

**REPORT OF  
PRELIMINARY SITE ASSESSMENT**

**STOP & SHOP, INC PROPERTY, PARCEL #114  
STATE PROJECT U-2412B, TIP NO. 34802.1.1  
4628 HIGH POINT ROAD  
GREENSBORO, NORTH CAROLINA**

Prepared for:

**North Carolina Department of Transportation  
Geotechnical Engineering Unit  
1589 Mail Service Center  
Raleigh, North Carolina 27699-1589**

Prepared by:

**MACTEC Engineering and Consulting, Inc.  
3301 Atlantic Avenue  
Raleigh, North Carolina 27604**

**May 24, 2010**

**MACTEC Project No. 6470-10-0072**





engineering and constructing a better tomorrow

May 24, 2010

Mr. Terry W. Fox, L.G.  
Geoenvironmental Project Manager  
NCDOT Geotechnical Engineering Unit  
1589 Mail Service Center  
Raleigh, North Carolina 27699

Subject: **Report of Preliminary Site Assessment  
Stop & Shop, Inc Property, Parcel #114  
State Project U-2412B, TIP No. 34802.1.1  
4628 High Point Road  
Greensboro, North Carolina  
MACTEC Project No. 6470-10-0072**

Dear Mr. Fox:

As authorized by Cathy Houser's acceptance of MACTEC Proposal No. PROP 10-RAL-141 dated March 22, 2010, MACTEC Engineering and Consulting, Inc. (MACTEC) is pleased to submit the attached Report of Preliminary Site Assessment for the above-referenced site.

This report is intended for the use of NCDOT subject to contractual terms between NCDOT and MACTEC. Reliance on this document by any other party is not allowed without the expressed, written consent of MACTEC. Use of this report for purposes beyond those reasonably intended by NCDOT and MACTEC will be at the sole risk of the user.

This report presents project information and assessment activities conducted, along with our findings, conclusions and recommendations. We appreciate your selection of MACTEC for this project and look forward to assisting you further on this and other projects. If you have any questions, please do not hesitate to contact us.

Sincerely,

**MACTEC Engineering and Consulting, Inc.**

William S. Grimes, L.G.  
Senior Geologist

Robert M. Miller, P.E.  
Senior Project Manager/Principal Engineer

**MACTEC Engineering and Consulting, Inc.**  
3301 Atlantic Avenue • Raleigh, NC 27604 • Phone: 919.876.0416 • Fax: 919.831.8136  
License Number: NC Engineering F-0653      NC Geology C-247

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Appendix C – Soil Boring Records

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## **1.0 INTRODUCTION**

MACTEC Engineering and Consulting, Inc. (MACTEC) was contracted by North Carolina Department of Transportation (NCDOT) to perform a Preliminary Site Assessment of the Stop & Shop, Inc Property (Stop & Shop) located at 4628 High Point Road in Greensboro, Guilford County, North Carolina (Figure 1). This site was one in a series of four sites that were investigated by MACTEC in conjunction with State Project U-2412B. MACTEC understands that NCDOT is planning road improvements to the area. Expanded right-of-way is being acquired by the NCDOT for this project. NCDOT requested that MACTEC assess the subject site to evaluate the extent (if any) of soil contamination related to the operation of the current building located on site and the impact (if any) of this operation on the proposed road improvements. This report presents a description of MACTEC's assessment activities, findings, conclusions and recommendations.

### **1.1 Site Location**

The Stop & Shop property is located at 4628 High Point Road in Greensboro, Guilford County, North Carolina. The Stop & Shop property is developed with an active B.P. gasoline station and convenience store and car wash. The site is composed of two individual parcels, both owned by Stop & Shop Inc according to the Guilford County Geographic Information Services (GIS). Guilford County GIS identifies the site as parcel numbers 0030131 and 0030126 with the PINs of 7843311370 and 7843311460, respectively. The site is bound to the north by a Taco Bell restaurant; to the east by High Point Road, across which is the Sedgfield Crossing Shopping Center; to the south by Hilltop Road, across which is the Quick Snak Citgo gasoline station and convenience store; and to the west by Dutch Barns (Figure 2).

### **1.2 Background Information**

The gas station building is constructed with a slab-on-grade concrete foundation and concrete block exterior. The asphalt parking lot provides access to Hilltop Road and High Point Road. There are five active USTs on the site. Groundwater contamination is present on this property and is associated with a former gas station, Kyle's Amoco, that operated here in the past. NCDENR assigned incident number 6829 to the groundwater contamination associated with Kyle's Amoco release.

## **2.0 ASSESSMENT ACTIVITIES**

Prior to field activities, MACTEC prepared a site health and safety plan in accordance with OSHA 1910.120 requirements. MACTEC contacted ULOCO and contracted Priority Underground Locating to mark the locations of underground utilities at the site. NCDOT contracted with Schnabel Engineering (Schnabel) to perform a geophysical survey to identify suspected USTs on the property and to identify buried utilities at the site. Schnabel provided paint mark outs of buried utilities to MACTEC prior to our assessment activities. Schnabel could not identify the locations of three known USTs located southwest of southernmost corner of the fuel canopy at the site. Schnabel indicated that these three USTs are located within the planned right-of-way and/or easement. Schnabel did not identify anomalies that may be the remaining two known USTs or any unknown USTs during their investigation. Schnabel's Geophysical Survey Report is included in Appendix A.

## **2.1 Soil Assessment**

On April 19, 2010, Regional Probing Services (RPS), under contract to MACTEC, advanced six soil borings (Nos. SB1-1 through SB1-6) at the subject site using a Geoprobe™ direct-push drill rig. Soil boring locations were selected based on the proposed NCDOT right-of-way, results of the geophysical investigation and field observations. Figure 2 shows a site layout and the locations of the soil borings.

MACTEC collected a soil sample from each boring location using the procedures outlined in Appendix B. Copies of soil boring records are included in Appendix C.

MACTEC instructed RPS to advance each soil boring to 12 feet below ground surface (bgs). MACTEC screened soil samples from each boring at one-foot intervals for volatile organic vapors using a photoionization detector (PID) and selected one soil sample from each boring for laboratory testing. MACTEC selected the soil sample that exhibited the highest PID measurement or the deepest, unsaturated soil sample if the PID did not detect organic vapors. Soil borings SB1-1 through SB1-6 were backfilled with the excess soil cuttings and bentonite chips.

## **2.2 Soil Analysis**

MACTEC submitted the soil samples to Prism Laboratories (Prism) of Charlotte, North Carolina for analysis for total petroleum hydrocarbons (TPH) diesel range organics (DRO) according to EPA Preparation/Test Methods 3550/8015 and TPH gasoline range organics (GRO) according to EPA Preparation/Testing Methods 5035/8015.

## **3.0 LABORATORY RESULTS**

The laboratory test results are summarized on Table 1. The laboratory test reports and chain-of-custody records are included in Appendix D. TPH was not detected in soil samples SB1-1 through SB1-6 at concentrations that exceed the laboratory reporting limits.

## **4.0 CONCLUSIONS AND RECOMMENDATIONS**

Based on the Preliminary Site Assessment, MACTEC offers the following conclusions and recommendations:

- MACTEC did not find evidence of a petroleum release in the vicinity of soil boring SB1-1 through SB1-6.
- MACTEC does not have evidence to support the need for further environmental assessment by NCDOT at this time.

## **5.0 QUALIFICATIONS**

This assessment was conducted under a limited scope for those purposes described above. The conclusions and recommendations presented in this report are based upon the data that were reviewed and documented in this report along with our experience on similar projects. The discovery of any additional information concerning environmental conditions at the site should be reported to MACTEC for additional review so that potential environmental impacts can be reassessed and the conclusions and recommendations modified, if appropriate.

## **FIGURES**

## **TABLE**



<b>Table 1</b> <b>Summary of Laboratory Test Results</b> <b>State Project U-2412B, TIP No. 34802.1.1</b> <b>Stop &amp; Shop, Inc Property, Parcel #114</b> <b>Greensboro, North Carolina</b> <b>MACTEC Job No. 6470-10-0072</b>				
Analytical Method →			EPA 8015	EPA 8015
Contaminant of Concern →			TPH-DRO	TPH-GRO
Sample ID	Date Collected	Sample Depth	mg/Kg	
SB1-1	4/19/2010	11'-12'	<11	<3.6
SB1-2	4/19/2010	11'-12'	<8.9	<4.2
SB1-3	4/19/2010	11'-12'	<8.9	<3.0
SB1-4	4/19/2010	11'-12'	<9.0	<3.5
SB1-5	4/19/2010	11'-12'	<9.1	<3.5
SB1-6	4/19/2010	11'-12'	<9.4	<3.1
<i>NCDENR Action Level</i>			<i>10</i>	<i>10</i>

Notes:

NCDENR  
<#

North Carolina Department of Environment and Natural Resources  
Analyte not detected above the Reporting Limit shown

Prepared by: WSE Date: 5-20-10

Checked by: CBS Date: 5/21/10

**APPENDIX A**

**SCHNABEL ENGINEERING  
GEOPHYSICAL SURVEY REPORT**



**Schnabel**  
ENGINEERING

May 21, 2010

Mr. Robert Miller, PE, Senior Principal Engineer  
Mactec Engineering and Consulting, Inc  
3301 Atlantic Avenue  
Raleigh, NC 27604

RE:           State Project:   U-2412B  
              WBS Element:  34802.1.1  
              County:        Guilford  
              Description:   Greensboro – SR 4121 (Greensboro/High Point Road) from SR 1480  
                                  (Vickery Chapel Road) to SR 1424 (Hilltop Road)

**Subject:        Report on Geophysical Surveys for Parcel 114, Greensboro, NC  
                  Schnabel Engineering Project 09210013.20**

Dear Mr. Miller:

Schnabel Engineering South, P.C. (Schnabel) is pleased to present this report on the geophysical surveys we conducted on the subject property. We understand this letter report will be included as an appendix in your report to the NCDOT. The report includes two 11x17 color figures and three 8.5x11 color figures.

## 1.0 INTRODUCTION

The work described in this report was conducted on April 14 and 18, 2010, by Schnabel under our 2009 contract with the NCDOT. The work was conducted within the accessible areas of the proposed right-of-way and/or easement as indicated by the NCDOT to support their environmental assessment of Parcel 114 (Stop & Shop Inc. Property). Photographs of the parcel are included on Figure 1. The purpose of the geophysical surveys was to locate possible metal underground storage tanks (UST's) and associated metal product lines in the accessible areas of the right-of-way and/or easement.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. The EM61 metal detector is used to locate metal objects buried up to about eight feet below ground surface. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies,

*W 4-  
p. 1-7*

[schnabel-eng.com](http://schnabel-eng.com)

including areas of reinforced concrete, were conducted using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. Photographs of the equipment used are shown on Figure 2.

## **2.0 FIELD METHODOLOGY**

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

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

Preliminary results for Parcel 114 were sent to Robert Miller and Kristen Lloyd of Mactec and Terry Fox of the NCDOT on April 16, 2010.

## **3.0 DISCUSSION OF RESULTS**

The contoured EM61 data for Parcel 114 are shown on Figures 3 and 4. The EM61 early time gate results are plotted on Figure 3. The early time gate data provide the more sensitive detection of metal objects. Figure 4 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as UST's.

The early time gate and differential results show anomalies apparently caused by buried utilities, reinforced concrete, or known site features (Figures 3 and 4). The GPR data collected immediately southwest of the southernmost canopy corner on Parcel 114 did not indicate the presence of the three known UST's, possibly due to limited penetration of the GPR signal. There are three known UST's in the tank pit. The UST's are inside the limits of the planned easement.

## **4.0 CONCLUSIONS**

Our evaluation of the geophysical data collected on Parcel 114 on Project U-2412B in Greensboro, NC indicates the following:

The EM61 data indicated a high-amplitude anomaly coincident to the location of the tank pit on Parcel 114. The GPR data did not image the three known UST's located in the tank pit. Locations of the known UST's were not marked onsite.

## 5.0 LIMITATIONS

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

Thank you for the opportunity to serve you on this project. Please call if you need additional information or have any questions.

Sincerely,

**SCHNABEL ENGINEERING SOUTH, PC**



James W. Whitt  
Staff Geophysicist



Edward D. Billington, LG  
Senior Vice President

JW:NB

Attachment: Figures (5)

FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.20 (U-2412B, GUILFORD CO.)\REPORT\PARCEL 114\PARCEL 114 (U-2412B).DOC



Parcel 114 – Stop & Shop Inc. Property, looking northwest



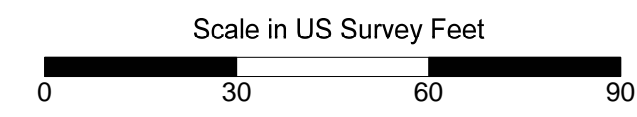
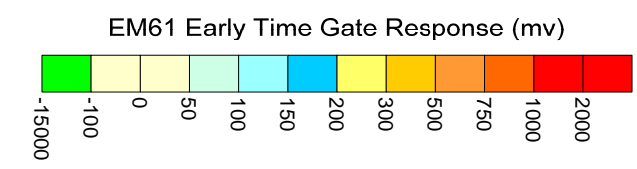
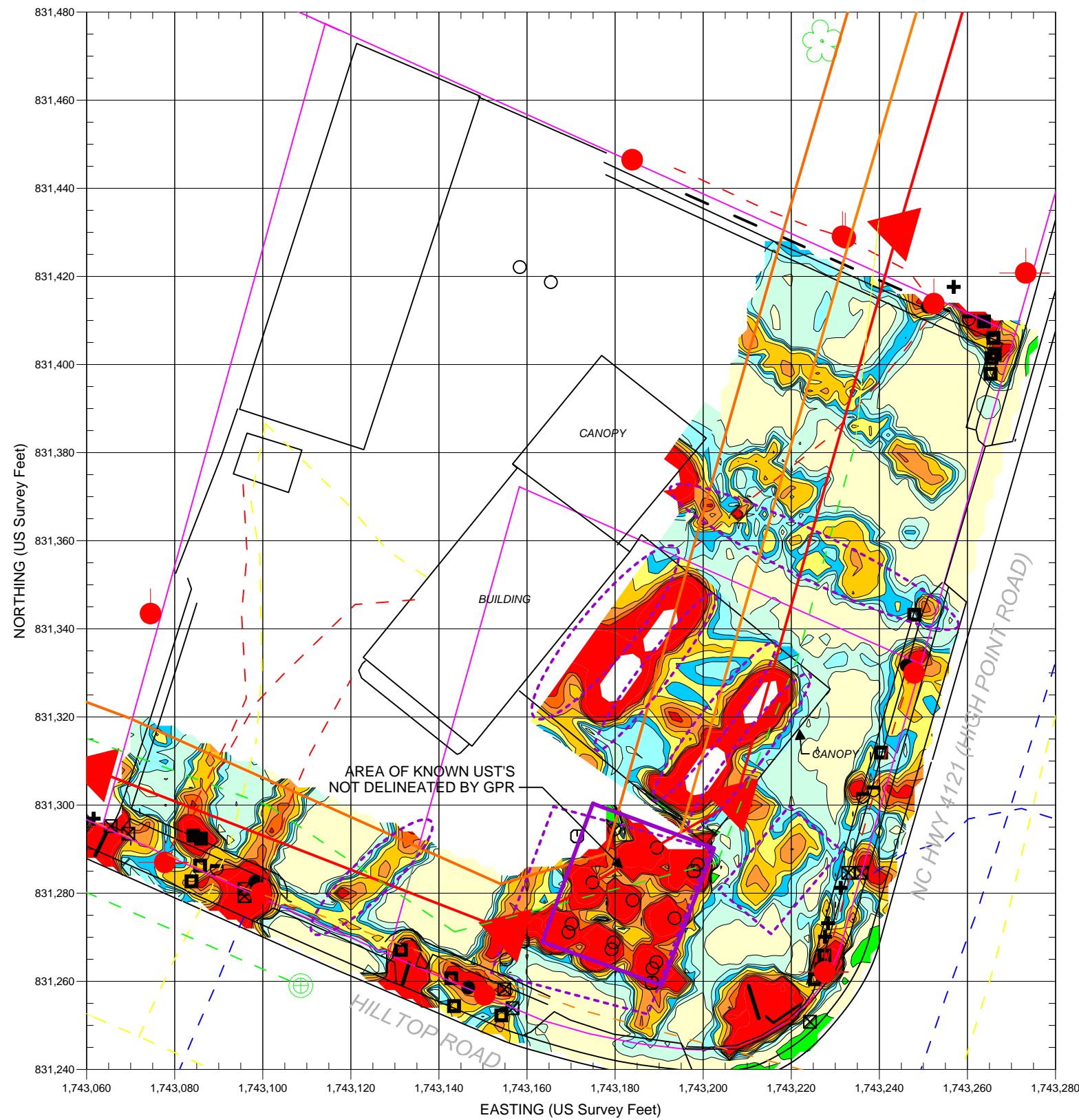
Parcel 114 – Stop & Shop Inc. Property, looking west



Geonics EM61-MK2



GSSI SIR-3000



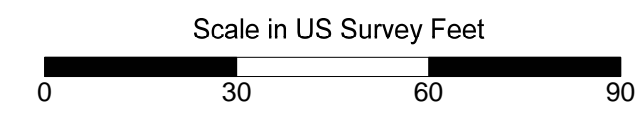
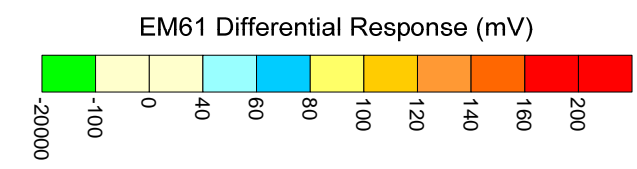
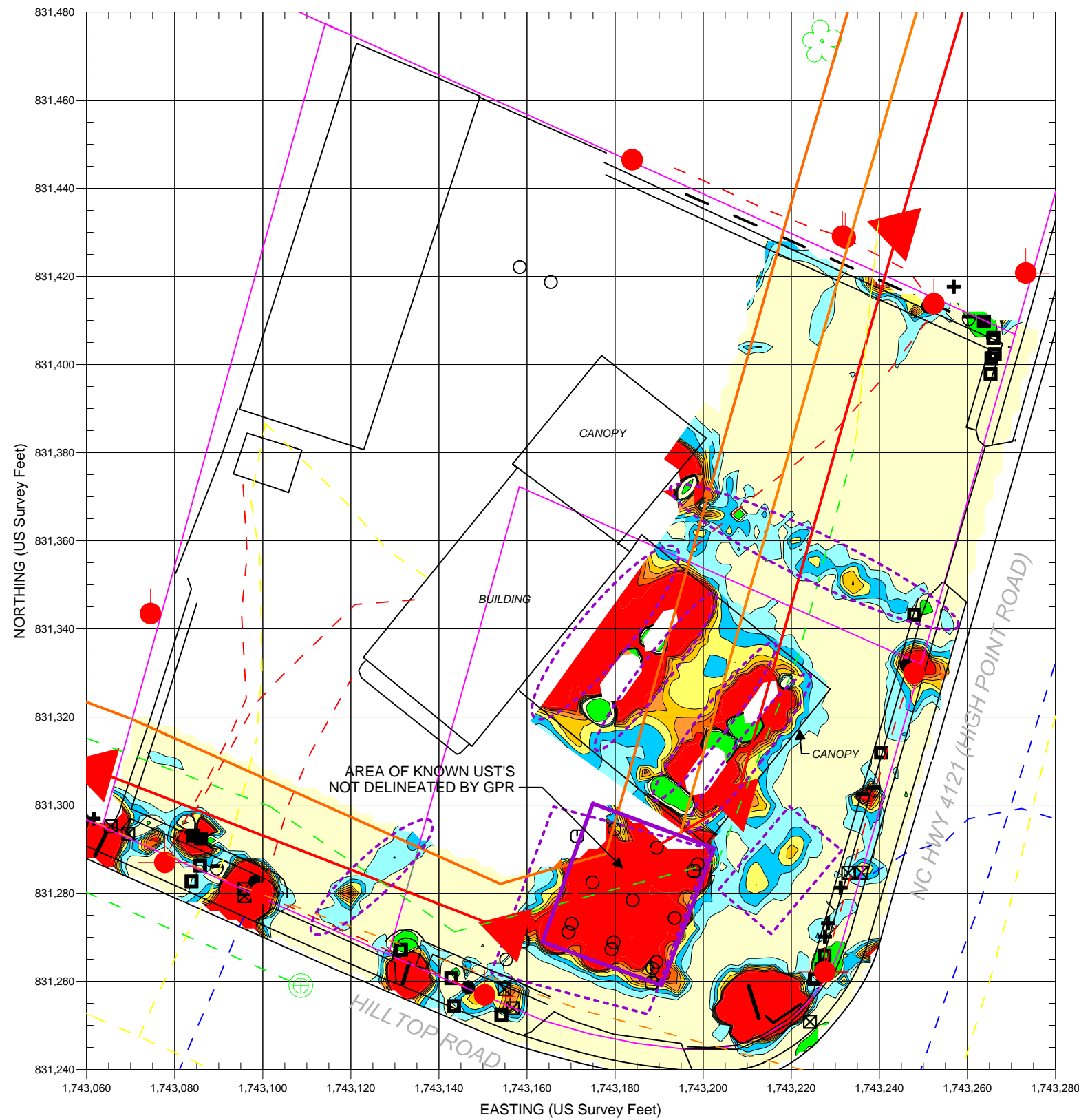
EXPLANATION	
	SIGN
	UTILITY POLE
	GUY WIRE
	MISCELLANEOUS METALLIC OBJECT
	UTILITY LID
	LIGHT POLE
	STORM SEWER INLET
	UST LID
	DOT PROPOSED RW
	DOT PROPOSED UTILITY EASEMENT
	PROPERTY LINE
	UTILITY (AS MARKED BY OTHERS OR AS PROVIDED BY NCDOT [VARIOUS COLORS])
	GPR SURVEY AREA

REF.: NCDOT FILE: u-2412b\_rdy\_psh\_22.dgn  
(FOR SOME SITE FEATURES)

Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on April 14, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on April 18, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

	STATE PROJECT U-2412B	PARCEL 114
	GUILFORD COUNTY, NORTH CAROLINA	EM61 EARLY TIME GATE
	NC DEPARTMENT OF TRANSPORTATION	RESPONSE
PROJECT NO. 09210013.20	FIGURE 3	





EXPLANATION	
	SIGN
	UTILITY POLE
	GUY WIRE
	MISCELLANEOUS METALLIC OBJECT
	UTILITY LID
	LIGHT POLE
	STORM SEWER INLET
	UST LID
	DOT PROPOSED RW
	DOT PROPOSED UTILITY EASEMENT
	PROPERTY LINE
	UTILITY (AS MARKED BY OTHERS OR AS PROVIDED BY NCDOT [VARIOUS COLORS])
	GPR SURVEY AREA

REF.: NCDOT FILE: u-2412b\_rdy\_psh\_22.dgn  
(FOR SOME SITE FEATURES)

Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on April 14, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on April 18, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

	STATE PROJECT U-2412B	PARCEL 114
	GUILFORD COUNTY, NORTH CAROLINA	EM61 DIFFERENTIAL RESPONSE
	NC DEPARTMENT OF TRANSPORTATION	
	PROJECT NO. 09210013.20	FIGURE 4

## **APPENDIX B**

### **PROCEDURES FOR COLLECTING SOIL SAMPLES**

## **Procedure for Collecting Soil Samples for Laboratory Testing Using the Geoprobe**

- MACTEC will collect the soil samples using the Geoprobe hammer impact system. Downforce or percussion will be utilized to advance the sampler to the desired depth to obtain the soil sample.
- Soil cores will be retrieved from the sampler and classified by an on-site geologist or engineer. The one-inch diameter cores are approximately four feet in length and are contained within a pre-cleaned, disposable plastic sleeve.
- Soil samples from the boring soil cores will be placed in pre-labeled, airtight, plastic "twin" bags.
- After several minutes, the gas contained in the "headspace" or void area within one of the twin bags will be tested with a photoionization detector (PID) or flame ionization detector (FID).
- The duplicate of the sample that exhibits the highest headspace reading will be submitted to the laboratory for testing. The remaining portion of the soil core will be utilized for classification purposes.
- The soils will be classified in accordance with the Unified Soils Classification System.
- The soil sample will be placed into laboratory-supplied bottles.
- Sample bottles will be labeled prior to sample collection.
- Caps will be secured on bottles.
- All sample containers will be placed in plastic bags and the bags sealed.
- Documentation, including chain-of-custody record and laboratory analytical request form, will be completed for all samples.
- Samples will be packed in coolers with "bubble wrap" and ice packs for shipment to the laboratory.
- The chain-of-custody record and analytical request form will be placed inside the cooler, which will be sealed with security tape.
- Samples will be sent to the analytical laboratory by overnight courier.

**APPENDIX C**  
**SOIL BORING RECORDS**



MACTEC Engineering and Consulting, Inc.  
3301 Atlantic Avenue  
Raleigh, North Carolina

Soil Boring Sample Record

MACTEC Project ID: NCDOT Greensboro Sites  
Stop & Shop, Inc Property, Parcel #114

MACTEC Field Representative

MACTEC Project #: 6470-10-0072

Lloyd

Date: 4/19/2010

Boring ID: SB1-1

N 36.03102°, W 079.86835°

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Concrete, Red (2.5YR 4/8) CLAYEY SILT, firm, slightly plastic. Moist.		0	No unusual odors or stains
1-2	Red (2.5YR 4/8) CLAYEY SILT, firm, slightly plastic. Moist.		0	
2-3	Red (2.5YR 4/8) CLAYEY SILT, firm, slightly plastic. Moist.		0	
3-4	Yellowish red (5YR 5/8) SILT, firm, slightly plastic, trace mica. Moist.		0	
4-5	Yellowish red (5YR 5/8) SILT, firm, slightly plastic, trace mica. Moist.		0	
5-6	Yellowish red (5YR 5/8) SILT, firm, slightly plastic, trace mica. Moist.		0	
6-7	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
7-8	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
8-9	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
9-10	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
10-11	Dark red (2.5YR 3/6) SILT, soft, plastic. Moist to damp.		0	
11-12	Dark red (2.5YR 3/6) SILT, soft, plastic. Moist to damp.	1020	0	Sample

Prepared by: [Signature] Date: 5-20-10  
Checked by: CBS Date: 5/21/10



MACTEC Engineering and Consulting, Inc.  
3301 Atlantic Avenue  
Raleigh, North Carolina

Soil Boring Sample Record

MACTEC Project ID: NCDOT Greensboro Sites  
Stop & Shop, Inc Property, Parcel #114

MACTEC Field Representative

MACTEC Project #: 6470-10-0072

Lloyd

Date: 4/19/2010

Boring ID: SB1-2

N 36.03093°, W 079.86847°

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Concrete, Red (2.5YR 4/8) CLAYEY SILT, firm, slightly plastic. Moist.		0	No unusual odors or stains
1-2	Red (2.5YR 4/8) CLAYEY SILT, firm, slightly plastic. Moist.		0	
2-3	Red (2.5YR 4/8) CLAYEY SILT, firm, slightly plastic. Moist.		0	
3-4	Yellowish red (5YR 5/8) SILT, firm, slightly plastic, trace mica. Moist.		0	
4-5	Yellowish red (5YR 5/8) SILT, firm, slightly plastic, trace mica. Moist.		0	
5-6	Yellowish red (5YR 5/8) SILT, firm, slightly plastic, trace mica. Moist.		0	
6-7	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
7-8	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
8-9	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
9-10	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
10-11	Red (2.5YR 5/8) SILT, soft, slightly plastic. Moist.		0	
11-12	Red (2.5YR 5/8) SILT, soft, slightly plastic. Moist.	1040	0	Sample

Prepared by: LS Date: 5-12-10  
Checked by: CBS Date: 5/21/10



MACTEC Engineering and Consulting, Inc.  
3301 Atlantic Avenue  
Raleigh, North Carolina

Soil Boring Sample Record

MACTEC Project ID: NCDOT Greensboro Sites  
Stop & Shop, Inc Property, Parcel #114

MACTEC Field Representative

MACTEC Project #: 6470-10-0072

Lloyd

Date: 4/19/2010

Boring ID: SB1-3

N 36.03088°, W 079.86855°

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Concrete, Reddish yellow (5YR 6/8) SANDY SILT, soft, slightly plastic, little gravel, some mica. Moist.		0	No unusual odors or stains
1-2	Reddish yellow (5YR 6/8) SANDY SILT, soft, slightly plastic, little gravel, some mica. Moist.		0	
2-3	Reddish yellow (5YR 6/8) SANDY SILT, soft, slightly plastic, little gravel, some mica. Moist.		0	
3-4	Yellowish red (5YR 5/6) SILT, soft, slightly plastic, some mica. Moist.		0	
4-5	Yellowish red (5YR 5/6) SILT, soft, slightly plastic, some mica. Moist.		0	
5-6	Yellowish red (5YR 5/6) SILT, soft, slightly plastic, some mica. Moist.		0	
6-7	Yellowish red (5YR 5/6) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
7-8	Yellowish red (5YR 5/6) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
8-9	Yellowish red (5YR 5/6) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
9-10	Yellowish red (5YR 5/6) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
10-11	Reddish yellow (5YR 6/6) SILT with sand, soft, slightly plastic, some mica, some fine sand. Moist.		0	
11-12	Reddish yellow (5YR 6/6) SILT with sand, soft, slightly plastic, some mica, some fine sand. Moist.	1105	0	Sample

Prepared by: WLR Date: 5-19-10  
Checked by: CBS Date: 5/21/10



MACTEC Engineering and Consulting, Inc.  
3301 Atlantic Avenue  
Raleigh, North Carolina

Soil Boring Sample Record

MACTEC Project ID: NCDOT Greensboro Sites  
Stop & Shop, Inc Property, Parcel #114

MACTEC Field Representative

MACTEC Project #: 6470-10-0072

Lloyd

Date: 4/19/2010

Boring ID: SB1-4

N 36.03087°, W 079.86861°

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Concrete, Red (2.5YR 5/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	No unusual odors or stains
1-2	Red (2.5YR 5/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
2-3	Red (2.5YR 5/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
3-4	Red (2.5YR 5/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
4-5	Red (2.5YR 5/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
5-6	Red (2.5YR 5/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
6-7	Yellowish red (5YR 5/6) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
7-8	Yellowish red (5YR 5/6) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
8-9	Red (2.5YR 4/6) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
9-10	Red (2.5YR 4/6) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
10-11	Red (2.5YR 4/6) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
11-12	Red (2.5YR 4/6) SANDY SILT, soft, slightly plastic, some mica, some fine sand. Moist.	1150	0	Sample

Prepared by: WJB Date: 5/20/10  
Checked by: CBS Date: 5/21/10





MACTEC Engineering and Consulting, Inc.  
3301 Atlantic Avenue  
Raleigh, North Carolina

Soil Boring Sample Record

MACTEC Project ID: NCDOT Greensboro Sites  
Stop & Shop, Inc Property, Parcel #114

MACTEC Field Representative

MACTEC Project #: 6470-10-0072

Lloyd

Date: 4/19/2010

Boring ID: SB1-5

N 36.03093°, W 079.86874°

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Concrete, Red (2.5YR 4/6) SILT, soft, slightly plastic, some mica, trace fine sand. Moist.		0	No unusual odors or stains
1-2	Red (2.5YR 4/6) SILT, soft, slightly plastic, some mica, trace fine sand. Moist.		0	
2-3	Red (2.5YR 4/6) SILT, soft, slightly plastic, some mica, trace fine sand. Moist.		0	
3-4	Red (2.5YR 4/6) SILT, soft, slightly plastic, some mica, trace fine sand. Moist.		0	
4-5	Red (2.5YR 4/6) SILT, soft, slightly plastic, some mica, trace fine sand. Moist.		0	
5-6	Red (2.5YR 4/6) SILT, soft, slightly plastic, some mica, trace fine sand. Moist.		0	
6-7	Red (2.5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
7-8	Red (2.5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
8-9	Red (2.5YR 5/8) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
9-10	Red (2.5YR 5/8) SILT, soft, slightly plastic, some mica, trace fine sand. Moist.		0	
10-11	Red (2.5YR 5/8) SILT, soft, slightly plastic, some mica, trace fine sand. Moist.		0	
11-12	Red (2.5YR 5/8) SILT, soft, slightly plastic, some mica, trace fine sand. Moist.	1205	0	Sample

Prepared by: iwk Date: 5-20-10  
Checked by: CBS Date: 5/21/10



MACTEC Engineering and Consulting, Inc.  
3301 Atlantic Avenue  
Raleigh, North Carolina

Soil Boring Sample Record

MACTEC Project ID: NCDOT Greensboro Sites  
Stop & Shop, Inc Property, Parcel #114

MACTEC Field Representative

MACTEC Project #: 6470-10-0072

Lloyd

Date: 4/19/2010

Boring ID: SB1-6

N 36.03095°, W 079.86887°

Depth Interval	Soil Description	Time	Headspace Screening Results (in ppm)	Comments
			PID	
0-1	Concrete and gravel, Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, some quartz pebbles, trace mica. Moist.		0	No unusual odors or stains
1-2	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, some quartz pebbles, trace mica. Moist.		0	
2-3	Reddish yellow (7.5YR 6/8) SANDY SILT, soft, slightly plastic, some quartz pebbles, trace mica. Moist.		0	
3-4	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, trace mica. Moist.		0	
4-5	Yellowish red (5YR 5/8) SANDY SILT, soft, slightly plastic, trace mica. Moist.		0	
5-6	Yellowish red (5YR 8/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
6-7	Yellowish red (5YR 8/8) SILT, soft, slightly plastic, some mica, some fine sand. Moist.		0	
7-8	Red (2.5YR 4/6) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
8-9	Red (2.5YR 4/6) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
9-10	Red (2.5YR 4/6) SANDY SILT, soft, slightly plastic, some mica. Moist.		0	
10-11	Red (2.5YR 4/6) SILT, soft, slightly plastic, some mica, trace black. Moist.		0	
11-12	Red (2.5YR 4/6) SILT, soft, slightly plastic, some mica, trace black. Moist.	1235	0	Sample

Prepared by: WSE Date: 5/21/10  
Checked by: CBS Date: 5/21/10

**APPENDIX D**

**LABORATORY ANALYTICAL REPORTS  
AND CHAIN-OF-CUSTODY RECORDS**



Full-Service Analytical & Environmental Solutions

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

# Case Narrative

05/05/2010

Mactec - Raleigh (NCDOT Project)  
Matt Gillis  
c/o MACTEC Eng. & Consulting, Inc, 3301 Atlantic Av  
Raleigh, NC 27604

Project: NCDOT Greensboro  
Project No.: WBS 34802.1.1  
Lab Submittal Date: 04/22/2010  
Prism Work Order: 0040318

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

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

Respectfully,

**PRISM LABORATORIES, INC.**

Project Manager

Reviewed By

### Data Qualifiers Key Reference:

- MI Matrix spike outside of the control limits. Matrix interference suspected.
- M Matrix spike outside of the control limits.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- D RPD value outside of the control limits.
- Af Surrogate recovery is above the control limits.
- Ae Surrogate recovery is above range due to sample matrix interference.
- Ad Surrogate recovery above the control limits.
- Ac Surrogate recovery above range.
- Ab Surrogate recovered outside established QC range
- Aa Surrogate outside control limits.
- A Sample analyzed out of hold time.
- BRL Below Reporting Limit
- MDL Method Detection Limit
- RPD Relative Percent Difference
- \* Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

*WBS  
A-1-16*

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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



Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
SB1-1	0040318-01	Solid	04/19/10	04/22/10
SB1-2	0040318-02	Solid	04/19/10	04/22/10
SB1-3	0040318-03	Solid	04/19/10	04/22/10
SB1-4	0040318-04	Solid	04/19/10	04/22/10
SB1-5	0040318-05	Solid	04/19/10	04/22/10
SB1-6	0040318-06	Solid	04/19/10	04/22/10
SB2-1	0040318-07	Solid	04/19/10	04/22/10
SB2-2	0040318-08	Solid	04/19/10	04/22/10
SB2-3	0040318-09	Solid	04/19/10	04/22/10
SB2-4	0040318-10	Solid	04/19/10	04/22/10
SB2-5	0040318-11	Solid	04/19/10	04/22/10
SB2-6	0040318-12	Solid	04/19/10	04/22/10
SB3-1	0040318-13	Solid	04/20/10	04/22/10
SB3-2	0040318-14	Solid	04/20/10	04/22/10
SB3-3	0040318-15	Solid	04/20/10	04/22/10
SB3-4	0040318-16	Solid	04/20/10	04/22/10
SB3-5	0040318-17	Solid	04/20/10	04/22/10
SB3-6	0040318-18	Solid	04/20/10	04/22/10
SB4-1	0040318-19	Solid	04/20/10	04/22/10
SB4-2	0040318-20	Solid	04/20/10	04/22/10
SB4-3	0040318-21	Solid	04/20/10	04/22/10
SB4-4	0040318-22	Solid	04/20/10	04/22/10
SB4-5	0040318-23	Solid	04/20/10	04/22/10
SB4-6	0040318-24	Solid	04/20/10	04/22/10

Samples received in good condition at 1.7 degrees C unless otherwise noted.



Mactec - Raleigh (NCDOT Project) Project: NCDOT Greensboro  
 Attn: Matt Gillis  
 c/o MACTEC Eng. & Consulting, Inc, 3301 Project No.: WBS 34802.1.1  
 Raleigh, NC 27604 Sample Matrix: Solid

Client Sample ID: SB1-1  
 Prism Sample ID: 0040318-01  
 Prism Work Order: 0040318  
 Time Collected: 04/19/10 10:20  
 Time Submitted: 04/22/10 13:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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**Extractable Petroleum Hydrocarbons by GC/FID**

Diesel Range Organics	BRL	mg/kg dry	11	1.7	1	8015C	4/29/10 21:45	JMV	P0D0313
			Surrogate	Recovery			Control Limits		
			o-Terphenyl	91 %			49-124		

**General Chemistry Parameters**

% Solids	65.2 A	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	P0D0254
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**Volatile Petroleum Hydrocarbons by GC/FID**

Gasoline Range Organics	BRL	mg/kg dry	3.6	0.47	50	8015C	4/30/10 8:54	HPE	P0D0352
			Surrogate	Recovery			Control Limits		
			a,a,a-Trifluorotoluene	138 %			55-129		



Mactec - Raleigh (NCDOT Project)  
Attn: Matt Gillis  
c/o MACTEC Eng. & Consulting, Inc, 3301  
Raleigh, NC 27604

Project: NCDOT Greensboro  
Project No.: WBS 34802.1.1  
Sample Matrix: Solid

Client Sample ID: SB1-2  
Prism Sample ID: 0040318-02  
Prism Work Order: 0040318  
Time Collected: 04/19/10 10:40  
Time Submitted: 04/22/10 13:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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**Extractable Petroleum Hydrocarbons by GC/FID**

Diesel Range Organics	BRL	mg/kg dry	8.9	1.4	1	8015C	4/29/10 22:20	JMV	P0D0313
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			121 %		49-124	

**General Chemistry Parameters**

% Solids	78.4 A	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	P0D0254
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**Volatile Petroleum Hydrocarbons by GC/FID**

Gasoline Range Organics	BRL	mg/kg dry	4.2	0.54	50	8015C	4/30/10 9:24	HPE	P0D0352
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			109 %		55-129	

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 Attn: Matt Gillis  
 c/o MACTEC Eng. & Consulting, Inc, 3301  
 Raleigh, NC 27604

Project: NCDOT Greensboro  
 Project No.: WBS 34802.1.1  
 Sample Matrix: Solid

Client Sample ID: SB1-3  
 Prism Sample ID: 0040318-03  
 Prism Work Order: 0040318  
 Time Collected: 04/19/10 11:05  
 Time Submitted: 04/22/10 13:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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**Extractable Petroleum Hydrocarbons by GC/FID**

Diesel Range Organics	BRL	mg/kg dry	8.9	1.4	1	8015C	4/29/10 23:31	JMV	POD0313
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			116 %		49-124	

**General Chemistry Parameters**

% Solids	78.4 A	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	POD0254
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**Volatile Petroleum Hydrocarbons by GC/FID**

Gasoline Range Organics	BRL	mg/kg dry	3.0	0.39	50	8015C	4/30/10 9:55	HPE	POD0352
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			130 %		55-129	

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Attn: Matt Gillis  
c/o MACTEC Eng. & Consulting, Inc, 3301  
Raleigh, NC 27604

Project: NCDOT Greensboro  
Project No.: WBS 34802.1.1  
Sample Matrix: Solid

Client Sample ID: SB1-4  
Prism Sample ID: 0040318-04  
Prism Work Order: 0040318  
Time Collected: 04/19/10 11:50  
Time Submitted: 04/22/10 13:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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**Extractable Petroleum Hydrocarbons by GC/FID**

Diesel Range Organics	BRL	mg/kg dry	9.0	1.5	1	8015C	4/30/10 0:07	JMV	P0D0313
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			107 %		49-124	

**General Chemistry Parameters**

% Solids	77.7 A	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	P0D0254
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**Volatile Petroleum Hydrocarbons by GC/FID**

Gasoline Range Organics	BRL	mg/kg dry	3.5	0.46	50	8015C	4/30/10 10:26	HPE	P0D0352
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			128 %		55-129	



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 c/o MACTEC Eng. & Consulting, Inc, 3301  
 Raleigh, NC 27604

Project: NCDOT Greensboro  
 Project No.: WBS 34802.1.1  
 Sample Matrix: Solid

Client Sample ID: SB1-5  
 Prism Sample ID: 0040318-05  
 Prism Work Order: 0040318  
 Time Collected: 04/19/10 12:05  
 Time Submitted: 04/22/10 13:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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**Extractable Petroleum Hydrocarbons by GC/FID**

Diesel Range Organics	BRL	mg/kg dry	9.1	1.5	1	8015C	4/30/10 0:42	JMV	P0D0313
			Surrogate	Recovery			Control Limits		
			o-Terphenyl	108 %			49-124		

**General Chemistry Parameters**

% Solids	76.5 A	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	P0D0254
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**Volatile Petroleum Hydrocarbons by GC/FID**

Gasoline Range Organics	BRL	mg/kg dry	3.5	0.46	50	8015C	4/30/10 10:56	HPE	P0D0352
			Surrogate	Recovery			Control Limits		
			a,a,a-Trifluorotoluene	130 %			55-129		

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 c/o MACTEC Eng. & Consulting, Inc, 3301  
 Raleigh, NC 27604

Project: NCDOT Greensboro  
 Project No.: WBS 34802.1.1  
 Sample Matrix: Solid

Client Sample ID: SB1-6  
 Prism Sample ID: 0040318-06  
 Prism Work Order: 0040318  
 Time Collected: 04/19/10 12:35  
 Time Submitted: 04/22/10 13:50

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
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**Extractable Petroleum Hydrocarbons by GC/FID**

Diesel Range Organics	BRL	mg/kg dry	9.4	1.5	1	8015C	4/30/10 1:17	JMV	POD0313
			Surrogate			Recovery		Control Limits	
			o-Terphenyl			105 %		49-124	

**General Chemistry Parameters**

% Solids	74.7 A	% by Weight	0.100	0.100	1	*SM2540 G	4/26/10 12:40	JAB	POD0254
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**Volatile Petroleum Hydrocarbons by GC/FID**

Gasoline Range Organics	BRL	mg/kg dry	3.1	0.40	50	8015C	4/30/10 11:27	HPE	POD0352
			Surrogate			Recovery		Control Limits	
			a,a,a-Trifluorotoluene			118 %		55-129	

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 c/o MACTEC Eng. & Consulting, Inc, 3301 Project No: WBS 34802.1.1  
 Raleigh, NC 27604

Prism Work Order: 0040318  
 Time Submitted: 04/22/10 1:50:00PM

**Volatile Petroleum Hydrocarbons by GC/FID - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P0D0352 - 5035</b>										
<b>Blank (P0D0352-BLK1)</b>				Prepared: 04/28/10 Analyzed: 04/30/10						
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	4.25		mg/kg wet	5.00		85	55-129			
<b>LCS (P0D0352-BS1)</b>				Prepared: 04/28/10 Analyzed: 04/30/10						
Gasoline Range Organics	43.2	5.0	mg/kg wet	50.0		86	67-116			
Surrogate: a,a,a-Trifluorotoluene	4.80		mg/kg wet	5.00		96	55-129			
<b>Matrix Spike (P0D0352-MS1)</b>				Source: 0040333-06		Prepared: 04/28/10 Analyzed: 04/30/10				
Gasoline Range Organics	59.1	6.2	mg/kg dry	62.1	BRL	95	57-113			
Surrogate: a,a,a-Trifluorotoluene	5.40		mg/kg dry	6.21		87	55-129			
<b>Matrix Spike Dup (P0D0352-MSD1)</b>				Source: 0040333-06		Prepared: 04/28/10 Analyzed: 04/30/10				
Gasoline Range Organics	60.1	6.2	mg/kg dry	62.1	BRL	97	57-113	2	23	
Surrogate: a,a,a-Trifluorotoluene	5.28		mg/kg dry	6.21		85	55-129			
<b>Batch P0D0421 - 5035</b>										
<b>Blank (P0D0421-BLK1)</b>				Prepared & Analyzed: 04/30/10						
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	4.65		mg/kg wet	5.00		93	55-129			
<b>LCS (P0D0421-BS1)</b>				Prepared & Analyzed: 04/30/10						
Gasoline Range Organics	44.1	5.0	mg/kg wet	50.0		88	67-116			
Surrogate: a,a,a-Trifluorotoluene	4.90		mg/kg wet	5.00		98	55-129			
<b>Matrix Spike (P0D0421-MS1)</b>				Source: 0040345-01		Prepared & Analyzed: 04/30/10				
Gasoline Range Organics	70.1	6.2	mg/kg dry	61.7	BRL	114	57-113			M
Surrogate: a,a,a-Trifluorotoluene	6.91		mg/kg dry	6.17		112	55-129			

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Mactec - Raleigh (NCDOT Project) Project: NCDOT Greensboro  
 Attn: Matt Gillis  
 c/o MACTEC Eng. & Consulting, Inc, 3301 Project No: WBS 34802.1.1  
 Raleigh, NC 27604

Prism Work Order: 0040318  
 Time Submitted: 04/22/10 1:50:00PM

**Volatile Petroleum Hydrocarbons by GC/FID - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P0D0421 - 5035</b>										
<b>Matrix Spike Dup (P0D0421-MSD1)</b>		<b>Source: 0040345-01</b>			<b>Prepared &amp; Analyzed: 04/30/10</b>					
Gasoline Range Organics	69.4	6.2	mg/kg dry	61.7	BRL	112	57-113	0.9	23	
Surrogate: a,a,a-Trifluorotoluene	6.98		mg/kg dry	6.17		113	55-129			
<b>Batch P0E0019 - 5035</b>										
<b>Blank (P0E0019-BLK1)</b>		<b>Prepared &amp; Analyzed: 05/03/10</b>								
Gasoline Range Organics	BRL	5.0	mg/kg wet							
Surrogate: a,a,a-Trifluorotoluene	4.95		mg/kg wet	5.00		99	55-129			
<b>LCS (P0E0019-BS1)</b>		<b>Prepared &amp; Analyzed: 05/03/10</b>								
Gasoline Range Organics	39.6	5.0	mg/kg wet	50.0		79	67-116			
Surrogate: a,a,a-Trifluorotoluene	4.80		mg/kg wet	5.00		96	55-129			
<b>Matrix Spike (P0E0019-MS1)</b>		<b>Source: 0040318-16</b>			<b>Prepared &amp; Analyzed: 05/03/10</b>					
Gasoline Range Organics	21.0	4.0	mg/kg dry	39.8	BRL	53	57-113			MI
Surrogate: a,a,a-Trifluorotoluene	3.03		mg/kg dry	3.98		76	55-129			
<b>Matrix Spike Dup (P0E0019-MSD1)</b>		<b>Source: 0040318-16</b>			<b>Prepared &amp; Analyzed: 05/03/10</b>					
Gasoline Range Organics	22.2	4.0	mg/kg dry	39.8	BRL	56	57-113	6	23	MI
Surrogate: a,a,a-Trifluorotoluene	3.11		mg/kg dry	3.98		78	55-129			

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Mactec - Raleigh (NCDOT Project) Project: NCDOT Greensboro  
 Attn: Matt Gillis  
 c/o MACTEC Eng. & Consulting, Inc, 3301 Project No: WBS 34802.1.1  
 Raleigh, NC 27604

Prism Work Order: 0040318  
 Time Submitted: 04/22/10 1:50:00PM

Extractable Petroleum Hydrocarbons by GC/FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P0D0313 - 3545A</b>										
<b>Blank (P0D0313-BLK1)</b> Prepared: 04/27/10 Analyzed: 04/29/10										
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: o-Terphenyl	1.46		mg/kg wet	1.60		91	49-124			
<b>LCS (P0D0313-BS1)</b> Prepared: 04/27/10 Analyzed: 04/29/10										
Diesel Range Organics	58.8	7.0	mg/kg wet	80.0		74	55-109			
Surrogate: o-Terphenyl	1.91		mg/kg wet	1.60		119	49-124			
<b>Matrix Spike (P0D0313-MS1)</b> Source: 0040318-02 Prepared: 04/27/10 Analyzed: 04/29/10										
Diesel Range Organics	70.5	8.9	mg/kg dry	102	BRL	69	50-117			
Surrogate: o-Terphenyl	2.45		mg/kg dry	2.04		120	49-124			
<b>Matrix Spike Dup (P0D0313-MSD1)</b> Source: 0040318-02 Prepared: 04/27/10 Analyzed: 04/29/10										
Diesel Range Organics	77.5	8.9	mg/kg dry	102	BRL	76	50-117	9	24	
Surrogate: o-Terphenyl	2.61		mg/kg dry	2.04		128	49-124			Ac
<b>Batch P0D0385 - 3545A</b>										
<b>Blank (P0D0385-BLK1)</b> Prepared: 04/28/10 Analyzed: 04/30/10										
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: o-Terphenyl	1.75		mg/kg wet	1.60		109	49-124			
<b>LCS (P0D0385-BS1)</b> Prepared: 04/28/10 Analyzed: 04/30/10										
Diesel Range Organics	70.9	7.0	mg/kg wet	80.0		89	55-109			
Surrogate: o-Terphenyl	1.82		mg/kg wet	1.60		114	49-124			
<b>Matrix Spike (P0D0385-MS1)</b> Source: 0040345-01 Prepared: 04/28/10 Analyzed: 04/30/10										
Diesel Range Organics	155	8.6	mg/kg dry	98.4	107	49	50-117			MI
Surrogate: o-Terphenyl	1.80		mg/kg dry	1.97		91	49-124			



Mactec - Raleigh (NCDOT Project) Project: NCDOT Greensboro  
 Attn: Matt Gillis  
 c/o MACTEC Eng. & Consulting, Inc, 3301 Project No: WBS 34802.1.1  
 Raleigh, NC 27604

Prism Work Order: 0040318  
 Time Submitted: 04/22/10 1:50:00PM

Extractable Petroleum Hydrocarbons by GC/FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P0D0385 - 3545A</b>										
<b>Matrix Spike Dup (P0D0385-MSD1)</b> Source: 0040345-01 Prepared: 04/28/10 Analyzed: 04/30/10										
Diesel Range Organics	307	8.6	mg/kg dry	98.5	107	203	50-117	66	24	D, MI
Surrogate: o-Terphenyl	4.49		mg/kg dry	1.97		228	49-124			Ae
<b>Batch P0D0414 - 3545A</b>										
<b>Blank (P0D0414-BLK1)</b> Prepared: 04/29/10 Analyzed: 04/30/10										
Diesel Range Organics	BRL	7.0	mg/kg wet							
Surrogate: o-Terphenyl	1.59		mg/kg wet	1.60		99	49-124			
<b>LCS (P0D0414-BS1)</b> Prepared: 04/29/10 Analyzed: 04/30/10										
Diesel Range Organics	63.5	7.0	mg/kg wet	80.0		79	55-109			
Surrogate: o-Terphenyl	2.11		mg/kg wet	1.60		132	49-124			Ad
<b>Matrix Spike (P0D0414-MS1)</b> Source: 0040318-20 Prepared: 04/29/10 Analyzed: 04/30/10										
Diesel Range Organics	97.5	10	mg/kg dry	115	BRL	85	50-117			
Surrogate: o-Terphenyl	3.16		mg/kg dry	2.29		138	49-124			Af
<b>Matrix Spike Dup (P0D0414-MSD1)</b> Source: 0040318-20 Prepared: 04/29/10 Analyzed: 04/30/10										
Diesel Range Organics	83.8	10	mg/kg dry	115	BRL	73	50-117	15	24	
Surrogate: o-Terphenyl	2.67		mg/kg dry	2.29		116	49-124			

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Mactec - Raleigh (NCDOT Project)  
Attn: Matt Gillis  
c/o MACTEC Eng. & Consulting, Inc, 3301  
Raleigh, NC 27604

Project: NCDOT Greensboro  
Project No: WBS 34802.1.1

Prism Work Order: 0040318  
Time Submitted: 04/22/10 1:50:00PM

General Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P0D0254 - NO PREP

Duplicate (P0D0254-DUP2)	Source: 0040318-16			Prepared & Analyzed: 04/26/10						
% Solids	66.0	0.100	% by Weight		65.7			0.5	20	

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**Sample Extraction Data**

Prep Method: 3545A

Lab Number	Batch	Initial	Final	Date
0040318-01	P0D0313	25.02 g	1 mL	04/27/10
0040318-02	P0D0313	25.07 g	1 mL	04/27/10
0040318-03	P0D0313	25.04 g	1 mL	04/27/10
0040318-04	P0D0313	25.06 g	1 mL	04/27/10
0040318-05	P0D0313	25.02 g	1 mL	04/27/10
0040318-06	P0D0313	25 g	1 mL	04/27/10
0040318-07	P0D0313	25.02 g	1 mL	04/27/10
0040318-08	P0D0313	25.1 g	1 mL	04/27/10
0040318-09	P0D0313	25.06 g	1 mL	04/27/10
0040318-10	P0D0313	25.1 g	1 mL	04/27/10
0040318-11	P0D0385	25.07 g	1 mL	04/28/10
0040318-12	P0D0385	25.09 g	1 mL	04/28/10
0040318-13	P0D0385	25 g	1 mL	04/28/10
0040318-14	P0D0385	25.03 g	1 mL	04/28/10
0040318-15	P0D0385	25.06 g	1 mL	04/28/10
0040318-16	P0D0385	25.01 g	1 mL	04/28/10
0040318-17	P0D0385	25.05 g	1 mL	04/28/10
0040318-18	P0D0385	25.05 g	1 mL	04/28/10
0040318-19	P0D0385	25.05 g	1 mL	04/28/10
0040318-20	P0D0414	25.18 g	1 mL	04/29/10
0040318-21	P0D0414	25.09 g	1 mL	04/29/10
0040318-22	P0D0414	25 g	1 mL	04/29/10
0040318-23	P0D0414	25.07 g	1 mL	04/29/10
0040318-24	P0D0414	25 g	1 mL	04/29/10

NO PREP

Lab Number	Batch	Initial	Final	Date
0040318-01	P0D0254	30 g	30 mL	04/26/10
0040318-02	P0D0254	30 g	30 mL	04/26/10
0040318-03	P0D0254	30 g	30 mL	04/26/10
0040318-04	P0D0254	30 g	30 mL	04/26/10
0040318-05	P0D0254	30 g	30 mL	04/26/10
0040318-06	P0D0254	30 g	30 mL	04/26/10
0040318-07	P0D0254	30 g	30 mL	04/26/10
0040318-08	P0D0254	30 g	30 mL	04/26/10
0040318-09	P0D0254	30 g	30 mL	04/26/10
0040318-10	P0D0254	30 g	30 mL	04/26/10
0040318-11	P0D0254	30 g	30 mL	04/26/10
0040318-12	P0D0254	30 g	30 mL	04/26/10
0040318-13	P0D0254	30 g	30 mL	04/26/10
0040318-14	P0D0254	30 g	30 mL	04/26/10
0040318-15	P0D0254	30 g	30 mL	04/26/10
0040318-16	P0D0254	30 g	30 mL	04/26/10
0040318-17	P0D0254	30 g	30 mL	04/26/10
0040318-18	P0D0254	30 g	30 mL	04/26/10
0040318-19	P0D0254	30 g	30 mL	04/26/10
0040318-20	P0D0254	30 g	30 mL	04/26/10
0040318-21	P0D0254	30 g	30 mL	04/26/10
0040318-22	P0D0254	30 g	30 mL	04/26/10
0040318-23	P0D0254	30 g	30 mL	04/26/10
0040318-24	P0D0254	30 g	30 mL	04/26/10

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date
0040318-01	P0D0352	10.55 g	5 mL	04/28/10

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### Sample Extraction Data

Prep Method: 5035

Lab Number	Batch	Initial	Final	Date
0040318-02	P0D0352	7.68 g	5 mL	04/28/10
0040318-03	P0D0352	10.61 g	5 mL	04/28/10
0040318-04	P0D0352	9.12 g	5 mL	04/28/10
0040318-05	P0D0352	9.27 g	5 mL	04/28/10
0040318-06	P0D0352	10.87 g	5 mL	04/28/10
0040318-07	P0D0352	9.74 g	5 mL	04/28/10
0040318-08	P0D0421	9.54 g	5 mL	04/30/10
0040318-09	P0D0421	8.23 g	5 mL	04/30/10
0040318-10	P0D0421	8.97 g	5 mL	04/30/10
0040318-11	P0D0421	7.8 g	5 mL	04/30/10
0040318-12	P0D0421	7.64 g	5 mL	04/30/10
0040318-13	P0D0421	9.83 g	5 mL	04/30/10
0040318-14	P0D0421	7.18 g	5 mL	04/30/10
0040318-15	P0D0421	8.05 g	5 mL	04/30/10
0040318-16	P0E0019	10.62 g	5 mL	05/03/10
0040318-17	P0E0019	9.39 g	5 mL	05/03/10
0040318-18	P0E0019	11.65 g	5 mL	05/03/10
0040318-19	P0E0019	5.81 g	5 mL	05/03/10
0040318-20	P0E0019	8.85 g	5 mL	05/03/10
0040318-21	P0E0019	8.75 g	5 mL	05/03/10
0040318-22	P0E0019	8.17 g	5 mL	05/03/10
0040318-23	P0E0019	7.98 g	5 mL	05/03/10
0040318-24	P0E0019	7.98 g	5 mL	05/03/10

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Full-Service Analytical & Environmental Solutions

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

Client Company Name: MACTEC  
Report To/Contact Name: Matt Gillis  
Reporting Address: MACTEC Raleigh

Phone: 919-971-8056 Fax (Yes) (No):  
Email (Yes) (No) Email Address: mgillis@mactec.com  
EDD Type: PDF  Excel  Other  
Site Location Name: NC DOT Greensboro sites  
Site Location Physical Address: High Point Rd, Greensboro, NC

# CHAIN OF CUSTODY RECORD

PAGE 1 OF 3 QUOTE # TO ENSURE PROPER BILLING: \_\_\_\_\_

Project Name: NC DOT Greensboro  
Short Hold Analysis: (Yes) (No)  (No)  UST Project: (Yes) (No)  (No)   
\*Please ATTACH any project specific reporting (QC LEVEL I II III IV) provisions and/or QC Requirements  
Invoice To: NC DOT  
Address: \_\_\_\_\_

LAB USE ONLY			
	YES	NO	N/A
Samples INTACT upon arrival?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received ON WET (CE) Temp	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER PRESERVATIVES indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received WITHIN HOLDING TIMES?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUSTODY SEALS INTACT?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VOLATILES rec'd W/OUT HEADSPACE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PROPER CONTAINERS used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Purchase Order No./Billing Reference WBS 34802-1.1  
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)

TO BE FILLED IN BY CLIENT/SAMPLING PERSONNEL  
Certification: NELAC USACE FL NC  
SC OTHER N/A  
Water Chlorinated: YES NO  
Sample Iced Upon Collection: YES NO

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED				REMARKS	PRISM LAB ID NO.	
				*TYPE SEE BELOW	NO.	SIZE		TOT	DPO	TPH	GLD			
SB 1-1	4/19/10	1020	Soil	CG, VOA	2, 2	4oz, 4oz	Methanol	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					01
SB 1-2		1046						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					02
SB 1-3		1105						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					03
SB 1-4		1150						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					04
SB 1-5		1205						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					05
SB 1-6		1235						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					06
SB 2-1		1420						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					07
SB 2-2		1450						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					08
SB 2-3		1505						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					09
SB 2-4		1520						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					10

Sampler's Signature: Kristen J. Gill Sampled By (Print Name): Keister Lloyd Affiliation: \_\_\_\_\_

**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.

Relinquished By: (Signature) <u>Kristen J. Gill</u>	Received By: (Signature) <u>Alex Lass</u>	Date	Military/Hours
Relinquished By: (Signature) <u>Alex Lass</u>	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By:	Date	
Method of Shipment: <input type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Hand-delivered <input type="checkbox"/> Prism Field Service <input type="checkbox"/> Other		COE Group No. <u>0042318</u>	

Additional Comments:

PRISM USE ONLY
Site Arrival Time
Site Departure Time
Field Tech Fee
Mileage

NPDES: <input type="checkbox"/> NC <input type="checkbox"/> SC	UST: <input type="checkbox"/> NC <input type="checkbox"/> SC	GROUNDWATER: <input type="checkbox"/> NC <input type="checkbox"/> SC	DRINKING WATER: <input type="checkbox"/> NC <input type="checkbox"/> SC	SOLID WASTE: <input type="checkbox"/> NC <input type="checkbox"/> SC	RCRA: <input type="checkbox"/> NC <input type="checkbox"/> SC	CERCLA: <input type="checkbox"/> NC <input type="checkbox"/> SC	LANDFILL: <input type="checkbox"/> NC <input type="checkbox"/> SC	OTHER: <input type="checkbox"/> NC <input type="checkbox"/> SC
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