
P68-B5	4 - 6	< 8.0	< 8.0
P68-B6	4 - 6	< 8.7	< 8.7
P68-B7	6 - 8	< 9.0	**9.9**
P68-B8	6 - 8	< 8.1	< 8.1
P68-B9	4 - 6	< 7.8	**37**
P68-B10	6 - 8	< 8.2	< 8.2
P68-B11	4 - 6	< 7.9	< 7.9
P68-B12	4 - 6	< 8.2	**8.8**
P68-B13	2 - 4	**4,500[3]**	**130**
P68-B14	0 - 2	<7.8	**10**
P68-B15	6 - 8	< 9.0	< 9.0
P68-B16	6 - 8	< 8.6	< 8.6
P68-B17	6 - 8	< 8.8	< 8.8
P68-B18	6 - 8	< 8.9	**7.7 J**
P68-B19	6 - 8	< 8.4	< 8.4

Notes:

1. Total Petroleum Hydrocarbons (TPH) Method 5030/8015MOD - Gasoline Range Hydrocarbons
2. Total Petroleum Hydrocarbons (TPH) Method 3545/8015MOD - Diesel Range Hydrocarbons
3. Laboratory data qualifiers note that the quality control results were outside the QC limits, possibly due to compound being diluted out.

Bold values indicate detected concentrations

J = Estimated value between the Reporting Limit and the Method Detection Limit

ft bgs = feet below ground surface

Shaded values indicate that exceed the action limit of 10 mg/kg for TPH-DRO and TPH-GRO provided from "Guidelines for Tank Closure", North Carolina Underground Storage Tank Section, State of North Carolina Department of Environment and

TABLE 3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
(Detected Constituents)
Parcel 68, Richmond County, North Carolina
WBS Element: 34438.1.1; State Project: R-2502B
Sample ID: P68-B4-GW
Sample Collected: September 7, 2006

Analyte	Concentration Detected (µg/L)	15A NCAC 02L .0202 Groundwater Quality Standards (µg/L)
EPA Method 625/625SF - Semivolatile Organics		
Naphthalene	**32**	21
EPA Method 601/602 Volatile Organics		
Benzene	**25**	1
Ethylbenzene	**65**	550
Xylenes (total)	**238**	530
Naphthalene	**23**	21
Toluene	**26**	1,000
MADEP - VPH AND EPH		
C05 - C08 Aliphatics	**1,500**	420
C09 - C10 Aromatics	**360**	210

Notes:

Constituents not shown were not detected above laboratory method detection limits.

Shaded cells denote constituents and concentrations that exceed the 15A NCAC 2L Groundwater Standards (2L Standards).

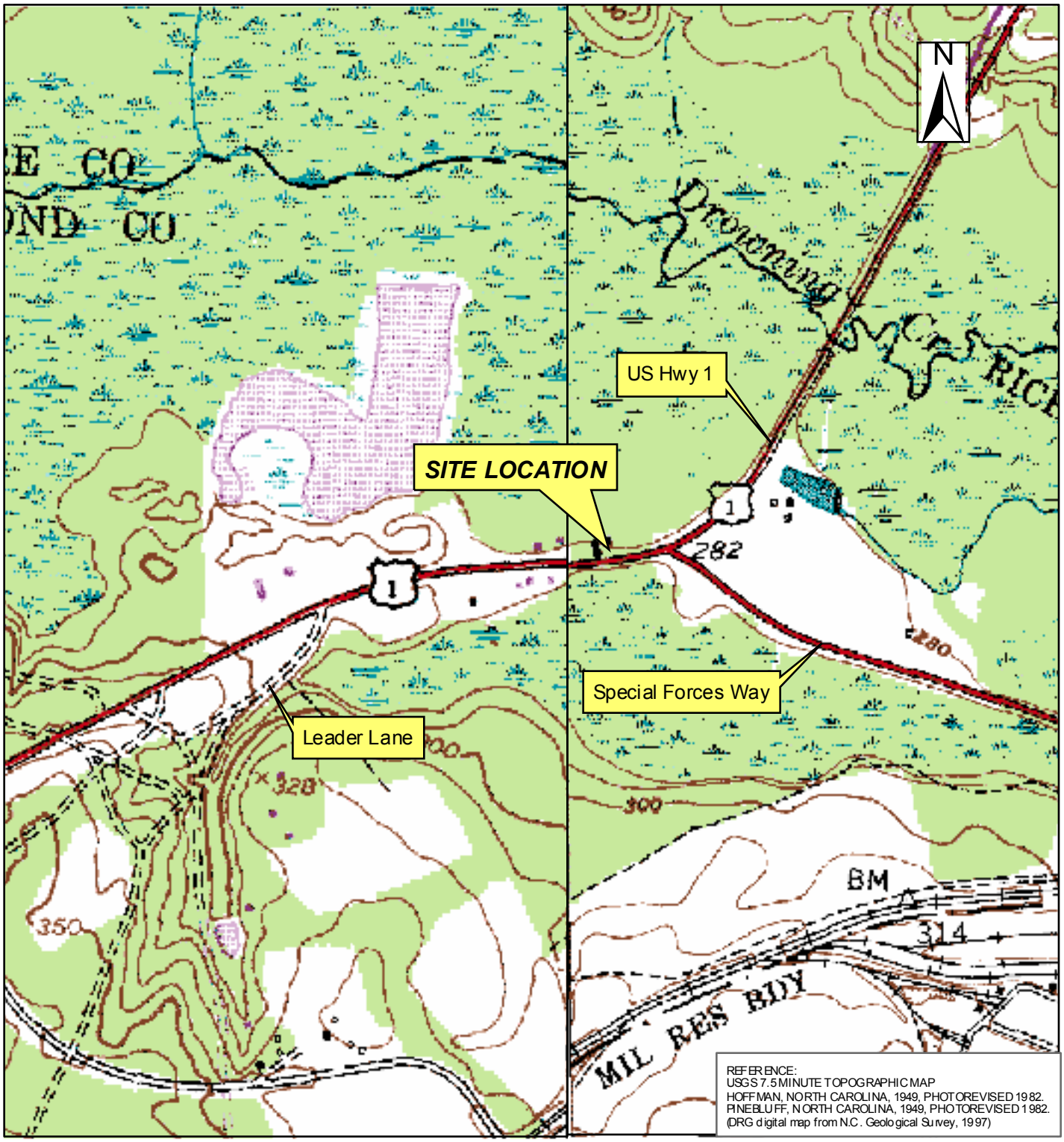
10 TICs (Semi-volatile organics) were also detected by Method 625 in the groundwater sample collected from the Study Area. These TICs are identified in the analytical report included as Appendix F.

C09 - C18 Aliphatics represent the combined totals of C9-C12 Aliphatics (VPH) and C9-C18 Aliphatics (EPH).

C09 - C10 Aromatics represent C9-C10 Aromatics (EPH) only; C11-C22 Aromatics (VPH) were not detected.

µg/L = micrograms per liter

FIGURES



1:10,000

SITE LOCATION MAP
PARCEL 68
JAMES PUGH PROPERTY
RICHMOND COUNTY, NORTH CAROLINA
STATE PROJECT NO. R-2502 B, WBS ELEMENT# 34438.1.1

Solutions-IES
Industrial & Environmental Services

1101 Nowell Road, Raleigh, NC 27609
Phone (919) 873-1060, Fax (919) 873-1074

Created by:	RT	Project:	3260.06A3.NDOT
Checked by:	SK	Date:	SEPTEMBER 2006
File:	Figure 1.mxd		
Software:	ESRI ArcMap 9.1	FIGURE	1

PROJECT NUMBER 3290.0BA3.NDOT | DRAFTER RT | CHECKED BY SK | PROJECT MANAGER SK | DATE AUGUST 2006 | FILE FIG2.DGN

630.93'
N87°43'04"E

182.12'
N00°41'02"W

68
JAMES E. PUGH
DB 634 PG 475

PDE
PDE
PDE
PDE
PDE

PWINS

68
JAMES E. PUGH
DB 634 PG 475

C A

13.68'
N00°35'46"W

STUDY AREA

CHORD

R/W

568

EXISTING R/W

100'

CONC

CAT-1

US 1 24' BST

TO PINEBLUFF → US 1 26' BST

4' CONC MW

38.96'
N21°52'17"E

574

576

GR

EXISTING R/W

573

571

WD DK

H/R

ISF BUS ABAND

ANTENNA

572

PDE

PDE

PDE

CHORD

R/W

R/W

R/W

Solutions-IES
Industrial & Environmental Services
1101 NOVELL ROAD
RALEIGH, NORTH CAROLINA 27607
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0 50 100
SCALE IN FEET

NOTE: BASEMAP PROVIDED BY NCDOT

PARCEL 68
JAMES E. PUGH PROPERTY
RICHMOND COUNTY, NORTH CAROLINA
STATE PROJECT NO. R-2502 B
WBS ELEMENT: 34438.1.1

SITE MAP

FIGURE:
2

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P68-B11	4 - 6	< 7.9	< 7.9
P68-B12	4 - 6	< 8.2	**8.8**
P68-B13	2 - 4	**4,500**[3]	**130**
P68-B14	0 - 2	<7.8	**10**
P68-B15	6 - 8	< 9.0	< 9.0
P68-B16	6 - 8	< 8.6	< 8.6
P68-B17	6 - 8	< 8.8	< 8.8
P68-B18	6 - 8	< 8.9	**7.7 J**
P68-B19	6 - 8	< 8.4	< 8.4

Notes:
1. Total Petroleum Hydrocarbons (TPH) Method 5030/8015MOD - Gasoline Range Hydrocarbons
2. Total Petroleum Hydrocarbons (TPH) Method 3545/8015MOD - Diesel Range Hydrocarbons
3. Laboratory data qualifiers note that the quality control results were outside the QC limits, possibly due to compound being diluted out.

Bold values indicate detected concentrations
J = Estimated value between the Reporting Limit and the Method Detection Limit
ft bgs = feet below ground surface

PROJECT NUMBER 3260.06A3.NODT
DRAFTER RT
CHECKED BY SK
PROJECT MANAGER SK
DATE AUGUST 2006
FILE FIG3.DGN

630.93'
N87°43'04"E

68
JAMES E. PUGH
DB 634 PG 475

68
JAMES E. PUGH
DB 634 PG 475

182.12'
N00°41'02"W

383.68'
N00°25'46"W

PDE
PDE
PDE
PDE
PONDS

APPROXIMATE EXTENT OF IMPACTED SOILS

STUDY AREA

CHORD
EXISTING R/W
568
100'
TO PINEBLUFF
US 1 26' BST
US 1 24' BST
4' CONC MW
574
GR
EXISTING R/W
571
573
576
572
WD DK
H/R
ANTENNA
ISF BUS ABAND
CHORD

P68-B1 P68-B2 P68-B3 P68-B4 P68-B5 P68-B6 P68-B7 P68-B8 P68-B9 P68-B10 P68-B11 P68-B12 P68-B13 P68-B14 P68-B15 P68-B16 P68-17 P68-B18 P68-B19

CA7-1

38.96'
S21°52'27"E

LEGEND
P68-B1 SOIL BORING LOCATION

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0 50 100
SCALE IN FEET

NOTE: BASEMAP PROVIDED BY NCDOT

PARCEL 68
JAMES E. PUGH PROPERTY
RICHMOND COUNTY, NORTH CAROLINA
STATE PROJECT NO. R-2502 B
WBS ELEMENT: 34438.1.1

SOIL BORING LOCATIONS
&
EXTENT OF SOIL CONTAMINATION

FIGURE: 3

APPENDIX A

PHOTOGRAPHS

Photograph 1 – View of Parcel 68 from east to west along US Highway 1.

Photograph 2 – View of former pump island on Parcel 68.

APPENDIX B

GEOPHYSICAL INVESTIGATION

Pyramid Project # 2006200

GEOPHYSICAL INVESTIGATION REPORT

GEOPHYSICAL SURVEYS FOR THE DETECTION OF METALLIC USTS

US 1 from SR 1001 to the Richmond County Line
Richmond, North Carolina
State Project Number U-3459

September 1, 2006

Report prepared for: Sheri Knox, PE
Solutions IES
1101 Nowell Rd.
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Prepared by: _____
Douglas Canavello, PG

Reviewed by: _____
Tim Leatherman, PG

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Solutions IES
GEOPHYSICAL SURVEYS FOR THE DETECTION OF METALLIC USTS
US 1 from SR 1001 to the Richmond County Line
State Project Number U-3456

TABLE OF CONTENTS

FIGURES

FIGURES (continued)

1.0 INTRODUCTION

Pyramid Environmental & Engineering, PC conducted geophysical investigations for Solutions IES during the period of July 26 through August 28, 2006, within the proposed Right-of-Way (ROW) areas at 10 sites located in Richmond County, North Carolina. The work was done as part of the North Carolina Department of Transportation (NCDOT) road-widening project under State Project number U-3459. The sites are located along the northern or western sides of US 1 from SR 1001 to the Richmond County Line. The geophysical surveys were conducted to determine if unknown metallic underground storage tanks (UST's) were present beneath the proposed ROW area of each site.

Solutions IES representative Ms. Sheri Knox, PE provided maps during the week of July 24, 2006 that outlined the geophysical survey area of each site. Ms. Knox also provided project management during the geophysical investigation of the sites. Geophysical surveys were conducted within the proposed ROW areas at the following 10 sites that are listed from the southern-most site to the northern-most site.

Property Owner	Parcel	Present Use of Property
Hillary McKay Property	(Parcel 6)	Grass-covered lot with garage
K.J. Lewis Property	(Parcel 9)	Vacant, wooded lot
James Brigman Property	(Parcel 21)	Vacant, grass-covered Lot
Roy Barry Bostick Property	(Parcel 48)	Grass-covered lot and garage
Pansy Ernest Property	(Parcel 50)	Grass-covered lot with vacant store
Church of Deliverance Prop.	(Parcel 51)	Asphalt lot with active church
Cooper & Brown Inc. Prop.	(Parcel 61)	Vacant lot and commercial building

Delia Lassiter Property	(Parcel 70)	Vacant lot and building
Ivey Little Property	(Parcel 22)	Vacant lot and building
James Pugh Property	(Parcel 68)	Vacant, wooded lot

Photographs of the above sites along with photographs of the geophysical equipment used for this project are presented in **Figure 1**.

2.0 FIELD METHODOLOGY

Prior to conducting the geophysical investigations, a 10-foot by 10-foot or 10-foot by 20-foot survey grid was established across the proposed ROW areas of the 10 sites using water-based marking paint or pin flags. 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 geophysical investigations consisted of electromagnetic (EM) induction-metal detection surveys and ground penetrating radar (GPR) surveys. 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 feet. The EM61 data were digitally collected at each site along parallel northerly-southerly or easterly-westerly trending survey lines spaced five feet apart. The data were downloaded to a computer and reviewed in the filed and office using the Geonics DAT61W and Surfer for Windows Version 7.0 software programs.

Contour plots of the EM61 bottom coil results and the EM61 differential results for each site are included in this report. The bottom coil results represent the most sensitive component of the EM61 instrument and detect metal objects regardless of size. The bottom coil response can be used to

delineate metal conduits or utility lines, small, isolated metal objects, and areas containing insignificant metal debris.

The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drums and USTs and ignore the smaller insignificant metal objects.

GPR surveys were conducted across selected EM61 differential anomalies and steel-reinforced concrete using a GSSI SIR-2000 unit equipped with a 400 MHz antenna. Surveys were also performed across several areas where parked vehicles that obstructed the EM61 survey had since been removed. GPR data were digitally collected in a continuous mode along X and/or Y survey lines, spaced two to five feet apart using a vertical scan of 512 samples, at a rate of 48 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 down to a maximum depth of approximately five feet, based on an estimated two-way travel time of 9 nanoseconds per foot.

The GPR data were downloaded to a field computer and later reviewed in the office using Radprint and Radan 5.0 software programs. The locations of GPR survey areas or individual GPR survey lines are shown as solid, purple polygons or solid purple lines, respectively, on the EM61 differential contour plots. The approximate perimeters of probable or possible USTs, based on the geophysical results, were marked and labeled in the field using orange, water-based marking paint and pin flags (when possible). The approximate locations of probable or possible USTs are shown as magenta-colored rectangles on the EM61 bottom coil and differential contour plots.

During the weeks of August 7, August 14, and August 28, preliminary contour plots of the EM61 bottom coil and the differential results were emailed to Ms. Knox.

3.0 DISCUSSION OF RESULTS

3.1 Parcel 6 – Hillary McKay Property

The Hillary McKay Property (Parcel 6) contains a former auto repair garage and a vacant wooden building. The ROW area consists of a flat-lying grass surface. The bottom coil results and the differential results are presented in **Figures 2 and 3**, respectively. GPR surveys conducted around the perimeter of the garage and wooden building, suggest that the EM61 anomalies surrounding the two buildings are in response to the structures and perhaps buried miscellaneous metal debris. The remaining EM61 anomalies are probably in response to buried miscellaneous metal debris. The geophysical results suggest that the proposed ROW area at Parcel 6 does not contain metallic UST's.

3.2 Parcel 9 – K.J. Lewis Property

The K.J. Lewis property (Parcel 9) is located immediately north of the Mercer Road and US 1 intersection, approximately 200 feet northeast of Parcel 6. The property consists of an abandoned building along the edge of US 1, which is surrounded by dense wooded terrain. A former pump island area is located in front of the building. The EM61 bottom coil results and the differential results are presented in **Figures 4 and 5**, respectively. Due to limited access to the site, the geophysical investigation was limited to the front portion of the property that is located along US 1.

The geophysical investigation detected the probable presence of two USTs located adjacent to the pump island area. The first UST is centered near grid coordinates X=84 Y=27, and buried approximately 1.5 feet below surface. The second UST is centered near grid coordinates X=103 Y=27, and is buried approximately 2.0 feet below surface. This latter UST appears to be lie partially beneath the former pump island area. The approximate locations of the USTs are shown as magenta-colored rectangles in Figures 4 and 5. Based on the GPR results, the probable USTs are approximately 10 feet long and 4 feet wide. A photograph showing the approximate locations of the two probable USTs and the image of GPR survey lines Y=27.5, which intersects the probable USTs, are presented in **Figure 6**.

The EM61 differential anomaly centered near grid coordinates X=118 Y=29, may possibly be in response to a UST or large metal object. However, GPR surveys could not be conducted across this EM anomaly due to the limited access caused by the dense wooded terrain. The approximate location of this possible UST is shown as a dashed, magenta-colored rectangle in Figures 4 and 5, and in the site photograph that is presented in Figure 6.

The remaining portion of the geophysical survey area does not appear to contain significant, buried, metal objects.

3.3 Parcel 21 – James Brigman Property

The James Brigman property (Parcel 21) consists of an open, grass and asphalt-covered lot located along the western side of US 1. The EM61 bottom coil results and the differential results are presented in **Figures 7 and 8**, respectively.

GPR surveys conducted across the linear, EM61 bottom coil anomalies that intersect grid coordinates X=62 Y=70, X=66 Y=94, X=84 Y=94, and X=87.5 Y=75, suggest the anomalies are probably in response to buried utility lines or conduits. GPR data also suggest that the high amplitude anomalies centered near grid coordinates X=77 Y=84, and X=93 Y=66, are probably in response to buried miscellaneous metal objects or junction areas for the conduits or utility lines.

GPR surveys conducted across the large, high amplitude anomaly centered near X=45 Y=75, detected the probable presence of four metallic USTs. The four probable USTs are centered near grid coordinates X=43 Y=80, X=50 Y=80, X=42 Y=73, and X=48 Y=73. Based on the GPR data, the USTs appear to be approximately 9 feet long and 3.5 to 4 feet wide and buried approximately 1.5 to 2.0 feet below surface. The approximate locations of the probable USTs are shown as magenta-colored rectangles in Figures 7 and 8. A photograph showing the approximate locations of the four probable USTs and the image of GPR survey lines Y=80, which intersects the two probable USTs centered near X=43 Y=80, and X=50 Y=80, are presented in **Figure 9**.

The remaining EM61 anomalies recorded within the proposed ROW area are probably in response to miscellaneous metal debris.

3.4 Parcel 48 – Roy Barry Bostick Property

The Roy Barry Bostick property (Parcel 48) consists of a red, brick building surrounded by flat-lying grass-covered terrain. The parcel is located along the northwestern side of US 1 approximately 300 feet southwest of the US 1 and Tilley Street intersection. The EM61 bottom coil results and the differential results are presented in **Figure 10**.

GPR surveys conducted across the EM61 anomaly centered near grid coordinates X=295 Y=60, suggest that the anomaly is probably in response to one or more large diameter (12 or more inches) conduits buried approximately 1.0 feet below surface. There is a possibility (although unlikely) that the anomaly may be in response to a very small UST centered near grid coordinates X=290 Y=59. The location of the possible, but unlikely UST is shown as a magenta-colored square in Figure 10.

GPR surveys conducted along the edge of the brick building suggest that the EM61 anomalies recorded in this area are probably in response to the building and/or buried miscellaneous debris. The remaining EM61 anomalies recorded within the proposed ROW area at Parcel 48 are probably in response to known cultural features and/or buried miscellaneous debris.

3.5 Parcel 50 – Pansy Ernest Property

The Pansy Ernest property (Parcel 50) is located on the western corner of the Tilley Street and US1 intersection. The parcel contains the former Little Grace's Variety store surrounded by a flay-lying grass-covered, terrain. An occupied house is located immediately west of the property. The EM61 bottom coil results and the differential results are presented in **Figures 11 and 12**, respectively. Please note that Figures 11 and 12 also contain the EM61 results for Church of Deliverance property (Parcel 51).

GPR surveys conducted across the backyard of Parcel 50 suggest the linear EM61 bottom coil anomalies intersecting grid coordinates X=570 Y=115, X=570 Y=126, X=580 Y=90, and X=586 Y=125, are probable in response to buried conduits or lines. Similarly, the locations of the linear EM61 anomalies intersecting grid coordinates X= 622 Y=80, X=622 Y=120, and X=640 Y=35, suggest these anomalies are probably in response to buried utility lines.

GPR surveys conduct across the high amplitude anomalies centered near grid coordinates X=575 Y=105, and X=590 Y=113, suggest the anomalies are probably in response to the "junction" of conduits and/or other miscellaneous objects. Although not confirmed by the GPR results, the EM61 anomaly located at X=575 Y=105, may be in response to a possible septic tank.

GPR surveys conducted across the EM61 anomaly centered near grid coordinates X=567 Y=55, detected the probably presence of two USTs buried approximately 0.75 feet below surface. The approximate locations of the probably USTs are shown as magenta-colored rectangles in Figures 11 and 12 and each UST appears to be approximately eight feet long and three feet wide. A photograph showing the approximate locations of the two probable USTs and the image of GPR survey line Y=55, which intersects the probable USTs, are presented in **Figure 13**.

The remaining EM61 anomalies recorded within the proposed ROW area at Parcel 50 are probably in response to known cultural features or buried miscellaneous metal debris.

3.6 Parcel 51 – Church of Deliverance Property

The Church of Deliverance property (Parcel 51) contains an active church building surrounded by a grass, gravel or asphalt-covered parking area. The property is located on the northern corner of the Tilley Street and US 1 intersection immediately across the street from the Pansy Ernest property (Parcel 50). The EM61 bottom coil results and the differential results for Parcel 51 are presented in **Figures 11 and 12**, respectively along with the EM61 results for Parcel 50.

The linear EM61 bottom coil anomalies intersecting grid coordinates X=670 Y=50, X=700 Y=30, and X=700 Y=65, are probably in response to buried utility lines or conduits. GPR surveys conducted across the EM61 differential anomaly centered near X=705 Y=105, and along the front edge of the church building suggest the anomalies are probably in response to miscellaneous debris and the building, respectively.

The remaining EM61 anomalies recorded within the proposed ROW area at Parcel 51 are probably in response to know cultural features or miscellaneous buried debris. The geophysical results also suggest that the proposed ROW area does not contain metallic USTs.

3.7 Parcel 61 – Cooper & Brown Inc. Property

The Cooper & Brown Inc. property (Parcel 61) is located on the western side of the US 1 and Little Road intersection. The proposed ROW area of Parcel 61 contains a vacant business building surrounded by flat-lying, grass or asphalt surfaces. A concrete pad is located in front of the building and probably identifies the former pump island area. An occupied house lies to the northwest of the proposed ROW area.

The EM61 bottom coil results and the differential results are presented in **Figures 14 and 15**, respectively. The linear EM61 bottom coil anomalies intersecting grid coordinates X=130 Y=34, X=142 Y=105, X=186 Y=100, X=210 Y=42, and X=213 Y=83, are probably in response to buried utility lines or conduits. The high amplitude anomalies centered near grid coordinates X=75 Y=67, and X=80 Y=50, are probably in response to steel reinforced concrete. GPR surveys conducted across these two areas did not detect the presence of USTs.

GPR surveys conducted across the high amplitude anomaly centered near X=226 Y=116, suggest the anomaly is probably in response to steel reinforced concrete and/or to the metal conduits that are visible at the surface. GPR surveys conducted along the perimeter of the building suggest that the EM61 anomalies are probably in response to the building and/or to miscellaneous debris. The remaining EM61 anomalies are probably in response to known cultural features and/or to buried miscellaneous metal debris.

The geophysical results suggest that the proposed ROW area at Parcel 61 does not contain metallic USTs.

3.8 Parcel 70 – Delia Lassiter Property

The Delia Lassiter Property (Parcel 70) contains a vacant building surrounded primarily by grass yard and an asphalt driveway. An occupied house lies immediately north of the proposed ROW area. The EM61 bottom coil results and the differential results are presented in **Figures 16 and 17**, respectively.

The linear EM61 anomaly intersecting grid coordinates X=90 Y=110, is probably in response to a buried utility line or conduit. The remaining EM anomalies are probably in response to known cultural features or to buried miscellaneous debris. The geophysical results suggest that the proposed ROW area at the Delia Lassiter property does not contain metallic USTs.

3.9 Parcel 22 – Ivey Little Property

The Ivey Little property (Parcel 22) is located along the northwest side of US 1 and consists of a vacant building surrounded by a gravel-covered driveway and grass-covered fields. The EM61 bottom coil results and the differential results are presented in **Figures 18 and 19**, respectively.

The linear EM61 anomaly intersecting grid coordinates X=354 Y=35, is probably in response to a buried utility line or conduit. The remaining EM anomalies are probably in response to known cultural features or to buried miscellaneous debris. The geophysical results suggest that the proposed ROW area at the Ivey Little property does not contain metallic USTs.

3.10 Parcel 68 – James Pugh Property

The James Pugh Property (Parcel 68) is a former gas station site located on the northern side of US 1, approximately 0.25 miles west of the US 1 and Special Forces Way intersection. The site consists primarily of grass, trees and brush with a former pump island pad located near the edge of US 1. The EM61 bottom coil results and the differential results are presented in **Figure 20**.

GPR surveys conducted across the EM61 anomalies centered grid coordinates X=305 Y=35, and X=321 Y=37, suggest the anomalies are probably in response to the pump island pad and to the

buried pump island-related equipment. GPR surveys conducted across the EM61 anomaly centered near grid coordinates X=534 Y=92, suggest the anomaly is probably in response to buried miscellaneous debris or object. The remaining EM61 anomalies are probably in response to known cultural features and miscellaneous metal debris.

The geophysical investigation conducted at Parcel 68 suggests that the proposed ROW area does not contain metallic USTs.

4.0 SUMMARY & CONCLUSIONS

Our evaluation of the EM61 and GPR data collected across the proposed ROW areas at the 10 sites along US 1 in Richmond County, North Carolina provides the following summary and conclusions:

- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the surveyed portions of the proposed ROW areas of each site.

- GPR surveys were conducted across selected EM61 differential anomalies and across areas containing steel reinforced concrete.

- Linear EM61 anomalies at the 10 sites are probably in response to buried utility lines and/or conduits. The majority of non-linear anomalies are probably in response to known cultural features or miscellaneous metal objects.

- The geophysical results suggest the proposed ROW areas at the following properties do not contain metallic USTs:

Hillary McKay Property	(Parcel 6)
Church of Deliverance Property	(Parcel 51)
Cooper & Brown Inc. Property	(Parcel 61)
Delia Lassiter Property	(Parcel 70)
Ivey Little Property	(Parcel 22)
James Pugh Property	(Parcel 68)

- K.J. Lewis Property (Parcel 9): Geophysical results suggest the probable presence of two USTs located adjacent to the pump island area. The first UST is centered near grid coordinates X=84 Y=27, and buried approximately 1.5 feet below surface. The second UST is centered near grid coordinates X=103 Y=27, and is buried approximately 2.0 feet below surface. The EM61 differential anomaly centered near grid coordinates X=118 Y=29, may possibly be in response to a UST or large metal object. However, GPR surveys could not be conducted across this EM anomaly due to the limited access caused by the dense wooded terrain.

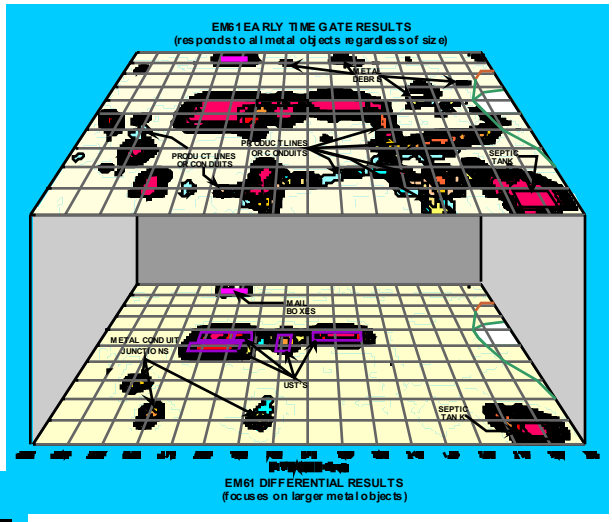
- James Brigman Property (Parcel 21): Geophysical results detected the probable presence of four metallic USTs centered near grid coordinates X=43 Y=80, X=50 Y=80, X=42 Y=73, and X=48 Y=73. Based on the GPR data, the USTs appear to be approximately 9 feet long and 3.5 to 4 feet wide and buried approximately 1.5 to 2.0 feet below surface.

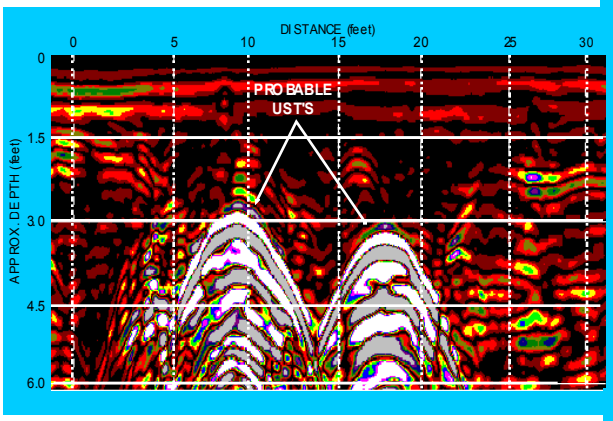
- Roy Barry Bostick Property (Parcel 48): GPR surveys conducted across the EM61 anomaly centered near grid coordinates X=295 Y=60, suggest that the anomaly is probably in response to one or more large diameter (12 or more inches) conduits buried approximately 1.0 feet below surface. There is a possibility (although unlikely) that the anomaly may be in response to a very small UST centered near grid coordinates X=290 Y=59.

- Pansy Ernest Property (Parcel 50): Geophysical results suggest the probable presence of two USTs centered near grid coordinates X=567 Y=55, and buried approximately 0.75 feet below surface. The USTs appear to be approximately eight feet long and three feet wide.

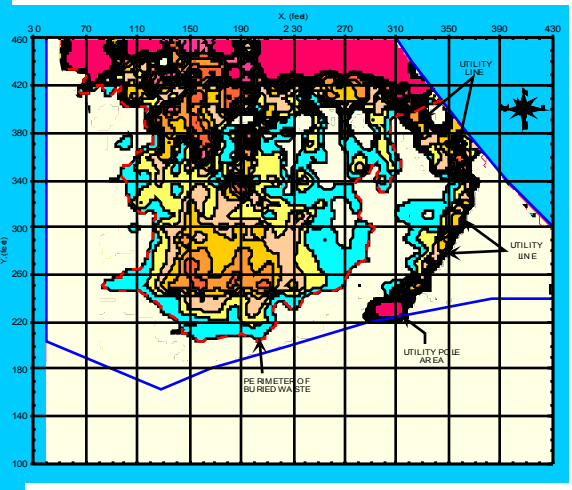
5.0 LIMITATIONS

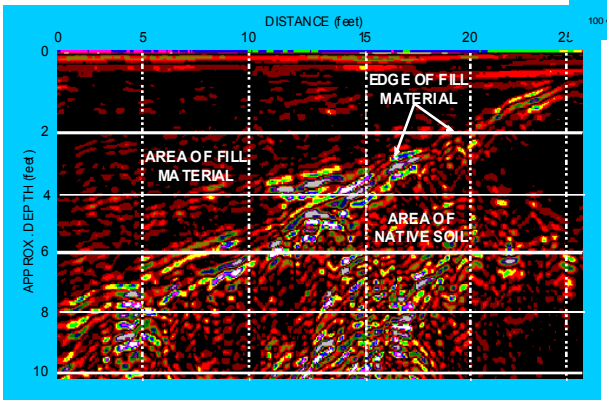
EM61 and GPR surveys have been performed and this report prepared for Solutions IES in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project do not conclusively define the locations of all metallic USTs but only suggest where some of the metallic USTs may be present. The EM61 and GPR anomalies, interpreted as probable or possible USTs or tanks, may be attributed to other surface or subsurface conditions or cultural interference.


EM61 EARLY TIME GATE RESULTS
(responds to all metal objects regardless of size)
METAL DEBRIS
PRODUCT LINES OR CONDUITS
PRODUCT LINES OR CONDUITS
SEPTIC TANK
MAIL BOXES
METAL CONDUIT JUNCTIONS
UST'S
SEPTIC TANKS
EM61 DIFFERENTIAL RESULTS
(focuses on larger metal objects)


DISTANCE (feet)
0
5
10
15
20
25
30
APPROX. DEPTH (feet)
0
1.5
3.0
4.5
6.0
PROBABLE UST'S

FIGURES


X (feet)
30
70
110
150
190
230
270
310
350
390
430
Y (feet)
460
420
380
340
300
260
220
180
140
100
UTILITY LINE
UTILITY LINE
UTILITY POLE AREA
PERIMETER OF BURIED WASTE


DISTANCE (feet)
0
5
10
15
20
APPROX. DEPTH (feet)
0
2
4
6
8
10
EDGE OF FILL MATERIAL
AREA OF FILL MATERIAL
AREA OF NATIVE SOIL

Parcel 6 - Hillary McKay Property

Parcel 9 - K.J. Lewis Property

Parcel 21 - James Brigman Property

Parcel 48 - Roy Barry Bostick Property

Parcel 50 - Pansy Earnest Property

Parcel 51 - Church of Deliverance Property

Parcel 61 - Cooper & Brown Property

Parcel 70 - Delia Lassiter Property

Parcel 22 - Ivey Little Property

Parcel 68 - James Pugh Property

GEOPHYSICAL EQUIPMENT

The photo shows the Geonics EM61 metal detector that was used to conduct the metal detection survey at the sites in Richmond County, North Carolina.

The photos show the SIR-2000 GPR system equipped with a 400 MHz antenna that was used to conduct the ground penetrating radar investigation at the sites in Richmond County, North Carolina.

SITE PHOTOGRAPHS

This figure shows the photographs of the ten sites located near Marston and Hoffman, North Carolina where geophysical investigations were conducted within the ROW areas for the detection of metallic USTs.

SITE PHOTOS

FIGURE 1

GRAPHIC SCALE IN FEET

DRWN	CHK'D		FIGURE
MJD			
DATE	LAY	DWG	J.NO.
08/31/06			2006-200

CLIENT: SOLUTIONS IES

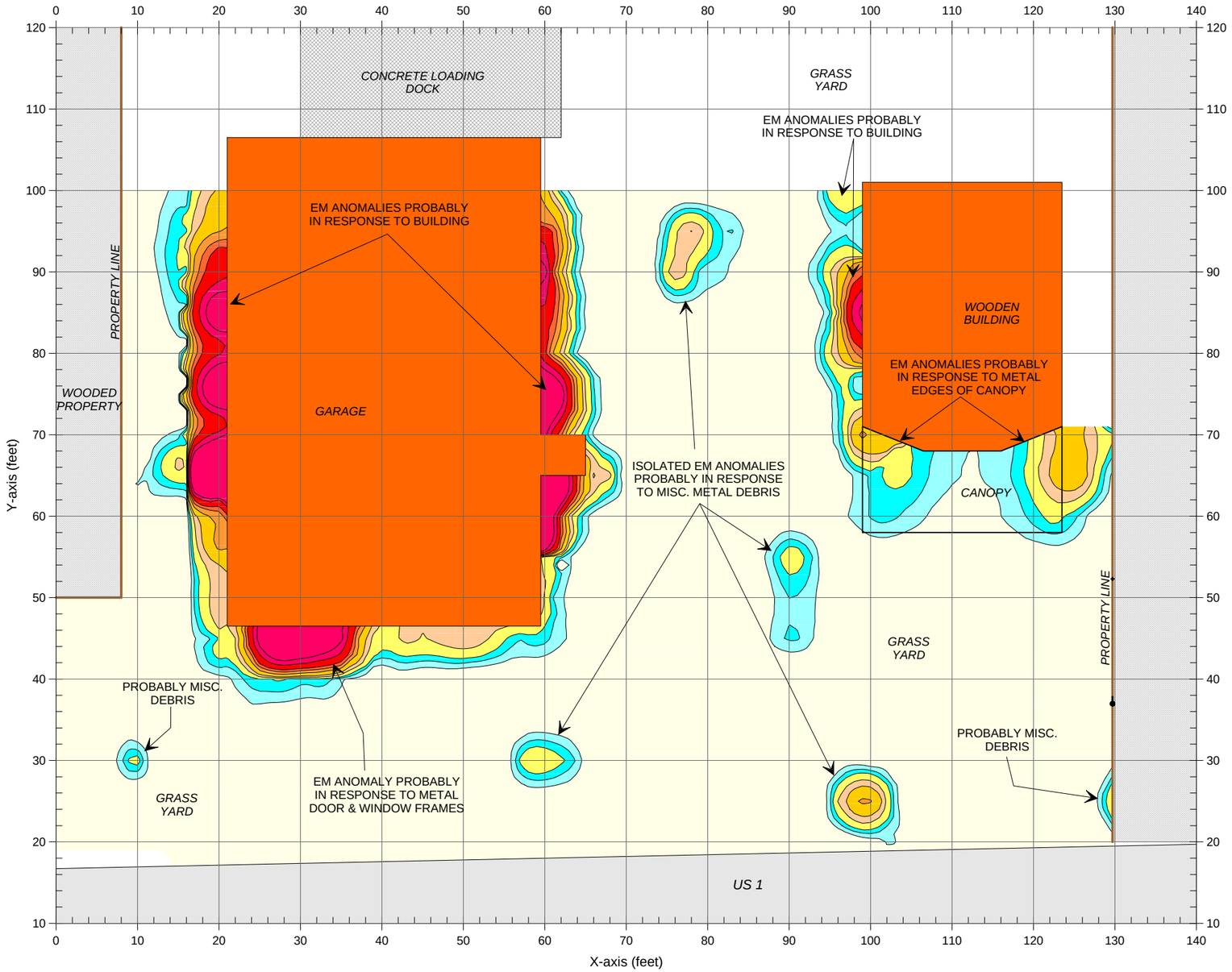
SITE: US 1 - RICHMOND COUNTY SITES

CITY: MARSTON & HOFFMAN

STATE: NORTH CAROLINA

TITLE: GEOPHYSICAL RESULTS

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.



APPROXIMATE NORTH

LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHEAST-SOUTHWEST TRENDING LINES SPACED 5 FEET APART
- PROPERTY LINE (APPROX.)
- GUY WIRE
- UTILITY POLE

EM61 BOTTOM COIL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -80 45 50 75 100 150 200 300 400 500 750 1000

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 July 27, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on August 16, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical investigation suggests that the survey area does not contain metallic USTs.

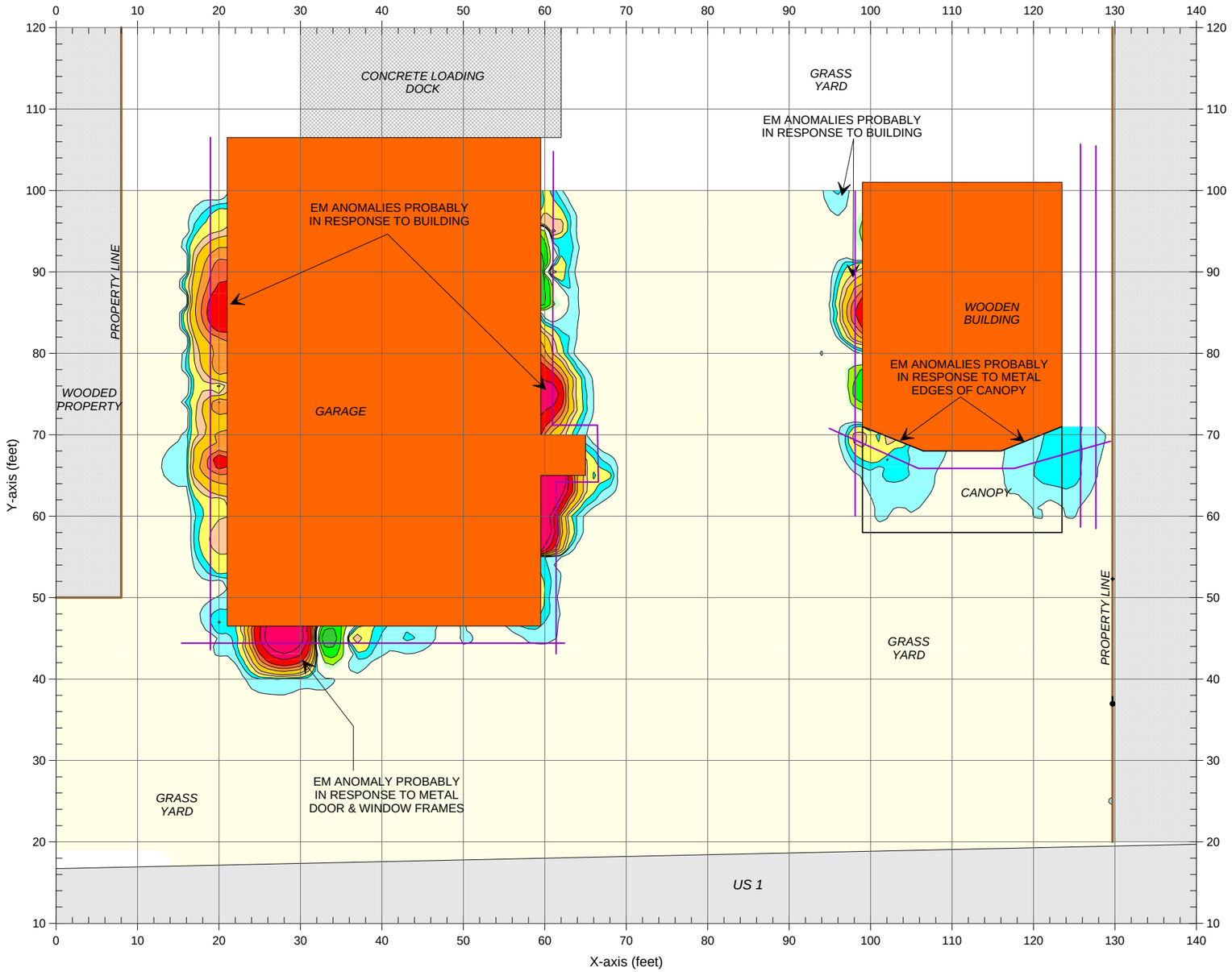
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/01/06	DRWN	MJD
SITE	PARCEL 6 - HILLARY MCKAY PROPERTY	LAY		CHKD	
CITY	MARSTON	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J-NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 BOTTOM COIL RESULTS

FIGURE 2



APPROXIMATE NORTH

LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHEAST-SOUTHWEST TRENDING LINES SPACED 5 FEET APART
- PROPERTY LINE (APPROX.)
- GUY WIRE
- UTILITY POLE
- APPROX. LOCATION OF GPR SURVEY LINE

EM61 DIFFERENTIAL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -80 45 50 75 100 150 200 300 400 500 750 1000

Note: The contour plot shows the differential results of the EM61 metal detection survey in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris. The EM metal detection data were collected on July 27, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on August 16, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical investigation suggests that the survey area does not contain metallic USTs.

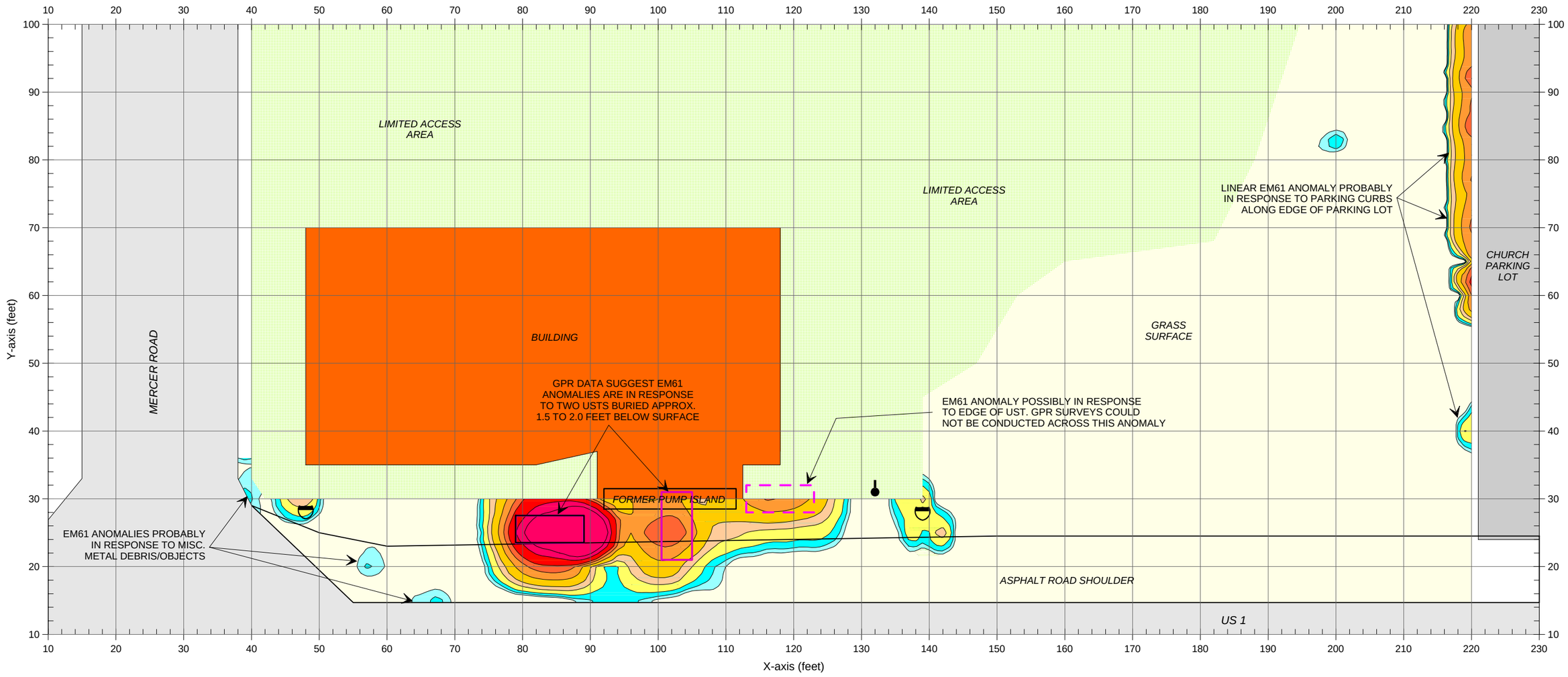
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES		DATE	08/01/06	DRWN MJD
SITE	PARCEL 6 - HILLARY MCKAY PROPERTY		LAY		CHKD
CITY	MARSTON	STATE NORTH CAROLINA	DWG		
TITLE	GEOPHYSICAL RESULTS		J-NO.	2006-200	FIGURE

GRAPHIC SCALE IN FEET

EM61 DIFFERENTIAL RESULTS

FIGURE 3



EM61 BOTTOM COIL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -90 55 60 75 100 150 200 300 400 500 750 1000

LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG EASTERLY-WESTERLY OR NORTHERLY- SOUTHERLY TRENDING LINES SPACED 5 FEET APART
- UTILITY POLE
- TRAFFIC SIGN
- POSSIBLE UST, AS SUGGESTED BY EM61 ANOMALY
- PROBABLE UST, AS SUGGESTED BY GPR SURVEYS

N W E S

APPROXIMATE NORTH

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 August 15, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on August 16, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

GPR surveys suggest that the EM61 anomalies recorded adjacent to the former pump island area are probably in response to metallic USTs.

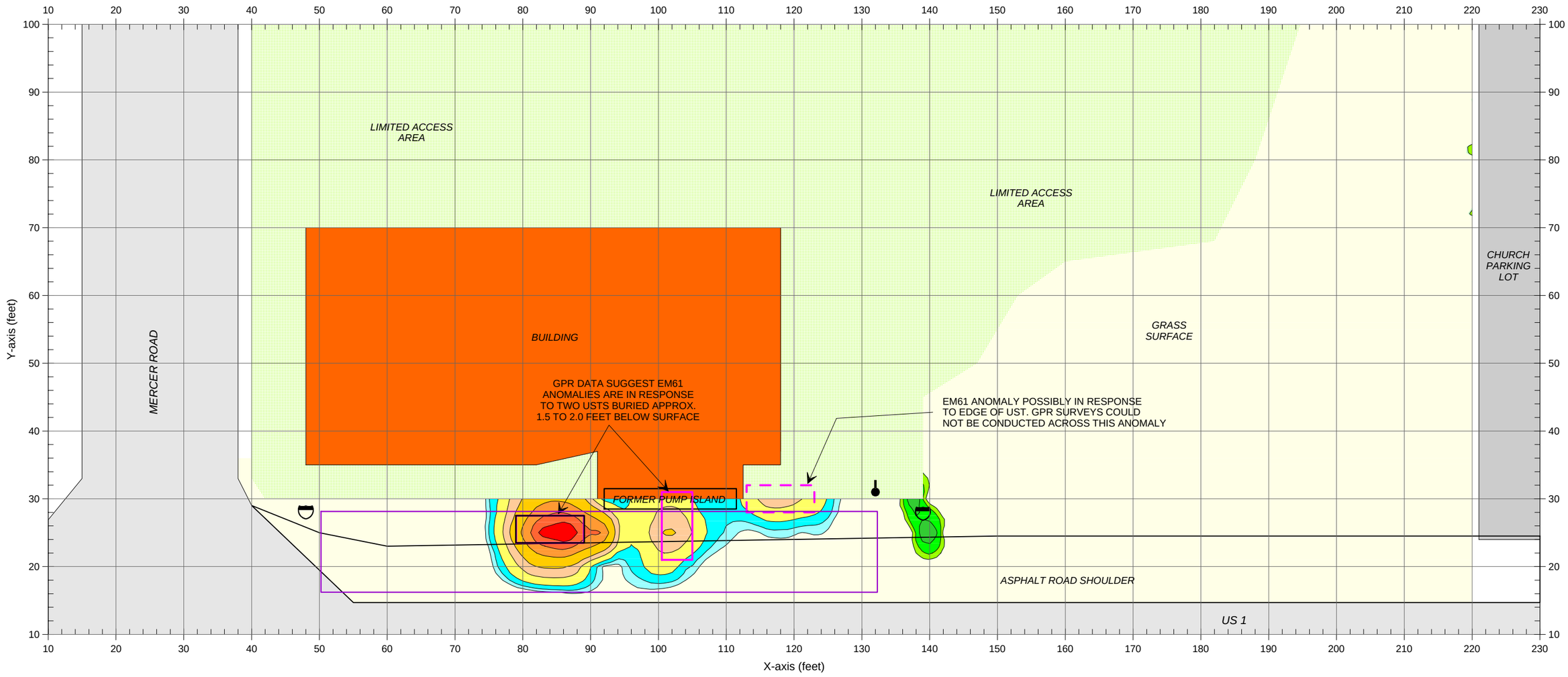
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/17/06	DRWN	MJD
SITE	PARCEL 9 - K. J. LEWIS PROPERTY	LAY		CHKD	
CITY	MARSTON	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J-NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 BOTTOM COIL RESULTS

FIGURE 4



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG EASTERLY-WESTERLY OR NORTHERLY- SOUTHERLY TRENDING LINES SPACED 5 FEET APART
- UTILITY POLE
- TRAFFIC SIGN
- GPR SURVEY AREA
- POSSIBLE UST, AS SUGGESTED BY EM61 ANOMALY
- PROBABLE UST, AS SUGGESTED BY GPR SURVEYS

EM61 DIFFERENTIAL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -90 55 60 75 100 150 200 300 400 500 750 1000

N W E S

APPROXIMATE NORTH

Note: The contour plot shows the differential results of the EM61 metal detection survey in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris. The EM metal detection data were collected on August 15, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on August 16, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

GPR surveys suggest that the EM61 anomalies recorded adjacent to the former pump island area are probably in response to metallic USTs.

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

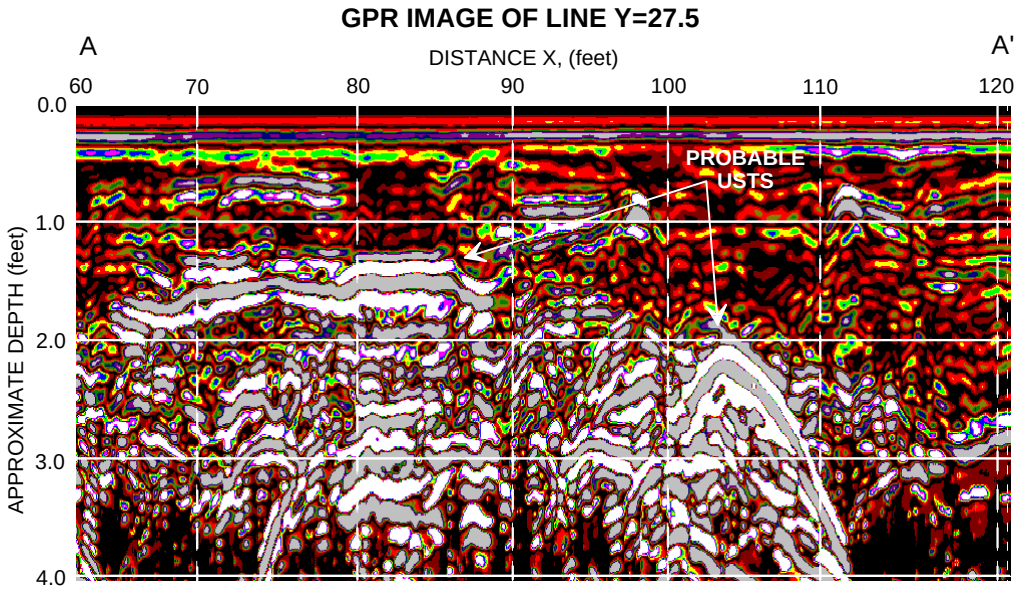
CLIENT	SOLUTIONS IES		DATE	08/17/06	DRWN MJD
SITE	PARCEL 9 - K. J. LEWIS PROPERTY		LAY		CHKD
CITY	MARSTON	STATE NORTH CAROLINA	DWG		
TITLE	GEOPHYSICAL RESULTS		J-NO.	2006-200	FIGURE

GRAPHIC SCALE IN FEET

EM61 DIFFERENTIAL RESULTS

FIGURE 5

The photograph shows the locations of two probable USTs and one possible UST buried 1.5 to 2.0 feet below surface, as suggested by the geophysical results at Parcel 9.



The GPR image obtained along a portion of survey line Y=27.5, shows the anomalies that are probably in response to USTs near X=84 and X=103, and buried approximately 1.5 and 2.0 feet below surface, respectively. The location of this GPR image is shown with a solid purple line in the above photograph.

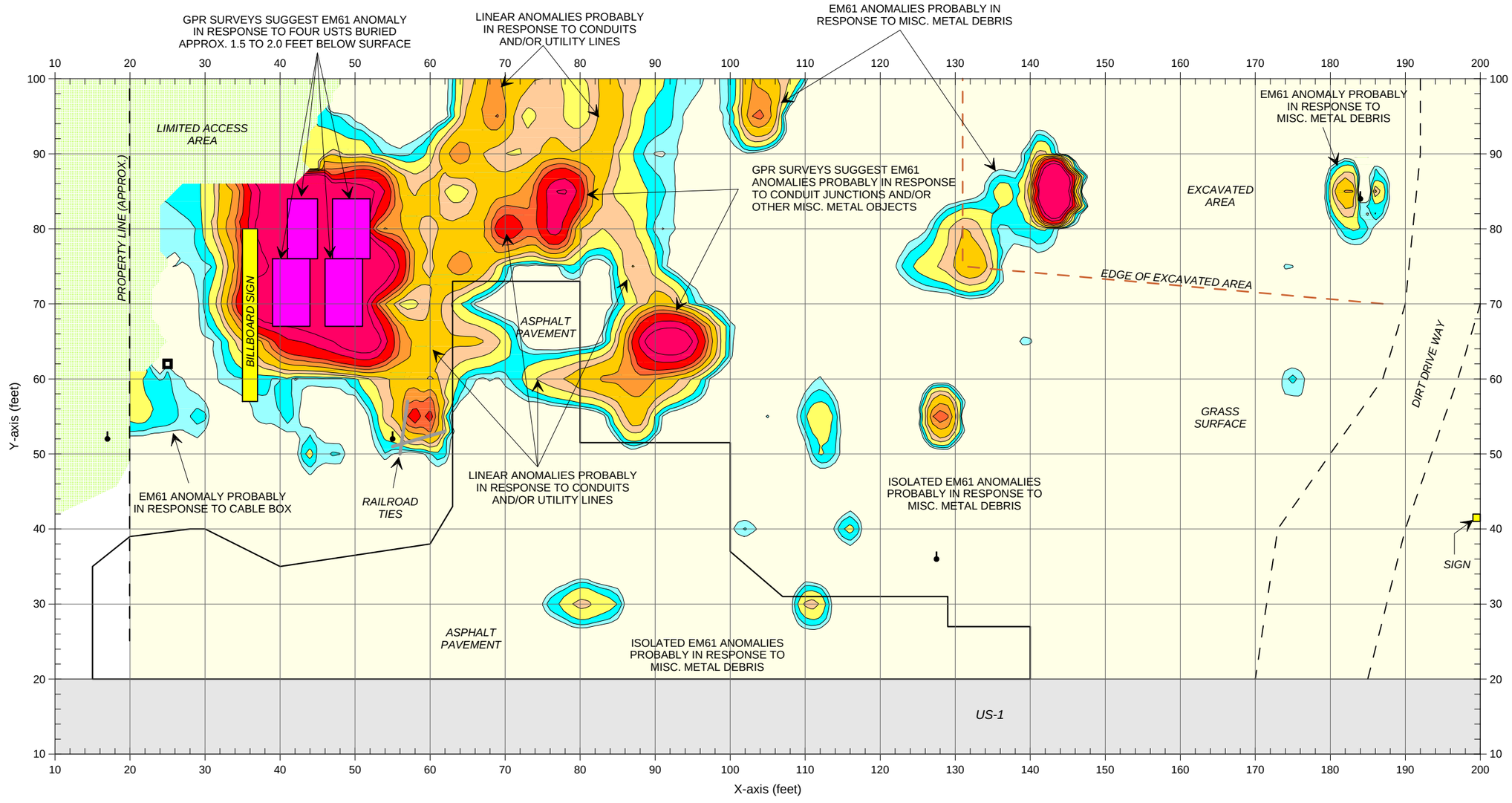
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES		DATE	08/26/05	DRWN
SITE	PARCEL 9 - K. J. LEWIS PROPERTY		LAY		CHKD
CITY	MARSTON	STATE NORTH CAROLINA	DWG		
TITLE	GEOPHYSICAL RESULTS		JOB	2006-200	FIGURE

GRAPHIC SCALE IN FEET

PHOTO & GPR IMAGE OF UST LOCATIONS (Parcel 9)

FIGURE 6



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHERLY- SOUTHERLY TRENDING LINES SPACED 5 FEET APART
- UTILITY POLE
- CABLE BOX
- PROBABLE UST, AS SUGGESTED BY GPR SURVEYS

APPROXIMATE NORTH

EM61 BOTTOM COIL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -90 -55 -60 -75 -100 -150 -200 -300 -400 -500 -750 -1000

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 August 15, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on August 16, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

GPR surveys suggest that the large, high amplitude, EM61 anomaly in the southwest portion of the survey area is probably in response to four metallic USTs.

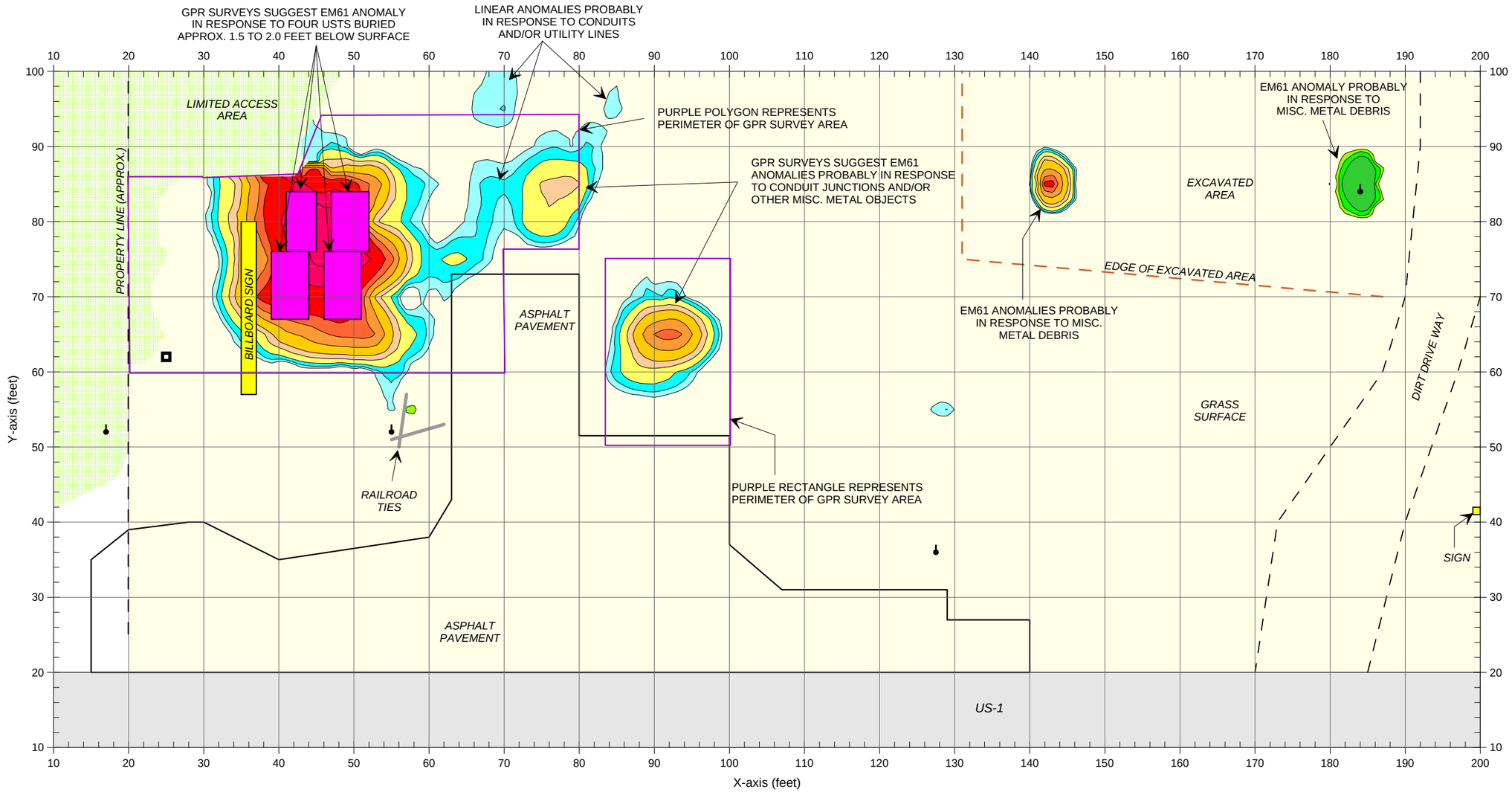
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/17/06	DRWN	MJD
SITE	PARCEL 21 - JAMES BRIGMAN PROPERTY	LAY		CHKD	
CITY	MARSTON	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J-NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 BOTTOM COIL RESULTS

FIGURE 7



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHERLY- SOUTHERLY TRENDING LINES SPACED 5 FEET APART
- UTILITY POLE
- CABLE BOX
- PROBABLE UST, AS SUGGESTED BY GPR SURVEYS

APPROXIMATE NORTH

EM61 DIFFERENTIAL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -90 55 60 75 100 150 200 300 400 500 750 1000

Note: The contour plot shows the differential results of the EM61 metal detection survey in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris. The EM metal detection data were collected on August 15, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on August 16, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

GPR surveys suggest that the large, high amplitude, EM61 anomaly in the southwest portion of the survey area is probably in response to four metallic USTs.

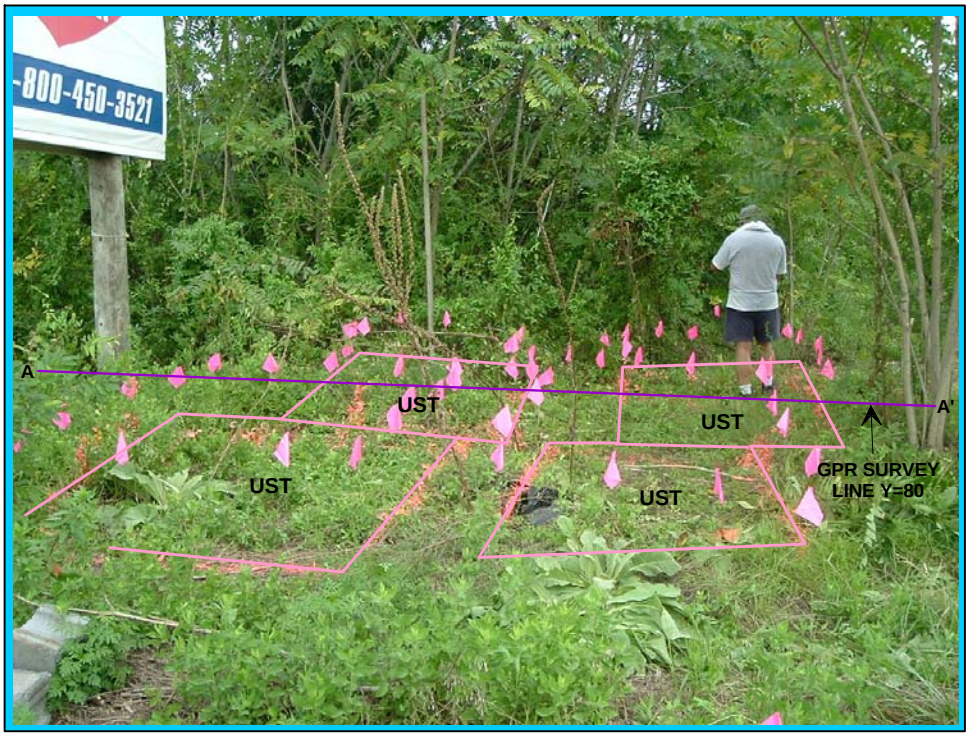
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/17/06	DRWN	MJD
SITE	PARCEL 21 - JAMES BRIGMAN PROPERTY	LAY		CHKD	
CITY	MARSTON	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J.NO.	2006-200	FIGURE	

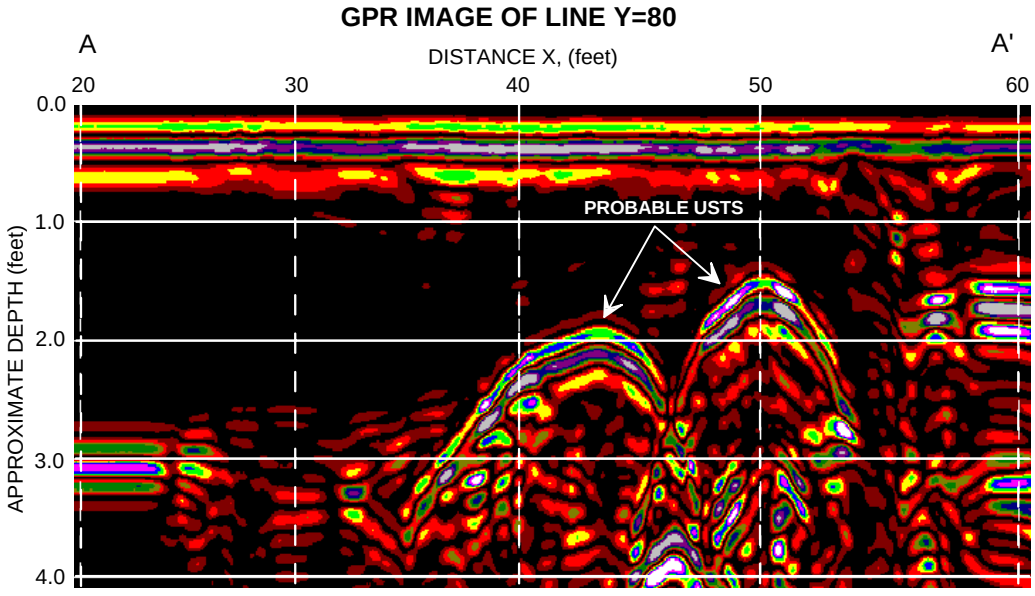
GRAPHIC SCALE IN FEET

EM61 DIFFERENTIAL RESULTS

FIGURE 8



The photograph shows the location of four probable USTs buried 1.75 to 2.0 feet below surface, as suggested by the geophysical results at Parcel 21.



The GPR image obtained along a portion of survey line Y=80, shows the anomalies that are probably in response to USTs near X=43 and X=50, and buried approximately 2.0 and 1.5 feet below surface, respectively. The location of this GPR image is shown with a solid purple line in the above photograph.

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES		DATE	08/26/05	DRWN
SITE	PARCEL 21 - JAMES BRIGMAN PROPERTY		LAY		CHKD
CITY	MARSTON	STATE NORTH CAROLINA	DWG		
TITLE	GEOPHYSICAL RESULTS		JNO	2006-200	FIGURE

GRAPHIC SCALE IN FEET

PHOTO & GPR IMAGE
OF UST LOCATIONS

FIGURE 9

BOTTOM COIL RESULTS

THICK BRUSH
(AREA NOT SURVEYED)

GRASS SURFACE

EM61 ANOMALY PROBABLY IN RESPONSE TO MISC. DEBRIS

PROPANE TANK

GPR SURVEYS SUGGEST EM61 ANOMALY PROBABLY IN RESPONSE TO BUILDING

BUILDING

GPR SURVEYS SUGGEST EM61 ANOMALIES PROBABLY IN RESPONSE TO BUILDING

EM61 ANOMALY PROBABLY IN RESPONSE TO MISC. OBJECT

GRASS SURFACE

LINEAR EM61 ANOMALY PROBABLY IN RESPONSE TO BURIED CONDUIT OR UTILITY LINE

EM61 ANOMALY PROBABLY IN RESPONSE TO MISC. DEBRIS

GPR SURVEYS SUGGEST EM61 ANOMALY PROBABLY IN RESPONSE TO LARGE-DIAMETER CONDUCT(S) OR POSSIBLY, VERY SMALL UST BURIED APPROX. 1 FOOT BELOW SURFACE

EM61 ANOMALY PROBABLY IN RESPONSE TO MISC. OBJECT

US-1

DIFFERENTIAL RESULTS

THICK BRUSH
(AREA NOT SURVEYED)

GRASS SURFACE

EM61 ANOMALY PROBABLY IN RESPONSE TO MISC. DEBRIS

PROPANE TANK

GPR SURVEYS SUGGEST EM61 ANOMALY PROBABLY IN RESPONSE TO BUILDING

BUILDING

GPR SURVEYS SUGGEST EM61 ANOMALIES PROBABLY IN RESPONSE TO BUILDING

GRASS SURFACE

PURPLE RECTANGLE REPRESENTS PERIMETER OF GPR SURVEY AREA

GPR SURVEY LINE

LINEAR EM61 ANOMALY PROBABLY IN RESPONSE TO BURIED CONDUIT OR UTILITY LINE

GPR SURVEYS SUGGEST EM61 ANOMALY PROBABLY IN RESPONSE TO LARGE-DIAMETER CONDUCT(S) OR POSSIBLY, VERY SMALL UST BURIED APPROX. 1 FOOT BELOW SURFACE

EM61 ANOMALY PROBABLY IN RESPONSE TO MISC. OBJECT

US-1

Y-axis (feet)

X-axis (feet)

LEGEND

- UTILITY CABLE BOX
- GUY WIRE
- UTILITY POLE
- PROBABLE CONDUIT OR POSSIBLE UST

APPROXIMATE NORTH

EM61 METAL DETECTION RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -90 -50 -60 -75 -100 -150 -200 -300 -400 -500 -750 -1000

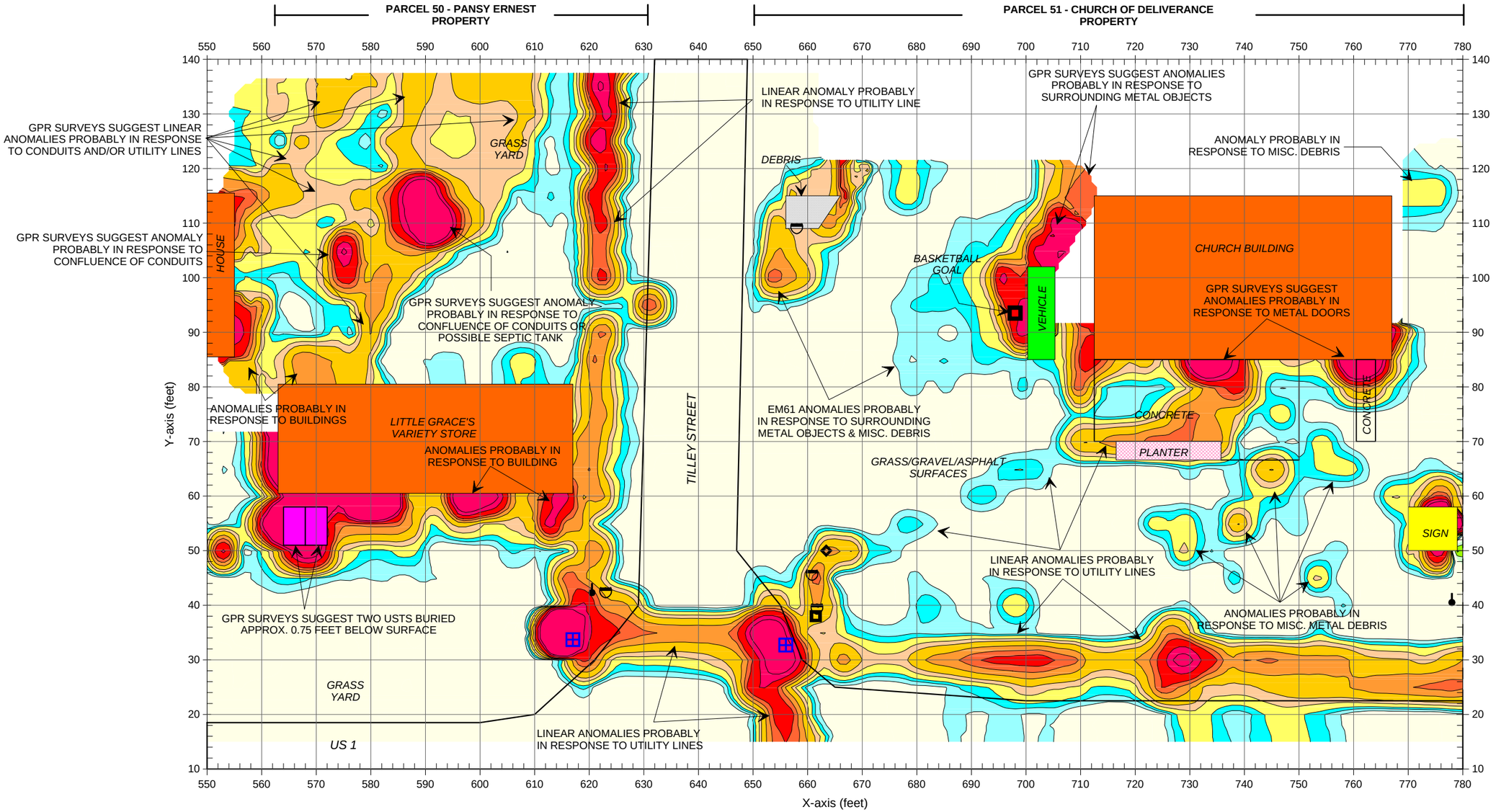
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/17/06	DRWN	MJD
SITE	PARCEL 48 - ROY BARRY BOSTICK PROPERTY	LAY		CHKD	
CITY	HOFFMAN	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	JAO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 METAL DETECTION RESULTS

FIGURE 10



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHEAST-SOUTHWEST TRENDING LINES SPACED 5 FEET APART
- STORM SEWER GRATE
- PHONE CABLE BOX
- GUY WIRE
- UTILITY POLE
- TRAFFIC SIGN
- STORM SEWER GRATE
- VENT/FILL PORT
- METAL POLE
- PROBABLE UST AS SUGGESTED BY THE GEOPHYSICAL RESULTS

APPROXIMATE NORTH

EM61 BOTTOM COIL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -40 -80 -75 100 150 200 300 400 500 750 1000

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 July 26, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on July 28, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The majority of linear EM61 bottom coil anomalies shown above, are probably in response to buried utility lines or conduits. Negative EM anomalies (shaded in green) are probably in response to metallic surface objects. The geophysical investigation detected two probable USTs on Parcel 50.

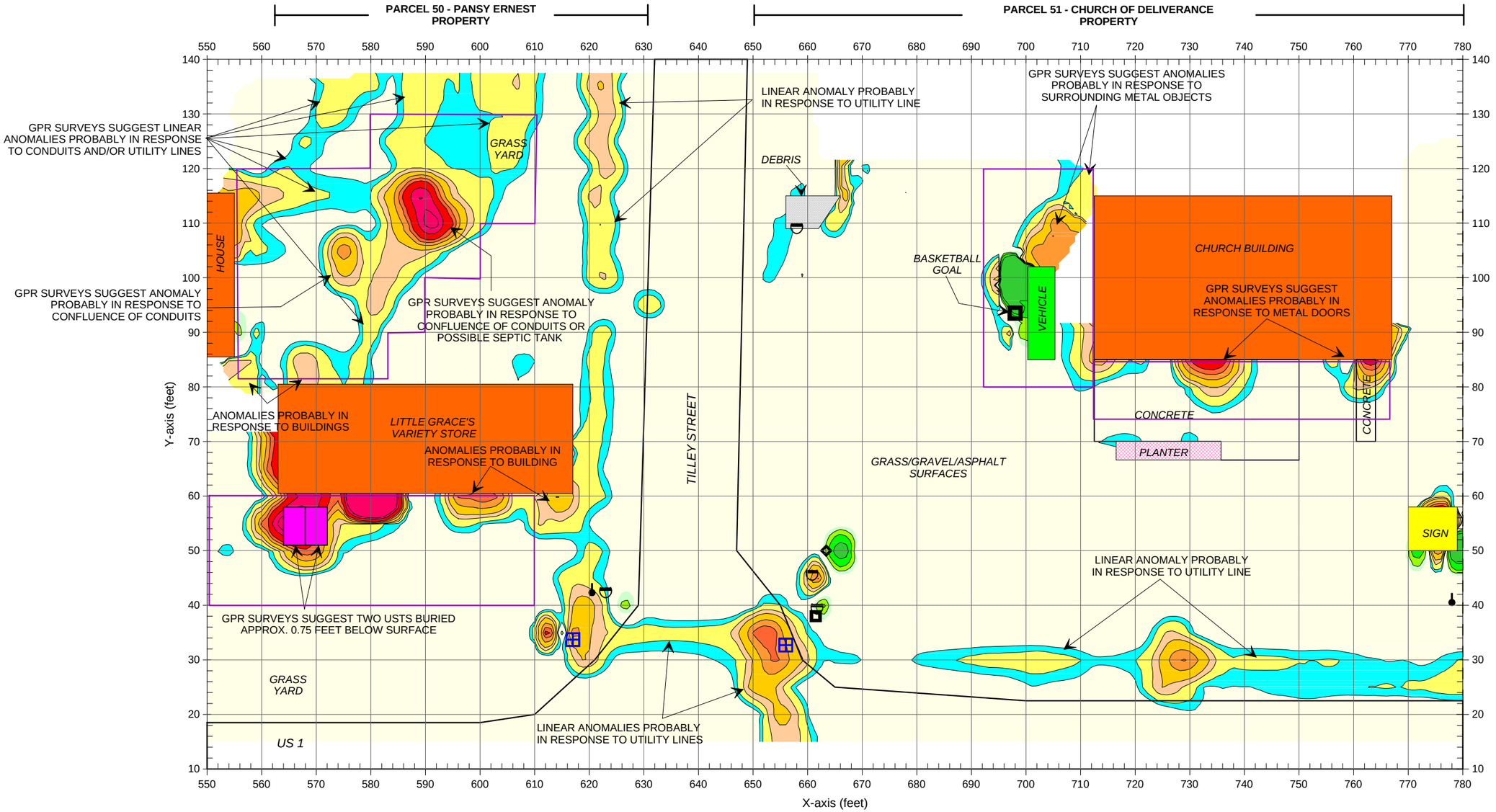
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/01/06	DRWN	MJD
SITE	PARCELS 50 & 51 (ERNEST & CHURCH PROPERTIES)	LAY		CHKD	
CITY	HOFFMAN	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J-NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 BOTTOM COIL RESULTS

FIGURE 11



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHEAST-SOUTHWEST TRENDING LINES SPACED 5 FEET APART
- STORM SEWER GRATE
- PHONE CABLE BOX
- GUY WIRE
- UTILITY POLE
- TRAFFIC SIGN
- STORM SEWER GRATE
- VENT/FILL PORT
- METAL POLE
- GPR SURVEY AREA
- PROBABLE UST AS SUGGESTED BY THE GEOPHYSICAL RESULTS

APPROXIMATE NORTH

EM61 DIFFERENTIAL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -40 60 75 100 150 200 300 400 500 750 1000

Note: The contour plot shows the differential results of the EM61 metal detection survey in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris. The EM metal detection data were collected on July 26, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on July 28, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The majority of linear EM61 bottom coil anomalies shown above, are probably in response to buried utility lines or conduits. Negative EM anomalies (shaded in green) are probably in response to metallic surface objects. The geophysical investigation detected two probable USTs on Parcel 50.

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

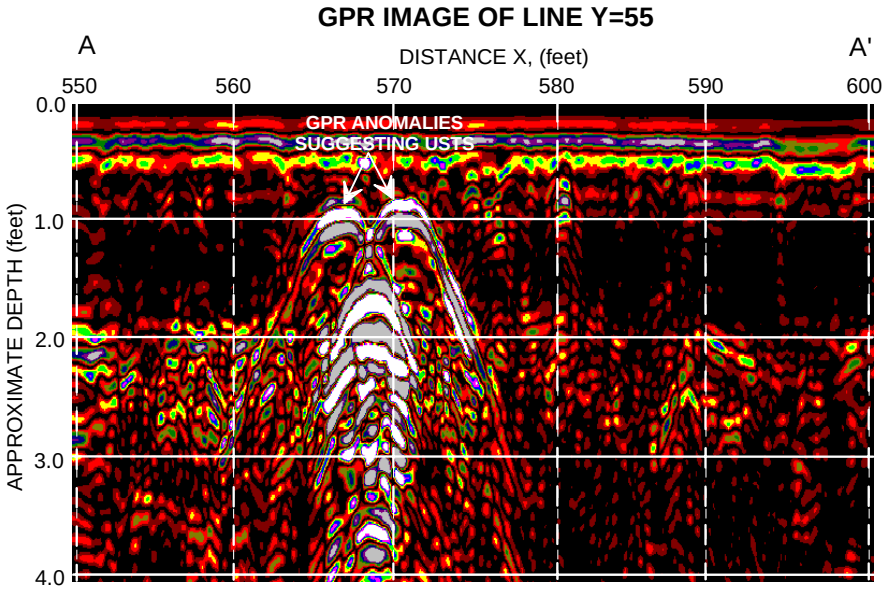
CLIENT	SOLUTIONS IES	DATE	08/01/06	DRWN	MJD
SITE	PARCELS 50 & 51 (ERNEST & CHURCH PROPERTIES)	LAY		CHKD	
CITY	HOFFMAN	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J-NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 DIFFERENTIAL RESULTS

FIGURE 12

The photograph shows the location of two probable USTs buried approx. 0.75 feet below surface, as suggested by the geophysical results at Parcel 50.



The GPR image obtained along survey line Y=55 shows the anomalies that are probably in response to USTs near X=566 and X=570, and buried approximately 0.75 feet below surface. The location of this GPR image is shown with a solid purple line in the above photograph.

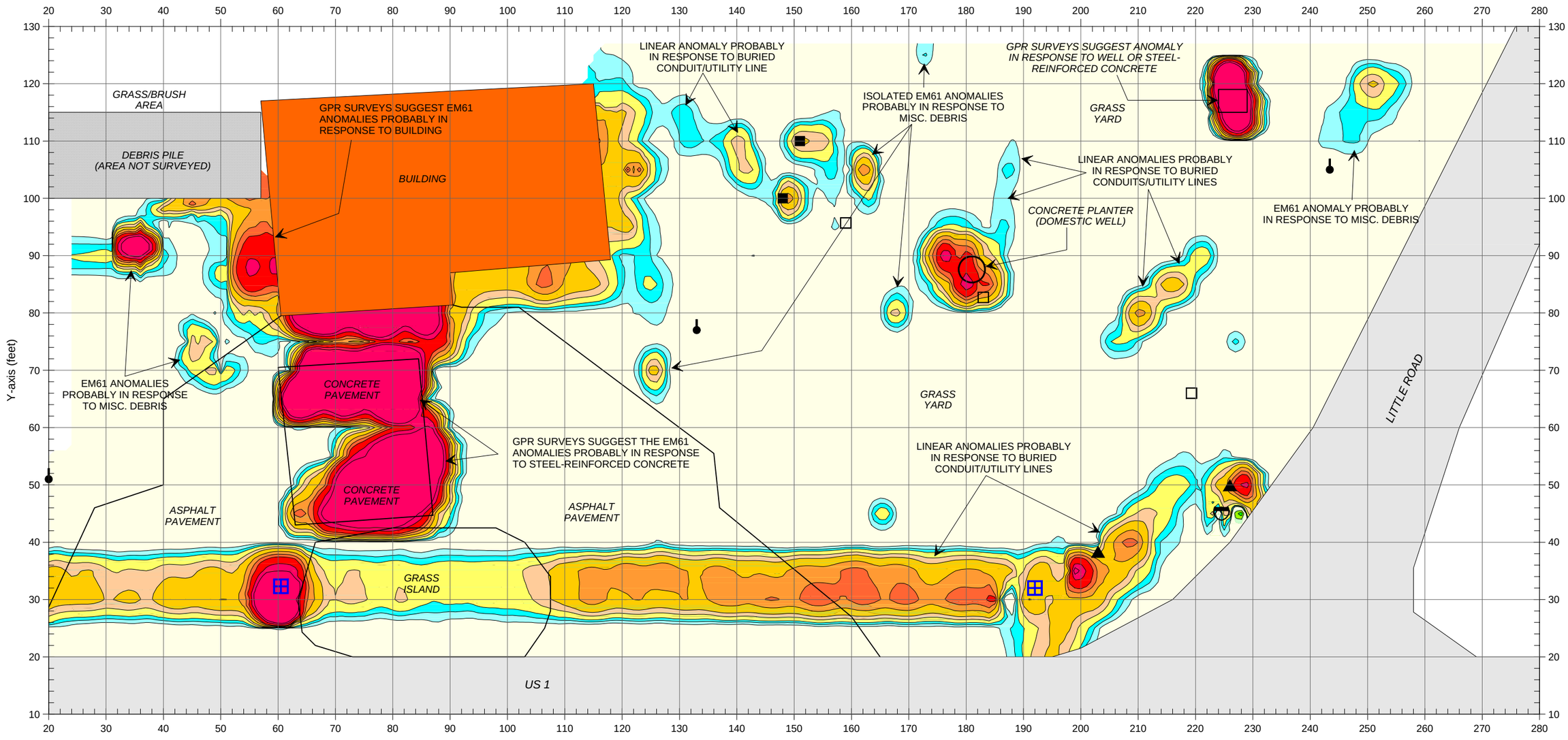
PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES		DATE	08/26/05	DRWN
SITE	PARCEL 50 (PANSY ERNEST PROPERTY)		LAY		CHKD
CITY	MARSTON	STATE NORTH CAROLINA	DWG		
TITLE	GEOPHYSICAL RESULTS		J.NO.	2006-200	FIGURE

GRAPHIC SCALE IN FEET

PHOTO & GPR IMAGE
OF UST LOCATIONS

FIGURE 13



EM61 BOTTOM COIL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -80 -45 -90 -75 -100 -150 -200 -300 -400 -500 -750 -1000

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 July 27, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on August 16, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical results suggest that the proposed ROW area does not contain metallic USTs.

LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHEAST-SOUTHWEST TRENDING LINES SPACED 5 FEET APART
- STORM SEWER GRATE
- CONCRETE BLOCK
- GUY WIRE
- UTILITY POLE
- TRAFFIC SIGN
- EDGE OF CULVERT
- CONCRETE ABUTMENT

APPROXIMATE NORTH

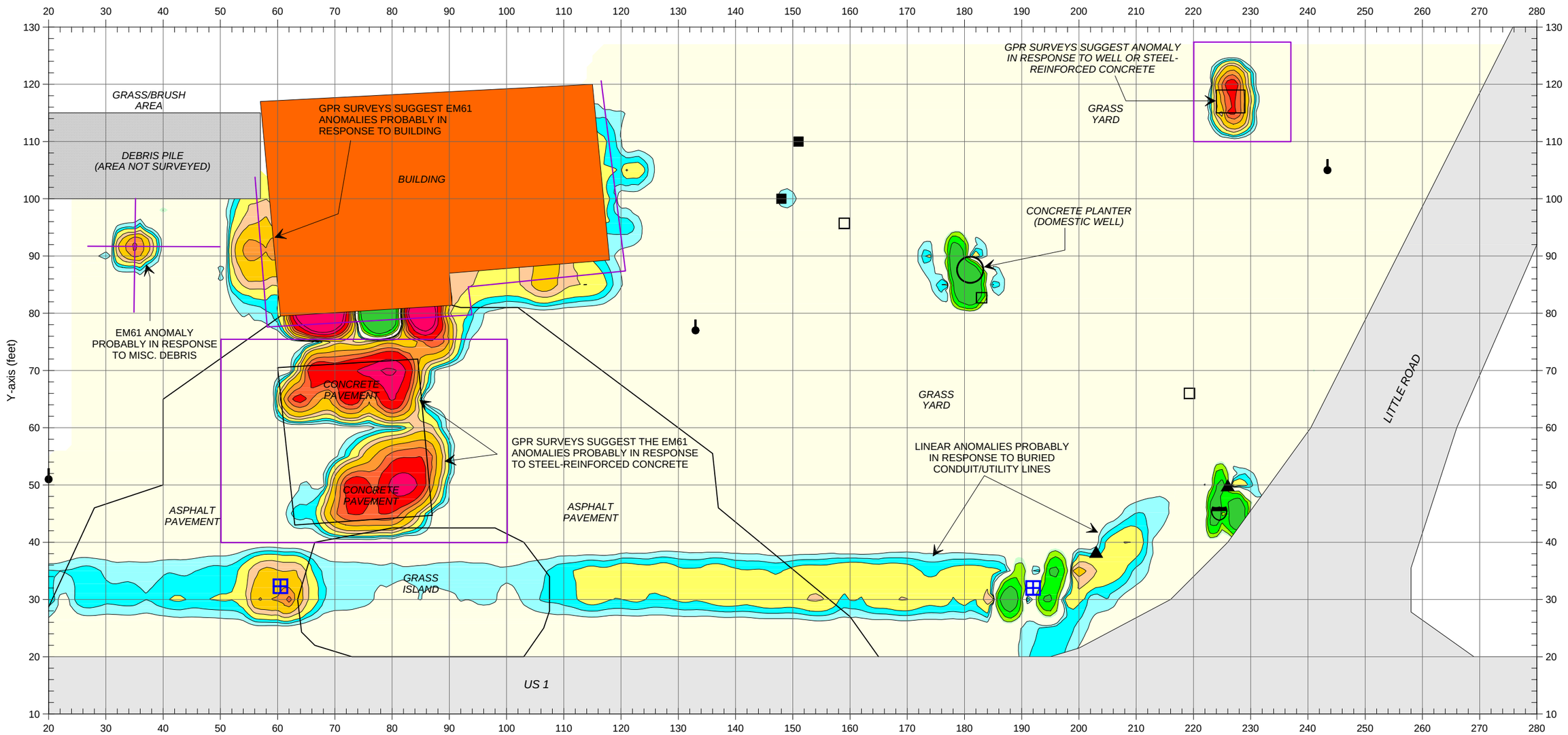
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/01/06	DRWN	MJD
SITE	PARCEL 61 - COOPER & BROWN INC. PROPERTY	LAY		CHKD	
CITY	HOFFMAN	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J.NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 BOTTOM COIL RESULTS

FIGURE 14



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHEAST-SOUTHWEST TRENDING LINES SPACED 5 FEET APART
- STORM SEWER GRATE
- CONCRETE BLOCK
- GUY WIRE
- UTILITY POLE
- TRAFFIC SIGN
- EDGE OF CULVERT
- CONCRETE ABUTMENT
- GPR SURVEY LINE
- GPR SURVEY AREA

EM61 DIFFERENTIAL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -50 -45 -50 75 100 150 200 300 400 500 750 1000

APPROXIMATE NORTH

Note: The contour plot shows the differential results of the EM61 metal detection survey in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris. The EM metal detection data were collected on July 27, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on August 16, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical results suggest the proposed ROW area does not contain metallic USTs.

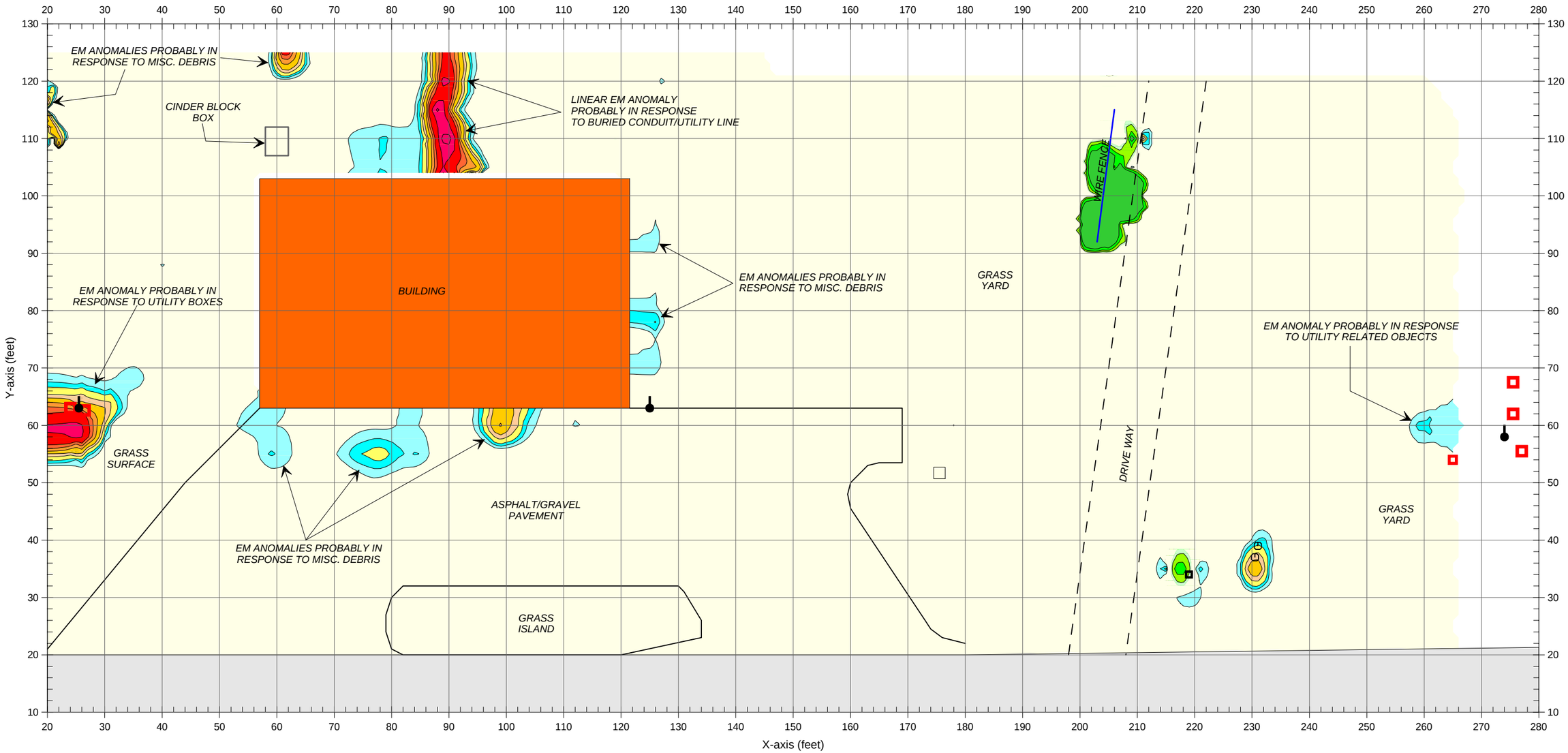
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/01/06	DRWN	MJD
SITE	PARCEL 61 - COOPER & BROWN INC. PROPERTY	LAY		CHKD	
CITY	HOFFMAN	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J-NO.	2006-200	FIGURE	

GRAPHIC SCALE IN METERS

EM61 DIFFERENTIAL RESULTS

FIGURE 15



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHERLY-SOUTHERLY TRENDING LINES SPACED 5 FEET APART
- ELECTRICAL OR UTILITY BOX
- WATER METER OR VALVE COVER
- GUY WIRE
- UTILITY POLE
- TRAFFIC SIGN
- MAIL BOX

N W E S

APPROXIMATE NORTH

EM61 BOTTOM COIL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -50 -45 50 75 100 150 200 300 400 500 750 1000

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 July 27 and August 14, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on July 28, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical investigation suggests that the survey area does not contain metallic USTs.

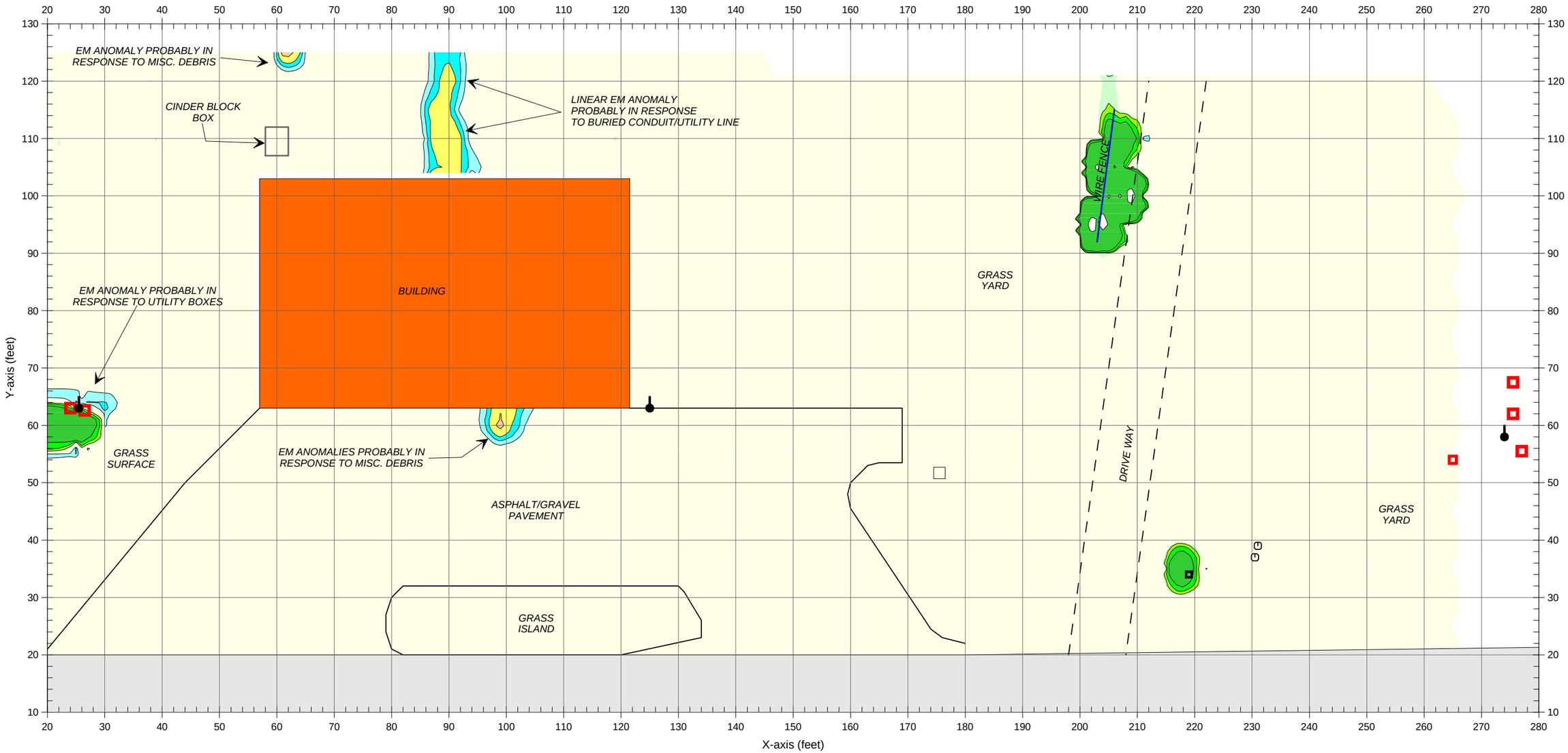
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/17/06	DRWN	MJD
SITE	PARCEL 70 - DELIA LASSITER PROPERTY	LAY		CHKD	
CITY	HOFFMAN	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J-NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 BOTTOM COIL RESULTS

FIGURE 16



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHERLY-SOUTHERLY TRENDING LINES SPACED 5 FEET APART
- ELECTRICAL OR UTILITY BOX
- WATER METER OR VALVE COVER
- GUY WIRE
- UTILITY POLE
- TRAFFIC SIGN
- MAIL BOX

APPROXIMATE NORTH

EM61 DIFFERENTIAL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -50 45 50 75 100 150 200 300 400 500 750 1000

Note: The contour plot shows the differential results of the EM61 metal detection survey in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris. The EM metal detection data were collected on July 27 and August 14, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on July 28, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical investigation suggests that the survey area does not contain metallic USTs.

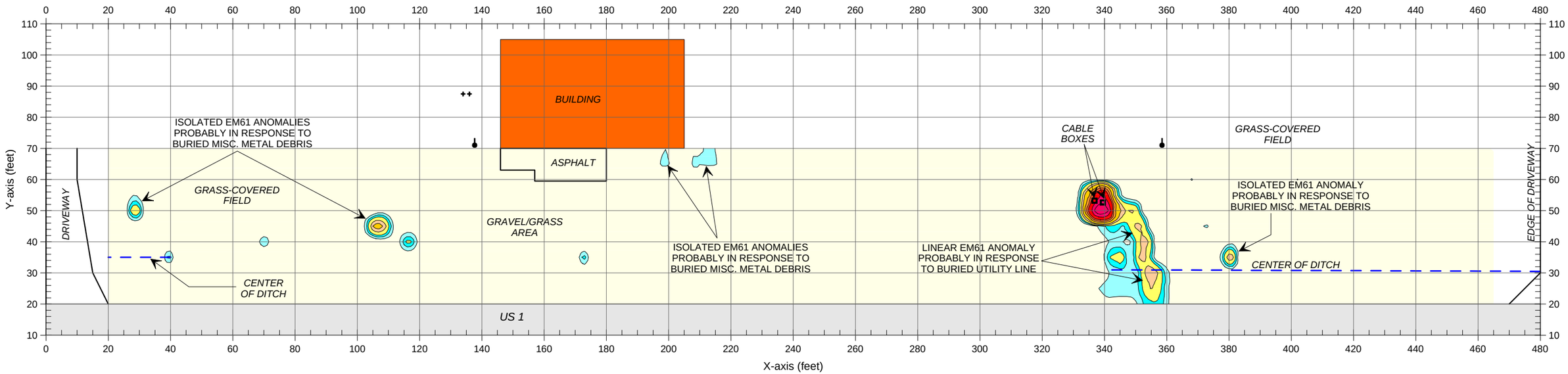
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/17/06	DRWN	MJD
SITE	PARCEL 70 - DELIA LASSITER PROPERTY	LAY		CHKD	
CITY	HOFFMAN	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J-NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 DIFFERENTIAL RESULTS

FIGURE 17



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHEAST-SOUTHWEST TRENDING LINES SPACED 5 FEET APART
- PHONE CABLE BOX
- GUY WIRE
- UTILITY POLE

APPROXIMATE NORTH

EM61 BOTTOM COIL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -80 -45 -50 -75 -100 -150 -200 -300 -400 -500 -750 -1000

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 July 27, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on July 28, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical investigation suggests that the survey area does not contain metallic USTs.

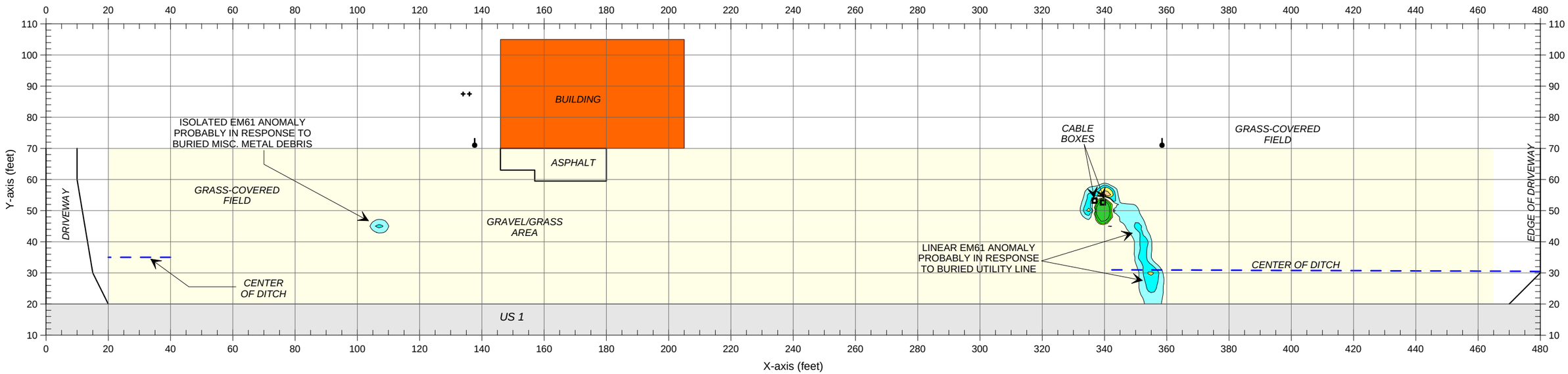
PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/01/06	DRWN	MJD
SITE	PARCEL 22 - IVEY LITTLE PROPERTY	LAY		CHKD	
CITY	HOFFMAN	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J-NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 BOTTOM COIL RESULTS

FIGURE 18



LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG NORTHEAST-SOUTHWEST TRENDING LINES SPACED 5 FEET APART
- PHONE CABLE BOX
- GUY WIRE
- UTILITY POLE

APPROXIMATE NORTH

EM61 DIFFERENTIAL RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -80 -45 -50 -75 -100 -150 -200 -300 -400 -500 -750 -1000

Note: The contour plot shows the differential results of the EM61 metal detection survey in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris. The EM metal detection data were collected on July 27, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on July 28, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical investigation suggests that the survey area does not contain metallic USTs.

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

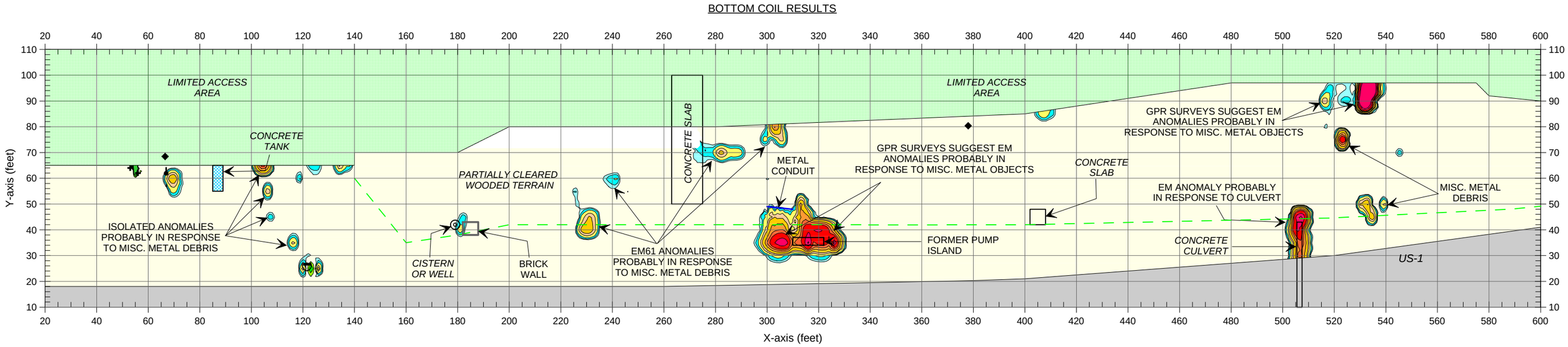
CLIENT	SOLUTIONS IES		DATE	08/01/06	DRWN MJD
SITE	PARCEL 22 - IVEY LITTLE PROPERTY		LAY		CHKD
CITY	HOFFMAN	STATE NORTH CAROLINA	DWG		
TITLE	GEOPHYSICAL RESULTS		J-NO.	2006-200	FIGURE

GRAPHIC SCALE IN METERS

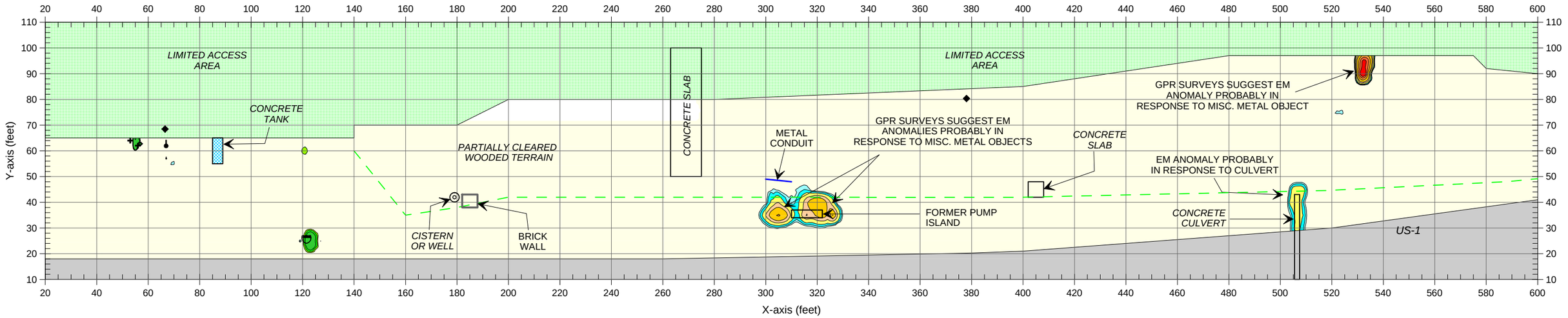
EM61 DIFFERENTIAL RESULTS

FIGURE 19

BOTTOM COIL RESULTS



DIFFERENTIAL RESULTS



Note: The contour plots show the bottom coil (most sensitive) response of the EM61 instrument and the differential response in millivolts (mV). The bottom coil response shows buried metallic objects regardless of size. The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris.The EM metal detection data were collected on August 14 & 28, 2006 using a Geonics EM61 instrument. Ground penetrating radar (GPR) data were acquired on August 15 & 28, 2006 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

The geophysical investigation suggests that the survey area does not contain metallic USTs.

LEGEND

- EM61 SURVEY AREA: EM DATA ACQUIRED ALONG EASTERLY-WESTERLY TRENDING LINES SPACED 5 FEET APART
- RIGHT-OF-WAY MARKER
- GUY WIRE
- UTILITY POLE
- TRAFFIC SIGN

EM61 METAL DETECTION RESPONSE (MILLIVOLTS)

-5000 -400 -200 -100 -90 -55 -60 -75 -100 -150 -200 -300 -400 -500 -750 -1000

N W E S

APPROXIMATE NORTH

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	SOLUTIONS IES	DATE	08/17/06	DRWN	MJD
SITE	PARCEL 68 - JAMES PUGH PROPERTY	LAY		CHKD	
CITY	HOFFMAN	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	J.NO.	2006-200	FIGURE	

GRAPHIC SCALE IN FEET

EM61 METAL DETECTION RESULTS

FIGURE 20

APPENDIX C

BORING LOGS

Log of Soil Boring: P68-B1

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 1
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: 4.3' bgs
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: 4.5' bgs
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 12' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm 250 500 750) / FID Field Screen (ppm 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
0		Asphalt					
1	SP	Brown, medium sand		100	0		
2	SM	Dark grey, silty sand					
3	CL - ML	Brown, silty, sandy clay, with some sand		100	0		
4							
5				100	0		
6	CL - ML	Grey, silty, sandy clay					
7	SP	Wet, grey, coarse sand		100	0		
8	CL	Dry, grey and orange, clay					
9	SP	Saturated, grey, medium to coarse sand					
10							
11							
12							
13							
14							
15							
16							

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

Solutions-IES
Industrial & Environmental Services

Log of Soil Boring: P68-B2

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 2
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: Dry at 8' bgs
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm 250 500 750) / FID Field Screen (ppm 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
0	SM	Moist, brown, medium silty sand					
1				100	0		
1	CL	Dry, tan, grey, and orange, silty clay					
2							
3				100	0		
4	SM	Dry, tan and grey, medium silty sand					
5				100	2		
5	SM	Dry, tan and orange, medium silty sand					
6							
6	CL	Dry, grey, orange, and tan, silty clay					
7				100	5		
8							
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B3

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 3
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: 4.6' bgs
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm 250 500 750) / FID Field Screen (ppm 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
0	SP	Damp, brown, fine sand					
1	SM	Dry, grey and orange, medium silty sand		100	2		
2							
3	SM	Dry, grey, tan and orange, silty sand		100	2		
4							
5	SM	Damp, medium silty sand		100	40		
6	SP	Wet, tan and orange, fine sand					
7	SM	Damp, grey and tan, fine silty sand		100	94		
8	CL	Dry, orange and grey, clay					
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B4

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 4
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: 4.6' bgs
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen ppm 250 500 750 / FID Field Screen ppm 250 500 750	Lab Sample Depth	Well Data
0		Ground Surface					
0–1	SP	Damp, brown, fine sand		100	>10		
1–2	SM	Damp, dark brown, fine silty sand					
2–3	CL	Dry, tan, silty clay		100	>1000		
3–4	CL	Dry, tan, orange and grey, silty clay					
4–5	SM	Damp, tan and grey, medium silty sand		100	>1000		
5–6	SM	Wet, grey, coarse silty sand		100	>1000		
6–8							
8–16							

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Log of Soil Boring: P68-B5

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 5
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: 5.8' bgs
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: 6.0' bgs
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm 250 500 750) / FID Field Screen (ppm 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
1	SP	Damp, brown, fine sand		100	1		
2	SP	Damp, orange, fine sand					
3	SM	Dry, tan, silty sand		100	1		
4	CL	Dry, tan, and orange, silty clay					
5	SM	Dry, tan, orange and grey, medium silty sand		100	1		
6	SM	Damp, tan and grey, medium silty sand					
7	SM	Wet, grey, fine silty sand		100	31		
8	CL	Dry, tan and orange, sandy clay					
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B6

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 6
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

SUBSURFACE PROFILE			SAMPLE				
Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen ppm 250 500 750 / FID Field Screen ppm 250 500 750	Lab Sample Depth	Well Data
0		Ground Surface					
1	SP	Damp, brown, fine sand		100	1		
2	SP	Damp, tan, fine sand					
3	SP	Damp, tan and grey, medium sand		100	1		
4	CL	Dry, tan, orange and red sandy clay					
5				100	4		
6	SM	Dry, tan and orange, medium silty sand					
7	CL	Dry, tan and orange, clay		100	1		
8							
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B7

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 7
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm 250 500 750) / FID Field Screen (ppm 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
0–1	SP	Dry, dark brown, fine sand		100	1		
1–3	SP	Dry, tan and grey, fine sand		100	1		
3–4	SP	Dry, tan, fine sand					
4–5	SM	Dry, red and brown, medium silty sand		100	1		
5–6	SM	Dry, grey and tan, fine silty sand					
6–8	CL	Dry, grey and tan, silty clay		100	5		
8–16							

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Log of Soil Boring: P68-B8

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 8
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm 250 500 750) / FID Field Screen (ppm 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
0	SP	Damp, brown, fine sand					
1	SM	Dry, tan and brown, fine silty sand		100	0		
2							
3				100	0		
4							
5	SP	Damp, orange and tan, medium sand		100	0		
6	SM	Damp, tan and orange, medium silty sand					
7				100	0		
8	CL	Damp, tan, sandy clay					
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B9

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 9
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: 6.0' bgs
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen ppm 250 500 750 / FID Field Screen ppm 250 500 750	Lab Sample Depth	Well Data
0		Ground Surface					
0	SM	Damp, brown, fine silty sand					
1				100	0		
1	CL	Dry, red, silty clay					
2							
3				100	0		
3	CL	Dry, orange and tan, silty clay					
4							
4	CL	Dry, tan, orange and grey, silty clay (mottled)					
5				100	0		
6							▼
7				100	0		
8							
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B10

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 10
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen ppm 250 500 750 / FID Field Screen ppm 250 500 750	Lab Sample Depth	Well Data
0		Ground Surface					
0	SP	Damp, brown and tan, fine sand					
1	CL	Dry, tan and orange, silty clay		100	0		
2							
3				100	0		
4	CL	Dry, tan, grey, and orange, silty clay					
5				100	0		
6	CL	Damp, tan and orange, sandy clay					
7	CL	Dry, grey and tan, sandy clay		100	0		
8	CL	Dry, grey, sandy clay					
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B11

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 11
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: 4.5' bgs
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen ppm 250 500 750 / FID Field Screen ppm 250 500 750	Lab Sample Depth	Well Data
0		Ground Surface					
0	SM	Damp, brown, fine silty sand					
1	CL	Damp, orange, tan and grey, sandy clay		100	0		
2							
3				100	0		
4							▼
5	SM	Wet, grey, fine silty sand		100	49		
6							
7	CL	Wet, grey, sandy clay		100	232		
8							
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B12

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 12
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm 250 500 750) / FID Field Screen (ppm 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
0	SM	Wet, dark brown, fine silty sand					
1				100	0		
1	CL	Moist, tan and orange, silty clay					
2							
3				100	0		
3	SM	Damp, tan, orange and grey, medium silty sand					
4							
5				100	2		
5	CL	Dry, tan, orange, and grey, silty clay					
6							
7				100	1		
8							
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B13

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 13
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: 4.5' bgs
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: SCK FOR JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen ppm 250 500 750 / FID Field Screen ppm 250 500 750	Lab Sample Depth	Well Data
0		Ground Surface					
0–1	SP	Dry, brown, fine sand					
1–2	SC	Dry, tan and brown, clayey sand		100	>1000		
2–3	CL	Dry, grey, sandy clay					
3–4	CL	Dry, orange and grey, sandy clay		100	>1000		
4–5	CL	Damp, orange and grey, silty clay		100	>1000		▼
5–6							
6–7	SM	Wet, grey and tan, fine silty sand		100	289		
7–8							
8–16							

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Log of Soil Boring: P68-B14

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 14
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: 3.9' bgs
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: 6.5' bgs
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen ppm 250 500 750 / FID Field Screen ppm 250 500 750	Lab Sample Depth	Well Data
0		Ground Surface					
0	SM	Damp, dark brown, fine silty sand		100	102		
1	SC	Dry, orange and tan, clayey sand					
2							
3				100	1		
4							
5				100	0		
5	SM	Damp, grey, fine silty sand					
6	SM	Damp, grey, medium silty sand					
7				100	0		
7	CL	Dry, grey and orange, silty clay					
8							
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B15

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 15
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: 6.5' bgs
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JO
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen ppm 250 500 750 / FID Field Screen ppm 250 500 750	Lab Sample Depth	Well Data
0		Ground Surface					
0–3	SM	Damp, brown, fine silty sand		100	0		
3–4	SP	Dry, tan, medium sand		100	0		
4–5	SM	Dry, tan and grey, medium silty sand		100	0		
5–6	CL	Dry, orange and grey, silty clay					
6–7	CL	Dry, light grey, silty clay		100	0		
7–8	CL	Dry, dark grey, silty clay					
8–16							

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Log of Soil Boring: P68-B16

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 16
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm 250 500 750) / FID Field Screen (ppm 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
0	CL	Dry, grey, silty clay					
1				100	0		
1	CL	Dry, orange and grey, silty clay					
2							
3				100	0		
4							
5				100	0		
6							
6	CL	Dry, orange and grey, sandy clay					
7				100	0		
8							
9							
10							
11							
12							
13							
14							
15							
16							

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Log of Soil Boring: P68-B17

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 17
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm 250 500 750) / FID Field Screen (ppm 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
0–3.5	CL	Dry, grey, sandy, silty clay		100	0		
3.5–4.5	CL	Dry, orange and grey, silty clay		100	0		
4.5–7	CL	Dry, orange, tan and grey, clay		100	0		
7–8	CL	Dry, grey, silty clay		100	0		

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Log of Soil Boring: P68-B18

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 18
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: NA
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen (ppm, 250 500 750) / FID Field Screen (ppm, 250 500 750)	Lab Sample Depth	Well Data
0		Ground Surface					
0–6	CL	Dry, grey and orange, silty clay		100	0		
3				100	0		
5				100	0		
6–7	CL	Dry, grey, sandy, silty clay		100	0		
7–8	CL	Dry, grey, sandy clay					

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Log of Soil Boring: P68-B19

Project: Richmond County PSA's
Solutions-IES Project No.: 3260.06A3.NDOT
Boring Number: 19
Client: NCDOT
WBS # 34438.1.1
Initial Water Level: NA
State Project # R-2502B
County: Richmond
Stabilized Water Level: NA
Drilling Method: Direct Push
Boring Date: 9/07/06
Cave In Depth: 7.9' bgs
Sampler Type: Macro Core
Site: Parcel 68
Logged By: S.J
Checked By: JD
Total Depth of Boring: 8' bgs

Depth ft. bgs	USCS Symbol	Description	Sample Interval	% Recovery	PID Field Screen ppm 250 500 750 / FID Field Screen ppm 250 500 750	Lab Sample Depth	Well Data
0		Ground Surface					
0	SM	Dry, dark brown, fine silty sand					
1				100	0		
1	SM	Dry, brown and grey, fine silty sand					
2							
2	CL	Dry, grey and orange, silty clay					
3				100	0		
4	CL	Dry, grey and tan, sandy, silty clay					
5				100	1		
6							
7				100	3		
8							
9							
10							
11							
12							
13							
14							
15							
16							

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APPENDIX D

GPS COORDINATES OF BORING LOCATIONS

Appendix D
GPS Coordinates of Boring Locations
Parcel 68, James Pugh Property
Richmond County, North Carolina
WBS Element: 34438.1.1; NCDOT Project R-2502B

Boring Identification	Northing	Easting
P68-B1	35.05733483	-79.49918138
P68-B2	35.05733969	-79.49916679
P68-B3	35.05735469	-79.49916026
P68-B4	35.05734128	-79.4992849
P68-B5	35.05733952	-79.49926184
P68-B6	35.05730582	-79.49929185
P68-B7	35.05730222	-79.49932194
P68-B8	35.05726727	-79.50006684
P68-B9	35.0572982	-79.49949386
P68-B10	35.05728185	-79.50003206
P68-B11	35.05726031	-79.49983894
P68-B12	35.05734899	-79.49917157
P68-B13	35.05736668	-79.49918054
P68-B14	35.05733784	-79.49914584
P68-B15	35.05738922	-79.49906948
P68-B16	35.05740448	-79.49899991
P68-B17	35.05746257	-79.49883806
P68-B18	35.05747966	-79.49859716
P68-B19	35.05746651	-79.49850538

Notes:

Coordinates referenced to North American Datum, 1983.

APPENDIX E

LABORATORY ANALYTICAL REPORTS – SOIL SAMPLES

PRISM
LABORATORIES, INC.

Case Narrative

Date: 09/19/06
Company: N. C. Department of Transportation
Contact: Sheri Knox
Address: c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Client Project ID: NCDOT Parcel 68
Prism COC Group No: G0906180
Collection Date(s): 09/07/06
Lab Submittal Date(s): 09/11/06

Client Project Name Or No: Richmond Co. WBS# 34438.1.1

This data package contains the analytical results for the project identified above and includes a Case Narrative, Laboratory Report and Quality Control Data totaling 39 pages. A chain-of-custody is also attached for the samples submitted to Prism for this project.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative. Quality control statements and/or sample specific remarks are included in the sample comments section of the laboratory report for each sample affected.

Semi Volatile Analysis

Analysis Note for Q17737 MSD 2,6-Dinitrotoluene: RPD value outside the control limits.

Analysis Note for Q17737 MSD Dimethylphthalate: RPD value outside the control limits.

Volatile Analysis

Analysis Note for Q17735 MS Naphthalene: Recovery above the control limits.

Analysis Note for Q17735 MSD 1,2-Dibromoethane (EDB): RPD value outside the control limits.

Analysis Note for Q17735 MSD Naphthalene: RPD value outside the control limits.

Analysis Note for Q17735 MSD o-Xylene: RPD value outside the control limits.

Metals Analysis

N/A

Wet Lab and Micro Analysis

N/A

Please call if you have any questions relating to this analytical report.

Date Reviewed by: Paula A. Gilleland
Signature: Paula A. Gilleland
Review Date: 09/19/06

Project Manager: Angela D. Overcash
Signature:
Approval Date: 09/19/06

Data Qualifiers Key Reference:

B: Compound also detected in the method blank.
#: Result outside of the QC limits.
DO: Compound diluted out.
E: Estimated concentration, calibration range exceeded.
J: The analyte was positively identified but the value is estimated below the reporting limit.
H: Estimated concentration with a high bias.
L: Estimated concentration with a low bias.
M: A matrix effect is present.

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B1-2-4
Prism Sample ID: 160590
COC Group: G0906180
Time Collected: 09/07/06 8:40
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**85.1**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	8.2	2.4	1	8015B	09/13/06 19:40	jvogel	Q17762
Sample Preparation:			25.15	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	88	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**6.58**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.90**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.2	3.2	50	8015B	09/13/06 16:49	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	99	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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Laboratory Report

09/18/06

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Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B2-6-8
Prism Sample ID: 160591
COC Group: G0906180
Time Collected: 09/07/06 9:10
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**81.1**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	8.6	2.5	1	8015B	09/13/06 20:17	jvogel	Q17762
Sample Preparation:			25.04 g / 1 mL			3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	86	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**6.11**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.32**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.6	3.4	50	8015B	09/13/06 17:27	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	88	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B3-4-6
Prism Sample ID: 160592
COC Group: G0906180
Time Collected: 09/07/06 9:45
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**88.4**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	7.9	2.3	1	8015B	09/13/06 20:54	jvogel	Q17762
Sample Preparation:			25.15	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	68	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**4.92**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**5.75**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	7.9	3.1	50	8015B	09/13/06 18:07	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	116	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

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Laboratory Report

09/18/06

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Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B4-0-2
Prism Sample ID: 160593
COC Group: G0906180
Time Collected: 09/07/06 9:55
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**88.0**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**1300**	mg/kg	160	45	20	8015B	09/14/06 19:14	jvogel	Q17762
Sample Preparation:			25.08	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	DO #	49 - 124

Sample Weight Determination									
Weight 1	**6.13**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.47**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**7200**	mg/kg	320	120	2000	8015B	09/14/06 10:54	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	DO #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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Laboratory Report

09/18/06

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Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B5-4-6
Prism Sample ID: 160594
COC Group: G0906180
Time Collected: 09/07/06 10:10
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**87.2**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	8.0	2.3	1	8015B	09/14/06 13:05	jvogel	Q17762
Sample Preparation:			25.21	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	94	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**6.94**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.41**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.0	3.1	50	8015B	09/13/06 14:53	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	96	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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Laboratory Report

09/18/06

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Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B6-4-6
Prism Sample ID: 160595
COC Group: G0906180
Time Collected: 09/07/06 10:20
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**80.7**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	8.7	2.5	1	8015B	09/14/06 13:42	jvogel	Q17762
Sample Preparation:			25.29	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	78	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**6.98**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.54**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.7	3.4	50	8015B	09/13/06 18:46	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	111	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B7-6-8
Prism Sample ID: 160596
COC Group: G0906180
Time Collected: 09/07/06 10:35
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**77.7**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**9.9**	mg/kg	9.0	2.6	1	8015B	09/14/06 14:18	jvogel	Q17762
Sample Preparation:			25.47	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	94	49 - 124

Sample Weight Determination									
Weight 1	**6.55**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.11**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	9.0	3.5	50	8015B	09/13/06 19:25	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	85	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

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Laboratory Report

09/18/06

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Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B8-6-8
Prism Sample ID: 160597
COC Group: G0906180
Time Collected: 09/07/06 11:22
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**86.5**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	8.1	2.3	1	8015B	09/13/06 18:27	jvogel	Q17762
Sample Preparation:			25.26	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	93	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**5.98**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**5.19**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.1	3.1	50	8015B	09/13/06 21:26	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	91	55 - 129

Sample Comment(s):

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Laboratory Report

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Attn: Sheri Knox
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Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B9-4-6
Prism Sample ID: 160598
COC Group: G0906180
Time Collected: 09/07/06 11:30
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**89.2**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**37**	mg/kg	7.8	2.2	1	8015B	09/14/06 14:55	jvogel	Q17762
Sample Preparation:			25.21	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	99	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**6.35**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.24**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	7.8	3.0	50	8015B	09/13/06 22:09	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	98	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

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Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B10-6-8
Prism Sample ID: 160599
COC Group: G0906180
Time Collected: 09/07/06 11:40
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**85.1**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	8.2	2.4	1	8015B	09/15/06 9:45	jvogel	Q17762
Sample Preparation:			25.01	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	68	49 - 124

Sample Weight Determination									
Weight 1	**6.26**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.30**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.2	3.2	50	8015B	09/13/06 22:52	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	103	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B11-4-6
Prism Sample ID: 160600
COC Group: G0906180
Time Collected: 09/07/06 13:30
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**88.1**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	7.9	2.3	1	8015B	09/14/06 16:09	jvogel	Q17762
Sample Preparation:			25.14	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	89	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**6.42**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**5.94**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	7.9	3.1	50	8015B	09/13/06 23:33	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	95	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543

Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

Full Service Analytical & Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert. No. 37735

Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B12-4-6
Prism Sample ID: 160601
COC Group: G0906180
Time Collected: 09/07/06 13:35
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**84.9**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**8.8**	mg/kg	8.2	2.4	1	8015B	09/15/06 8:31	jvogel	Q17762
Sample Preparation:			25.4 g / 1 mL			3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	107	49 - 124

Sample Weight Determination									
Weight 1	**7.21**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.85**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.2	3.2	50	8015B	09/14/06 0:17	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	95	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B13-2-4
Prism Sample ID: 160602
COC Group: G0906180
Time Collected: 09/07/06 13:40
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**85.1**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**130**	mg/kg	8.2	2.4	1	8015B	09/15/06 9:08	jvogel	Q17762
Sample Preparation:			25.2	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	114	49 - 124

Sample Weight Determination									
Weight 1	**5.43**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.33**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**4500**	mg/kg	160	64	1000	8015B	09/14/06 7:23	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	DO #	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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Angela D. Overcash, V.P. Laboratory Services

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Full Service Analytical & Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert. No. 37735

Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B14-0-2
Prism Sample ID: 160603
COC Group: G0906180
Time Collected: 09/07/06 14:20
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**89.9**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**10**	mg/kg	7.8	2.2	1	8015B	09/14/06 21:05	jvogel	Q17762
Sample Preparation:			25.15	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	110	49 - 124

Sample Weight Determination									
Weight 1	**6.57**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.32**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	7.8	3.0	50	8015B	09/14/06 0:58	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	125	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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Angela D. Overcash, V.P. Laboratory Services

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Full Service Analytical & Environmental Solutions

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B15-6-8
Prism Sample ID: 160604
COC Group: G0906180
Time Collected: 09/07/06 14:10
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**77.4**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	9.0	2.6	1	8015B	09/14/06 16:45	jvogel	Q17762
Sample Preparation:			25.08	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	92	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**6.36**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.35**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	9.0	3.5	50	8015B	09/14/06 1:43	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	97	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B16-6-8
Prism Sample ID: 160605
COC Group: G0906180
Time Collected: 09/07/06 14:50
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**81.2**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	8.6	2.5	1	8015B	09/14/06 17:22	jvogel	Q17762
Sample Preparation:			25.16 g / 1 mL			3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	90	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**6.13**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.39**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.6	3.3	50	8015B	09/14/06 2:26	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	94	55 - 129

Sample Comment(s):

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J = Estimated value between the Reporting Limit and the MDL

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B17-6-8
Prism Sample ID: 160606
COC Group: G0906180
Time Collected: 09/07/06 15:10
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**79.4**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	8.8	2.5	1	8015B	09/14/06 18:00	jvogel	Q17762
Sample Preparation:			25.34	g /	1 mL	3545	09/12/06 16:10	wconder	P16335

Surrogate	% Recovery	Control Limits
o-Terphenyl	84	49 - 124

Sample Weight Determination									
Weight 1	**6.61**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.81**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.8	3.4	50	8015B	09/14/06 3:09	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	96	55 - 129

Sample Comment(s):

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J = Estimated value between the Reporting Limit and the MDL

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B18-6-8
Prism Sample ID: 160607
COC Group: G0906180
Time Collected: 09/07/06 15:25
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**78.8**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**7.7 J**	mg/kg	8.9	2.5	1	8015B	09/15/06 23:34	jvogel	Q17814
Sample Preparation:			25.28 g / 1 mL			3545	09/15/06 12:00	wconder	P16355

Surrogate	% Recovery	Control Limits
o-Terphenyl	105	49 - 124

Sample Weight Determination									
Weight 1	**6.23**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**7.66**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.9	3.5	50	8015B	09/14/06 3:50	grappaccioli	Q17701

Surrogate	% Recovery	Control Limits
aaa-TFT	90	55 - 129

Sample Comment(s):

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J = Estimated value between the Reporting Limit and the MDL

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Soil

Client Sample ID: P68-B19-6-8
Prism Sample ID: 160608
COC Group: G0906180
Time Collected: 09/07/06 15:35
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Percent Solids Determination									
Percent Solids	**83.8**	%			1	SM2540 G	09/13/06 11:35	lthao	
Diesel Range Organics (DRO) by GC-FID									
Diesel Range Organics (DRO)	**BRL**	mg/kg	8.4	2.4	1	8015B	09/15/06 22:57	jvogel	Q17814
Sample Preparation:			25.11	g /	1 mL	3545	09/15/06 12:00	wconder	P16355

Surrogate	% Recovery	Control Limits
o-Terphenyl	103	49 - 124

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Weight Determination									
Weight 1	**6.72**	g			1	GRO	09/18/06 0:00	lbrown	
Weight 2	**6.70**	g			1	GRO	09/18/06 0:00	lbrown	
Gasoline Range Organics (GRO) by GC-FID									
Gasoline Range Organics (GRO)	**BRL**	mg/kg	8.4	3.2	50	8015B	09/14/06 19:00	grappaccioli	Q17731

Surrogate	% Recovery	Control Limits
aaa-TFT	79	55 - 129

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

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All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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APPENDIX F

LABORATORY ANALYTICAL REPORT – GROUNDWATER SAMPLE

Full Service Analytical & Environmental Solutions

NC Certification No. 402
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NC Drinking Water Cert. No. 37735

Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Water

Client Sample ID: P68-B4-GW
Prism Sample ID: 160609
COC Group: G0906180
Time Collected: 09/07/06 16:00
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Purgeable Halocarbons and Aromatics by GC-PID/ELCD									
1,1,1-Trichloroethane	BRL	µg/L	1.0	0.10	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,1,2,2-Tetrachloroethane	BRL	µg/L	1.0	0.080	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,1,2-Trichloroethane	BRL	µg/L	1.0	0.050	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,1-Dichloroethane	BRL	µg/L	1.0	0.050	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,1-Dichloroethene	BRL	µg/L	1.0	0.16	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,2-Dibromoethane (EDB)	BRL	µg/L	1.0	0.060	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,2-Dichlorobenzene	BRL	µg/L	1.0	0.17	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,2-Dichloroethane	BRL	µg/L	1.0	0.090	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,2-Dichloropropane	BRL	µg/L	1.0	0.060	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,3-Dichlorobenzene	BRL	µg/L	1.0	0.17	1	601/602	09/15/06 7:55	kcampigotto	Q17735
1,4-Dichlorobenzene	BRL	µg/L	1.0	0.17	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Benzene	25	µg/L	0.50	0.090	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Bromodichloromethane	BRL	µg/L	1.0	0.070	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Bromoform	BRL	µg/L	1.0	0.040	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Bromomethane	BRL	µg/L	5.0	0.12	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Carbon tetrachloride	BRL	µg/L	1.0	0.15	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Chlorobenzene	BRL	µg/L	1.0	0.10	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Chloroethane	BRL	µg/L	5.0	0.11	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Chloroform	BRL	µg/L	1.0	0.060	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Chloromethane	BRL	µg/L	5.0	0.11	1	601/602	09/15/06 7:55	kcampigotto	Q17735
cis-1,2-Dichloroethene	BRL	µg/L	1.0	0.25	1	601/602	09/15/06 7:55	kcampigotto	Q17735
cis-1,3-Dichloropropene	BRL	µg/L	1.0	0.090	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Dibromochloromethane	BRL	µg/L	1.0	0.050	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Dichlorodifluoromethane	BRL	µg/L	5.0	0.23	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Ethylbenzene	65	µg/L	1.0	0.13	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Isopropyl ether (IPE)	BRL	µg/L	5.0	0.041	1	601/602	09/15/06 7:55	kcampigotto	Q17735
m,p-Xylenes	180	µg/L	2.0	0.43	1	601/602	09/15/06 7:55	kcampigotto	Q17735

Full Service Analytical & Environmental Solutions

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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Water

Client Sample ID: P68-B4-GW
Prism Sample ID: 160609
COC Group: G0906180
Time Collected: 09/07/06 16:00
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Methyl t-butyl ether (MTBE)	**BRL**	µg/L	5.0	0.28	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Methylene Chloride	**BRL**	µg/L	5.0	0.19	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Naphthalene	**23**	µg/L	1.0	0.28	1	601/602	09/15/06 7:55	kcampigotto	Q17735
o-Xylene	**58**	µg/L	1.0	0.29	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Tetrachloroethene	**BRL**	µg/L	1.0	0.14	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Toluene	**26**	µg/L	1.0	0.13	1	601/602	09/15/06 7:55	kcampigotto	Q17735
trans-1,2-Dichloroethene	**BRL**	µg/L	1.0	0.10	1	601/602	09/15/06 7:55	kcampigotto	Q17735
trans-1,3-Dichloropropene	**BRL**	µg/L	1.0	0.090	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Trichloroethene	**BRL**	µg/L	1.0	0.090	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Trichlorofluoromethane	**BRL**	µg/L	5.0	0.31	1	601/602	09/15/06 7:55	kcampigotto	Q17735
Vinyl chloride	**BRL**	µg/L	1.0	0.16	1	601/602	09/15/06 7:55	kcampigotto	Q17735

Surrogate	% Recovery	Control Limits
Bromochlorobenzene-ELCD	98	56 - 148
1,4-Difluorobenzene-PID	128	69 - 140

Semivolatile Organic Compounds by GC/MS

1,2,4-Trichlorobenzene	**BRL**	µg/L	9.7	3.2	1	625	09/14/06 15:56	kelliot	Q17737
1,2-Dichlorobenzene	**BRL**	µg/L	9.7	2.8	1	625	09/14/06 15:56	kelliot	Q17737
1,3-Dichlorobenzene	**BRL**	µg/L	9.7	2.9	1	625	09/14/06 15:56	kelliot	Q17737
1,4-Dichlorobenzene	**BRL**	µg/L	9.7	3.0	1	625	09/14/06 15:56	kelliot	Q17737
2,4,5-Trichlorophenol	**BRL**	µg/L	9.7	2.8	1	625	09/14/06 15:56	kelliot	Q17737
2,4,6-Trichlorophenol	**BRL**	µg/L	9.7	2.9	1	625	09/14/06 15:56	kelliot	Q17737
2,4-Dichlorophenol	**BRL**	µg/L	9.7	3.1	1	625	09/14/06 15:56	kelliot	Q17737
2,4-Dimethylphenol	**BRL**	µg/L	9.7	2.9	1	625	09/14/06 15:56	kelliot	Q17737
2,4-Dinitrophenol	**BRL**	µg/L	49	1.2	1	625	09/14/06 15:56	kelliot	Q17737
2,4-Dinitrotoluene	**BRL**	µg/L	9.7	1.3	1	625	09/14/06 15:56	kelliot	Q17737
2,6-Dinitrotoluene	**BRL**	µg/L	9.7	2.3	1	625	09/14/06 15:56	kelliot	Q17737

Full Service Analytical & Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert. No. 37735

Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Water

Client Sample ID: P68-B4-GW
Prism Sample ID: 160609
COC Group: G0906180
Time Collected: 09/07/06 16:00
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
2-Chloronaphthalene	BRL	µg/L	9.7	3.0	1	625	09/14/06 15:56	kelliot	Q17737
2-Chlorophenol	BRL	µg/L	9.7	3.1	1	625	09/14/06 15:56	kelliot	Q17737
2-Methylphenol	BRL	µg/L	9.7	2.9	1	625	09/14/06 15:56	kelliot	Q17737
2-Nitrophenol	BRL	µg/L	9.7	3.1	1	625	09/14/06 15:56	kelliot	Q17737
3&4-Methylphenol	BRL	µg/L	9.7	2.8	1	625	09/14/06 15:56	kelliot	Q17737
3,3'-Dichlorobenzidine	BRL	µg/L	49	1.2	1	625	09/14/06 15:56	kelliot	Q17737
4,6-Dinitro-2-methylphenol	BRL	µg/L	49	0.86	1	625	09/14/06 15:56	kelliot	Q17737
4-Bromophenylphenylether	BRL	µg/L	9.7	1.9	1	625	09/14/06 15:56	kelliot	Q17737
4-Chloro-3-methylphenol	BRL	µg/L	9.7	2.6	1	625	09/14/06 15:56	kelliot	Q17737
4-Chlorophenylphenylether	BRL	µg/L	9.7	2.7	1	625	09/14/06 15:56	kelliot	Q17737
4-Nitrophenol	BRL	µg/L	49	1.8	1	625	09/14/06 15:56	kelliot	Q17737
Acenaphthene	BRL	µg/L	9.7	2.7	1	625	09/14/06 15:56	kelliot	Q17737
Acenaphthylene	BRL	µg/L	9.7	3.1	1	625	09/14/06 15:56	kelliot	Q17737
Anthracene	BRL	µg/L	9.7	1.4	1	625	09/14/06 15:56	kelliot	Q17737
Benzo(a)anthracene	BRL	µg/L	9.7	1.2	1	625	09/14/06 15:56	kelliot	Q17737
Benzo(a)pyrene	BRL	µg/L	9.7	1.1	1	625	09/14/06 15:56	kelliot	Q17737
Benzo(b)fluoranthene	BRL	µg/L	9.7	1.3	1	625	09/14/06 15:56	kelliot	Q17737
Benzo(g,h,i)perylene	BRL	µg/L	9.7	1.0	1	625	09/14/06 15:56	kelliot	Q17737
Benzo(k)fluoranthene	BRL	µg/L	9.7	1.2	1	625	09/14/06 15:56	kelliot	Q17737
Bis(2-chloroethoxy)methane	BRL	µg/L	9.7	3.2	1	625	09/14/06 15:56	kelliot	Q17737
Bis(2-chloroethyl)ether	BRL	µg/L	9.7	2.9	1	625	09/14/06 15:56	kelliot	Q17737
Bis(2-chloroisopropyl)ether	BRL	µg/L	9.7	3.1	1	625	09/14/06 15:56	kelliot	Q17737
Bis(2-ethylhexyl)phthalate	BRL	µg/L	9.7	1.2	1	625	09/14/06 15:56	kelliot	Q17737
Butylbenzylphthalate	BRL	µg/L	9.7	0.91	1	625	09/14/06 15:56	kelliot	Q17737
Chrysene	BRL	µg/L	9.7	1.1	1	625	09/14/06 15:56	kelliot	Q17737
Di-n-butylphthalate	BRL	µg/L	9.7	1.1	1	625	09/14/06 15:56	kelliot	Q17737
Di-n-octylphthalate	BRL	µg/L	9.7	1.0	1	625	09/14/06 15:56	kelliot	Q17737
Dibenzo(a,h)anthracene	BRL	µg/L	9.7	0.70	1	625	09/14/06 15:56	kelliot	Q17737

Full Service Analytical & Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert. No. 37735

Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Water

Client Sample ID: P68-B4-GW
Prism Sample ID: 160609
COC Group: G0906180
Time Collected: 09/07/06 16:00
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Dibenzofuran	**BRL**	µg/L	9.7	2.8	1	625	09/14/06 15:56	kelliot	Q17737
Diethylphthalate	**BRL**	µg/L	9.7	1.8	1	625	09/14/06 15:56	kelliot	Q17737
Dimethylphthalate	**BRL**	µg/L	9.7	2.0	1	625	09/14/06 15:56	kelliot	Q17737
Fluoranthene	**BRL**	µg/L	9.7	1.2	1	625	09/14/06 15:56	kelliot	Q17737
Fluorene	**BRL**	µg/L	9.7	2.8	1	625	09/14/06 15:56	kelliot	Q17737
Hexachlorobenzene	**BRL**	µg/L	9.7	1.5	1	625	09/14/06 15:56	kelliot	Q17737
Hexachlorobutadiene	**BRL**	µg/L	9.7	3.2	1	625	09/14/06 15:56	kelliot	Q17737
Hexachlorocyclopentadiene	**BRL**	µg/L	9.7	3.2	1	625	09/14/06 15:56	kelliot	Q17737
Hexachloroethane	**BRL**	µg/L	9.7	3.0	1	625	09/14/06 15:56	kelliot	Q17737
Indeno(1,2,3-cd)pyrene	**BRL**	µg/L	9.7	1.3	1	625	09/14/06 15:56	kelliot	Q17737
Isophorone	**BRL**	µg/L	9.7	2.9	1	625	09/14/06 15:56	kelliot	Q17737
N-Nitrosodi-n-propylamine	**BRL**	µg/L	9.7	3.2	1	625	09/14/06 15:56	kelliot	Q17737
Naphthalene	**32**	µg/L	9.7	3.2	1	625	09/14/06 15:56	kelliot	Q17737
Nitrobenzene	**BRL**	µg/L	9.7	3.0	1	625	09/14/06 15:56	kelliot	Q17737
Pentachlorophenol	**BRL**	µg/L	9.7	0.51	1	625	09/14/06 15:56	kelliot	Q17737
Phenanthrene	**BRL**	µg/L	9.7	1.3	1	625	09/14/06 15:56	kelliot	Q17737
Phenol	**BRL**	µg/L	9.7	2.5	1	625	09/14/06 15:56	kelliot	Q17737
Pyrene	**BRL**	µg/L	9.7	1.3	1	625	09/14/06 15:56	kelliot	Q17737

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

Full Service Analytical & Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert. No. 37735

Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Water

Client Sample ID: P68-B4-GW
Prism Sample ID: 160609
COC Group: G0906180
Time Collected: 09/07/06 16:00
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Preparation:			1030 mL / 1 mL			625	09/13/06 10:00	smanivanh	P16327

Surrogate	% Recovery	Control Limits
Terphenyl-d14	108	10 - 154
Phenol-d5	22	10 - 48
Nitrobenzene-d5	92	22 - 103
2-Fluorophenol	37	10 - 59
2-Fluorobiphenyl	101	29 - 112
2,4,6-Tribromophenol	102	27 - 125

TIC's By 625	Est.Conc	Units
Unknown	63	µg/L
Unknown	53	µg/L
Toluene	42	µg/L
p-Xylene	180	µg/L
Ethylbenzene	92	µg/L
Cyclic octaatomic sulfur	61	µg/L
Benzene, Trimethyl	42	µg/L
Benzene, Trimethyl	140	µg/L
Benzene, Dimethyl	64	µg/L
Benzene, 1-ethyl-2-methyl	82	µg/L

Extractable Petroleum Hydrocarbons by GC-FID

C11-C22 Aromatics	**BRL**	µg/L	100	71	1	MADEP EPH	09/16/06 17:33	grappaccioli	Q17783
C19-C36 Aliphatics	**BRL**	µg/L	100	31	1	MADEP EPH	09/16/06 17:33	grappaccioli	Q17783
C9-C18 Aliphatics	**BRL**	µg/L	100	75	1	MADEP EPH	09/16/06 17:33	grappaccioli	Q17783

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NC Certification No. 402
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Laboratory Report

09/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1
Sample Matrix: Water

Client Sample ID: P68-B4-GW
Prism Sample ID: 160609
COC Group: G0906180
Time Collected: 09/07/06 16:00
Time Submitted: 09/11/06 16:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
Sample Preparation:			1000 mL /		2 mL	EPH	09/15/06 7:00	smanivanh	P16347

Surrogate	% Recovery	Control Limits
o-Terphenyl	85	40 - 140
2-Fluorobiphenyl	88	40 - 140
2-Bromonaphthalene	82	40 - 140
1-Chloro-octadecane	106	40 - 140

Volatile Petroleum Hydrocarbons by GC-PID/FID

C5-C8 Aliphatics	**1500**	µg/L	100	50	1	MADEP VPH	09/15/06 18:22	erussell	Q17765
C9-C10 Aromatics	**360**	µg/L	100	35	1	MADEP VPH	09/15/06 18:22	erussell	Q17765
C9-C12 Aliphatics	**BRL**	µg/L	100	50	1	MADEP VPH	09/15/06 18:22	erussell	Q17765

Surrogate	% Recovery	Control Limits
2,5-Dibromotoluene-PID	104	70 - 130
2,5-Dibromotoluene-FID	105	70 - 130

Sample Comment(s):

BRL = Below Reporting Limit

J = Estimated value between the Reporting Limit and the MDL

The results in this report relate only to the samples submitted for analysis and meet state certification requirements other than NELAC certification except for those instances indicated in the case narrative and/or test comments.

Angela D. Overcash, V.P. Laboratory Services

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

CHAIN OF CUSTODY RECORD

PRISM LABORATORIES, INC.

Full Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
Phone: 704/529-6364 • Fax: 704/525-0409

PAGE 1 OF 2 QUOTE # TO ENSURE PROPER BILLING: _____

Project Name: NCDOT Parcel 68

Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)

*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements

Invoice To: ~~MARY Howard~~ NCDOT

Address: WBS# 34438.1.1
STAT Project # 4, 2502A&B

Purchase Order No./Billing Reference 3260.06A3.NDOT

Requested Due Date ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☒ 5 Days

"Working Days" ☐ 6-9 Days ☐ Standard 10 days

Samples received after 15:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

Client Company Name: Solutions - IES
Report To/Contact Name: SHERI KNOX
Reporting Address: 1101 Nowell Rd
Raleigh, NC 27607
Phone: 919-873-1060 Fax (Yes) (No): _____
Email (Yes) (No) Email Address SKNOX@solutions-ies.com
EDD Type: ___ PDF ___ Excel ___ Other
Site Location Name: NCDOT Parcel 68
Site Location Physical Address: Richmond Co, NC

LAB USE ONLY

	YES	NO	N/A
Samples INTACT upon arrival?	✓		
Received ON WET ICE? Temp 2-3	✓		
PROPER PRESERVATIVES indicated?	✓		
Received WITHIN HOLDING TIMES?	✓		
CUSTODY SEALS INTACT?			✓
VOLATILES rec'd W/OUT HEADSPACE?	~~✓~~		✓
PROPER CONTAINERS used?	✓		

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC ___ USACE ___ FL ___ NC X
SC ___ OTHER ___ N/A ___
Water Chlorinated: YES ___ NO X
Sample Iced Upon Collection: YES X NO ___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER *TYPE SEE BELOW	SAMPLE CONTAINER NO.	SAMPLE CONTAINER SIZE	PRESERVATIVES	ANALYSES REQUESTED GRO	ANALYSES REQUESTED DRO	REMARKS	PRISM LAB ID NO.
P68-B1-2-4	9/7/06	8:40	Soil	G	3	40mL 8oz	Methanol None	X	X		16Φ590
P68-B2-6-8		9:10									16Φ591
P68-B3-4-6		9:45									16Φ592
P68-B4-0-2		9:55									16Φ593
P68-B5-4-6		10:10									16Φ594
P68-B6-4-6		10:20									16Φ595
P68-B7-6-8		10:35									16Φ596
P68-B8-6-8		11:22									16Φ597
P68-B9-4-6		11:30									16Φ598
P68-B10-6-8		11:40									16Φ599

Sampler's Signature _____ Sampled By (Print Name) Sean Jarvis Affiliation Solutions-IES

PRESS DOWN FIRMLY - 3 COPIES

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

		Date	Military/Hours
Relinquished By: (Signature)	Received By: (Signature)	9/8/06	1510
Relinquished By: (Signature)	Received By: (Signature)	9/11/06	1340
Relinquished By: (Signature)	Received For Prism Laboratories By:	9/11/06	1615

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

☐ Fed Ex ☐ UPS ☐ Hand-delivered ☒ Prism Field Service ☐ Other _____

Log-In Group No. GΦ9Φ618Φ

Additional Comments:

PRISM USE ONLY

Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC	☐ NC ☐ SC
☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____	☐ _____

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

PRISM LABORATORIES, INC.

Full Service Analytical & Environmental Solutions

449 Springbrook Road • P.O. Box 240543 • Charlotte, NC 28224-0543
Phone: 704/529-6364 • Fax: 704/525-0409

CHAIN OF CUSTODY RECORD

PAGE 2 OF 2 QUOTE # TO ENSURE PROPER BILLING: _____

Project Name: NCDOT Parcel 68
Short Hold Analysis: (Yes) (No) UST Project: (Yes) (No)
*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements
Invoice To: NCDOT WBS# 34438.1.1
Address: State Project # U-2502 A2B

Client Company Name: Solutions-IES
Report To/Contact Name: Sheri Knox
Reporting Address: 1101 Nowell Rd.
Raleigh, NC 27607
Phone: 919-873-1060 Fax (Yes) (No): —
Email (Yes) (No) Email Address SKnox@Solutions-ies.com
EDD Type: PDF___ Excel___ Other___
Site Location Name: NCDOT Parcel 68
Site Location Physical Address: Richmond Co, NC

Purchase Order No./Billing Reference 3260.0643. NDOT
Requested Due Date ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 4 Days ☒ 5 Days
"Working Days" ☐ 6-9 Days ☐ Standard 10 days ☐ Rush Work Must Be Pre-Approved
Samples received after 15:00 will be processed next business day.
Turnaround time is based on business days, excluding weekends and holidays.
(SEE REVERSE FOR TERMS & CONDITIONS REGARDING SERVICES RENDERED BY PRISM LABORATORIES, INC. TO CLIENT)

LAB USE ONLY

	YES	NO	N/A
Samples INTACT upon arrival?	✓		
Received ON WET ICE? Temp 2.3	✓		
PROPER PRESERVATIVES indicated?	✓		
Received WITHIN HOLDING TIMES?			✓
CUSTODY SEALS INTACT?			✓
VOLATILES rec'd W/OUT HEADSPACE?	✓		
PROPER CONTAINERS used?	✓		

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL

Certification: NELAC___ USACE___ FL___ NC X
SC___ OTHER___ N/A___
Water Chlorinated: YES___ NO X
Sample Iced Upon Collection: YES X NO___

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER *TYPE SEE BELOW	NO.	SIZE	PRESERVATIVES	ANALYSES REQUESTED GRO	DRO	EPA 601 EPA 602 EPA 602 EDB MTBE	Xylenes 625+ 10 Naphthalene VPH	EPH	REMARKS	PRISM LAB ID NO.
P68-B11-4-6	9/7/06	13:30	Soil	G	3/40	Liters VOAs	Methanol None HCl	X	X					16Φ6ΦΦ
P68-B12-4-6		13:35						X	X					16Φ6Φ1
P68-B13-2-4		13:40						X	X					16Φ6Φ2
P68-B14-0-2		14:20						X	X					16Φ6Φ3
P68-B15-6-8		14:10						X	X					16Φ6Φ4
P68-B16-6-8		14:50						X	X					16Φ6Φ5
P68-B17-6-8		15:10						X	X					16Φ6Φ6
P68-B18-6-8		15:25						X	X					16Φ6Φ7
P68-B19-6-8		15:35						X	X					16Φ6Φ8
P68-B4-GW		16:00	Water		10	Liters VOAs				X	X	X	X	16Φ6Φ9

PRESS DOWN FIRMLY - 3 COPIES

Sampler's Signature _____ Sampled By (Print Name) Sean Sanah Affiliation Solutions-IES

Upon relinquishing, this Chain of Custody is your authorization for Prism to proceed with the analyses as requested above. Any changes must be submitted in writing to the Prism Project Manager. There will be charges for any changes after analyses have been initialized.

		Date	Military/Hours
Relinquished By: (Signature)	Received By: (Signature)	9/8/06	1510
Relinquished By: (Signature)	Received By: (Signature)	9/11/06	1340
Relinquished By: (Signature)	Received For Prism Laboratories By:	9-11-06	1615

Method of Shipment: NOTE: ALL SAMPLE COOLERS SHOULD BE TAPED SHUT WITH CUSTODY SEALS FOR TRANSPORTATION TO THE LABORATORY. SAMPLES ARE NOT ACCEPTED AND VERIFIED AGAINST COC UNTIL RECEIVED AT THE LABORATORY.

☐ Fed Ex ☐ UPS ☐ Hand-delivered ☒ Prism Field Service ☐ Other

COC Group No. GΦ9Φ618Φ

Additional Comments:

PRISM USE ONLY

Site Arrival Time:
Site Departure Time:
Field Tech Fee:
Mileage:

NPDES:	UST:	GROUNDWATER:	DRINKING WATER:	SOLID WASTE:	RCRA:	CERCLA	LANDFILL	OTHER:
☐ NC ☐ SC ☐	☐ NC ☐ SC ☐	☐ NC ☐ SC ☐	☐ NC ☐ SC ☐	☐ NC ☐ SC ☐	☐ NC ☐ SC ☐	☐ NC ☐ SC ☐	☐ NC ☐ SC ☐	☐ NC ☐ SC ☐

*CONTAINER TYPE CODES: A = Amber C = Clear G = Glass P = Plastic; TL = Teflon-Lined Cap VOA = Volatile Organics Analysis (Zero Head Space)

SEE REVERSE FOR TERMS & CONDITIONS

ORIGINAL

PRISM LABORATORIES, INC
Full Service Analytical & Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert. No. 37735

Level II QC Report

9/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Gasoline Range Organics (GRO) by GC-FID, method 8015B

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
Gasoline Range Organics (GRO)	ND	7	<3.5	mg/kg	Q17701

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
Gasoline Range Organics (GRO)	43.15	50	mg/kg	86	67 - 116	Q17701

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
160594	Gasoline Range Organics (GRO)	40.5	50	mg/kg	81	57 - 113	Q17701

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
160594	Gasoline Range Organics (GRO)	40.15	50	mg/kg	80	57 - 113	1	0 - 23	Q17701

Gasoline Range Organics (GRO) by GC-FID, method 8015B

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
Gasoline Range Organics (GRO)	ND	7	<3.5	mg/kg	Q17731

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
Gasoline Range Organics (GRO)	46.65	50	mg/kg	93	67 - 116	Q17731

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
160489	Gasoline Range Organics (GRO)	55.1	50	mg/kg	110	57 - 113	Q17731

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
160489	Gasoline Range Organics (GRO)	56.3	50	mg/kg	113	57 - 113	2	0 - 23	Q17731

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Level II QC Report

9/18/06

N. C. Department of Transportation
Attn: Sheri Knox
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1101 Nowell Road
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Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Purgeable Halocarbons and Aromatics by GC-PID/ELCD, method 601/602

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
1,1,1-Trichloroethane	ND	1	<0.5	µg/L	Q17735
1,1,2,2-Tetrachloroethane	ND	1	<0.5	µg/L	Q17735
1,1,2-Trichloroethane	ND	1	<0.5	µg/L	Q17735
1,1-Dichloroethane	ND	1	<0.5	µg/L	Q17735
1,1-Dichloroethene	ND	1	<0.5	µg/L	Q17735
1,2-Dibromoethane (EDB)	ND	1	<0.5	µg/L	Q17735
1,2-Dichlorobenzene	ND	1	<0.5	µg/L	Q17735
1,2-Dichloroethane	ND	1	<0.5	µg/L	Q17735
1,2-Dichloropropane	ND	1	<0.5	µg/L	Q17735
1,3-Dichlorobenzene	ND	1	<0.5	µg/L	Q17735
1,4-Dichlorobenzene	ND	1	<0.5	µg/L	Q17735
Benzene	ND	0.5	<0.25	µg/L	Q17735
Bromodichloromethane	ND	1	<0.5	µg/L	Q17735
Bromoform	ND	1	<0.5	µg/L	Q17735
Bromomethane	ND	5	<2.5	µg/L	Q17735
Carbon tetrachloride	ND	1	<0.5	µg/L	Q17735
Chlorobenzene	ND	1	<0.5	µg/L	Q17735
Chloroethane	ND	5	<2.5	µg/L	Q17735
Chloroform	ND	1	<0.5	µg/L	Q17735
Chloromethane	ND	5	<2.5	µg/L	Q17735
cis-1,2-Dichloroethene	ND	1	<0.5	µg/L	Q17735
cis-1,3-Dichloropropene	ND	1	<0.5	µg/L	Q17735
Dibromochloromethane	ND	1	<0.5	µg/L	Q17735
Dichlorodifluoromethane	ND	5	<2.5	µg/L	Q17735
Ethylbenzene	ND	1	<0.5	µg/L	Q17735
Isopropyl ether (IPE)	ND	5	<2.5	µg/L	Q17735
m,p-Xylenes	ND	2	<1	µg/L	Q17735
Methyl t-butyl ether (MTBE)	ND	5	<2.5	µg/L	Q17735
Methylene Chloride	ND	5	<2.5	µg/L	Q17735
Naphthalene	ND	1	<0.5	µg/L	Q17735
o-Xylene	ND	1	<0.5	µg/L	Q17735
Tetrachloroethene	ND	1	<0.5	µg/L	Q17735
Toluene	ND	1	<0.5	µg/L	Q17735
trans-1,2-Dichloroethene	ND	1	<0.5	µg/L	Q17735
trans-1,3-Dichloropropene	ND	1	<0.5	µg/L	Q17735
Trichloroethene	ND	1	<0.5	µg/L	Q17735
Trichlorofluoromethane	ND	5	<2.5	µg/L	Q17735
Vinyl chloride	ND	1	<0.5	µg/L	Q17735

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
1,1,1-Trichloroethane	19.2	20	µg/L	96	41 - 138	Q17735

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Level II QC Report

9/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
1,1,2,2-Tetrachloroethane	23.499	20	µg/L	117	10 - 184	Q17735
1,1,2-Trichloroethane	20.958	20	µg/L	105	39 - 136	Q17735
1,1-Dichloroethane	22.645	20	µg/L	113	47 - 132	Q17735
1,1-Dichloroethene	16.219	20	µg/L	81	28 - 167	Q17735
1,2-Dibromoethane (EDB)	22.237	20	µg/L	111	78 - 131	Q17735
1,2-Dichlorobenzene	20.287	20	µg/L	101	37 - 154	Q17735
1,2-Dichloroethane	19.888	20	µg/L	99	51 - 147	Q17735
1,2-Dichloropropane	19.91	20	µg/L	100	44 - 156	Q17735
1,3-Dichlorobenzene	20.23	20	µg/L	101	50 - 141	Q17735
1,4-Dichlorobenzene	20.353	20	µg/L	102	42 - 143	Q17735
Benzene	16.5	20	µg/L	83	39 - 150	Q17735
Bromodichloromethane	18.979	20	µg/L	95	42 - 172	Q17735
Bromoform	15.38	20	µg/L	77	13 - 159	Q17735
Bromomethane	15.027	20	µg/L	75	10 - 144	Q17735
Carbon tetrachloride	20.582	20	µg/L	103	43 - 143	Q17735
Chlorobenzene	15.899	20	µg/L	79	38 - 150	Q17735
Chloroethane	21.41	20	µg/L	107	46 - 137	Q17735
Chloroform	22.742	20	µg/L	114	49 - 133	Q17735
Chloromethane	22.345	20	µg/L	112	10 - 193	Q17735
cis-1,2-Dichloroethene	16.602	20	µg/L	83	62 - 145	Q17735
cis-1,3-Dichloropropene	22.424	20	µg/L	112	22 - 178	Q17735
Dibromochloromethane	18.698	20	µg/L	93	24 - 191	Q17735
Dichlorodifluoromethane	17.519	20	µg/L	88	48 - 148	Q17735
Ethylbenzene	16.351	20	µg/L	82	32 - 160	Q17735
Isopropyl ether (IPE)	15.507	20	µg/L	78	61 - 134	Q17735
m,p-Xylenes	32.935	40	µg/L	82	69 - 130	Q17735
Methyl t-butyl ether (MTBE)	15.881	20	µg/L	79	74 - 130	Q17735
Methylene Chloride	22.69	20	µg/L	113	25 - 162	Q17735
Naphthalene	13.666	20	µg/L	68	60 - 136	Q17735
o-Xylene	15.498	20	µg/L	77	66 - 129	Q17735
Tetrachloroethene	15.913	20	µg/L	80	26 - 162	Q17735
Toluene	15.892	20	µg/L	79	46 - 148	Q17735
trans-1,2-Dichloroethene	22.815	20	µg/L	114	38 - 155	Q17735
trans-1,3-Dichloropropene	21.374	20	µg/L	107	22 - 178	Q17735
Trichloroethene	15.389	20	µg/L	77	35 - 146	Q17735
Trichlorofluoromethane	20.579	20	µg/L	103	21 - 156	Q17735
Vinyl chloride	18.427	20	µg/L	92	28 - 163	Q17735

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
160609	1,1,1-Trichloroethane	790.96	800	µg/L	99	41 - 138	Q17735
	1,1,2,2-Tetrachloroethane	895.4	800	µg/L	112	10 - 184	Q17735
	1,1,2-Trichloroethane	844.32	800	µg/L	106	39 - 136	Q17735
	1,1-Dichloroethane	889.08	800	µg/L	111	47 - 132	Q17735

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Level II QC Report

9/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %		Recovery Range %	QC Batch ID
	1,1-Dichloroethene	667.36	800	µg/L	83		28 - 167	Q17735
	1,2-Dibromoethane (EDB)	749.44	800	µg/L	94		78 - 131	Q17735
	1,2-Dichlorobenzene	813.64	800	µg/L	102		37 - 154	Q17735
	1,2-Dichloroethane	815.52	800	µg/L	102		51 - 147	Q17735
	1,2-Dichloropropane	777.24	800	µg/L	97		44 - 156	Q17735
	1,3-Dichlorobenzene	819.76	800	µg/L	102		50 - 141	Q17735
	1,4-Dichlorobenzene	823.48	800	µg/L	103		42 - 143	Q17735
	Benzene	717.68	800	µg/L	90		39 - 150	Q17735
	Bromodichloromethane	818.2	800	µg/L	102		42 - 172	Q17735
	Bromoform	622.88	800	µg/L	78		13 - 159	Q17735
	Bromomethane	579.88	800	µg/L	72		10 - 144	Q17735
	Carbon tetrachloride	819.6	800	µg/L	102		43 - 143	Q17735
	Chlorobenzene	657.44	800	µg/L	82		38 - 150	Q17735
	Chloroethane	849.36	800	µg/L	106		46 - 137	Q17735
	Chloroform	912.84	800	µg/L	114		49 - 133	Q17735
	Chloromethane	765.68	800	µg/L	96		10 - 193	Q17735
	cis-1,2-Dichloroethene	692.24	800	µg/L	87		57 - 137	Q17735
	cis-1,3-Dichloropropene	814.68	800	µg/L	102		22 - 178	Q17735
	Dibromochloromethane	774.84	800	µg/L	97		24 - 191	Q17735
	Dichlorodifluoromethane	705.4	800	µg/L	88		47 - 143	Q17735
	Ethylbenzene	733.64	800	µg/L	92		32 - 160	Q17735
	Isopropyl ether (IPE)	669.52	800	µg/L	84		60 - 132	Q17735
	m,p-Xylenes	1492.72	1600	µg/L	93		59 - 126	Q17735
	Methyl t-butyl ether (MTBE)	681.16	800	µg/L	85		73 - 130	Q17735
	Methylene Chloride	1033.16	800	µg/L	129		25 - 162	Q17735
	Naphthalene	1386.92	800	µg/L	171	#	58 - 132	Q17735
	o-Xylene	828.04	800	µg/L	104		62 - 125	Q17735
	Tetrachloroethene	673.72	800	µg/L	84		26 - 162	Q17735
	Toluene	693.88	800	µg/L	87		46 - 148	Q17735
	trans-1,2-Dichloroethene	934.16	800	µg/L	117		38 - 155	Q17735
	trans-1,3-Dichloropropene	797.36	800	µg/L	100		22 - 178	Q17735
	Trichloroethene	653.92	800	µg/L	82		35 - 146	Q17735
	Trichlorofluoromethane	791.4	800	µg/L	99		21 - 156	Q17735
	Vinyl chloride	674.64	800	µg/L	84		28 - 163	Q17735

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
160609	1,1,1-Trichloroethane	750.6	800	µg/L	94	41 - 138	5	0 - 16	Q17735
	1,1,2,2-Tetrachloroethane	904.28	800	µg/L	113	10 - 184	1	0 - 14	Q17735
	1,1,2-Trichloroethane	816.56	800	µg/L	102	39 - 136	3	0 - 13	Q17735
	1,1-Dichloroethane	873	800	µg/L	109	47 - 132	2	0 - 14	Q17735
	1,1-Dichloroethene	646.2	800	µg/L	81	28 - 167	3	0 - 17	Q17735
	1,2-Dibromoethane (EDB)	878.04	800	µg/L	110	78 - 131	16 #	0 - 13	Q17735
	1,2-Dichlorobenzene	871.16	800	µg/L	109	37 - 154	7	0 - 15	Q17735

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Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Matrix Spike Duplicate

Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
1,2-Dichloroethane	846.8	800	µg/L	106	51 - 147	4	0 - 15	Q17735
1,2-Dichloropropane	772.96	800	µg/L	97	44 - 156	1	0 - 12	Q17735
1,3-Dichlorobenzene	800.96	800	µg/L	100	50 - 141	2	0 - 13	Q17735
1,4-Dichlorobenzene	768.72	800	µg/L	96	42 - 143	7	0 - 14	Q17735
Benzene	696.68	800	µg/L	87	39 - 150	3	0 - 12	Q17735
Bromodichloromethane	737.32	800	µg/L	92	42 - 172	10	0 - 11	Q17735
Bromoform	591.76	800	µg/L	74	13 - 159	5	0 - 10	Q17735
Bromomethane	578.68	800	µg/L	72	10 - 144	0	0 - 21	Q17735
Carbon tetrachloride	808.08	800	µg/L	101	43 - 143	1	0 - 14	Q17735
Chlorobenzene	644.56	800	µg/L	81	38 - 150	2	0 - 12	Q17735
Chloroethane	852.44	800	µg/L	107	46 - 137	0	0 - 18	Q17735
Chloroform	978	800	µg/L	122	49 - 133	7	0 - 13	Q17735
Chloromethane	702.32	800	µg/L	88	10 - 193	9	0 - 21	Q17735
cis-1,2-Dichloroethene	692.52	800	µg/L	87	57 - 137	0	0 - 15	Q17735
cis-1,3-Dichloropropene	815	800	µg/L	102	22 - 178	0	0 - 13	Q17735
Dibromochloromethane	800.64	800	µg/L	100	24 - 191	3	0 - 10	Q17735
Dichlorodifluoromethane	735.44	800	µg/L	92	47 - 143	4	0 - 21	Q17735
Ethylbenzene	711.08	800	µg/L	89	32 - 160	3	0 - 10	Q17735
Isopropyl ether (IPE)	661.44	800	µg/L	83	60 - 132	1	0 - 15	Q17735
m,p-Xylenes	1452	1600	µg/L	91	59 - 126	3	0 - 11	Q17735
Methyl t-butyl ether (MTBE)	676.2	800	µg/L	85	73 - 130	1	0 - 16	Q17735
Methylene Chloride	1024.36	800	µg/L	128	25 - 162	1	0 - 16	Q17735
Naphthalene	829.72	800	µg/L	101	58 - 132	50 #	0 - 17	Q17735
o-Xylene	686	800	µg/L	86	62 - 125	19 #	0 - 13	Q17735
Tetrachloroethene	644.24	800	µg/L	81	26 - 162	4	0 - 14	Q17735
Toluene	671.88	800	µg/L	84	46 - 148	3	0 - 11	Q17735
trans-1,2-Dichloroethene	982.8	800	µg/L	123	38 - 155	5	0 - 17	Q17735
trans-1,3-Dichloropropene	766.56	800	µg/L	96	22 - 178	4	0 - 10	Q17735
Trichloroethene	634.92	800	µg/L	79	35 - 146	3	0 - 14	Q17735
Trichlorofluoromethane	821.04	800	µg/L	103	21 - 156	4	0 - 19	Q17735
Vinyl chloride	708.84	800	µg/L	89	28 - 163	5	0 - 20	Q17735

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Level II QC Report

9/18/06

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Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Semivolatile Organic Compounds by GC/MS, method 625

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
1,2,4-Trichlorobenzene	ND	10	<5	µg/L	Q17737
1,2-Dichlorobenzene	ND	10	<5	µg/L	Q17737
1,3-Dichlorobenzene	ND	10	<5	µg/L	Q17737
1,4-Dichlorobenzene	ND	10	<5	µg/L	Q17737
2,4,5-Trichlorophenol	ND	10	<5	µg/L	Q17737
2,4,6-Trichlorophenol	ND	10	<5	µg/L	Q17737
2,4-Dichlorophenol	ND	10	<5	µg/L	Q17737
2,4-Dimethylphenol	ND	10	<5	µg/L	Q17737
2,4-Dinitrophenol	ND	50	<25	µg/L	Q17737
2,4-Dinitrotoluene	ND	10	<5	µg/L	Q17737
2,6-Dinitrotoluene	ND	10	<5	µg/L	Q17737
2-Chloronaphthalene	ND	10	<5	µg/L	Q17737
2-Chlorophenol	ND	10	<5	µg/L	Q17737
2-Methylphenol	ND	10	<5	µg/L	Q17737
2-Nitrophenol	ND	10	<5	µg/L	Q17737
3&4-Methylphenol	ND	10	<5	µg/L	Q17737
3,3´-Dichlorobenzidine	ND	50	<25	µg/L	Q17737
4,6-Dinitro-2-methylphenol	ND	50	<25	µg/L	Q17737
4-Bromophenylphenylether	ND	10	<5	µg/L	Q17737
4-Chloro-3-methylphenol	ND	10	<5	µg/L	Q17737
4-Chlorophenylphenylether	ND	10	<5	µg/L	Q17737
4-Nitrophenol	ND	50	<25	µg/L	Q17737
Acenaphthene	ND	10	<5	µg/L	Q17737
Acenaphthylene	ND	10	<5	µg/L	Q17737
Anthracene	ND	10	<5	µg/L	Q17737
Benzo(a)anthracene	ND	10	<5	µg/L	Q17737
Benzo(a)pyrene	ND	10	<5	µg/L	Q17737
Benzo(b)fluoranthene	ND	10	<5	µg/L	Q17737
Benzo(g,h,i)perylene	ND	10	<5	µg/L	Q17737
Benzo(k)fluoranthene	ND	10	<5	µg/L	Q17737
Bis(2-chloroethoxy)methane	ND	10	<5	µg/L	Q17737
Bis(2-chloroethyl)ether	ND	10	<5	µg/L	Q17737
Bis(2-chloroisopropyl)ether	ND	10	<5	µg/L	Q17737
Bis(2-ethylhexyl)phthalate	ND	10	<5	µg/L	Q17737
Butylbenzylphthalate	ND	10	<5	µg/L	Q17737
Chrysene	ND	10	<5	µg/L	Q17737
Di-n-butylphthalate	ND	10	<5	µg/L	Q17737
Di-n-octylphthalate	ND	10	<5	µg/L	Q17737
Dibenzo(a,h)anthracene	ND	10	<5	µg/L	Q17737
Dibenzofuran	ND	10	<5	µg/L	Q17737
Diethylphthalate	ND	10	<5	µg/L	Q17737
Dimethylphthalate	ND	10	<5	µg/L	Q17737

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Level II QC Report

9/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
Fluoranthene	ND	10	<5	µg/L	Q17737
Fluorene	ND	10	<5	µg/L	Q17737
Hexachlorobenzene	ND	10	<5	µg/L	Q17737
Hexachlorobutadiene	ND	10	<5	µg/L	Q17737
Hexachlorocyclopentadiene	ND	10	<5	µg/L	Q17737
Hexachloroethane	ND	10	<5	µg/L	Q17737
Indeno(1,2,3-cd)pyrene	ND	10	<5	µg/L	Q17737
Isophorone	ND	10	<5	µg/L	Q17737
N-Nitrosodi-n-propylamine	ND	10	<5	µg/L	Q17737
Naphthalene	ND	10	<5	µg/L	Q17737
Nitrobenzene	ND	10	<5	µg/L	Q17737
Pentachlorophenol	ND	10	<5	µg/L	Q17737
Phenanthrene	ND	10	<5	µg/L	Q17737
Phenol	ND	10	<5	µg/L	Q17737
Pyrene	ND	10	<5	µg/L	Q17737

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
1,2,4-Trichlorobenzene	65.02	100	µg/L	65	44 - 142	Q17737
1,2-Dichlorobenzene	61.38	100	µg/L	61	32 - 129	Q17737
1,3-Dichlorobenzene	60.06	100	µg/L	60	20 - 124	Q17737
1,4-Dichlorobenzene	59.91	100	µg/L	60	20 - 124	Q17737
2,4,6-Trichlorophenol	75.69	100	µg/L	76	37 - 144	Q17737
2,4-Dichlorophenol	68.46	100	µg/L	68	39 - 135	Q17737
2,4-Dimethylphenol	65.94	100	µg/L	66	32 - 119	Q17737
2,4-Dinitrophenol	110.93	100	µg/L	111	10 - 191	Q17737
2,4-Dinitrotoluene	97.79	100	µg/L	98	39 - 139	Q17737
2,6-Dinitrotoluene	114.44	100	µg/L	114	50 - 158	Q17737
2-Chloronaphthalene	71.42	100	µg/L	71	60 - 118	Q17737
2-Chlorophenol	51.86	100	µg/L	52	23 - 134	Q17737
2-Nitrophenol	70.27	100	µg/L	70	29 - 182	Q17737
3,3´-Dichlorobenzidine	126.33	100	µg/L	126	10 - 262	Q17737
4,6-Dinitro-2-methylphenol	103.53	100	µg/L	104	10 - 181	Q17737
4-Bromophenylphenylether	88.18	100	µg/L	88	53 - 127	Q17737
4-Chloro-3-methylphenol	74.62	100	µg/L	75	22 - 147	Q17737
4-Chlorophenylphenylether	90.43	100	µg/L	90	25 - 158	Q17737
4-Nitrophenol	26.87	100	µg/L	27	10 - 132	Q17737
Acenaphthene	86.99	100	µg/L	87	47 - 145	Q17737
Acenaphthylene	84.33	100	µg/L	84	33 - 145	Q17737
Anthracene	78.12	100	µg/L	78	27 - 133	Q17737
Benzo(a)anthracene	99.11	100	µg/L	99	33 - 143	Q17737
Benzo(a)pyrene	105.02	100	µg/L	105	17 - 163	Q17737
Benzo(b)fluoranthene	133.83	100	µg/L	134	24 - 159	Q17737
Benzo(g,h,i)perylene	108.16	100	µg/L	108	10 - 219	Q17737

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Level II QC Report

9/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
Benzo(k)fluoranthene	83.29	100	µg/L	83	11 - 162	Q17737
Bis(2-chloroethoxy)methane	66.5	100	µg/L	67	33 - 184	Q17737
Bis(2-chloroethyl)ether	60.74	100	µg/L	61	12 - 158	Q17737
Bis(2-chloroisopropyl)ether	56.52	100	µg/L	57	36 - 166	Q17737
Bis(2-ethylhexyl)phthalate	101.01	100	µg/L	101	10 - 158	Q17737
Butylbenzylphthalate	108.28	100	µg/L	108	10 - 152	Q17737
Chrysene	90.76	100	µg/L	91	17 - 168	Q17737
Di-n-butylphthalate	83.92	100	µg/L	84	10 - 118	Q17737
Di-n-octylphthalate	95.82	100	µg/L	96	10 - 146	Q17737
Dibenzo(a,h)anthracene	109.91	100	µg/L	110	10 - 227	Q17737
Diethylphthalate	94.48	100	µg/L	94	10 - 114	Q17737
Dimethylphthalate	83.31	100	µg/L	83	10 - 112	Q17737
Fluoranthene	95.47	100	µg/L	95	26 - 137	Q17737
Fluorene	92.93	100	µg/L	93	59 - 121	Q17737
Hexachlorobenzene	89.09	100	µg/L	89	10 - 152	Q17737
Hexachlorobutadiene	60.71	100	µg/L	61	24 - 116	Q17737
Hexachlorocyclopentadiene	70.42	100	µg/L	70	32 - 103	Q17737
Hexachloroethane	55.99	100	µg/L	56	40 - 113	Q17737
Indeno(1,2,3-cd)pyrene	122.52	100	µg/L	123	10 - 171	Q17737
Isophorone	77.6	100	µg/L	78	21 - 196	Q17737
N-Nitrosodi-n-propylamine	73.04	100	µg/L	73	10 - 230	Q17737
Naphthalene	60.94	100	µg/L	61	21 - 133	Q17737
Nitrobenzene	58.51	100	µg/L	59	35 - 180	Q17737
Pentachlorophenol	121.54	100	µg/L	122	14 - 176	Q17737
Phenanthrene	93.98	100	µg/L	94	54 - 120	Q17737
Phenol	19.54	100	µg/L	20	10 - 112	Q17737
Pyrene	105.12	100	µg/L	105	52 - 115	Q17737

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
160609	1,2,4-Trichlorobenzene	133.3333	196.08	µg/L	68	44 - 142	Q17737
	1,2-Dichlorobenzene	119.1764	196.08	µg/L	61	32 - 129	Q17737
	1,3-Dichlorobenzene	121.9411	196.08	µg/L	62	20 - 124	Q17737
	1,4-Dichlorobenzene	117.2745	196.08	µg/L	60	20 - 124	Q17737
	2,4,6-Trichlorophenol	136.8627	196.08	µg/L	70	37 - 144	Q17737
	2,4-Dichlorophenol	139.2352	196.08	µg/L	71	39 - 135	Q17737
	2,4-Dimethylphenol	137.8235	196.08	µg/L	70	32 - 119	Q17737
	2,4-Dinitrophenol	179.0980	196.08	µg/L	91	10 - 191	Q17737
	2,4-Dinitrotoluene	179.2549	196.08	µg/L	91	39 - 139	Q17737
	2,6-Dinitrotoluene	182.5098	196.08	µg/L	93	50 - 158	Q17737
	2-Chloronaphthalene	136	196.08	µg/L	69	60 - 118	Q17737
	2-Chlorophenol	112.9019	196.08	µg/L	58	23 - 134	Q17737
	2-Nitrophenol	151.4117	196.08	µg/L	77	29 - 182	Q17737
	3,3´-Dichlorobenzidine	224.9607	196.08	µg/L	115	10 - 262	Q17737

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NC Drinking Water Cert. No. 37735

Level II QC Report

9/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
	4,6-Dinitro-2-methylphenol	181.6666	196.08	µg/L	93	10 - 181	Q17737
	4-Bromophenylphenylether	163.7647	196.08	µg/L	84	53 - 127	Q17737
	4-Chloro-3-methylphenol	144.3725	196.08	µg/L	74	22 - 147	Q17737
	4-Chlorophenylphenylether	167.2745	196.08	µg/L	85	25 - 158	Q17737
	4-Nitrophenol	78	196.08	µg/L	40	10 - 132	Q17737
	Acenaphthene	156.1568	196.08	µg/L	80	47 - 145	Q17737
	Acenaphthylene	150.6666	196.08	µg/L	77	33 - 145	Q17737
	Anthracene	143.2941	196.08	µg/L	73	27 - 133	Q17737
	Benzo(a)anthracene	175.8039	196.08	µg/L	90	33 - 143	Q17737
	Benzo(a)pyrene	195.2549	196.08	µg/L	100	17 - 163	Q17737
	Benzo(b)fluoranthene	236.2745	196.08	µg/L	121	24 - 159	Q17737
	Benzo(g,h,i)perylene	191.1568	196.08	µg/L	97	10 - 219	Q17737
	Benzo(k)fluoranthene	172.9215	196.08	µg/L	88	11 - 162	Q17737
	Bis(2-chloroethoxy)methane	137.2352	196.08	µg/L	70	33 - 184	Q17737
	Bis(2-chloroethyl)ether	115.3137	196.08	µg/L	59	12 - 158	Q17737
	Bis(2-chloroisopropyl)ether	114.1960	196.08	µg/L	58	36 - 166	Q17737
	Bis(2-ethylhexyl)phthalate	184.5882	196.08	µg/L	94	10 - 158	Q17737
	Butylbenzylphthalate	197.5686	196.08	µg/L	101	10 - 152	Q17737
	Chrysene	167.0196	196.08	µg/L	85	17 - 168	Q17737
	Di-n-butylphthalate	157.0392	196.08	µg/L	80	10 - 118	Q17737
	Di-n-octylphthalate	178.4901	196.08	µg/L	91	10 - 146	Q17737
	Dibenzo(a,h)anthracene	196.3333	196.08	µg/L	100	10 - 227	Q17737
	Diethylphthalate	177.9803	196.08	µg/L	91	10 - 114	Q17737
	Dimethylphthalate	152.7254	196.08	µg/L	78	10 - 112	Q17737
	Fluoranthene	172.0392	196.08	µg/L	88	26 - 137	Q17737
	Fluorene	166.3921	196.08	µg/L	85	59 - 121	Q17737
	Hexachlorobenzene	163.1764	196.08	µg/L	83	10 - 152	Q17737
	Hexachlorobutadiene	126.4509	196.08	µg/L	64	24 - 116	Q17737
	Hexachlorocyclopentadiene	143.5294	196.08	µg/L	73	48 - 94	Q17737
	Hexachloroethane	111.1372	196.08	µg/L	57	40 - 113	Q17737
	Indeno(1,2,3-cd)pyrene	216.3333	196.08	µg/L	110	10 - 171	Q17737
	Isophorone	151.0588	196.08	µg/L	77	21 - 196	Q17737
	N-Nitrosodi-n-propylamine	153.7450	196.08	µg/L	78	10 - 230	Q17737
	Naphthalene	131.0196	196.08	µg/L	67	21 - 133	Q17737
	Nitrobenzene	121.0588	196.08	µg/L	62	35 - 180	Q17737
	Pentachlorophenol	214.8627	196.08	µg/L	110	14 - 176	Q17737
	Phenanthrene	170.5490	196.08	µg/L	87	54 - 120	Q17737
	Phenol	61.86274	196.08	µg/L	32	10 - 112	Q17737
	Pyrene	189.7647	196.08	µg/L	97	52 - 115	Q17737

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
160609	1,2,4-Trichlorobenzene	150.745	196.08	µg/L	77	44 - 142	12	0 - 36	Q17737
	1,2-Dichlorobenzene	136.470	196.08	µg/L	70	32 - 129	14	0 - 38	Q17737

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NC Drinking Water Cert. No. 37735

Level II QC Report

9/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Matrix Spike Duplicate

Sample ID:	Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
1,3-Dichlorobenzene	137.745	196.08	µg/L	70	20 - 124	12	0 - 41	Q17737
1,4-Dichlorobenzene	137.352	196.08	µg/L	70	20 - 124	16	0 - 36	Q17737
2,4,6-Trichlorophenol	160.803	196.08	µg/L	82	37 - 144	16	0 - 30	Q17737
2,4-Dichlorophenol	154.078	196.08	µg/L	79	39 - 135	10	0 - 31	Q17737
2,4-Dimethylphenol	158.294	196.08	µg/L	81	32 - 119	14	0 - 26	Q17737
2,4-Dinitrophenol	200.647	196.08	µg/L	102	10 - 191	11	0 - 30	Q17737
2,4-Dinitrotoluene	197.647	196.08	µg/L	101	39 - 139	10	0 - 29	Q17737
2,6-Dinitrotoluene	230.666	196.08	µg/L	118	50 - 158	23 #	0 - 15	Q17737
2-Chloronaphthalene	156.803	196.08	µg/L	80	60 - 118	14	0 - 21	Q17737
2-Chlorophenol	129.666	196.08	µg/L	66	23 - 134	14	0 - 35	Q17737
2-Nitrophenol	176.666	196.08	µg/L	90	29 - 182	15	0 - 34	Q17737
3,3´-Dichlorobenzidine	250.333	196.08	µg/L	128	10 - 262	11	0 - 50	Q17737
4,6-Dinitro-2-methylphenol	209.450	196.08	µg/L	107	10 - 181	14	0 - 19	Q17737
4-Bromophenylphenylether	190.470	196.08	µg/L	97	53 - 127	15	0 - 18	Q17737
4-Chloro-3-methylphenol	168.078	196.08	µg/L	86	22 - 147	15	0 - 33	Q17737
4-Chlorophenylphenylether	188.921	196.08	µg/L	96	25 - 158	12	0 - 19	Q17737
4-Nitrophenol	80.7647	196.08	µg/L	41	10 - 132	3	0 - 50	Q17737
Acenaphthene	177.411	196.08	µg/L	90	47 - 145	13	0 - 20	Q17737
Acenaphthylene	176.137	196.08	µg/L	90	33 - 145	16	0 - 24	Q17737
Anthracene	166.450	196.08	µg/L	85	27 - 133	15	0 - 30	Q17737
Benzo(a)anthracene	214.392	196.08	µg/L	109	33 - 143	20	0 - 26	Q17737
Benzo(a)pyrene	216.529	196.08	µg/L	110	17 - 163	10	0 - 25	Q17737
Benzo(b)fluoranthene	277.725	196.08	µg/L	142	24 - 159	16	0 - 29	Q17737
Benzo(g,h,i)perylene	223.882	196.08	µg/L	114	10 - 219	16	0 - 27	Q17737
Benzo(k)fluoranthene	159.196	196.08	µg/L	81	11 - 162	8	0 - 11	Q17737
Bis(2-chloroethoxy)methane	157.411	196.08	µg/L	80	33 - 184	14	0 - 31	Q17737
Bis(2-chloroethyl)ether	135.901	196.08	µg/L	69	12 - 158	16	0 - 36	Q17737
Bis(2-chloroisopropyl)ether	129.392	196.08	µg/L	66	36 - 166	12	0 - 40	Q17737
Bis(2-ethylhexyl)phthalate	199.588	196.08	µg/L	102	10 - 158	8	0 - 17	Q17737
Butylbenzylphthalate	219.745	196.08	µg/L	112	10 - 152	11	0 - 15	Q17737
Chrysene	180.647	196.08	µg/L	92	17 - 168	8	0 - 25	Q17737
Di-n-butylphthalate	175.156	196.08	µg/L	89	10 - 118	11	0 - 27	Q17737
Di-n-octylphthalate	197.843	196.08	µg/L	101	10 - 146	10	0 - 17	Q17737
Dibenzo(a,h)anthracene	224.568	196.08	µg/L	115	10 - 227	13	0 - 28	Q17737
Diethylphthalate	193.078	196.08	µg/L	98	10 - 114	8	0 - 16	Q17737
Dimethylphthalate	186.156	196.08	µg/L	95	10 - 112	20 #	0 - 15	Q17737
Fluoranthene	193.039	196.08	µg/L	98	26 - 137	12	0 - 24	Q17737
Fluorene	193.117	196.08	µg/L	98	59 - 121	15	0 - 15	Q17737
Hexachlorobenzene	191.529	196.08	µg/L	98	10 - 152	16	0 - 18	Q17737
Hexachlorobutadiene	142.215	196.08	µg/L	73	24 - 116	12	0 - 34	Q17737
Hexachlorocyclopentadiene	163.960	196.08	µg/L	84	48 - 94	13	0 - 30	Q17737
Hexachloroethane	130.862	196.08	µg/L	67	40 - 113	16	0 - 38	Q17737
Indeno(1,2,3-cd)pyrene	251.960	196.08	µg/L	129	10 - 171	15	0 - 29	Q17737
Isophorone	177.098	196.08	µg/L	90	21 - 196	16	0 - 32	Q17737

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Level II QC Report

9/18/06

N. C. Department of Transportation
Attn: Sheri Knox
c/o Solution - IES
1101 Nowell Road
Raleigh, NC 27607

Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
	N-Nitrosodi-n-propylamine	172	196.08	µg/L	88	10 - 230	11	0 - 36	Q17737
	Naphthalene	156.607	196.08	µg/L	80	21 - 133	18	0 - 42	Q17737
	Nitrobenzene	139.196	196.08	µg/L	71	35 - 180	14	0 - 25	Q17737
	Pentachlorophenol	243.529	196.08	µg/L	124	14 - 176	13	0 - 21	Q17737
	Phenanthrene	194.019	196.08	µg/L	99	54 - 120	13	0 - 29	Q17737
	Phenol	66.5490	196.08	µg/L	34	10 - 112	7	0 - 39	Q17737
	Pyrene	214.666	196.08	µg/L	109	52 - 115	12	0 - 15	Q17737

Diesel Range Organics (DRO) by GC-FID, method 8015B

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg	Q17762

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
Diesel Range Organics (DRO)	57.15	80	mg/kg	71	55 - 109	Q17762

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
160597	Diesel Range Organics (DRO)	49.80	80	mg/kg	62	50 - 117	Q17762

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
160597	Diesel Range Organics (DRO)	54.61	80	mg/kg	68	50 - 117	9	0 - 24	Q17762

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Level II QC Report

9/18/06

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COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Volatile Petroleum Hydrocarbons by GC-PID/FID, method MADEP VPH

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
C5-C8 Aliphatics	ND	100	<50	µg/L	Q17765
C9-C10 Aromatics	ND	100	<50	µg/L	Q17765
C9-C12 Aliphatics	ND	100	<50	µg/L	Q17765

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
C5-C8 Aliphatics	192.44	150	µg/L	128	70 - 130	Q17765
C9-C10 Aromatics	53.29	50	µg/L	107	70 - 130	Q17765
C9-C12 Aliphatics	116.10	100	µg/L	116	70 - 130	Q17765

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
160554	C5-C8 Aliphatics	184.78	150	µg/L	123	70 - 130	Q17765
	C9-C10 Aromatics	51.39	50	µg/L	103	70 - 130	Q17765
	C9-C12 Aliphatics	114.92	100	µg/L	115	70 - 130	Q17765

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
160554	C5-C8 Aliphatics	183.75	150	µg/L	123	70 - 130	1	0 - 25	Q17765
	C9-C10 Aromatics	48.53	50	µg/L	97	70 - 130	6	0 - 25	Q17765
	C9-C12 Aliphatics	112.30	100	µg/L	112	70 - 130	2	0 - 25	Q17765

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Project Name: Richmond Co.
Project ID: NCDOT Parcel 68
Project No.: WBS# 34438.1.1

COC Group Number: G0906180
Date/Time Submitted: 9/11/06 16:15

Extractable Petroleum Hydrocarbons by GC-FID, method MADEP EPH

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
C11-C22 Aromatics	ND	100	<50	µg/L	Q17783
C19-C36 Aliphatics	ND	100	<50	µg/L	Q17783
C9-C18 Aliphatics	ND	100	<50	µg/L	Q17783

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
C11-C22 Aromatics	1490.2	1700	µg/L	88	40 - 140	Q17783
C19-C36 Aliphatics	643	800	µg/L	80	40 - 140	Q17783
C9-C18 Aliphatics	404.6	600	µg/L	67	40 - 140	Q17783

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
160609	C11-C22 Aromatics	1615.8	1700	µg/L	95	40 - 140	Q17783
	C19-C36 Aliphatics	696.2	800	µg/L	87	40 - 140	Q17783
	C9-C18 Aliphatics	496	600	µg/L	83	40 - 140	Q17783

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
160609	C11-C22 Aromatics	1625.4	1700	µg/L	96	40 - 140	1	0 - 50	Q17783
	C19-C36 Aliphatics	640.8	800	µg/L	80	40 - 140	8	0 - 50	Q17783
	C9-C18 Aliphatics	518	600	µg/L	86	40 - 140	4	0 - 50	Q17783

Diesel Range Organics (DRO) by GC-FID, method 8015B

Method Blank

	Result	RL	Control Limit	Units	QC Batch ID
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg	Q17814

Laboratory Control Sample

	Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
Diesel Range Organics (DRO)	54.89	80	mg/kg	69	55 - 109	Q17814

Matrix Spike

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	QC Batch ID
160608	Diesel Range Organics (DRO)	66.54	80	mg/kg	83	50 - 117	Q17814

Matrix Spike Duplicate

Sample ID:		Result	Spike Amount	Units	Recovery %	Recovery Range %	RPD %	RPD Range %	QC Batch ID
160608	Diesel Range Organics (DRO)	58.33	80	mg/kg	73	50 - 117	13	0 - 24	Q17814

#-See Case Narrative

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

VPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name:	N. C. Department of Transportation	Laboratory Name:	Prism Laboratories, Inc.
Project Name:	Parcel 68	NC Certification # (Lab):	402
Site Location:	Richmond Co., NC	Sample Matrix:	Water

Sample Information and Analytical Results							
Method for Ranges: MADEP VPH VPH Surrogate Standards: Aliphatic - 2,5-Dibromotoluene / Aromatic - 2,5-Dibromotoluene							
Sample Identification:			160609				
Collection Option (for soil*):			NA	NA	NA	NA	NA
Date Collected:			9/7/06				
Date Received:			9/11/06				
Date Extracted:			NA	NA	NA	NA	NA
Date Analyzed:			9/15/06				
% Dry Solids:			NA	NA	NA	NA	NA
Dilution Factor:			1				
Hydrocarbon Ranges in ug/L:			Sample Results	Sample Results	Sample Results	Sample Results	Sample Results
C5-C8 Aliphatics ***			1500				
C9-C12 Aliphatics ***			<100				
C9-C10 Aromatics **			360				
Blank:	C5-C8 Aliphatics		<100	<100	<100	<100	<100
	C9-C12 Aliphatics		<100	<100	<100	<100	<100
	C9-C10 Aromatics		<100	<100	<100	<100	<100
RL:	C5-C8 Aliphatics		100				
	C9-C12 Aliphatics		100				
	C9-C10 Aromatics		100				
MDL:	C5-C8 Aliphatics		50				
	C9-C12 Aliphatics		50				
	C9-C10 Aromatics		35				
Surrogate Acceptance Range:		Blank	70-130 %	70-130 %	70-130 %	70-130 %	70-130 %
Aliphatic Surrogate % Rec. - FID:		103	105				
Aromatic Surrogate % Rec. - PID:		86	104				

* Option 1 = Established fill line on vial
* Option 2 = Sampling device (indicate brand, e.g., EnCore TM)
* Option 3 = Field weight of soil

** Unadjusted value - should exclude the concentration of any surrogate(s), internal standards and/or concentrations of other ranges that elute within the specified range.
*** Adjusted value

MDL = Method Detection Limit RL = Reporting Limit Blank = Laboratory Method Blank or Trip Blank (whichever is higher - indicate type)

Were all performance/acceptance standards for required QA/QC procedures achieved?	**YES**	No - Details Attached
Were any significant modifications to the VPH method made?	**NO**	Yes - Details Attached

Comments: VPH trip blank was not submitted to the laboratory.

EPH (Aliphatics/Aromatics) Laboratory Reporting Form

Client Name:	N. C. Department of Transportation	Laboratory Name:	Prism Laboratories, Inc.
Project Name:	Parcel 68	NC Certification # (Lab):	402
Site Location:	Richmond Co., NC	Sample Matrix:	Water

Sample Information and Analytical Results							
Method for Ranges: MADEP EPH							
EPH Surrogate Standards: Aliphatic - 1-Chloro-octadecane / Aromatic - o-Terphenyl							
EPH Fractionation Surrogates: #1 - 2-Bromonaphthalene / #2 - Fluorobiphenyl							
Sample Identification:			160609				
Date Collected:			9/7/06				
Date Received:			9/11/06				
Date Extracted:			9/15/06				
Date Analyzed:			9/16/06				
% Dry Solids:			NA	NA	NA	NA	NA
Dilution Factor:			1				
Hydrocarbon Ranges in ug/L:			Sample Results	Sample Results	Sample Results	Sample Results	Sample Results
C9-C18 Aliphatics *			<100				
C19-C36 Aliphatics *			<100				
C11-C22 Aromatics **			<100				
Blank:	C9-C18 Aliphatics		<100	<100	<100	<100	<100
	C19-C36 Aliphatics		<100	<100	<100	<100	<100
	C11-C22 Aromatics		<100	<100	<100	<100	<100
RL:	C9-C18 Aliphatics		100				
	C19-C36 Aliphatics		100				
	C11-C22 Aromatics		100				
MDL:	C9-C18 Aliphatics		75				
	C19-C36 Aliphatics		31				
	C11-C22 Aromatics		71				
Surrogate Acceptance Range:		Blank	40-140 %	40-140 %	40-140 %	40-140 %	40-140 %
Aliphatic Surrogate % Rec.:		59	106				
Aromatic Surrogate % Rec.:		80	85				
Fractionation Surrogate Accep. Range:		Blank	40-140 %	40-140 %	40-140 %	40-140 %	40-140 %
Frac. Surrogate #1 % Rec.:		55	82				
Frac. Surrogate #2 % Rec.:		78	88				

* Unadjusted value - should exclude the concentration of any surrogate(s), internal standards and/or concentrations of other ranges that elute within the specified range.

** Adjusted value

MDL = Method Detection Limit RL = Reporting Limit Blank = Laboratory Method Blank

Were all performance/acceptance standards for required QA/QC procedures achieved?	**YES**	No - Details Attached
Was blank correction applied as a significant modification of the method?	Yes	**NO**
Were any significant modifications to the EPH method made?	**NO**	Yes - Details Attached

Comments: