PRELIMINARY SITE ASSESSMENT
FOR
PARCEL #075 J.W. EZZELL PROPERTY
STATE PROJECT: R-2303B
WBS ELEMENT: 34416.1.1
NC 24 FROM SR 1853 (JOHN NUNNERY RD.) IN CUMBERLAND COUNTY TO SR 1404 (DOWDY RD.) IN SAMPSON COUNTY

PREPARED FOR:

NCDOT GEOTECHNICAL ENGINEERING UNIT
GEOENVIRONMENTAL SECTION
1589 MSC
RALEIGH, NORTH CAROLINA 27699-1589

JULY 26, 2011

PREPARED BY:

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CATLIN PROJECT NO. 211043

CORPORATE GEOLOGY LICENSE CERTIFICATION NO. C-118
CORPORATE LICENSURE NO. FOR ENGINEERING SERVICES C-0585

TABLE OF CONTENTS

Preliminary Site Assessment
for
Parcel #075 J.W. Ezzell Property

State Project: R-2303B
WBS Element: 34416.1.1
NC 24 from SR 1853 (John Nunnery Rd.) in Cumberland County
to SR 1404 (Dowdy Rd.) in Sampson County

July 26, 2011

1.0 PURPOSE OF INVESTIGATION AND DESCRIPTION

CATLIN Engineers and Scientists (CATLIN) were retained by the North Carolina Department of Transportation (NCDOT) Geotechnical Engineering Unit to provide a field investigation concluding with a Preliminary Site Assessment (PSA) for the above referenced property. In response to a Request for Technical and Cost Proposal (RFP) dated May 10, 2011 and discussions with NCDOT GeoEnvironmental Project Manager Mr. Terry Fox, LG, CATLIN submitted a proposal for conducting an investigation at five (5) parcels near Stedman and Autryville, North Carolina. Notice to Proceed was received from NCDOT in correspondence dated May 27, 2011.

Acquisition of the right-of-way is necessary for NC 24 roadway construction (above referenced State Project R-2303B) and specifically at the above referenced parcel. A site investigation is necessary to determine the presence of underground storage tanks (USTs) and/or contaminated soil in the proposed right-of-way and/or easement. Figure 1 illustrates the State Project location.

This report documents our activities and findings at Parcel #037, Douglas L. New Property. The site is illustrated on Figure 2. The following specific parcel information was provided by NCDOT:

<u>Parcel #075 J.W. Ezzell Property</u>
Plan sheet 21
Jesse's 76 Gas Grocery
4794 Autry Highway (approx.)
Autryville, NC 28318

Facility I.D. #: None Identified

Property Owner:
J.W. Ezzell Property
357 Hayne Stretch Rd.
Autryville, NC 28318

This site appears to be an abandoned gas station and grocery store. The site is located on the north side of Autry Highway (NC 24) approximately 660 feet west of Hayne Exit Rd. According to

NCDENR's UST Section Registry there are no known Facility IDs or Groundwater Incidents associated with this property. The site is illustrated on Figure 2.

The work scope as requested includes:

- Locate all USTs and determine approximate size and contents (if any).
- Determine if contaminated soils are present.
- If contamination is evident, estimate the quantity of impacted soils and indicate the approximate area of soil contamination on a site map.
- Provide a Microstation file with the location of USTs, soil contamination and monitoring wells.
- Prepare a report including field activities, findings, and recommendations for each site in triplicate and electronically to the NCDOT GeoEnvironmental Section.

In addition to the RFP, NCDOT provided plan sheets associated with the roadway construction. CATLIN and NCDOT personnel agreed to approximate proposed boring and sample locations within the right-of-way and/or easement for soil sample collection and total petroleum hydrocarbons (TPH) diesel and gasoline range organics (DRO and GRO) laboratory analysis.

2.0 METHODS

Approximate proposed borings were discussed with NCDOT personnel before final Workplan submittal. Per NCDOT request, borings (soil samples) were located near known or suspect UST systems and proposed drainage features (as indicated on NCDOT provided plan sheets).

CATLIN coordinated geophysical activities concurrently with soil boring and sampling. The geophysical investigation methods are detailed in the Schnable Engineering report provided in Appendix C. Final boring/sample locations were determined based on proposed drainage feature locations, geophysical results, and field observations. CATLIN's field activities concluded on June 24, 2011.

2.1 FIELD METHODS

All field work was conducted in general accordance with state and federal guidelines and industry standards.

Underground utility locating was coordinated by CATLIN personnel. The North Carolina One Call Center (NC-1-Call) was contacted for underground utility location. Proposed boring locations were marked

before NC-1-Call personnel were on-site. The areas around the proposed boring locations were checked and found to be clear of any underground utilities or alternate locations were indicated by NC-1-Call personnel.

CATLIN personnel gathered subsurface soil data at the site by Direct Push Technology (DPT) boring advancement using an AMS PowerProbe^{TM} 9600D (PowerProbe). The borings were advanced to depth by static force and a 90-pound hydraulic percussion hammer. Two and one-quarter inch diameter by four-foot length steel is used as casing. Soil samples were continuously collected in four-foot long and one and one-half inch diameter clear liners. Liners are removed from the casing and then cut in half longitudinally to allow for visual/manual classification utilizing the Unified Soil Classification System (USCS).

Borings were identified by the parcel number (as indicated by NCDOT) followed by "DPT" and consecutive numbers starting with "01" at each parcel (example: 75-DPT-01). Soil samples were collected continuously from near the surface to boring termination. Soils were removed from the liners in two-foot intervals and placed in sealable polyethylene bags for organic vapor analysis (OVA) headspace screening utilizing a photo ionization detector (PID). The USCS, OVA/PID reading, and any indication of petroleum impact were recorded on field logs and have been transferred to the Boring Logs provided in Appendix A.

Soil samples were collected for laboratory analysis above the water table using roughly a one-foot interval of the two-foot sample revealing the highest OVA/PID reading. Sample identification was based on the boring identification followed by sample depth (in feet) below land surface (BLS) in parentheses [example: 75-DPT-01 (3-4')]. In some cases of elevated OVA/PID readings, additional borings were advanced for soil sample collection in an attempt to delineate suspected soil contamination.

A post-hole digger was utilized to collect a soil samples at borings 75-DPT-12 and 75-DPT-13.

New disposable nitrile gloves were worn during sampling activities. All samples were placed into laboratory provided glassware and packed on ice in an insulated cooler for transportation to the laboratory. Sample integrity was maintained by following proper Chain of Custody procedures. A copy of the Chain of Custody is provided following the analytical report in Appendix B.

Boreholes were abandoned to just below the surface using three-

eighth inch bentonite chips. Bentonite and water were poured into the borehole simultaneously to facilitate hydration. Borings located in asphalt or gravel were topped with asphalt cold patch. Final borehole and sample locations were surveyed utilizing a Trimble® GPS survey instrument.

Thirteen (13) borings were advanced for soil sample collection and one sample was collected from each boring for laboratory analysis. Borings were advanced near a proposed drainage feature, suspected UST locations, and a former dispenser pump island. Boring/sample locations are illustrated on Figure 2.

2.2 LABORATORY TESTING

Following boring advancement, selected soils were placed in the appropriately labeled glassware. In an attempt to provide information regarding petroleum impact to soils and groundwater with reasonable analytical expense, soil samples were analyzed for TPH DRO and GRO by Environmental Protection Agency (EPA) Methods 5030 and 3550 with analysis by modified 8015.

A total of 13 soil samples were submitted to SGS North America Inc. (NC Certification # 481). Chain of Custody documentation is included in Appendix B.

3.0 RESULTS

In the event a cut is required for roadway construction or utility installation, any soil samples revealing detectable TPH concentrations will be considered petroleum impacted for handling and disposal purposes. The complete laboratory analytical reports are provided in Appendix B. Results of Schnabel's geophysical investigation including site photographs were submitted directly to NCDOT and a copy is provided in Appendix C. Schnabel's investigation results will be generally discussed in the following section.

The geophysical data did not indicate the presence of metallic USTs in the areas surveyed at the site. A vent pipe was identified on the east side of the building. Based on visual confirmation, the buried section of the vent pipe extends at least six (6) feet to the east-southeast of the building. Based on the Fisher Gemini-3 conductive tracing, the vent pipe extends at least 24 feet to the east-southeast of the building. It is possible that the UST that would have been connected to the vent pipe was previously removed or it is located in the wooded area to the east of the building in areas not accessible for geophysical surveying.

As illustrated on Figure 2, a water line and telecommunications lines were identified between the building and Autry Highway (NC 24). Due to the presence of numerous utilities, soil boring/sampling was prohibited south of the borings 75-DPT-09 and 75-DPT-11.

Boring 75-DPT-02 was terminated at eight (8) feet BLS in clayey sand. Damp soils were encountered at approximately four (4) feet BLS and saturated soils were noted at boring termination (eight feet BLS). A strong petroleum odor and stained soils were noted in the 75-DPT-02 boring from four (4) feet to eight (8) feet. Borings 75-DPT-01 and 71-DPT-03 through 71-DPT-07 were terminated at four (4) feet BLS. A mix of sands and clays were encountered across the site. Soil samples were collected for laboratory analysis from within the two (2) foot interval with the highest OVA/PID reading. Physical indications (petroleum odor, staining, and/or elevated organic vapor readings) of petroleum impacted soils were noted in the field at borings 75-DPT-02, 75-DPT-05, 75-DPT-06, 75-DPT-09, 75-DPT-10, and 75-DPT-11. Boring logs including USCS classification and OVA/PID screening results are provided in Appendix A. Summarized analytical results are provided on Table 1 and Figure 2.

Laboratory analytical results revealed TPH impacted soils around the former dispenser island and at the proposed drainage feature. All of the soil samples except the samples collected from borings 75-DPT-04, 75-DPT-08, and 75-DPT-12 revealed concentrations of TPH DRO or TPH GRO. The detectable TPH DRO concentrations ranged from 11.8 milligrams per kilogram (mg/kg) [75-DPT-01 (3-4')] to 1,190 mg/kg [75-DPT06 (2-3')]. The detectable TPH GRO concentrations ranged from 4.13 mg/kg [75-DPT-07 (1-2')] to 5,260 mg/kg [75-DPT-02 (1-2')].

The estimated extent of TPH impacted soil is illustrated on Figure 2. The estimated area encompasses approximately 2,580 ft^2. Based on contamination from the surface to the assumed water table depth of eight (8) feet BLS, approximately 760 yds^3 of TPH impacted soils may be in the area. There has been no additional sampling conducted to vertically delineate petroleum impact(s).

4.0 SUMMARY AND RECOMMENDATIONS

A preliminary site assessment was conducted at the subject site as requested by NCDOT. Right-of-Way acquisition for NC 24 roadway construction is proposed at the site. In the event a cut is required for roadway construction or utility installation, any soil samples revealing detectable TPH concentrations will be considered petroleum impacted for handling and disposal purposes.

A vent pipe and former dispenser pump island are located at the site. A drainage features identified on the NCDOT provided plan sheets is proposed on the east side of the building. The geophysical data did not indicate the presence of metallic USTs.

Thirteen (13) borings were advanced for soil sample collection. Ten (10) of the 13 soil samples revealed TPH DRO or TPH GRO concentrations above 10 mg/kg. The area of impacted soil is illustrated on Figure 2 and covers approximately 2,580 ft^2. Based on assumed petroleum impacts from the surface to the estimated water table depth (eight feet BLS), approximately 760 yds^3 or roughly 1,140 tons of TPH impacted soils may be at the site around the former dispenser pump island area. A portion of the proposed drainage is within the petroleum impacted soil area.

CATLIN recommends removing the petroleum impacted soils from within the proposed drainage feature area. CATLIN also recommends notifying any utility or construction contractor of these findings and advising them to be prepared to handle petroleum impacted soil if disturbing soil near the area indicated on Figure 2.

5.0 LIMITATIONS

This report is based on the agreed work scope and a review of available data from limited sampling. It is possible that this investigation may have failed to reveal the presence of contamination in the project area where such contamination may exist. Although CATLIN has used accepted methods appropriate for soil and groundwater sampling, CATLIN cannot guarantee that additional soil and/or groundwater contamination does not exist.

6.0 SIGNATURES

Benjamin J. Ashba
Project Manager

NORTH CAROLINA LICENSED SEAL 1052 GEOLOGIST GEORGE RICHARD GARRETT

7/26/11

G. Richard Garrett, P.G.
Senior Project Manager

TABLES

TABLE 1
SUMMARY OF SOIL LABORATORY RESULTS
EPA METHOD 8015

Parcel #075
J.W. Ezzell Property
Jesse's 76 Gas Grocery (abandoned)
4794 Autry Highway (NC 24) (approximate)
Autryville, North Carolina

Sample ID	Location		Contaminant of Concern →	Diesel Range Organics	Gasoline Range Organics
	Northing	Easting	Date Collected		
75-DPT-01 (3-4ft)	448059.531	2123371.260	6/23/2011	**11.8**	<3.26
75-DPT-02 (1-2ft)	448046.809	2123366.699	6/23/2011	**933**	**5,260**
75-DPT-03 (2-3ft)	448043.547	2123379.374	6/23/2011	**52.8**	**130**
75-DPT-04 (3-4ft)	448042.620	2123388.886	6/23/2011	<6.68	<3.31
75-DPT-05 (1-2ft)	448044.765	2123349.499	6/23/2011	**963**	**4,010**
75-DPT-06 (2-3ft)	448056.788	2123340.432	6/23/2011	**1,190**	**2,470**
75-DPT-07 (1-2ft)	448074.138	2123347.386	6/23/2011	**11.9**	**4.13**
75-DPT-08 (1-2ft)	448082.473	2123325.169	6/23/2011	<6.54	<3.35
75-DPT-09 (1-2ft)	448034.822	2123358.642	6/23/2011	**230**	**1,220**
75-DPT-10 (3-4ft)	448064.505	2123325.442	6/23/2011	<7.01	**191**
75-DPT-11 (1-2ft)	448043.391	2123335.038	6/23/2011	**536**	**1,730**
75-DPT-12 (2ft)	448054.391	2123391.354	6/23/2011	<6.51	<3.93
75-DPT-13 (2ft)	448070.234	2123378.832	6/23/2011	**14.5**	<3.32

All results in milligrams per kilogram (mg/kg).
Location coordinates: US State Plane 1983, NC Zone 3200, NAD 1983, US Survey feet
Sample depth in feet provided in parenthesis ( ) as part of the Sample ID.
< = Less than reporting limit
Results in bold exceed the reporting limit.

FIGURES

DESCRIPTION:
PARCEL #075
J. W. EZZELL
PROPERTY

ENGLISH

FIGURE:	1
WBS NO.:	34416.1.1
TIP NO.:	R-2303B
COUNTY:	SAMPSON

PARCEL #075

ELECTRONIC TOPOGRAPHIC QUADRANGLES: AUTRYVILLE, ROSEBORO, SALEMBURG, AND STEDMAN
OBTAINED FROM TERRAIN NAVIGATOR PRO.
ELECTRONIC DESIGN FILES OBTAINED FROM NCDOT

2000 1000 0 2000
SCALE IN FEET

DESCRIPTION:
PARCEL #075
J. W. EZZELL
PROPERTY

ENGLISH

FIGURE:	2
WBS NO.:	34416.1.1
TIP NO.:	R-2303B
COUNTY:	SAMPSON

Sample ID	Contaminant of Concern → Date Collected	Diesel Range Organics	Gasoline Range Organics
75-DPT-01 (3-4ft)	6/23/2011	**11.8**	<3.26
75-DPT-02 (1-2ft)	6/23/2011	**933**	**5,260**
75-DPT-03 (2-3ft)	6/23/2011	**52.8**	**130**
75-DPT-04 (3-4ft)	6/23/2011	<6.68	<3.31
75-DPT-05 (1-2ft)	6/23/2011	**963**	**4,010**
75-DPT-06 (2-3ft)	6/23/2011	**1,190**	**2,470**
75-DPT-07 (1-2ft)	6/23/2011	**11.9**	**4.13**
75-DPT-08 (1-2ft)	6/23/2011	<6.54	<3.35
75-DPT-09 (1-2ft)	6/23/2011	**230**	**1,220**
75-DPT-10 (3-4ft)	6/23/2011	<7.01	**191**
75-DPT-11 (1-2ft)	6/23/2011	**536**	**1,730**
75-DPT-12 (2ft)	6/23/2011	<6.51	<3.93
75-DPT-13 (2ft)	6/23/2011	**14.5**	<3.32

All results in milligrams per kilogram (mg/kg).
Location coordinates: US State Plane 1983, NC Zone 3200, NAD 1983, US Survey feet
Sample depth in feet provided in parenthesis ( ) as part of the Sample ID.
< = Less than reporting
Results in bold exceed the reporting limit.

75
J. W. EZZELL
DB 1053 PG 596

N 18° 41' 20" E
196.45'

ACCESS POINT
RW
CA

JESSE'S 76 GAS
GROCERY (ABANDONED)
4794 AUTRY HWY
(NC 24) (APPROXIMATE)

CONC
SOIL
MTL CANOPY
CONC
SOIL

*08 *13 *12 *07 *01 *06 *04 *10 *02 *03 *11 *05 *09

15"
8"
W
T
T FO

ESTIMATED EXTENT OF
PETROLEUM IMPACTED SOIL

NC 24 AUTRY HIGHWAY

-L- S 69° 32' 36.7" E

LEGEND
DPT SOIL BORING/SAMPLE
EXISTING MONITORING WELL

NOTES:
* = ALL BORINGS PREFACED WITH "75-DPT-"
ELECTRONIC FILES OBTAINED FROM NCDOT

20 10 0 20
SCALE IN FEET

APPENDICES

APPENDIX A

BORING LOGS

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-01	
		DRILLER: Michael D. Mason			
NORTHING: 448,059.53	EASTING: 2,123,371.26	CREW:			
SYSTEM:	BORING LOCATION: SE corner of Bldg.			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 4.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D	▲3.1		SP			Vf. to coarse SAND. Black grading to brown grading to orangish-brown.	
2.0		D	▲4.6	75-DPT-01 (3-4') @ 0700	SP		2.0	Grayish-brown vf. to f. SAND.	
4.0							4.0	Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-02	
		DRILLER: Michael D. Mason			
NORTHING: 448,046.81	EASTING: 2,123,366.70	CREW:			
SYSTEM:	BORING LOCATION: SE corner of canopy			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 8.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D	▲1,963	75-DPT-02 (1-2') @ 0730	SP			Orangish-brown f. SAND w/ thin (~2") black GRAVEL lense at ~ 0.5' BLS.	
2.0		D	▲1,564		SP		2.0	Grayish-brown f. SAND.	
4.0		M	▲1,365		SC		3.0	Clayey SAND w/ staining and strong petro odor.	
6.0		M	▲949		SC		4.0	S.A.A. w/ mottled oranges, browns, tans, and gray to black staining w/ strong petro odor throughout.	
8.0							6.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN.GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-03	
		DRILLER: Michael D. Mason			
NORTHING: 448,043.55	EASTING: 2,123,379.37	CREW:			
SYSTEM:	BORING LOCATION: ~15' E. of DPT-02			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 5.5	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D	▲390		ML		0.3	Grassy TOPSOIL.	
					OL		0.8	Dark red Silty CLAY. Tr. plasticity.	
					GP		1.0	Sandy GRAVEL.	
2.0					SP		2.0		
		M	▲819	75-DPT-03 (2-3') @ 0745	SP		2.6	Dark gray vf. to f. SAND. Slight petro odor.	
4.0					SC		4.0	S.A.A.	
								Brown w/ dark gray Clayey vf. to f. SAND. Petro odor.	
5.5								Boring Terminated at Depth 5.5 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN.GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-04	
		DRILLER: Michael D. Mason			
NORTHING: 448,042.62	EASTING: 2,123,388.89	CREW:			
SYSTEM:	BORING LOCATION: ~8' E. of DPT-03			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 4.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D	▲5.1		SP/ ML		0.9	Thin layers of varying brown f. SAND (~1") and red CLAY layer at 0.5' BLS.	
					GW		1.0 2.0	Sandy GRAVEL.	
2.0					SP			Brown f. SAND.	
		D	▲5.3	75-DPT-04 (3-4') @ 0800	SP/ SC		4.0	S.A.A. grading to light yellowish-brown Clayey SAND.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-05	
		DRILLER: Michael D. Mason			
NORTHING: 448,044.77	EASTING: 2,123,349.50	CREW:			
SYSTEM:	BORING LOCATION: ~9' S. of center of canopy/ edge of concrete			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 4.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D	▲1,807	75-DPT-05 (1-2') @ 0815	GW		0.5	Sandy GRAVEL w/ thin (~1") of black lense at ~ 0.5' BLS.	
					SP		1.5	Brown f. SAND.	
2.0		D	▲1,390		SP/ SC		2.0	S.A.A. grading to Clayey SAND w/ strong petro odor throughout.	
					SC		4.0	Brown, Clayey SAND. Strong petro odor.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN.GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-06	
		DRILLER: Michael D. Mason			
NORTHING: 448,056.79	EASTING: 2,123,340.43	CREW:			
SYSTEM:	BORING LOCATION: SW of corner of canopy			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: ~8	BORING DEPTH: 8.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D	▲1,661		GW		0.5	Sandy GRAVEL (over Asphalt possibly).	
					SP		1.5	Brown f. SAND.	
2.0		D	▲1,843	75-DPT-06 (2-3') @ 0830	SP/SC		2.0	S.A.A. grading to Clayey SAND w/ strong petro odor.	
					SC			Clayey SAND w/ strong petro odor.	
4.0		M	▲1,498				4.0		
6.0		Sat.	▲1,078						
8.0								Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN.GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-07	
		DRILLER: Michael D. Mason			
NORTHING: 448,074.14	EASTING: 2,123,347.39	CREW:			
SYSTEM:	BORING LOCATION: NW corner of canopy			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 4.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT (0.5 0.5 0.5 0.5)	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.5	Sandy GRAVEL.	
		D	▲6.5	75-DPT-07 (1-2') @ 0845	SP		2.0	Grayish-brown f. SAND.	
2.0		M	▲5.5		SC		4.0	Brown Clayey SAND.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN.GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-08	
		DRILLER: Michael D. Mason			
NORTHING: 448,082.47	EASTING: 2,123,325.17	CREW:			
SYSTEM:	BORING LOCATION: Btwn Bldg & concrete pad W. of Bldg.			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 4.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	SOIL AND ROCK DESCRIPTION	DEPTH	ELEVATION
							LAND SURFACE	0.0	
0.0		D	▲4.8	75-DPT-08 (1-2') @ 0900	SP		Dark brown to light brown, vf. SAND.	2.0	
2.0		D	▲4.5		SC		Light orangish-brown Clayey SAND.	4.0	
4.0							Boring Terminated at Depth 4.0 ft		

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN.GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-09	
		DRILLER: Michael D. Mason			
NORTHING: 448,034.82	EASTING: 2,123,358.64	CREW:			
SYSTEM:	BORING LOCATION: S. of SE canopy corner			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 4.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D	4,000+▲	75-DPT-09 (1-2') @ 0915	GW		1.0	Sandy GRAVEL.	
					SP		2.0	Grayish-brown vf. to f. SAND.	
2.0		D	▲1,654		SC		4.0	Brown Clayey SAND w/ Dark gray and black staining from 3.5-4' BLS. Petro odor from 1-4' BLS.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN.GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-10	
		DRILLER: Michael D. Mason			
NORTHING: 448,064.51	EASTING: 2,123,325.44	CREW:			
SYSTEM:	BORING LOCATION: ~15' W. of DPT-06 & SW corner of canopy			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 4.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D	▲46.5		GW		1.0	Sandy GRAVEL.	
					SP		2.0	Gray, f. SAND.	
2.0		D	▲276	75-DPT-10 (3-4') @ 0930	SC/ CL		4.0	Olive gray, Clayey SAND to Sandy CLAY. Slight petro odor from 3-4' BLS. Grading back to clean sand at 4' BLS.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404 GPJ CATLIN GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-11	
		DRILLER: Michael D. Mason			
NORTHING: 448,043.39	EASTING: 2,123,335.04	CREW:			
SYSTEM:	BORING LOCATION: S. of SW canopy corner			LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push		0 HOUR DTW: N/A	BORING DEPTH: 4.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D	▲1,956	75-DPT-11 (1-2') @ 0945	GW		0.3	ASPHALT.	
					GW		1.0	Sandy GRAVEL.	
					SP		2.0	Gray, f. SAND.	
2.0		D	▲1,510		SC			Olive gray, Clayey SAND to Sandy CLAY. Petro odor. Staining @ ~2.5' BLS.	
4.0							4.0	Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN.GDT 7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-12	
		DRILLER: Michael D. Mason			
NORTHING: 448,054.39	EASTING: 2,123,391.35	CREW:			
SYSTEM:	BORING LOCATION: E. of culvert			LAND ELEV.: NM	
DRILL MACHINE: Hand Auger	METHOD: Post Hole Dig		0 HOUR DTW: N/A	BORING DEPTH: 3.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	SOIL AND ROCK DESCRIPTION DEPTH	ELEVATION
							0.0 LAND SURFACE	
0.0		D		75-DPT-12 (2') @ 1530	SP		F. SAND.	
2.0							2.0	
3.0							Boring Terminated at Depth 3.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG_211043.NCDOT_NC24-SR1404.GPJ_CATLIN.GDT_7/25/11

BORING LOG

CATLIN Engineers and Scientists
Wilmington, NC

PROJECT NO.: 211043	STATE: NC	COUNTY: Sampson		LOCATION: Autryville	
PROJECT NAME: NC 24 from SR 1853 to SR 1404		LOGGED BY: Ben Ashba		BORING ID: 75-DPT-13	
		DRILLER: Michael D. Mason			
NORTHING: 448,070.23	EASTING: 2,123,378.83	CREW:			
SYSTEM:	BORING LOCATION: Vent line ~6' E. of Bldg.			LAND ELEV.: NM	
DRILL MACHINE: Hand Auger	METHOD: Post Hole Dig		0 HOUR DTW: N/A	BORING DEPTH: 2.0	
START DATE: 6/23/11	FINISH DATE: 6/23/11		24 HOUR DTW: N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	PID RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		D		75-DPT-13 (2') @ 1540	SP			F. SAND.	
2.0							2.0	Boring Terminated at Depth 2.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 211043 NCDOT NC24-SR1404.GPJ CATLIN.GDT 7/25/11

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

Laboratory Report of Analysis

To: Ben Ashba
RICHARD CATLIN & ASSOCIATES
P.O. Box 10279
Wilmington, NC 28404

Report Number: **31101641**

Client Project: **Ezzell Prop-Parcel 75**

Dear Ben Ashba,

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 Barbara A. Hager 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.

Barbara A. Hager Date
Project Manager
barbara.hager@sgs.com

SGS North America Inc.
5500 Business Drive, Wilmington, NC 28405
t 910.350.1903 **f** 910.350.1557 www.us.sgs.com
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Laboratory Qualifiers

Report Definitions

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

Qualifier Definitions

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

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

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
75-DPT-01 (3-4ft)	31101641001	06/23/2011 07:00	06/24/2011 11:30	Soil-Solid as dr
75-DPT-02 (1-2ft)	31101641002	06/23/2011 07:30	06/24/2011 11:30	Soil-Solid as dr
75-DPT-03 (2-3ft)	31101641003	06/23/2011 07:45	06/24/2011 11:30	Soil-Solid as dr
75-DPT-04 (3-4ft)	31101641004	06/23/2011 08:00	06/24/2011 11:30	Soil-Solid as dr
75-DPT-05 (1-2ft)	31101641005	06/23/2011 08:15	06/24/2011 11:30	Soil-Solid as dr
75-DPT-06 (2-3ft)	31101641006	06/23/2011 08:30	06/24/2011 11:30	Soil-Solid as dr
75-DPT-07 (1-2ft)	31101641007	06/23/2011 08:45	06/24/2011 11:30	Soil-Solid as dr
75-DPT-08 (1-2ft)	31101641008	06/23/2011 09:00	06/24/2011 11:30	Soil-Solid as dr
75-DPT-09 (1-2ft)	31101641009	06/23/2011 09:15	06/24/2011 11:30	Soil-Solid as dr
75-DPT-10 (3-4ft)	31101641010	06/23/2011 09:30	06/24/2011 11:30	Soil-Solid as dr
75-DPT-11 (1-2ft)	31101641011	06/23/2011 09:45	06/24/2011 11:30	Soil-Solid as dr
75-DPT-12 (2ft)	31101641012	06/23/2011 15:30	06/24/2011 11:30	Soil-Solid as dr
75-DPT-13 (2ft)	31101641013	06/23/2011 15:40	06/24/2011 11:30	Soil-Solid as dr

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Results of **75-DPT-01 (3-4ft)**

Client Sample ID: **75-DPT-01 (3-4ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641001-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 07:00
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 91

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.26	mg/kg	1	06/29/2011 13:09
Surrogates						
4-Bromofluorobenzene	99.3		70.0-130	%	1	06/29/2011 13:09

Batch Information

Analytical Batch: **VGC1285**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **06/29/2011 13:09**

Prep Batch: **VXX1709**
Prep Method: **SW-846 5035**
Prep Date/Time: **06/29/2011 09:04**
Prep Initial Wt./Vol.: **6.78 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-01 (3-4ft)**

Client Sample ID: **75-DPT-01 (3-4ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641001-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 07:00
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 91

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**11.8**		6.92	mg/kg	1	06/27/2011 20:40
Surrogates						
o-Terphenyl	69.2		40.0-140	%	1	06/27/2011 20:40

Batch Information

Analytical Batch: **XGC1327**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/27/2011 20:40**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **31.94 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-02 (1-2ft)**

Client Sample ID: **75-DPT-02 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641002-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 07:30
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 88

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**5260**		747	mg/kg	250	07/1/2011 11:46
Surrogates						
4-Bromofluorobenzene	99.3		70.0-130	%	250	07/1/2011 11:46

Batch Information

Analytical Batch: **VGC1288**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **07/01/2011 11:46**

Prep Batch: **VXX1717**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/01/2011 09:25**
Prep Initial Wt./Vol.: **7.59 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-02 (1-2ft)**

Client Sample ID: **75-DPT-02 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641002-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 07:30
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 88

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**933**		67.1	mg/kg	10	06/30/2011 12:49
Surrogates						
o-Terphenyl	81.5		40.0-140	%	10	06/30/2011 12:49

Batch Information

Analytical Batch: **XGC1337**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/30/2011 12:49**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **33.8 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-03 (2-3ft)**

Client Sample ID: **75-DPT-03 (2-3ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641003-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 07:45
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 90

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**130**		31.2	mg/kg	10	07/5/2011 20:37
Surrogates						
4-Bromofluorobenzene	101		70.0-130	%	10	07/5/2011 20:37

Batch Information

Analytical Batch: **VGC1291**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **07/05/2011 20:37**

Prep Batch: **VXX1723**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/06/2011 14:16**
Prep Initial Wt./Vol.: **7.14 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-03 (2-3ft)**

Client Sample ID: **75-DPT-03 (2-3ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641003-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 07:45
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 90

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**52.8**		7.14	mg/kg	1	06/27/2011 21:36
Surrogates						
o-Terphenyl	71.7		40.0-140	%	1	06/27/2011 21:36

Batch Information

Analytical Batch: **XGC1327**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/27/2011 21:36**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **31.22 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-04 (3-4ft)**

Client Sample ID: **75-DPT-04 (3-4ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641004-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 08:00
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 90

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.31	mg/kg	1	06/29/2011 14:02
Surrogates						
4-Bromofluorobenzene	102		70.0-130	%	1	06/29/2011 14:02

Batch Information

Analytical Batch: **VGC1285**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **06/29/2011 14:02**

Prep Batch: **VXX1709**
Prep Method: **SW-846 5035**
Prep Date/Time: **06/29/2011 09:04**
Prep Initial Wt./Vol.: **6.7 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-04 (3-4ft)**

Client Sample ID: **75-DPT-04 (3-4ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641004-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 08:00
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 90

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		6.68	mg/kg	1	06/27/2011 22:04
Surrogates						
o-Terphenyl	68.4		40.0-140	%	1	06/27/2011 22:04

Batch Information

Analytical Batch: **XGC1327**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/27/2011 22:04**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **33.22 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-05 (1-2ft)**

Client Sample ID: **75-DPT-05 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641005-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 08:15
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 93

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**4010**		1510	mg/kg	500	07/1/2011 12:13
Surrogates						
4-Bromofluorobenzene	100		70.0-130	%	500	07/1/2011 12:13

Batch Information

Analytical Batch: **VGC1288**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **07/01/2011 12:13**

Prep Batch: **VXX1717**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/01/2011 09:25**
Prep Initial Wt./Vol.: **7.07 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-05 (1-2ft)**

Client Sample ID: **75-DPT-05 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641005-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 08:15
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 93

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**963**		67.6	mg/kg	10	06/30/2011 13:17
Surrogates						
o-Terphenyl	86.8		40.0-140	%	10	06/30/2011 13:17

Batch Information

Analytical Batch: **XGC1337**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/30/2011 13:17**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **31.65 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-06 (2-3ft)**

Client Sample ID: **75-DPT-06 (2-3ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641006-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 08:30
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 90

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**2470**		295	mg/kg	100	06/29/2011 17:40
Surrogates						
4-Bromofluorobenzene	99.1		70.0-130	%	100	06/29/2011 17:40

Batch Information

Analytical Batch: **VGC1285**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **06/29/2011 17:40**

Prep Batch: **VXX1709**
Prep Method: **SW-846 5035**
Prep Date/Time: **06/29/2011 09:04**
Prep Initial Wt./Vol.: **7.57 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-06 (2-3ft)**

Client Sample ID: **75-DPT-06 (2-3ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641006-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 08:30
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 90

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**1190**		70.0	mg/kg	10	06/30/2011 13:45
Surrogates						
o-Terphenyl	83.7		40.0-140	%	10	06/30/2011 13:45

Batch Information

Analytical Batch: **XGC1337**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/30/2011 13:45**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **31.86 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-07 (1-2ft)**

Client Sample ID: **75-DPT-07 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641007-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 08:45
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 93

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**4.13**		3.45	mg/kg	1	06/29/2011 14:29
Surrogates						
4-Bromofluorobenzene	102		70.0-130	%	1	06/29/2011 14:29

Batch Information

Analytical Batch: **VGC1285**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **06/29/2011 14:29**

Prep Batch: **VXX1709**
Prep Method: **SW-846 5035**
Prep Date/Time: **06/29/2011 09:04**
Prep Initial Wt./Vol.: **6.24 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-07 (1-2ft)**

Client Sample ID: **75-DPT-07 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641007-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 08:45
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 93

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**11.9**		6.40	mg/kg	1	06/27/2011 23:29
Surrogates						
o-Terphenyl	68.8		40.0-140	%	1	06/27/2011 23:29

Batch Information

Analytical Batch: **XGC1327**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/27/2011 23:29**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **33.67 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-08 (1-2ft)**

Client Sample ID: **75-DPT-08 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641008-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 09:00
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 95

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.35	mg/kg	1	06/29/2011 14:56
Surrogates						
4-Bromofluorobenzene	100		70.0-130	%	1	06/29/2011 14:56

Batch Information

Analytical Batch: **VGC1285**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **06/29/2011 14:56**

Prep Batch: **VXX1709**
Prep Method: **SW-846 5035**
Prep Date/Time: **06/29/2011 09:04**
Prep Initial Wt./Vol.: **6.25 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-08 (1-2ft)**

Client Sample ID: **75-DPT-08 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641008-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 09:00
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 95

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		6.54	mg/kg	1	06/27/2011 23:58
Surrogates						
o-Terphenyl	64.4		40.0-140	%	1	06/27/2011 23:58

Batch Information

Analytical Batch: **XGC1327**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/27/2011 23:58**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **32.01 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-09 (1-2ft)**

Client Sample ID: **75-DPT-09 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641009-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 09:15
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 93

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**1220**		343	mg/kg	100	06/29/2011 18:08
Surrogates						
4-Bromofluorobenzene	97.2		70.0-130	%	100	06/29/2011 18:08

Batch Information

Analytical Batch: **VGC1285**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **06/29/2011 18:08**

Prep Batch: **VXX1709**
Prep Method: **SW-846 5035**
Prep Date/Time: **06/29/2011 09:04**
Prep Initial Wt./Vol.: **6.24 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-09 (1-2ft)**

Client Sample ID: **75-DPT-09 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641009-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 09:15
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 93

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**230**		6.45	mg/kg	1	06/28/2011 0:26
Surrogates						
o-Terphenyl	65.9		40.0-140	%	1	06/28/2011 0:26

Batch Information

Analytical Batch: **XGC1327**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/28/2011 00:26**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **33.2 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-10 (3-4ft)**

Client Sample ID: **75-DPT-10 (3-4ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641010-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 09:30
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 88

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**191**		35.3	mg/kg	10	07/5/2011 20:10
Surrogates						
4-Bromofluorobenzene	102		70.0-130	%	10	07/5/2011 20:10

Batch Information

Analytical Batch: **VGC1291**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **07/05/2011 20:10**

Prep Batch: **VXX1723**
Prep Method: **SW-846 5035**
Prep Date/Time: **07/06/2011 14:16**
Prep Initial Wt./Vol.: **6.43 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-10 (3-4ft)**

Client Sample ID: **75-DPT-10 (3-4ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641010-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 09:30
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 88

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		7.01	mg/kg	1	06/28/2011 0:54
Surrogates						
o-Terphenyl	67.0		40.0-140	%	1	06/28/2011 0:54

Batch Information

Analytical Batch: **XGC1327**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/28/2011 00:54**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **32.33 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-11 (1-2ft)**

Client Sample ID: **75-DPT-11 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641011-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 09:45
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 93

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	**1730**		330	mg/kg	100	06/29/2011 18:35
Surrogates						
4-Bromofluorobenzene	99.6		70.0-130	%	100	06/29/2011 18:35

Batch Information

Analytical Batch: **VGC1285**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **06/29/2011 18:35**

Prep Batch: **VXX1709**
Prep Method: **SW-846 5035**
Prep Date/Time: **06/29/2011 09:04**
Prep Initial Wt./Vol.: **6.51 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-11 (1-2ft)**

Client Sample ID: **75-DPT-11 (1-2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641011-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 09:45
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 93

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**536**		65.5	mg/kg	10	06/30/2011 14:13
Surrogates						
o-Terphenyl	75.4		40.0-140	%	10	06/30/2011 14:13

Batch Information

Analytical Batch: **XGC1337**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/30/2011 14:13**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **32.82 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-12 (2ft)**

Client Sample ID: **75-DPT-12 (2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641012-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 15:30
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 96

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.93	mg/kg	1	06/29/2011 15:50
Surrogates						
4-Bromofluorobenzene	103		70.0-130	%	1	06/29/2011 15:50

Batch Information

Analytical Batch: **VGC1285**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **06/29/2011 15:50**

Prep Batch: **VXX1709**
Prep Method: **SW-846 5035**
Prep Date/Time: **06/29/2011 09:04**
Prep Initial Wt./Vol.: **5.29 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-12 (2ft)**

Client Sample ID: **75-DPT-12 (2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641012-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 15:30
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 96

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	ND		6.51	mg/kg	1	06/28/2011 1:51
Surrogates						
o-Terphenyl	64.9		40.0-140	%	1	06/28/2011 1:51

Batch Information

Analytical Batch: **XGC1327**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/28/2011 01:51**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **31.9 g**
Prep Extract Vol: **10 mL**

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Results of **75-DPT-13 (2ft)**

Client Sample ID: **75-DPT-13 (2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641013-B
Lab Project ID: 31101641

Collection Date: 06/23/2011 15:40
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 91

Results by **SW-846 8015C GRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Gasoline Range Organics (GRO)	ND		3.32	mg/kg	1	06/29/2011 16:18
Surrogates						
4-Bromofluorobenzene	103		70.0-130	%	1	06/29/2011 16:18

Batch Information

Analytical Batch: **VGC1285**
Analytical Method: **SW-846 8015C GRO**
Instrument: **GC4**
Analyst: **LMC**
Analytical Date/Time: **06/29/2011 16:18**

Prep Batch: **VXX1709**
Prep Method: **SW-846 5035**
Prep Date/Time: **06/29/2011 09:04**
Prep Initial Wt./Vol.: **6.65 g**
Prep Extract Vol: **5 mL**

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Results of **75-DPT-13 (2ft)**

Client Sample ID: **75-DPT-13 (2ft)**
Client Project ID: **Ezzell Prop-Parcel 75**
Lab Sample ID: 31101641013-A
Lab Project ID: 31101641

Collection Date: 06/23/2011 15:40
Received Date: 06/24/2011 11:30
Matrix: Soil-Solid as dry weight
Solids (%): 91

Results by **SW-846 8015C DRO**

Parameter	Result	Qual	LOQ/CL	Units	DF	Date Analyzed
Diesel Range Organics (DRO)	**14.5**		6.76	mg/kg	1	06/28/2011 2:19
Surrogates						
o-Terphenyl	67.3		40.0-140	%	1	06/28/2011 2:19

Batch Information

Analytical Batch: **XGC1327**
Analytical Method: **SW-846 8015C DRO**
Instrument: **GC6**
Analyst: **DTF**
Analytical Date/Time: **06/28/2011 02:19**

Prep Batch: **XXX1473**
Prep Method: **SW-846 3541**
Prep Date/Time: **06/27/2011 08:03**
Prep Initial Wt./Vol.: **32.61 g**
Prep Extract Vol: **10 mL**

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CLIENT: CATLIN/NCDOT
CONTACT: BenAshby@CATLIN PHONE NO:(910) 452-5861
PROJECT: Ezzell Prop-Parcel 75 SITE/PWSID#:
REPORTS TO: BenCATLIN ben.ashby@catlinusa.com FAX NO:( )
INVOICE TO: NCDOT QUOTE#: Sampson County WBS: 34416.1.1 P.O. NUMBER: P-2303B

SGS Reference: 311641

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(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used: Meoh, ice / Analysis Required (3): TPH GRO, TPH DRO	REMARKS
	75-DPT-01 (3-4')	6.23.11	700	SOIL	3	G	✓ ✓	"HOT"
	75-DPT-02 (1-2')		730					"HOT"
	75-DPT-03 (2-3')		745					
	75-DPT-04 (3-4')		800					
	75-DPT-05 (1-2')		815					"HOT"
	75-DPT-06 (2-3')		830					"HOT"
	75-DPT-07 (1-2')		845					
	75-DPT-08 (1-2')		900					
	75-DPT-09 (1-2')		915					"HOT"
	75-DPT-10 (3-4')		930					"HOT"
	75-DPT-11 (1-2')		945					
	75-DPT-12 (2')		1530					
	75-DPT-13 (2')		1540					

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
BenAshby	6.24.11	1130	
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

Shipping Carrier:
Shipping Ticket No:
Samples Received Cold? (Circle) YES NO
Temperature°C: 5.20
Special Deliverable Requirements:
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
Special Instructions:
Requested Turnaround Time: ☐ RUSH _____ Date Needed ☒ STD

❑ 200 W. Potter Drive **Anchorage, AK 99518** Tel: (907) 562-2343 Fax: (907) 561-5301
❑ 5500 Business Drive **Wilmington, NC 28405** Tel: (910) 350-1903 Fax: (910) 350-1557

White - Retained by Lab
Pink - Retained by Client

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: **NCDOT-Catlin** Work Order No.: **31101641**

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: 5.2
   ___ Ambient on Receipt
   X 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

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

Notes:

Comments:

Inspected and Logged in by: JJ

Date: Fri-6/24/11 00:00

APPENDIX C

SCHNABEL GEOPHYSICAL REPORT

Schnabel ENGINEERING

July 20, 2011

Mr. Richard Garrett, LG
Catlin Engineers and Scientists, Inc.
P.O. Box 10279
Wilmington, NC 28404-0279

RE:	State Project:	R-2303B
	WBS Element:	34416.1.1
	County:	Cumberland - Sampson
	Description:	NC 24 from SR 1853 (John Nunnery Rd) in Cumberland County to SR 1404 (Dowdy Rd) in Sampson County

Subject: **Project 09210013.41, Report on Geophysical Surveys**
Parcel 75, J.W. Ezzell Property, Sampson County, North Carolina

Dear Mr. Garrett:

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

INTRODUCTION

The work described in this report was conducted on June 1, 7, and 23, 2011, by Schnabel under our 2009 contract with the NCDOT. The work was conducted over the accessible areas of the property as indicated by the NCDOT to support their environmental assessment of the subject property. Photographs of the property are included on Figure 1. The property is located on the north side of NC 24 (Autry Highway) approximately 660 feet west of Hayne Exit Road in Autryville, NC. The purpose of the geophysical surveys was to locate suspect metal underground storage tanks (USTs) in the accessible areas of the right-of-way and/or easement.

The geophysical investigation consisted of electromagnetic (EM) induction surveys using a Geonics EM61-MK2 instrument. The EM61 metal detector is used to locate metal objects buried up to about eight feet below ground surface. Ground-penetrating radar (GPR) investigations of selected EM61 anomalies, including areas of reinforced concrete, were conducted using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna. The location of the buried vent pipe was investigated using a Fisher Gemini-3 metal detector. Photographs of the equipment used are shown on Figure 2 and 3.

schnabel-eng.com
T/ 336-274-9456 F/ 336-274-9486
11A Oak Branch Drive / Greensboro, NC / 27407

FIELD METHODOLOGY

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

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

At the request of Catlin, we returned to the site on June 23, 2011 to conduct further investigations of the probable vent pipe on the east side of the building. We used a Fisher Gemini-3 metal detector in the conduction mode to trace the vent pipe eastward from the building about 16 feet to the edge of the wooded area. We dug down with a shovel at 1.0 foot and 6.0 feet east of the building and confirmed the presence of the buried horizontal vent pipe. We also dug down 10.0 feet and 16.0 feet east of the building about 1.5 to 2.5 feet deep but did not find the vent pipe. We scanned the area with the GPR system but did not see any reflections from possible USTs. We walked around in parts of the wooded area east of the building using the Fisher Gemimi-3 in the induction mode but did not measure responses indicative of buried metal USTs; however, the area available for surveying was limited by the thickly grown bushes and trees.

DISCUSSION OF RESULTS

The contoured EM61 data collected over Parcel 75 are shown on Figures 3 and 4. The EM61 early time gate results are plotted on Figure 4. The early time gate data provide the more sensitive detection of metal objects. Figure 5 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as USTs.

The early time gate and differential results show anomalies apparently caused by reinforced concrete, buried utilities, or known site features (Figures 4 and 5). The anomaly located northeast of the building at about 2,123,380E, 448,115N appears to be caused by the septic tank for the building. The GPR data collected at the site do not indicate the presence of metallic USTs within the areas surveyed.

Based on the Fisher Gemini-3 readings, the vent pipe extends at least 24 feet east-southeast of the building, as indicated on Figures 4 and 5, and as shown in the photographs on Figure 6.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project R-2303B in Autryville, NC indicates the following:

- The geophysical data do not indicate the presence of metallic USTs in the areas surveyed on the subject property.
- Based on visual confirmation, the buried section of the vent pipe on the east side of the building extends at least six feet to the east-southeast of the building. Based on the Fisher Gemini-3 conductive tracing, the vent pipe extends at least 24 feet to the east-southeast of the building.
- It is possible that the UST that would have been connected to the vent pipe was previously removed or it is located in the wooded area to the east of the building in areas not accessible for geophysical surveying.

LIMITATIONS

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

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

Sincerely,

SCHNABEL ENGINEERING SOUTH, PC

Jeremy S. Strohmeyer, LG
Project Manager

Edward D. Billington, LG
Senior Vice President

JS:NB
Attachments: Figures (4)
FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.41 (R-2303B, CUMBERLAND-SAMPSON CO.)\REPORT\PARCEL 75\SCHNABEL GEOPHYSICAL REPORT ON PARCEL 75 (R-2303B).DOCX

Parcel 75 – J.W. Ezzell Property, looking northeast

Parcel 75 – J.W. Ezzell Property, looking northwest

Schnabel ENGINEERING	STATE PROJECT R-2303B NC DEPT. OF TRANSPORTATION CUMBERLAND-SAMPSON COS., NC PROJECT NO. 09210013.41	PARCEL 75 SITE PHOTOS FIGURE 1

Geonics EM61-MK2

GSSI SIR-3000

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CUMBERLAND-SAMPSON COS., NC
PROJECT NO. 09210013.41

PHOTOS OF
GEOPHYSICAL
EQUIPMENT USED

FIGURE 2

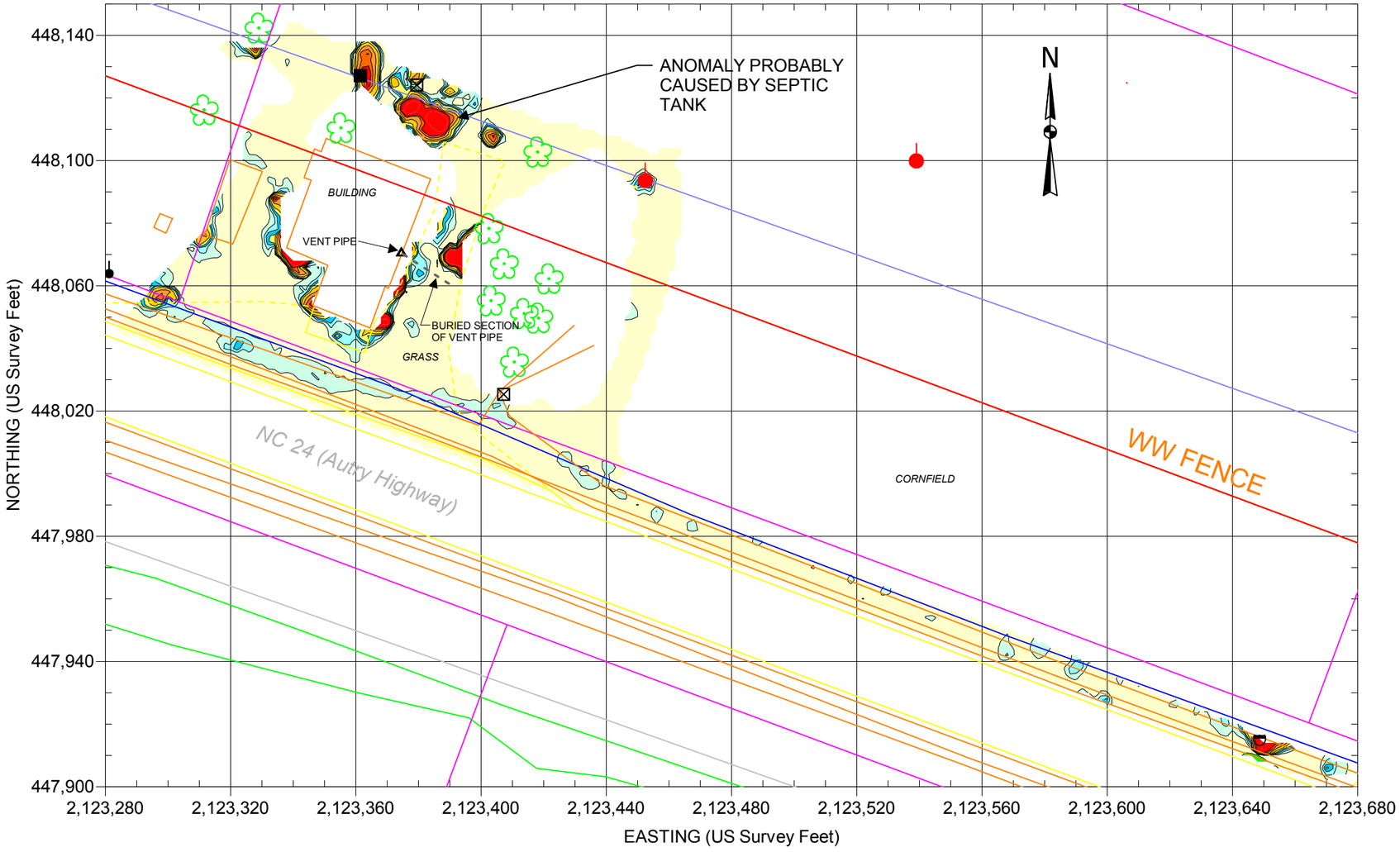
Fisher Gemini-3 Metal Detector

Schnabel ENGINEERING

STATE PROJECT R-2303B
NC DEPT. OF TRANSPORTATION
CUMBERLAND-SAMPSON COS., NC
PROJECT NO. 09210013.41

PHOTOS OF
GEOPHYSICAL
EQUIPMENT USED

FIGURE 3



EXPLANATION

- SIGN
- UTILITY POLE
- GUY WIRE
- MISCELLANEOUS METALLIC OBJECT
- UTILITY MANHOLE, METER, BOX, ETC.
- LIGHT POLE
- MONITORING WELL
- UST LID
- DOT PROPOSED R/W
- DOT PROPOSED UTILITY EASEMENT
- PROPERTY LINE
- UTILITY (AS MARKED BY OTHERS OR AS PROVIDED BY NCDOT [VARIOUS COLORS])
- EXAMPLE GPR LINE LOCATION
- GPR SURVEY AREA
- LOCATION OF KNOWN OR SUSPECT USTS MARKED ON SITE

REF.: NCDOT FILE: r2303b_rdy_psh21.dgn
(FOR SOME SITE FEATURES)

EM61 Early Time Gate Response (mV)

-15000 -100 0 50 100 150 200 300 500 750 1000 2000

Scale in US Survey Feet

0 40 80 120

Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on June 1, 2011, 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 June 7, 2011, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

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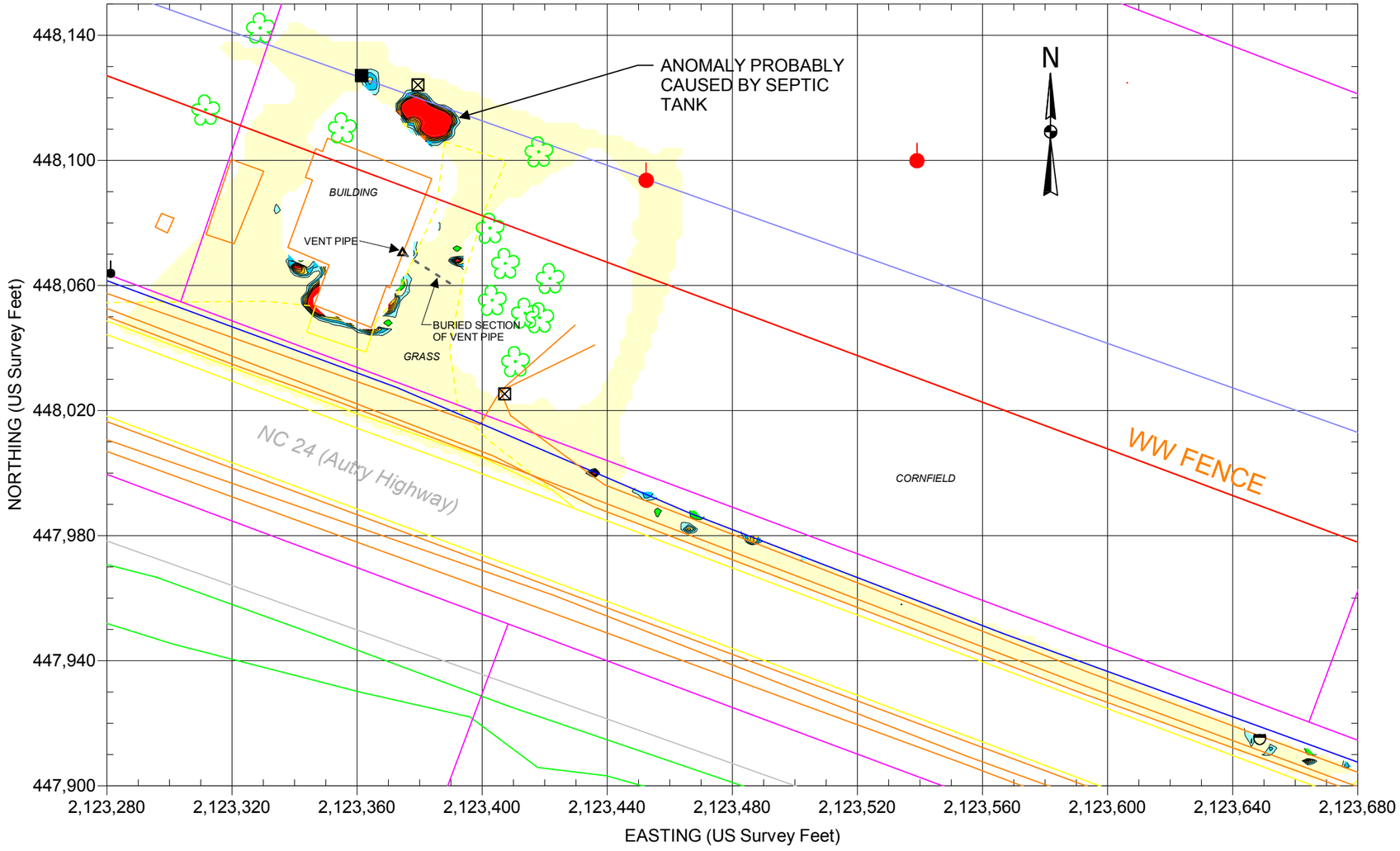
PROJECT NO. 09210013.41

PARCEL 75
EM61 EARLY TIME GATE RESPONSE
FIGURE 4



EXPLANATION

- SIGN
- UTILITY POLE
- GUY WIRE
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- UTILITY MANHOLE, METER, BOX, ETC.
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- PROPERTY LINE
- UTILITY (AS MARKED BY OTHERS OR AS PROVIDED BY NCDOT [VARIOUS COLORS])
- EXAMPLE GPR LINE LOCATION
- GPR SURVEY AREA
- LOCATION OF KNOWN OR SUSPECT USTS MARKED ON SITE

REF.: NCDOT FILE: r2303b_rdy_psh21.dgn
(FOR SOME SITE FEATURES)

EM61 Differential Response (mV)

-20000 -100 0 40 60 80 100 120 140 160 200

Scale in US Survey Feet

0 40 80 120

Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on June 1, 2011, 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 June 7, 2011, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

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CUMBERLAND-SAMPSON COUNTIES, NC
NC DEPARTMENT OF TRANSPORTATION
PROJECT NO. 09210013.41

PARCEL 75
EM61 DIFFERENTIAL RESPONSE
FIGURE 5

Vertical vent pipe at building and buried section of pipe traced to east

Buried section of vent pipe (arrow) excavated 6 feet east of building at depth of 1.4 feet.

Buried section of vent pipe was traced with Fisher Gemini-3 to wooded area east of building

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PHOTOS OF
VENT PIPE

FIGURE 6