Preliminary Site Assessment

1003 Chestnut Street

Parcel #188, Holloman, Oscar

Historical Dry Cleaning Facility

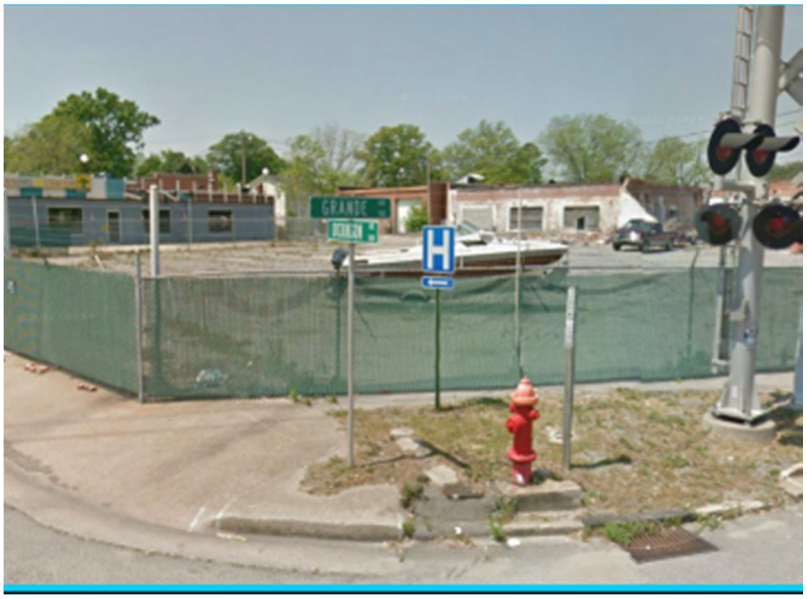
Greenville, Pitt County, North Carolina

State Project No. U-3315

WBS Element: 35781.1.2

February 21, 2013

Terracon Project No. 70127335



Prepared for:

North Carolina Department of Transportation (NCDOT)

Geotechnical Engineering Unit

Prepared by:

Terracon Consultants, Inc.

Raleigh, North Carolina

Offices Nationwide Established in 1965
Employee-Owned terracon.com

Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

February 21, 2013

North Carolina Department of Transportation
Attention: Mr. Gordon Box, LG
Geotechnical Engineering Unit
1589 Mail Service Center
Raleigh, NC 27699

Re: Preliminary Site Assessment (PSA)
Parcel 188, Holloman, Oscar
Historical Dry Cleaning Facility
1003 Chestnut Street
Greenville, Pitt County, North Carolina
Terracon Project No. 70127335
WBS Element: 35781.1.2

Dear Mr. Box:

Terracon Consultants, Inc. (Terracon) is pleased to submit a Preliminary Site Assessment (PSA) report for the above referenced site. This assessment was performed in accordance with our Proposal for Preliminary Site Assessment (Terracon Proposal No. P70127314) dated February August 7, 2012. This report includes the findings of the investigation, and provides our conclusions and recommendations.

Terracon appreciates the opportunity to provide these services to the NCDOT. If you have any questions concerning this report or need additional information, please contact us at 919-873-2211.

Sincerely,

Terracon Consultants, Inc.

Prepared by:

Stephen Kerlin
Environmental Professional

Reviewed by:

FOR: Christopher L. Corbitt, PG
Authorized Project Reviewer

Lori Hoffman, PE
Environmental Department Manager

TABLE OF CONTENTS

Page No.

PRELIMINARY SITE ASSESSMENT

PARCEL 188, HOLLOMAN, OSCAR
1003 CHESTNUT STREET
GREENVILLE, PITT COUNTY, NORTH CAROLINA

1.0 INTRODUCTION

1.1 Site Description

Site Name	Parcel 188, Holloman, Oscar (Historical Dry Cleaning Facility)
Site Location/Address	1003 Chestnut Street, Greenville, North Carolina
General Site Description	The site includes a structure that was previously operated as a dry cleaning facility. The on-site structure has shared walls with a building on Parcel #81.

1.2 Site History

According to information provided by the NCDOT and collected by Terracon, there are no known release incidents associated with the site, and the facility is not enrolled within the NCDENR DSCA Program. According to historical Sanborn Fire Insurance Maps, Parcel 188 was historically developed with a residence from at least 1911 to 1929. In the 1946 Sanborn Map, the building is labeled as storage and a dry cleaning/laundry facility is located adjacent to the southeast. In the 1958 Sanborn Map, the dry cleaning and laundry label was expanded to the northwest to include the site building indicating the dry cleaning operation expanded to include the site.

1.3 Scope of Work

Terracon has prepared the following Preliminary Site Assessment (PSA) scope of work (SOW) in accordance with the NCDOT's Request for Technical and Cost Proposal dated June 19, 2012 and Terracon's Proposal for Preliminary Site Assessment (Proposal No. P70127314) dated August 7, 2012. The scope of work included a geophysical investigation, the collection of nine soil samples for laboratory analysis and preparation of a report documenting our soil investigation activities.

1.4 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either expressed or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of

laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These PSA services were performed in accordance with the scope of work authorized by you and were not conducted in accordance with ASTM E1903-97.

1.5 Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, undetectable or not present during these services; thus, we cannot represent that the site is free of hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this PSA. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

1.6 Reliance

This report has been prepared for the exclusive use of the North Carolina Department of Transportation (NCDOT). Authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the expressed written authorization of the client and Terracon.

2.0 FIELD ACTIVITIES

The following PSA activities are presented in the order that they were conducted in the field on August 22, 23, and 29 and September 7, 2012. Access to the interior of the building for investigation activities was limited due to safety and structural integrity concerns associated with the adjacent building with shared walls (Parcel 81) being mostly collapsed with rubble surrounding the area.

Exhibit 1 presents the general boundaries and topography of the site on portions of the USGS topographic quadrangle map of Greenville SW, North Carolina dated 1998. Exhibit 2 is a site layout plan that indicates the approximate locations of the site features and soil boring locations.

2.1 Geophysical Survey

On August 22, 23 and 29, 2012, Pyramid Environmental conducted a geophysical investigation at the site in an effort to determine if unknown, metallic underground storage tanks (USTs) were present beneath the proposed right-of-way (ROW) area. The geophysical investigation included

an electromagnetic (EM) induction survey using a Geonics EM-61 MK1 metal detection instrument and a ground penetrating radar (GPR) survey using a GSSI SIR-2000 unit.

The geophysical investigation did not reveal metallic USTs in the area of investigation identified for this site. A copy of the geophysical report is included in Appendix B.

2.2 Soil Sampling

Based on the findings of the geophysical investigation, Terracon provided oversight for the advancement of soil borings B-1 and B-2 along the southwestern and northeastern sides of the parcel on September 7, 2012. The borings were completed by Bridger Drilling Enterprises, Inc., a North Carolina licensed driller using a Geoprobe® rig. Soil borings B-1 and B-2 were located outside of the on-site building footprint due to access and potential structural integrity issues noted during our field reconnaissance activities.

Soil samples were collected in 5-foot, disposable, acetate sleeves to document soil lithology, color, moisture content, and sensory evidence of impairment. The soil samples were placed in resealable plastic bags for a sufficient amount of time to allow volatilization of organic compounds from the soils. The soil samples were then screened using a *Thermo Electron Corporation TVA-1000* Photoionization/Flame Ionization Detector (PID/FID) by inserting the probe tip into the headspace of each bagged sample. The PID readings and soil sample depths are included on Table 1 and on individual boring logs in Appendix A.

Soil borings B-1 and B-2 were each advanced to a depth of approximately 15 feet below ground surface (bgs). Groundwater levels were not measured in either boring but moist soils were observed at a depth of approximately 7.5 feet bgs in the borings. Information obtained during investigations on nearby properties noted groundwater levels between approximately six and 14 feet bgs. Based on the field observations, soils were only screened above the saturated zone. Soils obtained from the acetate sleeves were separated into two and half foot intervals.

The soil samples were collected and placed in laboratory prepared glassware and packed in ice within a cooler. The sample cooler and completed chain-of-custody forms were relinquished to SGS North American Inc. in Wilmington, North Carolina.

2.3 Subsurface Conditions

The soil samples from ground surface to a depth of 15 feet included silty sands, clayey sands, silty clay, and sandy clay. Soil samples from the interval in each boring exhibiting the highest PID reading or most obvious evidence of contamination were submitted for laboratory analysis.

3.0 LABORATORY ANALYSES

Soil samples were submitted for laboratory analysis of volatile organic compounds (VOCs) by EPA Method 8260 and semi-volatile organic compounds (SVOCs) by EPA Method 8270. No groundwater samples were submitted for laboratory analysis. Please refer to Appendix C for the laboratory analytical reports.

4.0 DATA EVALUATION

4.1 Soil Sample Analytical Results and Interpretation

VOC compounds and SVOC compounds were not detected above laboratory method detection limits in the soil samples from borings B-1 and B-2.

5.0 CONCLUSIONS

The findings of this investigation are discussed below.

- The geophysical investigation did not reveal probable metallic USTs in the area of investigation identified for this site.
- Two soil borings were advanced at the site to depths of approximately 15 feet bgs.
- VOC compounds and SVOC compounds were not detected above their laboratory method reporting limits in soil samples B-1 or B-2.
- Based on the analytical results, the soils at the site do not appear to have been impacted by the historical dry cleaning activities on the site. The presence of chlorinated constituents related to dry cleaning operations in soils and groundwater on adjacent parcels to the south-southeast indicates a release may have occurred on adjacent parcels. Since soil borings B-1 and B-2 were located outside of the on-site building footprint, additional assessment may be necessary to evaluate soil and groundwater impacts beneath the building once it has been demolished.

TABLES

Table 1 - Soil Sampling Analytical Results Summary

Table 1
Soil Sampling Analytical Results Summary
Parcel #188, Holloman, Oscar Property
Greenville, Pitt County, North Carolina

					Sample ID	S-1	S-2
					Depth	5.0-7.5 FT	5.0-7.5 FT
Method	**Parameter**	**Units**	**Industrial**	**Protection of Groundwater**		**Value**	**Value**
8260B	VOCs	mg/kg	No Analytes Detected Above the Laboratory Detection Limits				
8270C	SVOCs	mg/kg	No Analytes Detected Above the Laboratory Detection Limits				

Notes:

Samples collected on September 7, 2012

NE = Not established

units = mg/kg - sample analyte compound concentrations measured in milligrams per kilogram

Bold concentrations were reported above the IHSB Industrial Soil Remediation Goals

FIGURES

Exhibit 1 – Site Vicinity Map (Topographic Map)
Exhibit 2 – Site Diagram with Soil Boring Locations and Analytical Data

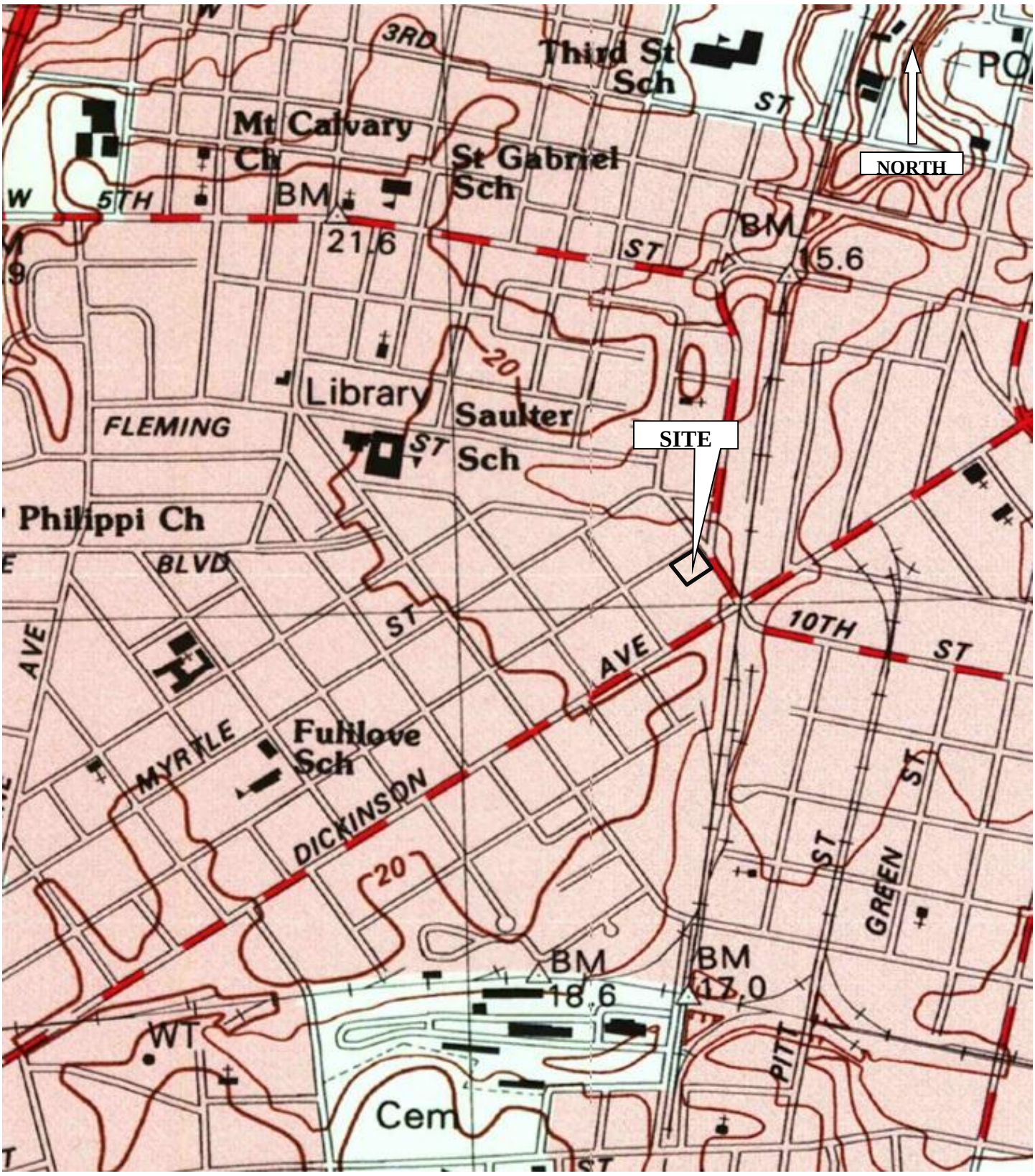


Diagram is for general location only

Site Vicinity Map
Parcel # 188
1003 Chestnut Street
Greenville, Pitt County, North Carolina

Reference: Greenville SW, NC USGS Quadrangle

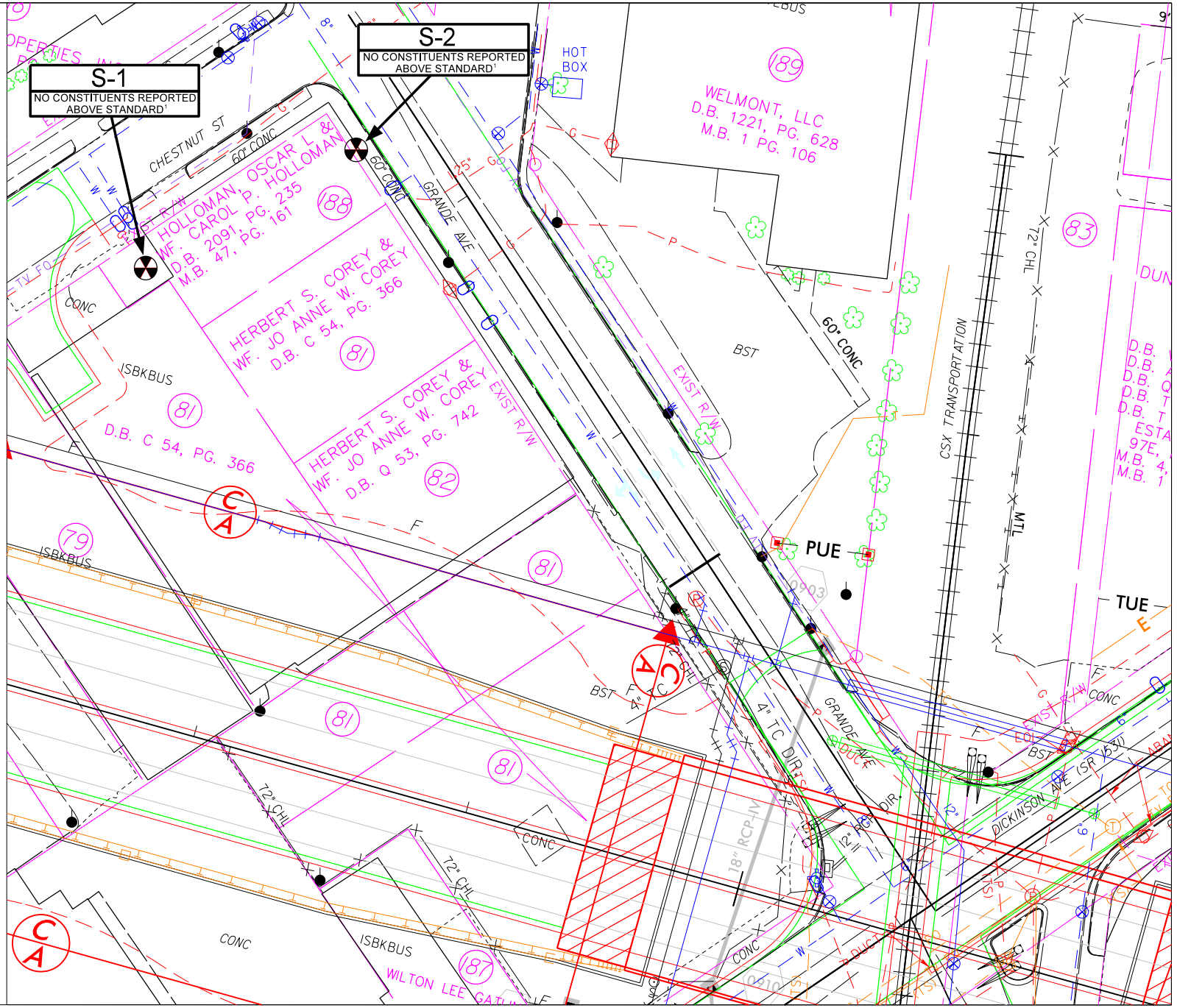
Dated Year: 1998

Terracon

PROJECT NO.:	70127335
DATE: 10/2/12	CONTOUR INT: 2 meters
DRAWN: MDP	CHECK: LCH
SCALE: NTS	

LEGEND

- PROPERTY LINE
- EXISTING RIGHT OF WAY LINE
- PROPOSED RIGHT OF WAY LINE WITH IRON PIN AND CAP MARKER
- PROPOSED CONTROL OF ACCESS
- PROPOSED CONSTRUCTION EASEMENT
- PROPOSED EDGE OF TRAVEL
- PROPOSED CUT / FILL LINE
- PUE – PROPOSED PERMANENT UTILITY EASEMENT
- PROPOSED CATCH BASIN
- PROPOSED DRAINAGE PIPING
- SOIL SAMPLE LOCATION



NOTES:

1. IHSB INDUSTRIAL SOIL REMEDIATION GOALS

NC GRID NAD 83/95

0 25 50
FEET

SCALE:	1:50
DATE:	FEBRUARY 2013
DRAWN BY:	MJA
APPROVED BY:	LCH / BWS
PROJ. REFERENCE NUMBER:	35781.1.2
TIP NUMBER:	U-3315
COUNTY:	PITT
TERRACON PROJECT:	70127335

Terracon
5240 GREEN'S DAIRY ROAD RALEIGH, NC 27616
PH. (919) 873-2211 FAX. (919) 873-9555

SITE DIAGRAM WITH SOIL BORING LOCATIONS AND ANALYTICAL DATA

HOLLOMAN, OSCAR L & WF. CAROL P HOLLOMAN PROPERTY - PARCEL 188
-Y16- STATION 13+35
1003 CHESTNUT STREET
GREENVILLE, PITT COUNTY, NORTH CAROLINA

EXHIBIT 2

APPENDICES

Appendix A – Boring Logs
Appendix B – Geophysical Survey Report
Appendix C – Laboratory Analytical Reports and Chain of Custody

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: B-1
PROJECT NO.: 70127335	DATE(S) DRILLED: September 7, 2012
PROJECT LOCATION: Parcel # 188 1006 Dickinson Avenue Greenville, North Carolina	DRILLING CONTR.: Bridger Drilling Enterprises, Inc. DRILL METHOD: Geoprobe BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Steve Kerlin	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0-2.5		NA	0.0	No odors	0.0	
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	0.0		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5*		NA	0.0		5.0	
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	0.0		7.5	Damp
					8.0	
					8.5	
					9.0	
					9.5	
10.0 - 12.5		NA	0.1		10.0	Damp
					10.5	
					11.0	
					11.5	
					12.0	
12.5 - 15		NA	0.0		12.5	Wet
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	Boring terminated at 15.0 feet bgs
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	
					18.0	
					18.5	
					19.0	
					19.5	
					20.0	
					20.5	
					21.0	
					21.5	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

SOIL BORING LOG

PROJECT NAME: Stantonsburg/Tenth Street Connector	SOIL BORING I.D.: B-1
PROJECT NO.: 70127335	DATE(S) DRILLED: September 7, 2012
PROJECT LOCATION: Parcel # 188 1006 Dickinson Avenue Greenville, North Carolina	DRILLING CONTR.: Bridger Drilling Enterprises, Inc. DRILL METHOD: Geoprobe BORING DIAMETER: 2 inches
CLIENT: NCDOT Geoenvironmental	SAMPLING METHOD/INTERVAL: 5-Foot
LOGGED BY: Steve Kerlin	REMARKS: BGS = below grade surface

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	Odors	DEPTH (FT)	DESCRIPTION OF SOIL
0-2.5		NA	0.0	No odors	0.0	
					0.5	
					1.0	
					1.5	
					2.0	
2.5 - 5.0		NA	0.0		2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5.0 - 7.5*		NA	0.3		5.0	
					5.5	
					6.0	
					6.5	
					7.0	
7.5 - 10.0		NA	0.0		7.5	Damp
					8.0	
					8.5	
					9.0	
					9.5	
10.0 - 12.5		NA	0.7		10.0	Damp
					10.5	
					11.0	
					11.5	
					12.0	
12.5 - 15		NA	NA		12.5	Wet
					13.0	
					13.5	
					14.0	
					14.5	
					15.0	Boring terminated at 15.0 feet bgs
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	
					18.0	
					18.5	
					19.0	
					19.5	
					20.0	
					20.5	
					21.0	
					21.5	

DRILLING METHODS
AR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE
GP - GEOPROBE

* - Sample collected for analysis
ND = <1 ppm

Terracon

Pyramid Project # 2012212

GEOPHYSICAL INVESTIGATION REPORT

EM61 & GPR SURVEYS

CORY, HANNAN, GATLIN & HOLLMAN PROPERTIES
(PARCELS 79, 80, 81, 82, 187, & 188)
Dickinson Avenue
Greenville, North Carolina

September 27, 2012

Report prepared for: **Lori C. Hoffman, PE**
Stephen J. Kerlin
Terracon
5240 Green's Dairy Road
Raleigh, North Carolina 27616

Prepared by: Mark J. Denil
Mark J. Denil, P.G.

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.
P.O. Box 16265
GREENSBORO, NC 27416-0265
(336) 335-3174

Terracon
GEOPHYSICAL INVESTIGATION REPORT
COREY, HANNAN, GATLIN & HOLLOMAN PROPERTIES
(PARCELS 79, 80, 81, 82, 187, & 188)
Dickinson Avenue
Greenville, North Carolina

TABLE OF CONTENTS PAGE

FIGURES

1.0 INTRODUCTION

Pyramid Environmental conducted a geophysical investigation for Terracon across portions of six different parcels of properties located adjacent to the intersection of Dickinson Avenue and Grande Avenue in Greenville, North Carolina. Conducted on August 22, 23 and 29, 2012, the geophysical investigation was performed as part of the North Carolina Department of Transportation (NCDOT) preliminary site assessment for state project number U-3315 (WBS Element 35781.1.2) to determine if unknown, metallic, underground storage tanks (USTs) were present beneath the proposed ROW areas of the six properties. The following are the six properties:

Herbert S. Corey Properties (Parcels 79, 81 & 82)	1000 Dickinson Avenue
James E. Hannan Property (Parcel 80)	1008 Dickinson Avenue
Wilton Lee Gatlin Property (Parcel 187)	1006 Dickinson Avenue
Oscar Holloman Property (Parcel 188)	1003 Dickinson Avenue

The Herbert S. Corey properties consist of three separate but contiguous parcels with several miscellaneous buildings. The properties previous operated as storage lots and a filling station. The geophysical survey area encompassed the open asphalt pavement of the properties and a 10 to 20-foot buffer along the northerly, southerly and westerly sides of the buildings. The James E. Hannan property consists of a commercial building with steel reinforced concrete pavement (parking area) adjacent to the easterly side of the building. The geophysical survey area encompassed a 10 to 20-foot buffer around the northerly, southerly and easterly sides of the building.

The Wilton Lee Gatlin property contains a commercial building that was previously used as a dry cleaning facility. The building is surrounded by steel reinforced pavement (parking area). The geophysical survey area encompassed the entire parcel. The Oscar Holloman property is occupied by a partially failed building and at the time of the geophysical investigation, nearly half of the building footprint was a debris pile as a result of the structural failure. The geophysical survey area encompassed a 5 to 10-foot buffer along the northerly and easterly sides of the building.

Terracon representatives Mr. Stephen Kerlin and Ms. Lori Hoffman, PE provided information and maps identifying the geophysical survey area to Mark Denil, PG prior to conducting the investigation. Photographs of the geophysical equipment used in this investigation and a portion of the six parcels are shown in **Figure 1**.

2.0 FIELD METHODOLOGY

Prior to conducting the geophysical investigation, a 20-foot by 20-foot survey grid was established across the geophysical surveys area using measuring tapes and water-based marking paint. These grid marks were used as X-Y coordinates for location control when collecting the geophysical data and establishing base maps for the geophysical results.

At Parcels 79 and 81, the geophysical investigation consisted of electromagnetic (EM) induction-metal detection surveys and ground penetrating radar (GPR) surveys. The EM survey was 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. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. All of the EM61 data were digitally collected at approximately 0.8 foot intervals along northwesterly-southeasterly or northeasterly-southwesterly trending, parallel survey lines spaced five feet apart. All of the data were downloaded to a computer and reviewed in the field and office using the Geonics DAT61W and Surfer for Windows Version 7.0 software programs.

The GPR investigation was conducted across the areas containing steel reinforced concrete and selected EM61 differential anomalies using a GSSI SIR-2000 unit equipped with a 400 MHz antenna. Data were digitally collected in a continuous mode along X-axis and/or Y-axis survey lines, spaced 2.5 to 5.0 feet apart using a vertical scan of 512 samples, at a rate of 48 scans per second. A 70 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 5 feet, based on an estimated two-way travel time of 8 nanoseconds per foot.

Due to the steel reinforced concrete pavement encountered within the areas of interest at Parcels 80, 82, 187, and 188, the geophysical investigation was limited to GPR surveys. GPR data were continuously collected along X-axis and Y-axis survey lines spaced 5 feet apart across the specified areas at each parcel using the same GPR equipment and settings that were discussed above. Locations of the EM61 metal detection survey lines and the GPR survey lines for the six parcels are shown as red dots and purple lines, respectively in **Figure 2**. Each red dot represents an EM61 data point.

Verbal, preliminary geophysical results obtained from the site were provided to Mr. Kerlin or Ms Hoffman during the week of September 3, 2012.

3.0 DISCUSSION OF RESULTS

Contour plots of the EM61 bottom coil and differential results obtained from Parcels 79, 81 and 82 are presented in **Figures 3 and 4**, respectively**.** The bottom coil results represent the most sensitive component of the EM61 instrument and detect metal objects regardless of size. The bottom coil response can be used to delineate metal conduits or utility lines, small, isolated metal objects, and areas containing insignificant metal debris. The differential results are obtained from the difference between the top and bottom coils of the EM61 instrument. The differential results focus on the larger metal objects such as drum and UST-size objects and ignore the smaller insignificant metal objects.

The linear, EM61 bottom coil anomalies intersecting grid coordinates X=15 Y=20, X=30 Y=92, X=30 Y=115, X=210 Y=110, and X=300 Y=165 are probably in response to buried utility lines or conduits. The linear, bottom coil anomalies intersecting grid coordinates X=30 Y=80, X=30 Y=138 and X=100 Y=28 are probably in response to buildings and buried lines. The linear, bottom coil anomalies intersecting grid coordinates X=220 Y=66, X=240 Y=118 and X=345 Y=160 are probably in response to the metal fence line that runs along the perimeter of Parcel 81. The linear, bottom coil anomaly intersecting grid coordinates X=182 Y=120 is probably in response to the building.

GPR data suggest the EM61 differential anomalies centered near grid coordinates X=290 Y=190, X=310 Y=210, X=315 Y=160, and X=334 Y=185 are in response to buried, miscellaneous metal objects or to portions of buried conduits.

GPR data acquired across the steel reinforced concrete pavement at Parcels 80, 187 and 188 did not detect buried metallic USTs. Although GPR scans detected a number of buried lines/conduits beneath the sidewalks running along Chestnut Street, Grande Avenue and Dickinson Avenue, the GPR data suggest the surveyed areas of interest do not contain buried metallic USTs.

The geophysical investigation conducted across the accessible portions of Parcels 79, 80, 81, 82, 187, and 188 suggest the areas do not contain buried metallic USTs.

4.0 SUMMARY & CONCLUSIONS

Our evaluation of the EM61 and GPR data collected across the accessible portions of Parcels 79, 80, 81, 82, 187, and 188 located adjacent to the intersection of Dickinson Avenue and Grande Avenue in Greenville, 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 portion of the site.

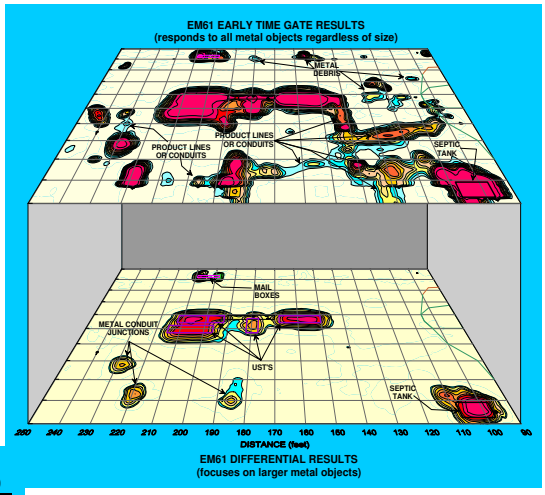
- The linear, EM61 bottom coil anomalies intersecting grid coordinates X=15 Y=20, X=30 Y=92, X=30 Y=115, X=210 Y=110, and X=300 Y=165 are probably in response to buried utility lines or conduits.

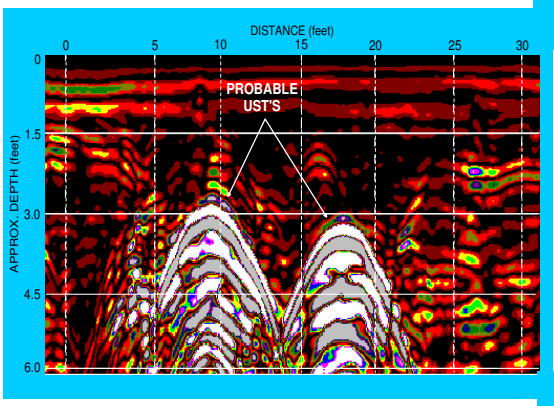
- GPR data suggest the EM61 differential anomalies centered near grid coordinates X=290 Y=190, X=310 Y=210, X=315 Y=160, and X=334 Y=185 are in response to buried, miscellaneous metal objects or to portions of buried conduits.

- The geophysical investigation conducted across the accessible portions of Parcels 79, 80, 81, 82, 187, and 188 suggest the areas do not contain buried metallic USTs.

5.0 LIMITATIONS

EM61 and GPR surveys have been performed and this report prepared for Terracon Consultants, Inc. 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 have not conclusively determined that the areas of interest do not contain buried, metallic USTs, but that none were detected.

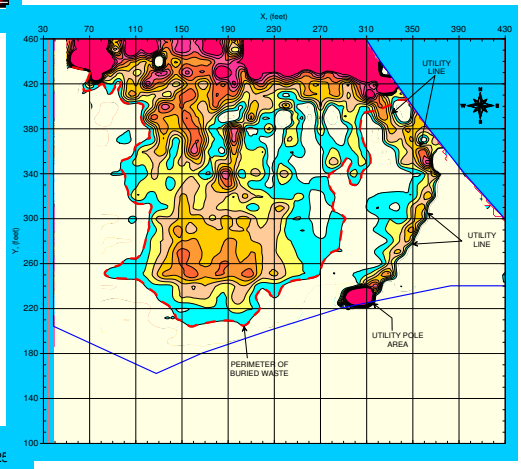


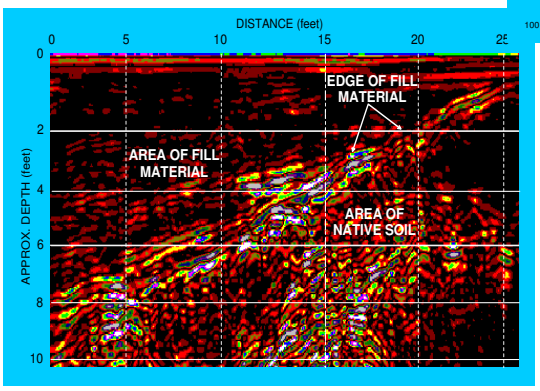


FIGURES

(on the following pages)

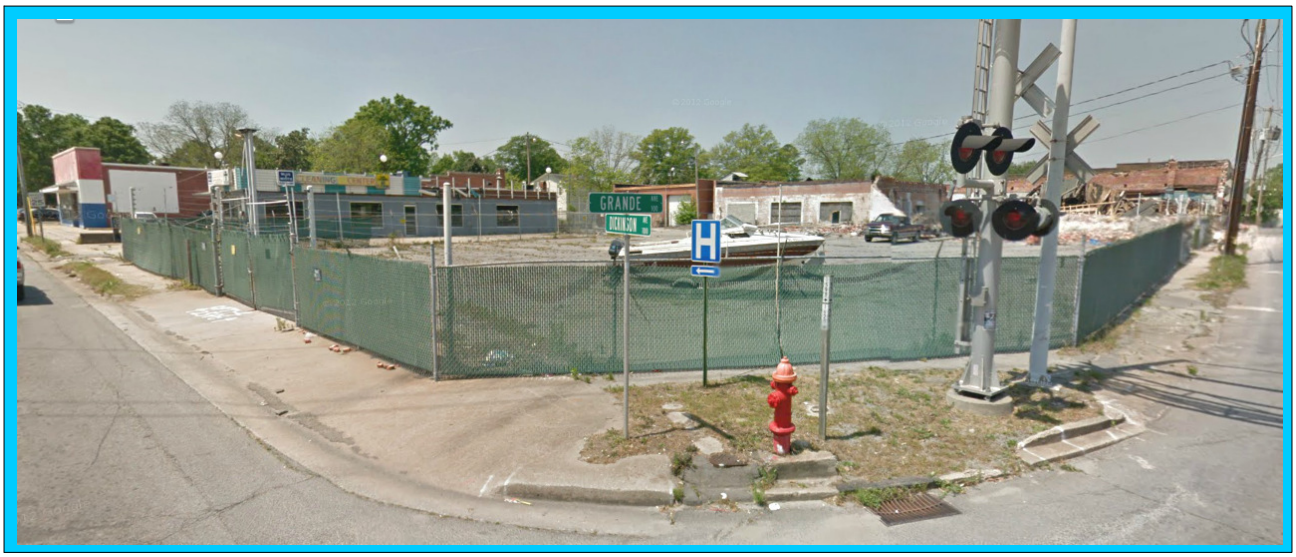
Figures shown on this page are for esthetic purposes only and are not related to the geophysical results discussed in this report.





The photograph shows the Geonics EM61 metal detector that was used to conduct the metal detection survey across the Herbert Corey properties (Parcels 79, 81 & 82) on August 22, 2012.

The photographs show the SIR-2000 GPR system equipped with a 400 MHz antenna that were used to conduct the ground penetrating radar investigation across the areas containing steel reinforced concrete and selected EM61 differential anomalies at Parcels, 79, 80, 81, 82, 187, & 188 on August 23 & 29, 2012.



The photograph shows the eastern portions of the Corey, Hannan, Gatlin and Holloman properties located adjacent to the intersection of Dickinson Avenue and Grande Avenue in Greenville, North Carolina. The photograph is viewed in a northwesterly direction.

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	TERRACON CONSULTANTS, INC.	DATE	09/27/12	DRWN	MJD
SITE	COREY, HANNAN, GATLIN, & HOLLOMAN PROPERTIES	LAY		CHKD	
CITY	GREENVILLE	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS	JNO	2012-212	FIGURE	

GEOPHYSICAL EQUIPMENT & SITE PHOTOGRAPHS

FIGURE 1

Y-axis (feet)

X-axis (feet)

CHESTNUT STREET

GRASS ISLAND

CONCRETE SIDEWALK

CONCRETE PAVEMENT

BUILDING
OSCAR HOLLOMAN PROPERTY
(PARCEL 188)

CONCRETE SIDEWALK

BUILDING
HERBERT COREY PROPERTY
(PARCELS 81 & 82)

BUILDING
HERBERT COREY PROPERTY
(PARCEL 79)

GRAVEL/ASPHALT
ACCESS ROAD

GRASS LOT
(ADJACENT PROPERTY)

DEBRIS PILE FROM BUILDING FAILURE
(AREA NOT SURVEYED)

GPR SURVEY LINES
(PURPLE LINES)

EM61 SURVEY LINES
(RED DOTS)

TREES

GRANDE AVENUE

HERBERT COREY PROPERTY
(PARCEL 81)

DEBRIS

ASPHLAT
PAVEMENT

CONCRETE

DEBRIS

BUILDING
WILTON LEE GATLIN PROPERTY
(PARCEL 187)

STEEL REINFORCED
CONCRETE

FENCE LINE

CONCRETE

CONCRETE WALKWAY

BUILDING
JAMES E. HANNAN PROPERTY
(PARCEL 80)

CONCRETE WALKWAY

STEEL REINFORCED
CONCRETE

DICKINSON AVENUE

LEGEND

- SURVEY AREA: EM61 DATA ACQUIRED ALONG X-AXIS OR Y-AXIS TRENDING LINES SPACED 5 FEET APART
- BUILDING
- DEBRIS PILE
- STORM SEWER GRATE
- METAL FENCE LINE
- WATER METER COVER
- UTILITY POLE
- SUPPORT POLE
- FIRE HYDRANT
- MONITORING WELL
- ROAD SIGN
- EM61 METAL DETECTION SURVEY LINE
- GPR SURVEY LINE

APPROXIMATE NORTH

Note: The map shows the geophysical survey area at Parcels 79, 80, 81, 82, 187, and 188. The red dots represent the EM61 metal detection survey lines that were acquired on August 22, 2012 using a Geonics EM61 metal detection instrument. Each dot represents an EM61 data point.

The solid purple lines represent the ground penetrating radar (GPR) survey lines that were acquired across areas containing steel reinforced concrete and selected EM61 metal detection anomalies. The GPR investigation was conducted on August 23 and 29, 2012, using a Geophysical Survey Systems SIR-2000 unit with a 400 MHz antenna.

The red polygon in the aerial photograph represents the approximate outer perimeter of the geophysical survey at at the subject parcels.

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

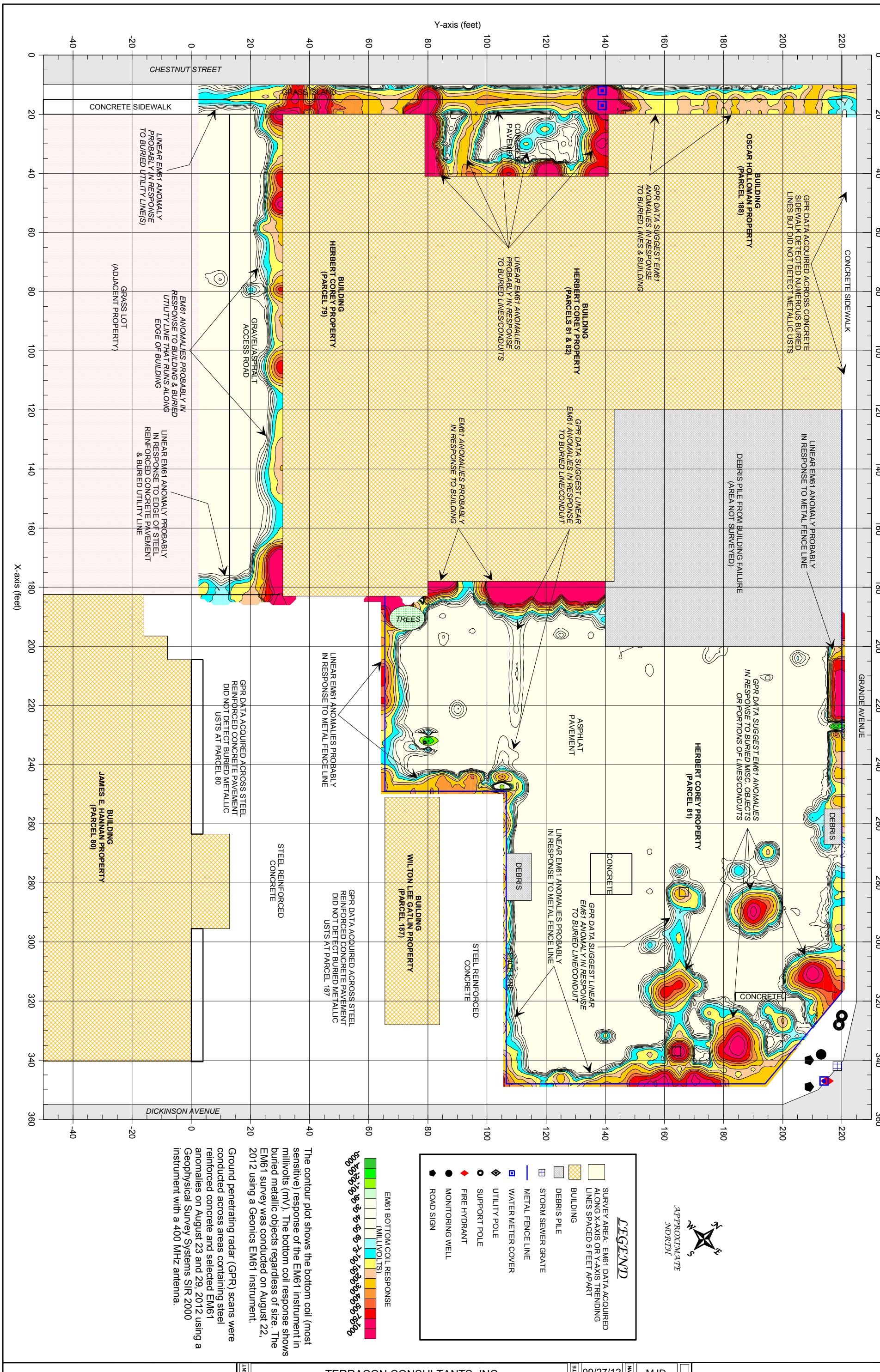
CLIENT	TERRACON CONSULTANTS, INC.	DATE	09/27/12	DRWN	MJD
SITE	COREY, HANNAN, GATLIN, & HOLLOMAN PROPERTIES	LAY		CHKD	
CITY	GREENVILLE	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS			J.NO.	2012-212

FIGURE

GRAPHIC SCALE IN FEET

GEOPHYSICAL SURVEY LINE LOCATIONS

FIGURE 2



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 EM61 survey was conducted on August 22, 2012 using a Geonics EM61 instrument.

Ground penetrating radar (GPR) scans were conducted across areas containing steel reinforced concrete and selected EM61 anomalies on August 23 and 29, 2012 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

PYRAMID
ENVIRONMENTAL & ENGINEERING, P.C.

CLIENT	TERRACON CONSULTANTS, INC.	DATE	09/27/12	DRWN	MJD
SITE	COREY, HANNAN, GATLIN, & HOLLOMAN PROPERTIES	LAY		CHKD	
CITY	GREENVILLE	STATE	NORTH CAROLINA	DWG	
TITLE	GEOPHYSICAL RESULTS			J.NO.	2012-212

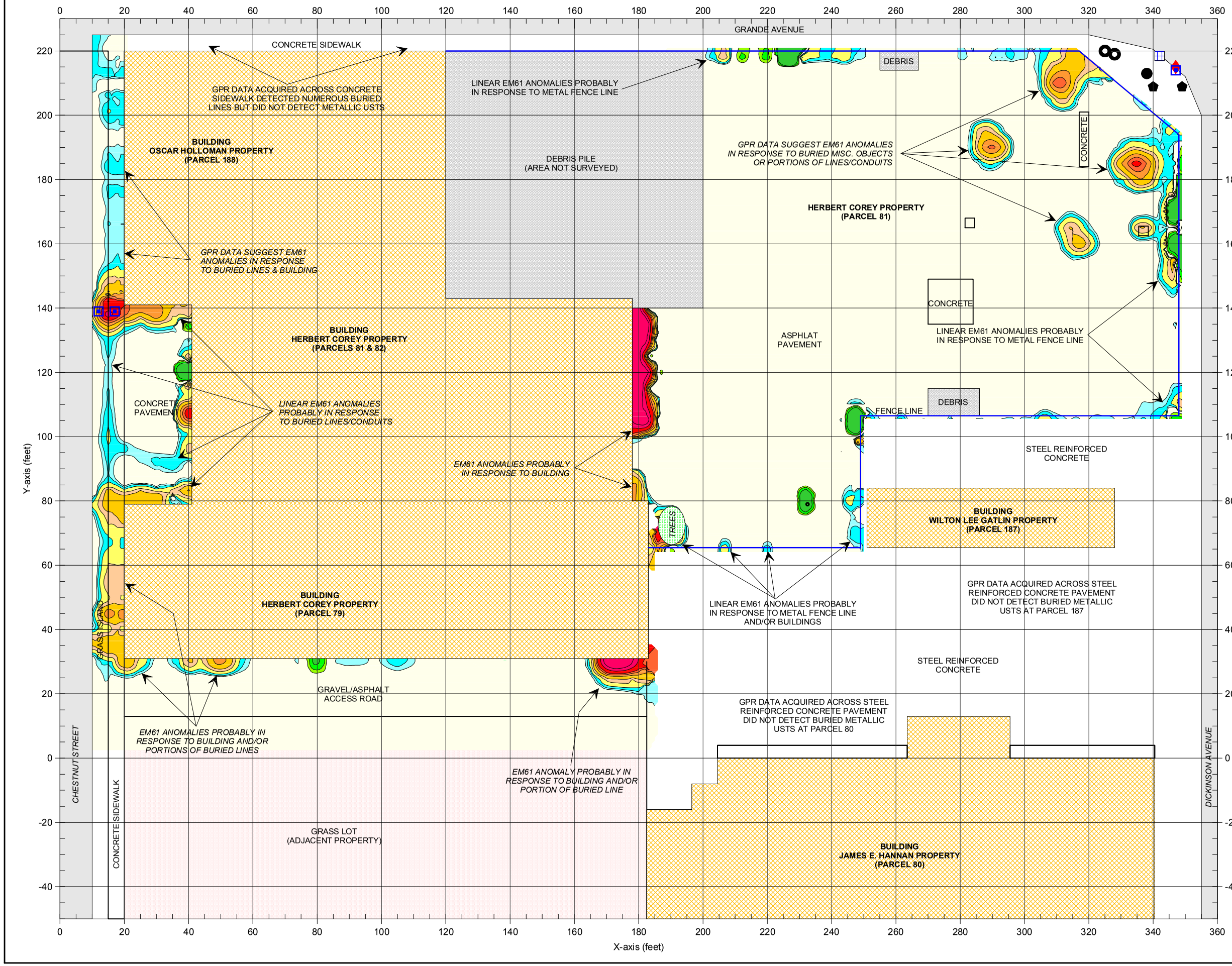
GRAPHIC SCALE IN FEET

EM61 METAL DETECTION
(BOTTOM COIL RESULTS)

FIGURE 3

EM61 METAL DETECTION (DIFFERENTIAL RESULTS)

FIGURE 4



APPROXIMATE NORTH

LEGEND

- SURVEY AREA: EM61 DATA ACQUIRED ALONG X-AXIS OR Y-AXIS TRENDING LINES SPACED 5 FEET APART
- BUILDING
- DEBRIS PILE
- STORM SEWER GRATE
- METAL FENCE LINE
- WATER METER COVER
- UTILITY POLE
- SUPPORT POLE
- FIRE HYDRANT
- MONITORING WELL
- ROAD SIGN

EM61 DIFFERENTIAL RESPONSE (MILLIVOLTS)

-5000 -400 -250 -100 -90 -45 -80 -75 -100 -150 -200 -300 -400 -500 -750 -1000

Note: The contour plot shows the differential response between the bottom and top coils of the EM61 instrument in millivolts (mV). The differential response focuses on larger, buried metallic objects such as drums and USTs and ignores smaller miscellaneous, buried, metal debris. The EM61 survey was conducted on August 22, 2012 using a Geonics EM61 instrument.

Ground penetrating radar (GPR) scans were conducted across areas containing steel reinforced concrete and selected EM61 anomalies on August 23 & 29, 2012 using a Geophysical Survey Systems SIR 2000 instrument with a 400 MHz antenna.

GRAPHIC SCALE IN FEET

DRWN	CHKD		FIGURE
MJD			
DATE	LAY	DWG	J.-NO.
09/27/12			2012-212

CLIENT: TERRACON CONSULTANTS, INC.
SITE: COREY, HANNAN, GATLIN, & HOLLOMAN PROPERTIES
CITY: GREENVILLE
STATE: NORTH CAROLINA
TITLE: GEOPHYSICAL RESULTS

PYRAMID ENVIRONMENTAL & ENGINEERING, P.C.

Laboratory Report of Analysis

To: Steve Kerlin
Terracon
5240 Greens Dairy Rd
Raleigh, NC 27616

Report Number: **31202860**

Client Project: **70127335 U-3315 Parcel 188**

Dear Steve Kerlin,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

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

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

Sincerely,
SGS North America Inc.

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

Print Date: 09/17/2012 N.C. Certification # 481

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

Laboratory Qualifiers

Report Definitions

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

Qualifier Definitions

*	Recovery or RPD outside of control limits
B	Analyte was detected in the Lab Method Blank at a level above the LOQ
U	Undetected (Reported as ND or < DL)
V	Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit
A	Amount detected is less than the Lower Method Calibration Limit
J	Estimated Concentration.
O	The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high
E	Amount detected is greater than the Upper Calibration Limit
S	The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s)
Q	Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s)
I	Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s)
DPE	Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s)
TIC	Tentatively Identified Compound
EMPC	Estimated Maximum possible Concentration due to ion ratio failure
ND	Not Detected
K	Result is estimated due to ion ratio failure in High Resolution PCB Analysis
P	RPD > 40% between results of dual columns
D	Spike or surrogate was diluted out in order to achieve a parameter result within instrument calibration range

Samples requiring manual integrations for various congeners and/or standards are marked and dated by the analyst. A code definition is provided below:

M1	Mis-identified peak

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

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
S-1	31202860001	09/07/2012 09:30	09/10/2012 14:45	Soil-Solid as dry weight
S-2	31202860002	09/07/2012 09:55	09/10/2012 14:45	Soil-Solid as dry weight

Print Date: 09/17/2012

N.C. Certification # 481

Results of **S-1**

Client Sample ID: **S-1**
Client Project ID: **70127335 U-3315 Parcel 188**
Lab Sample ID: 31202860001-A
Lab Project ID: 31202860

Collection Date: 09/07/2012 09:30
Received Date: 09/10/2012 14:45
Matrix: Soil-Solid as dry weight
Solids (%): 83.80

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,1,1-Trichloroethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,1,2,2-Tetrachloroethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,1,2-Trichloroethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,1-Dichloroethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,1-Dichloroethene	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,1-Dichloropropene	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,2,3-Trichlorobenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,2,3-Trichloropropane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,2,4-Trichlorobenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,2,4-Trimethylbenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,2-Dibromo-3-chloropropane	ND		26.7	ug/Kg	1	09/11/2012 12:35
1,2-Dibromoethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,2-Dichlorobenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,2-Dichloroethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,2-Dichloropropane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,3,5-Trimethylbenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,3-Dichlorobenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,3-Dichloropropane	ND		4.46	ug/Kg	1	09/11/2012 12:35
1,4-Dichlorobenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
2,2-Dichloropropane	ND		4.46	ug/Kg	1	09/11/2012 12:35
2-Butanone	ND		22.3	ug/Kg	1	09/11/2012 12:35
2-Chlorotoluene	ND		4.46	ug/Kg	1	09/11/2012 12:35
2-Hexanone	ND		11.1	ug/Kg	1	09/11/2012 12:35
4-Chlorotoluene	ND		4.46	ug/Kg	1	09/11/2012 12:35
4-Isopropyltoluene	ND		4.46	ug/Kg	1	09/11/2012 12:35
4-Methyl-2-pentanone	ND		11.1	ug/Kg	1	09/11/2012 12:35
Acetone	ND		44.6	ug/Kg	1	09/11/2012 12:35
Benzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Bromobenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Bromochloromethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
Bromodichloromethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
Bromoform	ND		4.46	ug/Kg	1	09/11/2012 12:35
Bromomethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
n-Butylbenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Carbon disulfide	ND		4.46	ug/Kg	1	09/11/2012 12:35
Carbon tetrachloride	ND		4.46	ug/Kg	1	09/11/2012 12:35
Chlorobenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Chloroethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
Chloroform	ND		4.46	ug/Kg	1	09/11/2012 12:35
Chloromethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
Dibromochloromethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
Dibromomethane	ND		4.46	ug/Kg	1	09/11/2012 12:35

Print Date: 09/17/2012

N.C. Certification # 481

Results of **S-1**

Client Sample ID: **S-1**
Client Project ID: **70127335 U-3315 Parcel 188**
Lab Sample ID: 31202860001-A
Lab Project ID: 31202860

Collection Date: 09/07/2012 09:30
Received Date: 09/10/2012 14:45
Matrix: Soil-Solid as dry weight
Solids (%): 83.80

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
cis-1,3-Dichloropropene	ND		4.46	ug/Kg	1	09/11/2012 12:35
trans-1,3-Dichloropropene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Diisopropyl Ether	ND		4.46	ug/Kg	1	09/11/2012 12:35
Ethyl Benzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Hexachlorobutadiene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Isopropylbenzene (Cumene)	ND		4.46	ug/Kg	1	09/11/2012 12:35
Methyl iodide	ND		4.46	ug/Kg	1	09/11/2012 12:35
Methylene chloride	ND		17.8	ug/Kg	1	09/11/2012 12:35
Naphthalene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Styrene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Tetrachloroethene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Toluene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Trichloroethene	ND		4.46	ug/Kg	1	09/11/2012 12:35
Trichlorofluoromethane	ND		4.46	ug/Kg	1	09/11/2012 12:35
Vinyl chloride	ND		4.46	ug/Kg	1	09/11/2012 12:35
Xylene (total)	ND		8.92	ug/Kg	1	09/11/2012 12:35
cis-1,2-Dichloroethene	ND		4.46	ug/Kg	1	09/11/2012 12:35
m,p-Xylene	ND		8.92	ug/Kg	1	09/11/2012 12:35
n-Propylbenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
o-Xylene	ND		4.46	ug/Kg	1	09/11/2012 12:35
sec-Butylbenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
tert-Butyl methyl ether (MTBE)	ND		4.46	ug/Kg	1	09/11/2012 12:35
tert-Butylbenzene	ND		4.46	ug/Kg	1	09/11/2012 12:35
trans-1,2-Dichloroethene	ND		4.46	ug/Kg	1	09/11/2012 12:35
trans-1,4-Dichloro-2-butene	ND		22.3	ug/Kg	1	09/11/2012 12:35
Surrogates						
1,2-Dichloroethane-d4	106		55.0-173	%	1	09/11/2012 12:35
4-Bromofluorobenzene	96.0		23.0-141	%	1	09/11/2012 12:35
Toluene d8	100		57.0-134	%	1	09/11/2012 12:35

Batch Information

Analytical Batch: **VMS2542**
Analytical Method: **SW-846 8260B**
Instrument: **MSD9**
Analyst: **DVO**

Prep Batch: **VXX3976**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **09/11/2012 10:24**
Prep Initial Wt./Vol.: **6.69 g**
Prep Extract Vol: **5 mL**

Print Date: 09/17/2012

N.C. Certification # 481

Results of **S-1**

Client Sample ID: **S-1**
Client Project ID: **70127335 U-3315 Parcel 188**
Lab Sample ID: 31202860001-E
Lab Project ID: 31202860

Collection Date: 09/07/2012 09:30
Received Date: 09/10/2012 14:45
Matrix: Soil-Solid as dry weight
Solids (%): 83.80

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND		368	ug/Kg	1	09/13/2012 21:28
1,2-Dichlorobenzene	ND		368	ug/Kg	1	09/13/2012 21:28
1,3-Dichlorobenzene	ND		368	ug/Kg	1	09/13/2012 21:28
1,4-Dichlorobenzene	ND		368	ug/Kg	1	09/13/2012 21:28
2,4,5-Trichlorophenol	ND		368	ug/Kg	1	09/13/2012 21:28
2,4,6-Trichlorophenol	ND		368	ug/Kg	1	09/13/2012 21:28
2,4-Dichlorophenol	ND		368	ug/Kg	1	09/13/2012 21:28
2,4-Dinitrophenol	ND		1840	ug/Kg	1	09/13/2012 21:28
2,4-Dinitrotoluene	ND		368	ug/Kg	1	09/13/2012 21:28
2,6-Dinitrotoluene	ND		368	ug/Kg	1	09/13/2012 21:28
2-Chloronaphthalene	ND		368	ug/Kg	1	09/13/2012 21:28
2-Chlorophenol	ND		368	ug/Kg	1	09/13/2012 21:28
2-Methylnaphthalene	ND		368	ug/Kg	1	09/13/2012 21:28
2-Methylphenol	ND		368	ug/Kg	1	09/13/2012 21:28
2-Nitroaniline	ND		368	ug/Kg	1	09/13/2012 21:28
2-Nitrophenol	ND		368	ug/Kg	1	09/13/2012 21:28
3 and/or 4-Methylphenol	ND		368	ug/Kg	1	09/13/2012 21:28
3,3'-Dichlorobenzidine	ND		736	ug/Kg	1	09/13/2012 21:28
3-Nitroaniline	ND		1840	ug/Kg	1	09/13/2012 21:28
4,6-Dinitro-2-methylphenol	ND		1840	ug/Kg	1	09/13/2012 21:28
4-Chloro-3-methylphenol	ND		368	ug/Kg	1	09/13/2012 21:28
4-Chloroaniline	ND		368	ug/Kg	1	09/13/2012 21:28
4-Chlorophenyl phenyl ether	ND		368	ug/Kg	1	09/13/2012 21:28
Acenaphthene	ND		368	ug/Kg	1	09/13/2012 21:28
Acenaphthylene	ND		368	ug/Kg	1	09/13/2012 21:28
Anthracene	ND		368	ug/Kg	1	09/13/2012 21:28
Benzo(a)anthracene	ND		368	ug/Kg	1	09/13/2012 21:28
Benzo(a)pyrene	ND		368	ug/Kg	1	09/13/2012 21:28
Benzo(b)fluoranthene	ND		368	ug/Kg	1	09/13/2012 21:28
Benzo(g,h,i)perylene	ND		368	ug/Kg	1	09/13/2012 21:28
Benzo(k)fluoranthene	ND		368	ug/Kg	1	09/13/2012 21:28
Benzoic acid	ND		1840	ug/Kg	1	09/13/2012 21:28
Bis(2-Chloroethoxy)methane	ND		368	ug/Kg	1	09/13/2012 21:28
Bis(2-Chloroethyl)ether	ND		368	ug/Kg	1	09/13/2012 21:28
Bis(2-Chloroisopropyl)ether	ND		368	ug/Kg	1	09/13/2012 21:28
Bis(2-Ethylhexyl)phthalate	ND		368	ug/Kg	1	09/13/2012 21:28
4-Bromophenyl phenyl ether	ND		368	ug/Kg	1	09/13/2012 21:28
Butyl benzyl phthalate	ND		368	ug/Kg	1	09/13/2012 21:28
Chrysene	ND		368	ug/Kg	1	09/13/2012 21:28
Di-n-butyl phthalate	ND		368	ug/Kg	1	09/13/2012 21:28
Di-n-octyl phthalate	ND		368	ug/Kg	1	09/13/2012 21:28
Dibenz(a,h)anthracene	ND		368	ug/Kg	1	09/13/2012 21:28
Dibenzofuran	ND		368	ug/Kg	1	09/13/2012 21:28

Print Date: 09/17/2012

N.C. Certification # 481

Results of **S-1**

Client Sample ID: **S-1**
Client Project ID: **70127335 U-3315 Parcel 188**
Lab Sample ID: 31202860001-E
Lab Project ID: 31202860

Collection Date: 09/07/2012 09:30
Received Date: 09/10/2012 14:45
Matrix: Soil-Solid as dry weight
Solids (%): 83.80

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diethyl phthalate	ND		368	ug/Kg	1	09/13/2012 21:28
Dimethyl phthalate	ND		368	ug/Kg	1	09/13/2012 21:28
2,4-Dimethylphenol	ND		368	ug/Kg	1	09/13/2012 21:28
Diphenylamine	ND		368	ug/Kg	1	09/13/2012 21:28
Fluoranthene	ND		368	ug/Kg	1	09/13/2012 21:28
Fluorene	ND		368	ug/Kg	1	09/13/2012 21:28
Hexachlorobenzene	ND		1840	ug/Kg	1	09/13/2012 21:28
Hexachlorobutadiene	ND		368	ug/Kg	1	09/13/2012 21:28
Hexachlorocyclopentadiene	ND		736	ug/Kg	1	09/13/2012 21:28
Hexachloroethane	ND		368	ug/Kg	1	09/13/2012 21:28
Indeno(1,2,3-cd)pyrene	ND		368	ug/Kg	1	09/13/2012 21:28
Isophorone	ND		368	ug/Kg	1	09/13/2012 21:28
Naphthalene	ND		368	ug/Kg	1	09/13/2012 21:28
4-Nitroaniline	ND		1840	ug/Kg	1	09/13/2012 21:28
Nitrobenzene	ND		368	ug/Kg	1	09/13/2012 21:28
4-Nitrophenol	ND		1840	ug/Kg	1	09/13/2012 21:28
Pentachlorophenol	ND		1840	ug/Kg	1	09/13/2012 21:28
Phenanthrene	ND		368	ug/Kg	1	09/13/2012 21:28
Phenol	ND		368	ug/Kg	1	09/13/2012 21:28
Pyrene	ND		368	ug/Kg	1	09/13/2012 21:28
n-Nitrosodi-n-propylamine	ND		368	ug/Kg	1	09/13/2012 21:28
Surrogates						
2,4,6-Tribromophenol	69.0		41.0-129	%	1	09/13/2012 21:28
2-Fluorobiphenyl	77.0		48.0-123	%	1	09/13/2012 21:28
2-Fluorophenol	73.0		42.0-123	%	1	09/13/2012 21:28
Nitrobenzene-d5	82.0		46.0-117	%	1	09/13/2012 21:28
Phenol-d6	84.0		48.0-125	%	1	09/13/2012 21:28
Terphenyl-d14	84.0		44.0-140	%	1	09/13/2012 21:28

Batch Information

Analytical Batch: **XMS1663**
Analytical Method: **SW-846 8270D**
Instrument: **MSD10**
Analyst: **CMP**

Prep Batch: **XXX3037**
Prep Method: **SW-846 3541**
Prep Date/Time: **09/12/2012 15:32**
Prep Initial Wt./Vol.: **32.45 g**
Prep Extract Vol: **10 mL**

Print Date: 09/17/2012

N.C. Certification # 481

Results of **S-2**

Client Sample ID: **S-2**
Client Project ID: **70127335 U-3315 Parcel 188**
Lab Sample ID: 31202860002-A
Lab Project ID: 31202860

Collection Date: 09/07/2012 09:55
Received Date: 09/10/2012 14:45
Matrix: Soil-Solid as dry weight
Solids (%): 84.20

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,1,1-Trichloroethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,1,2,2-Tetrachloroethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,1,2-Trichloroethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,1-Dichloroethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,1-Dichloroethene	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,1-Dichloropropene	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,2,3-Trichlorobenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,2,3-Trichloropropane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,2,4-Trichlorobenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,2,4-Trimethylbenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,2-Dibromo-3-chloropropane	ND		28.7	ug/Kg	1	09/11/2012 13:19
1,2-Dibromoethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,2-Dichlorobenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,2-Dichloroethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,2-Dichloropropane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,3,5-Trimethylbenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,3-Dichlorobenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,3-Dichloropropane	ND		4.79	ug/Kg	1	09/11/2012 13:19
1,4-Dichlorobenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
2,2-Dichloropropane	ND		4.79	ug/Kg	1	09/11/2012 13:19
2-Butanone	ND		24.0	ug/Kg	1	09/11/2012 13:19
2-Chlorotoluene	ND		4.79	ug/Kg	1	09/11/2012 13:19
2-Hexanone	ND		12.0	ug/Kg	1	09/11/2012 13:19
4-Chlorotoluene	ND		4.79	ug/Kg	1	09/11/2012 13:19
4-Isopropyltoluene	ND		4.79	ug/Kg	1	09/11/2012 13:19
4-Methyl-2-pentanone	ND		12.0	ug/Kg	1	09/11/2012 13:19
Acetone	ND		47.9	ug/Kg	1	09/11/2012 13:19
Benzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Bromobenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Bromochloromethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
Bromodichloromethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
Bromoform	ND		4.79	ug/Kg	1	09/11/2012 13:19
Bromomethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
n-Butylbenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Carbon disulfide	ND		4.79	ug/Kg	1	09/11/2012 13:19
Carbon tetrachloride	ND		4.79	ug/Kg	1	09/11/2012 13:19
Chlorobenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Chloroethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
Chloroform	ND		4.79	ug/Kg	1	09/11/2012 13:19
Chloromethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
Dibromochloromethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
Dibromomethane	ND		4.79	ug/Kg	1	09/11/2012 13:19

Print Date: 09/17/2012

N.C. Certification # 481

Results of **S-2**

Client Sample ID: **S-2**
Client Project ID: **70127335 U-3315 Parcel 188**
Lab Sample ID: 31202860002-A
Lab Project ID: 31202860

Collection Date: 09/07/2012 09:55
Received Date: 09/10/2012 14:45
Matrix: Soil-Solid as dry weight
Solids (%): 84.20

Results by **SW-846 8260B**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Dichlorodifluoromethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
cis-1,3-Dichloropropene	ND		4.79	ug/Kg	1	09/11/2012 13:19
trans-1,3-Dichloropropene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Diisopropyl Ether	ND		4.79	ug/Kg	1	09/11/2012 13:19
Ethyl Benzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Hexachlorobutadiene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Isopropylbenzene (Cumene)	ND		4.79	ug/Kg	1	09/11/2012 13:19
Methyl iodide	ND		4.79	ug/Kg	1	09/11/2012 13:19
Methylene chloride	ND		19.2	ug/Kg	1	09/11/2012 13:19
Naphthalene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Styrene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Tetrachloroethene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Toluene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Trichloroethene	ND		4.79	ug/Kg	1	09/11/2012 13:19
Trichlorofluoromethane	ND		4.79	ug/Kg	1	09/11/2012 13:19
Vinyl chloride	ND		4.79	ug/Kg	1	09/11/2012 13:19
Xylene (total)	ND		9.58	ug/Kg	1	09/11/2012 13:19
cis-1,2-Dichloroethene	ND		4.79	ug/Kg	1	09/11/2012 13:19
m,p-Xylene	ND		9.58	ug/Kg	1	09/11/2012 13:19
n-Propylbenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
o-Xylene	ND		4.79	ug/Kg	1	09/11/2012 13:19
sec-Butylbenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
tert-Butyl methyl ether (MTBE)	ND		4.79	ug/Kg	1	09/11/2012 13:19
tert-Butylbenzene	ND		4.79	ug/Kg	1	09/11/2012 13:19
trans-1,2-Dichloroethene	ND		4.79	ug/Kg	1	09/11/2012 13:19
trans-1,4-Dichloro-2-butene	ND		24.0	ug/Kg	1	09/11/2012 13:19
Surrogates						
1,2-Dichloroethane-d4	111		55.0-173	%	1	09/11/2012 13:19
4-Bromofluorobenzene	100		23.0-141	%	1	09/11/2012 13:19
Toluene d8	102		57.0-134	%	1	09/11/2012 13:19

Batch Information

Analytical Batch: **VMS2542**
Analytical Method: **SW-846 8260B**
Instrument: **MSD9**
Analyst: **DVO**

Prep Batch: **VXX3976**
Prep Method: **SW-846 5035 SL**
Prep Date/Time: **09/11/2012 10:29**
Prep Initial Wt./Vol.: **6.2 g**
Prep Extract Vol: **5 mL**

Print Date: 09/17/2012

N.C. Certification # 481

Results of **S-2**

Client Sample ID: **S-2**
Client Project ID: **70127335 U-3315 Parcel 188**
Lab Sample ID: 31202860002-E
Lab Project ID: 31202860

Collection Date: 09/07/2012 09:55
Received Date: 09/10/2012 14:45
Matrix: Soil-Solid as dry weight
Solids (%): 84.20

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
1,2,4-Trichlorobenzene	ND		357	ug/Kg	1	09/13/2012 22:37
1,2-Dichlorobenzene	ND		357	ug/Kg	1	09/13/2012 22:37
1,3-Dichlorobenzene	ND		357	ug/Kg	1	09/13/2012 22:37
1,4-Dichlorobenzene	ND		357	ug/Kg	1	09/13/2012 22:37
2,4,5-Trichlorophenol	ND		357	ug/Kg	1	09/13/2012 22:37
2,4,6-Trichlorophenol	ND		357	ug/Kg	1	09/13/2012 22:37
2,4-Dichlorophenol	ND		357	ug/Kg	1	09/13/2012 22:37
2,4-Dinitrophenol	ND		1780	ug/Kg	1	09/13/2012 22:37
2,4-Dinitrotoluene	ND		357	ug/Kg	1	09/13/2012 22:37
2,6-Dinitrotoluene	ND		357	ug/Kg	1	09/13/2012 22:37
2-Chloronaphthalene	ND		357	ug/Kg	1	09/13/2012 22:37
2-Chlorophenol	ND		357	ug/Kg	1	09/13/2012 22:37
2-Methylnaphthalene	ND		357	ug/Kg	1	09/13/2012 22:37
2-Methylphenol	ND		357	ug/Kg	1	09/13/2012 22:37
2-Nitroaniline	ND		357	ug/Kg	1	09/13/2012 22:37
2-Nitrophenol	ND		357	ug/Kg	1	09/13/2012 22:37
3 and/or 4-Methylphenol	ND		357	ug/Kg	1	09/13/2012 22:37
3,3'-Dichlorobenzidine	ND		713	ug/Kg	1	09/13/2012 22:37
3-Nitroaniline	ND		1780	ug/Kg	1	09/13/2012 22:37
4,6-Dinitro-2-methylphenol	ND		1780	ug/Kg	1	09/13/2012 22:37
4-Chloro-3-methylphenol	ND		357	ug/Kg	1	09/13/2012 22:37
4-Chloroaniline	ND		357	ug/Kg	1	09/13/2012 22:37
4-Chlorophenyl phenyl ether	ND		357	ug/Kg	1	09/13/2012 22:37
Acenaphthene	ND		357	ug/Kg	1	09/13/2012 22:37
Acenaphthylene	ND		357	ug/Kg	1	09/13/2012 22:37
Anthracene	ND		357	ug/Kg	1	09/13/2012 22:37
Benzo(a)anthracene	ND		357	ug/Kg	1	09/13/2012 22:37
Benzo(a)pyrene	ND		357	ug/Kg	1	09/13/2012 22:37
Benzo(b)fluoranthene	ND		357	ug/Kg	1	09/13/2012 22:37
Benzo(g,h,i)perylene	ND		357	ug/Kg	1	09/13/2012 22:37
Benzo(k)fluoranthene	ND		357	ug/Kg	1	09/13/2012 22:37
Benzoic acid	ND		1780	ug/Kg	1	09/13/2012 22:37
Bis(2-Chloroethoxy)methane	ND		357	ug/Kg	1	09/13/2012 22:37
Bis(2-Chloroethyl)ether	ND		357	ug/Kg	1	09/13/2012 22:37
Bis(2-Chloroisopropyl)ether	ND		357	ug/Kg	1	09/13/2012 22:37
Bis(2-Ethylhexyl)phthalate	ND		357	ug/Kg	1	09/13/2012 22:37
4-Bromophenyl phenyl ether	ND		357	ug/Kg	1	09/13/2012 22:37
Butyl benzyl phthalate	ND		357	ug/Kg	1	09/13/2012 22:37
Chrysene	ND		357	ug/Kg	1	09/13/2012 22:37
Di-n-butyl phthalate	ND		357	ug/Kg	1	09/13/2012 22:37
Di-n-octyl phthalate	ND		357	ug/Kg	1	09/13/2012 22:37
Dibenz(a,h)anthracene	ND		357	ug/Kg	1	09/13/2012 22:37
Dibenzofuran	ND		357	ug/Kg	1	09/13/2012 22:37

Print Date: 09/17/2012

N.C. Certification # 481

Results of **S-2**

Client Sample ID: **S-2**
Client Project ID: **70127335 U-3315 Parcel 188**
Lab Sample ID: 31202860002-E
Lab Project ID: 31202860

Collection Date: 09/07/2012 09:55
Received Date: 09/10/2012 14:45
Matrix: Soil-Solid as dry weight
Solids (%): 84.20

Results by **SW-846 8270D**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diethyl phthalate	ND		357	ug/Kg	1	09/13/2012 22:37
Dimethyl phthalate	ND		357	ug/Kg	1	09/13/2012 22:37
2,4-Dimethylphenol	ND		357	ug/Kg	1	09/13/2012 22:37
Diphenylamine	ND		357	ug/Kg	1	09/13/2012 22:37
Fluoranthene	ND		357	ug/Kg	1	09/13/2012 22:37
Fluorene	ND		357	ug/Kg	1	09/13/2012 22:37
Hexachlorobenzene	ND		1780	ug/Kg	1	09/13/2012 22:37
Hexachlorobutadiene	ND		357	ug/Kg	1	09/13/2012 22:37
Hexachlorocyclopentadiene	ND		713	ug/Kg	1	09/13/2012 22:37
Hexachloroethane	ND		357	ug/Kg	1	09/13/2012 22:37
Indeno(1,2,3-cd)pyrene	ND		357	ug/Kg	1	09/13/2012 22:37
Isophorone	ND		357	ug/Kg	1	09/13/2012 22:37
Naphthalene	ND		357	ug/Kg	1	09/13/2012 22:37
4-Nitroaniline	ND		1780	ug/Kg	1	09/13/2012 22:37
Nitrobenzene	ND		357	ug/Kg	1	09/13/2012 22:37
4-Nitrophenol	ND		1780	ug/Kg	1	09/13/2012 22:37
Pentachlorophenol	ND		1780	ug/Kg	1	09/13/2012 22:37
Phenanthrene	ND		357	ug/Kg	1	09/13/2012 22:37
Phenol	ND		357	ug/Kg	1	09/13/2012 22:37
Pyrene	ND		357	ug/Kg	1	09/13/2012 22:37
n-Nitrosodi-n-propylamine	ND		357	ug/Kg	1	09/13/2012 22:37
Surrogates						
2,4,6-Tribromophenol	76.0		41.0-129	%	1	09/13/2012 22:37
2-Fluorobiphenyl	83.0		48.0-123	%	1	09/13/2012 22:37
2-Fluorophenol	77.0		42.0-123	%	1	09/13/2012 22:37
Nitrobenzene-d5	89.0		46.0-117	%	1	09/13/2012 22:37
Phenol-d6	88.0		48.0-125	%	1	09/13/2012 22:37
Terphenyl-d14	88.0		44.0-140	%	1	09/13/2012 22:37

Batch Information

Analytical Batch: **XMS1663**
Analytical Method: **SW-846 8270D**
Instrument: **MSD10**
Analyst: **CMP**

Prep Batch: **XXX3037**
Prep Method: **SW-846 3541**
Prep Date/Time: **09/12/2012 15:32**
Prep Initial Wt./Vol.: **33.36 g**
Prep Extract Vol: **10 mL**

Print Date: 09/17/2012

N.C. Certification # 481

CHAIN OF CUSTODY

Pitt County, NC

SGS ANALYTICAL PERSPECTIVES
5500 Business Drive
Wilmington, NC 28405
+1 910 350 1903
WWW.SGS.COM

CLIENT: Terracon Parcel 188		SGS Reference #: 31202860	PAGE 1
CONTACT: Steve Kerlin	**PHONE NO:** (919) 873-2211		OF 1
PROJECT: 70127335	**SITE / PWSID / WBS #:** U-3315		
REPORTS TO: sjkerlin@terracon.com			
EMAIL: Steve Kerlin			
INVOICE TO: NCDOT	**QUOTE #** / **P.O. NUMBER**		

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	# CONTAINERS	SAMPLE TYPE (C=COMP, G=GRAB)	PRESERVATIVES USED: MeOH	N/A	ANALYSIS REQUIRED: 8260	8270	REMARKS
	S-1	9/7/12	9:30A	SS	4	G			X	X	
	S-2	9/7/12	9:55	SS	4	G			X	X	

COLLECTED/RELINQUISHED BY: (1)	DATE	TIME	RECEIVED BY:	REPORT LEVEL:	REQUESTED TURNAROUND TIME:
	9/7/12	1715		☐ Level I ☐ Level II ☐ Level IV	☐ Rush:_____ ☒ Standard
Relinquished By: (2)	Date 9/10/12	Time 1200	Received By:	**SPECIAL DELIVERABLES:** State of Origin:_____	☐ Trust Fund
				☐ DoD ☐ EDD:_____	Other:_____
Relinquished By: (3)	Date 9/10/12	Time 1445	Received By:	**SPECIAL INSTRUCTIONS:**	
Received For Laboratory By:	Date 9/19/12	Time 1445	CoC Seal: INTACT BROKEN (ABSENT) Sample Receipt Temp: C 0.2oC	Shipping Carrier: Shipping Ticket No:	Notes:

SGS-00055 (06/12)

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

White - Retained by Lab
Yellow - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT-Terracon** Work Order No.: **31202860**

1. ___ Shipped
   _X_ Hand Delivered

2. _X_ COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms

3. ___ Custody Tape on Container
   _X_ No Custody Tape

4. _X_ Samples Intact
   ___ Samples Broken / Leaking

5. _X_ Chilled on Receipt Actual Temp.(s) in °C: 0.2
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   ___ Received Outside of Temperature Specifications

6. _X_ Sufficient Sample Submitted
   ___ Insufficient Sample Submitted

7. ___ Chlorine absent
   ___ HNO3 < 2
   ___ HCL < 2
   ___ Additional Preservatives verified (see notes)

8. _X_ Received Within Holding Time
   ___ Not Received Within Holding Time

9. _X_ No Discrepancies Noted
   ___ Discrepancies Noted
   ___ NCDENR notified of Discrepancies*

10. ___ No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm

Notes:

Comments:

Inspected and Logged in by: JJ

Date: Mon-9/10/12 00:00

*NCDENR must be notified when collection, holding time or preservation requirements are not met. MI_11.6