

**PRELIMINARY SITE ASSESSMENT
FOR
KHARRAT PROPERTIES I, LLC
JACKSONVILLE, ONSLOW COUNTY, NORTH CAROLINA**

**STATE PROJECT: W-5147
WBS ELEMENT: 45362.1.1
NORTH QUADRANT OF US 17 (MARINE BLVD.) AND SR 1308
(GUM BRANCH ROAD) – JACKSONVILLE**

**PREPARED FOR:
NCDOT GEOTECHNICAL ENGINEERING UNIT-GEOENVIRONMENTAL SECTION
1589 MSC
RALEIGH, NORTH CAROLINA 27699-1589**

JULY 14, 2010

**PREPARED BY:
CATLIN ENGINEERS AND SCIENTISTS
P. O. BOX 10279
WILMINGTON, NORTH CAROLINA 28404-0279
(910) 452-5861**

CATLIN PROJECT NO. 210069

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

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July 14, 2010

1.0 INTRODUCTION

1.1 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. According to the RFP, the US 17 (Marine Blvd.) right turn lane will be widened with a curb and gutter. A signal pole will be installed along with relocated utility poles. This will require deep drilling on site. The NCDOT Division 3 Engineer needs information on contaminated soils and their removal before construction can begin.

In response to a Request for Technical and Cost Proposal (RFP) dated June 14, 2010, and subsequent site reconnaissance and on site meeting with NCDOT personnel Mr. Patrick Riddle, CATLIN submitted a proposal for conducting an investigation at the Kharrat property in Jacksonville, North Carolina. According to Mr. Riddle, existing power poles and signal poles will be relocated and replaced with similar type. Figure 1 illustrates the general location and the Site Map is illustrated on Figure 2.

According to the RFP:

Acquisition of the right-of-way is necessary for sidewalk improvements at the north quadrant of US 17 (Marine Blvd.) and SR 1308 (Gum Branch Road). 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.

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.
- Prepare and submit one report of findings including field activities, findings, and recommendations in triplicate (the report is also being submitted electronically to the NCDOT GeoEnvironmental Section).

In addition to the RFP, NCDOT provided plan sheets associated with the sidewalk improvements. CATLIN and NCDOT agreed to proposed boring and sample locations within the right-of-way and/or easement for soil sample collection and laboratory analysis for total petroleum hydrocarbon (TPH) diesel and gasoline range organics (DRO and GRO). It was also determined that a geophysical investigation for possible USTs would be conducted and no groundwater sample would be collected. CATLIN coordinated geophysical activities and conducted sampling after the geophysical survey. CATLIN's field activities concluded on June 29, 2010. This report documents our activities and findings.

1.2 BACKGROUND INFORMATION

A former gas station operated at the northern quadrant of US 17 (Marine Blvd.) and SR1308 (Gum Branch Road) in Jacksonville. An automotive towing and repair shop presently operates at this location and there are monitoring wells on site. The UST Section registry shows that four (4) USTs were removed in 1992 and soil and groundwater petroleum impacts were noted. The North Carolina Department of Environment and Natural Resources (NCDENR) refers to the site as Roy's Discount Auto and assigned Incident Number 9655. An incident file review was conducted at the NCDENR Wilmington Regional Office. A Comprehensive Site Assessment Report was submitted in July 1993 but not approved. A Corrective Action Plan (CAP) was subsequently submitted in October 1993 and after revisions and supplemental information was approved in May 1995. CAP information indicates a groundwater treatment system consisting of recovery wells, groundwater treatment system and infiltration gallery. Boring information reviewed at NCDENR indicated a depth to water of approximately five (5) feet below land surface (BLS) in 1996. A copy of selected NCDENR file review information is included in Appendix A.

2.0 METHODS

Proposed borings were indicated on the NCDOT provided plan sheets and sent to NCDOT before finalizing the scope of work and cost estimate. During site reconnaissance the approximate proposed/planned boring locations were identified in the field.

Per NCDOT request, one (1) boring was advanced along the proposed right-of-way and sidewalk improvement area approximately every 25 feet. A total of six (6) borings were advanced and one soil sample from each boring was collected for laboratory analysis.

For construction activities and waste handling, soil sample results with any detectable concentrations are considered impacted. For impacted soil volume estimating purposes, impacted soils are assumed to extend vertically to the water table and laterally (within the right-of-way and/or easement, and/or sidewalk improvement area only) half the distance to the closest “clean” sample location where possible.

2.1 FIELD METHODS

All field work was conducted in general accordance with state and federal guidelines and industry standards. A geophysical investigation was conducted by Schnabel. Schnabel's geophysical efforts were limited to the proposed right-of-way area. A copy of the geophysical report is provided in Appendix B.

Boring coordinates were collected utilizing a Trimble® Global Positioning System (GPS) unit. CATLIN personnel gathered subsurface soil data at the site by Direct Push Technology (DPT) boring advancement using an AMS PowerProbe™ 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). 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. The USCS and OVA information was recorded on field logs and has been transferred to the Boring Logs provided in Appendix C.

Soil samples were collected for laboratory analysis above the water table from the two-foot interval revealing the highest OVA reading. 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 D.

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. In asphalt areas, boreholes were sealed with asphalt cold patch. Final borehole and sample locations were surveyed utilizing a Trimble® GPS survey instrument. Borehole locations and site features 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 potential impact to soils with reasonable analytical expense, soil samples were analyzed for TPH DRO and GRO per Environmental Protection Agency (EPA) Method 8015.

A total of six (6) soil samples were submitted to SGS North America Inc. (NC Certification # 481). Chain of Custody documentation is included in Appendix D.

3.0 RESULTS

Results of Schnabel's geophysical investigation were submitted directly to NCDOT and a copy is provided in Appendix B. Schnabel's investigation did not reveal geophysical anomalies at the site indicative of USTs.

A mixture of silts, sands, and clays were encountered across the project site (see Boring Logs in Appendix C). Wet soils were encountered at approximately six (6) to eight (8) feet BLS.

Boring logs including USCS information and OVA screening results are provided in Appendix C. Boring and sample locations are illustrated on Figure 2. The complete analytical report is provided in Appendix D. Summarized soil boring information including location coordinates and OVA results are provided on Table 1. Soil sample laboratory analytical results are summarized on Table 2 and illustrated on Figure 2.

Results of OVA headspace screening ranged from two (2) parts per million (PPM) to 48 PPM (detected in the DPT-06 (0-2') soil sample). No detectable concentrations of TPH GRO were revealed in any of the soil samples. The soil

sample DPT-02 (2-4') revealed 7.90 milligrams per kilogram (mg/kg) TPH DRO and the DPT-06 (0-2') soil sample revealed 120 mg/kg TPH DRO. No other TPH DRO concentrations were detected above the laboratory reporting limit.

It should also be noted, during boring advancement at DPT-06, a vertical 1.5-inch galvanized pipe with a threaded cap near the ground surface was observed in the grass island. An unsuccessful attempt was made to remove the cap. The Schnabel Geophysical Report indicates an unidentified metal object near the DPT-06 location and eastern portion of the geophysical survey area.

4.0 SUMMARY AND DISCUSSION

A preliminary site assessment was conducted at the subject site as requested by NCDOT. Right-of-way acquisition for sidewalk improvements at the north quadrant of US 17 (Marine Blvd.) and SR 1308 (Gum Branch Road) is proposed at the site. A site investigation was conducted to determine the presence of USTs and/or contaminated soil in the proposed right-of-way and/or easement.

Six (6) soil borings were advanced across the site for soil sample collection and laboratory analysis. No TPH GRO concentrations were detected in the submitted soil samples. The soil samples collected at borings DPT-02 and DPT-06 revealed 7.90 mg/kg and 120 mg/kg TPH DRO, respectively.

According to the Plan Sheet provided by NCDOT, the proposed sidewalk construction will be five (5) feet wide. Based on assumed impacted soil extending vertically from the surface to an estimated water table depth of seven (7) feet BLS and five (5) feet horizontally from:

- DPT-06 west to the driveway entrance (approximately 15 feet) and east, half way to DPT-05 (approximately 16 feet);
- DPT-02 north half way to DPT-01 (approximately 12 feet) and south half way to DPT-03 (approximately 12 feet).

Approximately 71 cubic yards of diesel impacted soil may be encountered during excavating for construction activities near DPT-02 and DPT-06. These areas are shown on Figure 2. These soils should be handled as potentially impacted waste. Additional sampling and analysis may be necessary for disposal determination.

A NCDENR file review indicated a previous petroleum release at the site and provided approximate extent of groundwater contamination as of 1995 (see Appendix A).

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



G. Richard Garrett, P.G.
Contract Manager

TABLES

TABLE 1
BORING SUMMARY

Kharrat Properties I, LLC

Northern Quadrant of US 17 (Marine Blvd) and SR 1308 (Gum Branch Road) - Jacksonville

Boring ID	Northing	Easting	Date	Depth (feet BLS)	OVA (PPM)
DPT-01	374362.705	2478632.295	6/29/10	0 - 2	2
				2 - 4	3
				4 - 6*	4
				6 - 8	3
DPT-02	374339.670	2478643.561	6/29/10	0 - 2	6
				2 - 4*	8
				4 - 6	5
				6 - 8	6
DPT-03	374315.750	2478651.030	6/29/10	0 - 2	5
				2 - 4	6
				4 - 6*	5
				6 - 8	6
DPT-04	374310.159	2478672.093	6/29/10	0 - 2	5
				2 - 4*	5
				4 - 6	3
				6 - 8	2
DPT-05	374313.618	2478705.040	6/29/10	0 - 2	6
				2 - 4	7
				4 - 6*	7
				6 - 8	7
DPT-06	374326.944	2478732.713	6/29/10	0 - 2*	48
				2 - 4	9
				4 - 6	14
				6 - 8	5

BLS = Below Land Surface

OVA = Organic Vapor Analysis

PPM = Parts Per Million

* = Sample interval selected for laboratory total petroleum hydrocarbon diesel and gasoline range organics analysis

Coordinate System: US State Plane 1983

Coordinate Zone: North Carolina 3200

Datum: NAD 1983 (Conus)

Coordinate Units: US Survey Feet

TABLE 2
SUMMARY OF SOIL LABORATORY RESULTS –
TOTAL PETROLEUM HYDROCARBON DIESEL AND GASOLINE RANGE ORGANICS –
EPA METHOD 8015

Kharrat Properties I, LLC

Northern Quadrant of US 17 (Marine Blvd) and SR 1308 (Gum Branch Road) - Jacksonville

Boring ID	Northing	Easting	Sample ID	Date	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)
DPT-01	374362.705	2478632.295	DPT-01 (4-6')	6/29/10	<5.26	<0.075
DPT-02	374339.670	2478643.561	DPT-02 (2-4')	6/29/10	<5.15	7.90
DPT-03	374315.750	2478651.030	DPT-03 (4-6')	6/29/10	<4.92	<7.26
DPT-04	374310.159	2478672.093	DPT-04 (2-4')	6/29/10	<5.43	<7.02
DPT-05	374313.618	2478705.040	DPT-05 (4-6')	6/29/10	<5.97	<7.64
DPT-06	374326.944	2478732.713	DPT-06 (0-2')	6/29/10	<6.37	120

All results in milligrams per kilogram (mg/Kg).

TPH GRO = Total Petroleum Hydrocarbons Gasoline Range Organics

TPH DRO = Total Petroleum Hydrocarbons Diesel Range Organics

Sample depth in feet below land surface indicated in parenthesis as part of the sample identification.

Results in bold exceed the laboratory reporting limit.

< = Less than reporting limit

Coordinate System: US State Plane 1983

Coordinate Zone: North Carolina 3200

Datum: NAD 1983 (Conus)

Coordinate Units: US Survey Feet

FIGURES

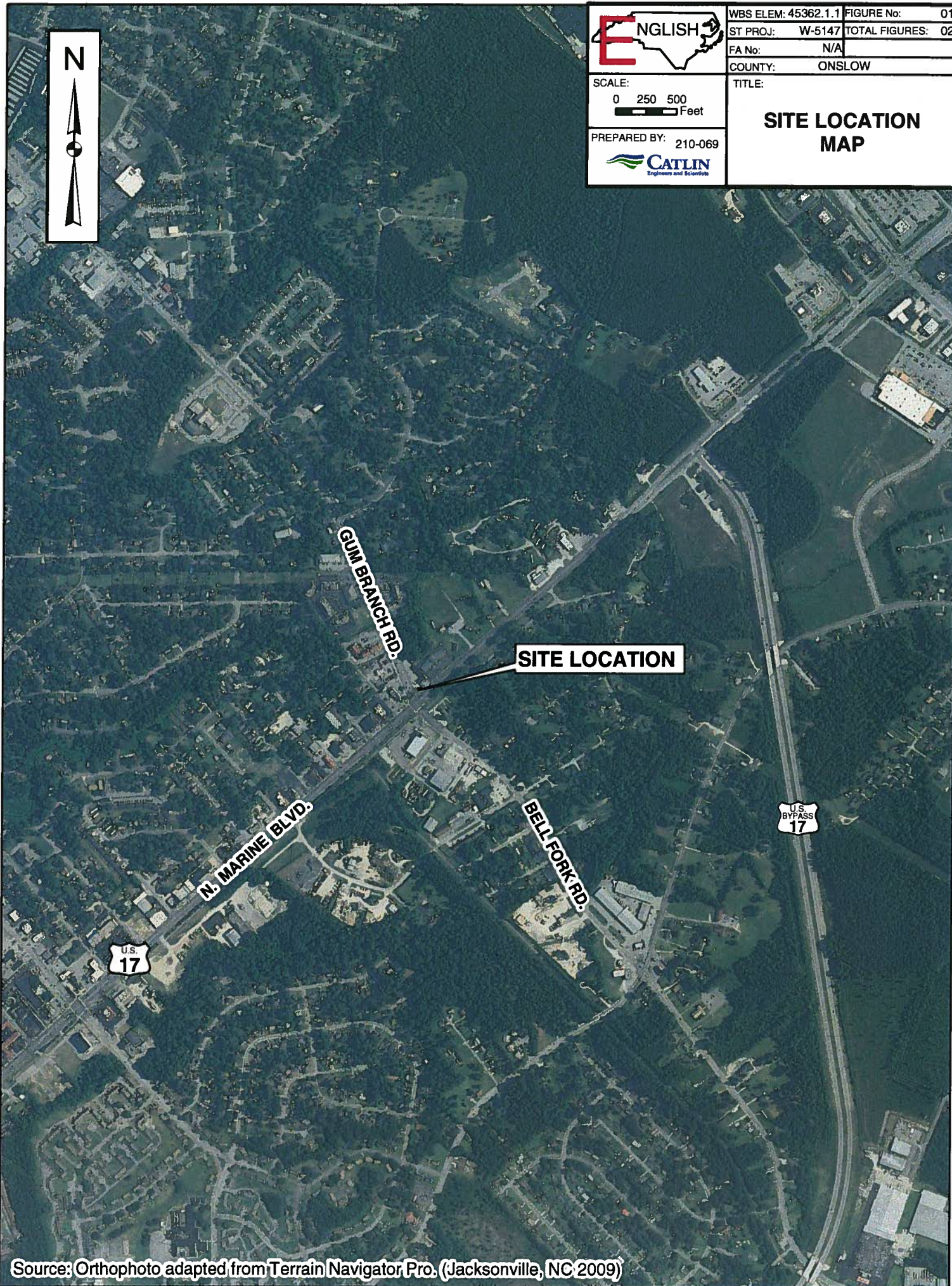


WBS ELEM: 45362.1.1	FIGURE No: 01
ST PROJ: W-5147	TOTAL FIGURES: 02
FA No: N/A	
COUNTY: ONSLOW	

SCALE:
0 250 500
Feet

PREPARED BY: 210-069
 **CATLIN**
Engineers and Scientists

TITLE:
**SITE LOCATION
MAP**



Pedestrian Crosswalks
US 17 (N. Marine Blvd.), SR 1308 (Gum Branch Rd.) & SR 1308 (Bell Fork Rd.)
Jacksonville, NC – Onslow County

NOTE: TO BE CONSTRUCTED BY OTHERS

NOTE: TO BE CONSTRUCTED BY OTHERS

NOTE: PROPERTY BOUNDARIES BY COUNTY TAX MAP. NOT INTENDED AS A PROPERTY SURVEY.

DETAIL OF EXISTING CURB & GUTTER

Boring ID	Sample ID	Date	Northing	Easting	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)
DPT-01	DPT-01 (4-6')	6/29/2010	374362.705	2478632.295	<5.26	<0.075
DPT-02	DPT-02 (2-4')	6/29/2010	374339.670	2478643.561	<5.15	7.90
DPT-03	DPT-03 (4-6')	6/29/2010	374315.750	2478651.030	<4.92	<7.26
DPT-04	DPT-04 (2-4')	6/29/2010	374310.159	2478672.093	<5.43	<7.02
DPT-05	DPT-05 (4-6')	6/29/2010	374313.618	2478705.040	<5.97	<7.64
DPT-06	DPT-06 (0-2')	6/29/2010	374326.944	2478732.713	<6.37	120

All results in milligrams per kilogram (mg/Kg).
TPH GRO = Total Petroleum Hydrocarbons Gasoline Rang Organics
TPH DRO = Total Petroleum Hydrocarbons Diesel Range Organics
Sample depth in feet below land surface indicated in parenthesis as part of the sample identification
Results in bold exceed the laboratory reporting limit.
< = Less than reporting limit
Coordinate System: US State Plane 1983
Coordinate Zone: North Carolina 3200
Datum: NAD 1983 (Conus)
Coordinate Units: US Survey Feet

APPENDICES

APPENDIX A
NCDENR FILE REVIEW INFORMATION

TO: BOB JAMIE SON

FROM: CHARLIE SEHMAN

SUBJECT: RDY'S DISCOUNT AUTO HISTORY

12/10/92

PROBLEM DISCOVERED

12/10/92

INITIAL SITE REPORT

2/1/93

NOTICE ESTABLISHING DUE DATE FOR
COMPREHENSIVE SITE ASSESSMENT (CSA);
DUE → 5/30/93

4/28/93

DEM EXTENDS CSA DUE DATE TO
7/15/93 PER REQUEST

7/15/93

CSA SUBMITTED

8/17/93

REVIEW LETTER DECLARED CSA IS
INCOMPLETE; DEADLINE FOR CORRECTIVE
ACTION PLAN IS SET BY DEM FOR 10/15/93

10/26/93

CAP SUBMITTED, ELEVEN DAYS LATE

12/9/93

CAP IS REJECTED BY DEM BECAUSE
INFORMATION REQUESTED BY DEM IN
8/17/93 LETTER HAS NOT BEEN PROVIDED;
REVISED
NEW CAP DEADLINE WITH REQUESTED
ASSESSMENT INFORMATION ESTABLISHED
FOR 2/15/94

2/18/94

EXTENSION GRANTED BY DEM UNTIL 3/16/94
FOR REVISED CAP AND REQUESTED INFORMATION

3/16/94

REVISED CAP AND SUPPLEMENTARY INFORMATION
RECEIVED BY DEM.

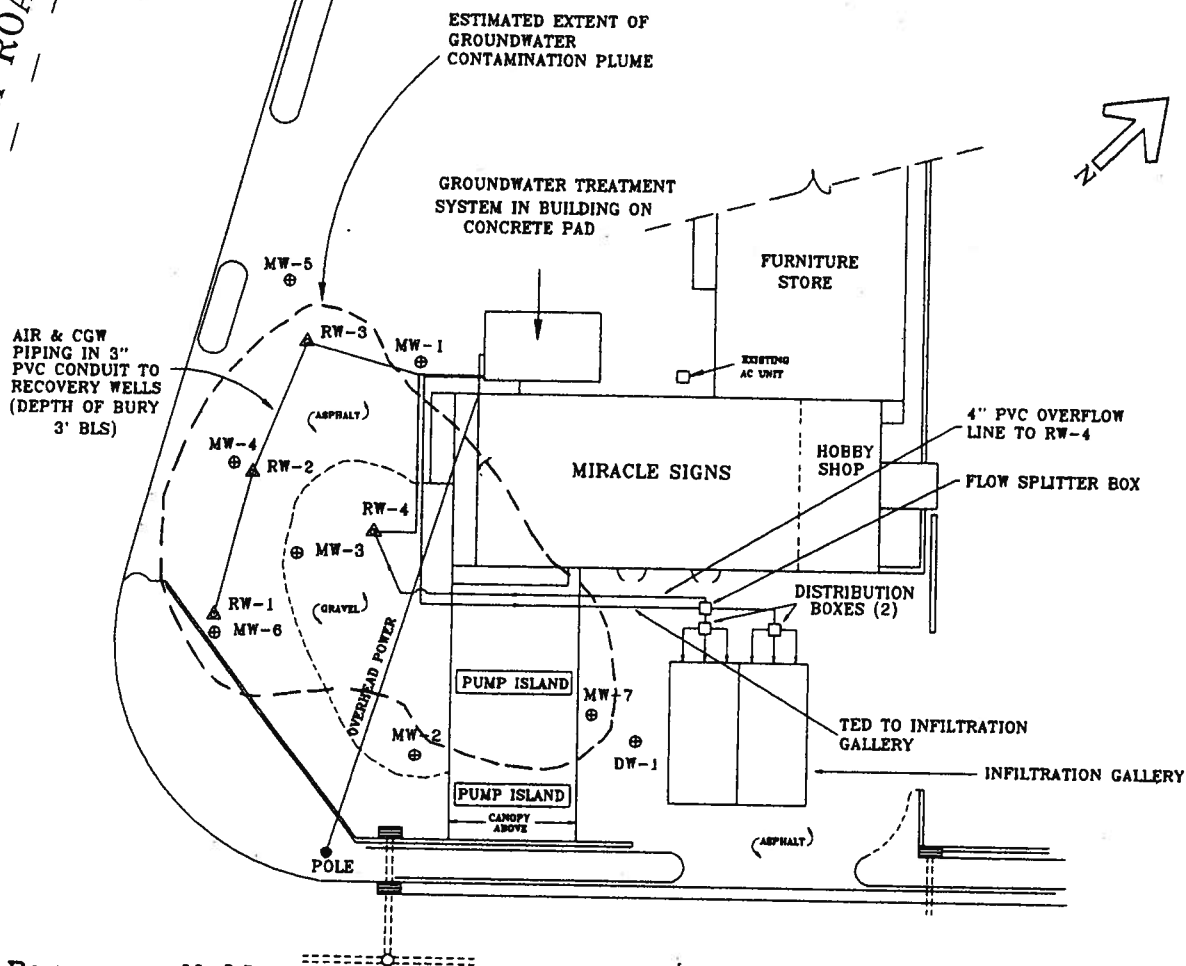
- 5/2/94 REVIEW OF CAP FINDS IT INADEQUATE
BECAUSE INFORMATION REQUESTED BY
DEM 8/17/93 HAS NOT BEEN PROVIDED; NEW
DEAD LINE FOR ADEQUATE CAP AND
ADDITIONAL INFORMATION ESTABLISHED
AT 6/30/94; NOTICE OF VIOLATION FOR INADEQUATE CAP
- 6/30/94 DEADLINE FOR REVISED AND CAP
PASSES UNANSWERED.
- 9/16/94 REVISED CAP SUBMITTED TO DEM
- 11/17/94 DEM REVIEW OF CAP FINDS IT INADEQUATE
BECAUSE INFORMATION REQUESTED ON 8/17/93
HAS NOT BEEN PROVIDED.
- 12/2/94 ^{SECOND} ~~NOTICE~~ NOTICE OF VIOLATION FOR FAILURE TO
SUBMIT AN ADEQUATE CAP
- 12/2/94 RECOMMENDATION FOR ENFORCEMENT

SALIENT FACTS

① ^{MISSING} INFORMATION ESSENTIAL TO ASSESSMENT OF THE CONTAMINANT PLUME DIMENSIONS WAS REQUESTED BY DEM ON 8/17/94. THIS INFORMATION WAS FOUND ABSENT FROM SUBMITTALS ON 10/26/93, 3/16/94 AND 9/16/94. THE INFORMATION (ON THE DOWNGRADE EXTENT OF THE PLUME HAS YET TO BE SUBMITTED.

② AFTER TWO YEARS NO CORRECTIVE ACTION IS IN PLACE, AND THE EXTENT OF THE PROBLEM HAS NOT BEEN DEFINED.

GUMBRANCH ROAD



egend:

- △ RW-1 Recovery Well
- ⊕ MW-1 Monitoring Well

MARINE BLVD (U.S. HWY 17)

Note: No potable water wells within 500 ft. of site.

SITE PLAN SHOWING LOCATIONS OF RECOVERY WELLS		
SCALE: NTS	APPROVED BY:	DRAWN BY EWB/WEB
DATE: 11-12-95		REVISED
GROUNDWATER REMEDIATION SYSTEM FOR MIRACLE SIGNS, JACKSONVILLE, NC		
COASTAL ENVIRONMENTAL SERVICES CO. ENVIRONMENTAL CONSULTING WILMINGTON, NORTH CAROLINA		DRAWING NUMBER Figure 1

R-1 Not available

ASTAL ENVIRONMENTAL SERVICES CO.

ENVIRONMENTAL CONSULTING

7151 Market Street Wilmington, NC 28405 (910) 686-9617

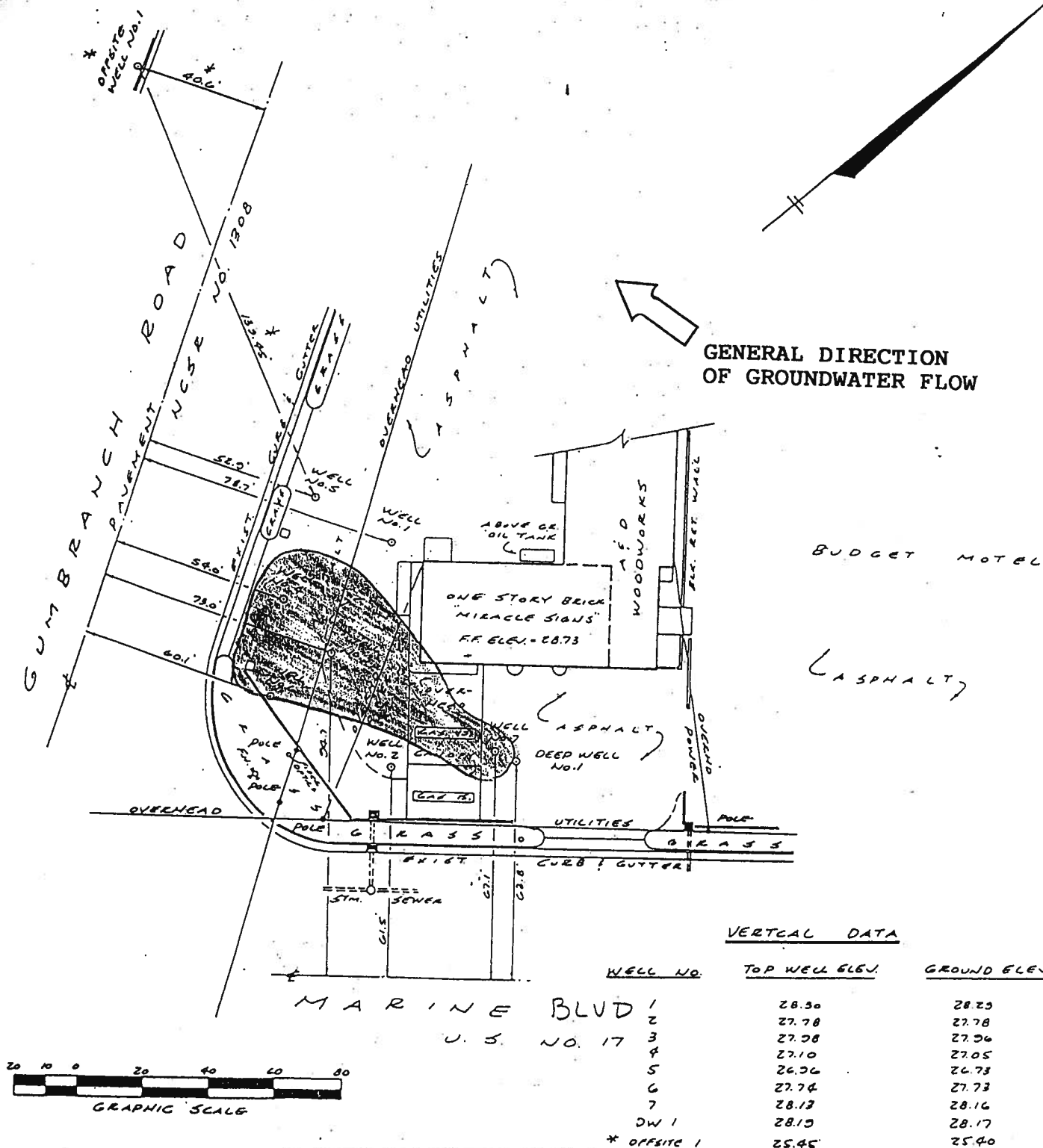
BORING LOG	Boring/Well No.: RW-2	Page 1 of 1
Project No.: NC95122RD	Client/Project: LILLIAN KHARRAT	Site: MIRACLE SIGNS
Site Address: JCT Gum Branch Road & US HWY 17, Jacksonville, NC		
Drilling Contractor: CESCO	Driller: DWD/RMP	
Drilling Started: 2-22-96 (12:59 pm)	Drilling Ended: 2-22-96 (3:00 pm)	
Drilling Method/Rig Type: 6" HOLLOW STEM AUGER		
Logged By: DWD	Borehole dia(s): 8"	Protection Level: D

TOTAL WELL DEPTH 20'

CASING/SCREEN DIAMETER 4"

DEPTH	Lithologic Description	HC (PPM)	WELL DETAIL
0	ASPHALT/MARL		CASING
	BROWN ORANGE SANDY CLAY		
			WL
5	GRAY SAND		SCREEN
			GAS ODOR
10	DARK GRAY SILTY SAND		SCREEN
			GAS ODOR
15	DARK GREY CLAYEY SAND		SCREEN
			GAS ODOR
20	AUGER REFUSAL (CEMENTED SAND) @ 20'		SCREEN
25			SCREEN
30			SCREEN

U = Thin Wall Tube R = Rock Coring Field G/C (Make/Mod.) _____
S = Split spoon (tube) O = Other G/C Oper.: _____
C = Cuttings Notes: _____



SITE SURVEY SHOWING CONTAMINANT PLUME

SCALE: AS SHOWN

APPROVED BY:

DRAWN BY TMB

DATE: 3-12-94

REVISED HEC

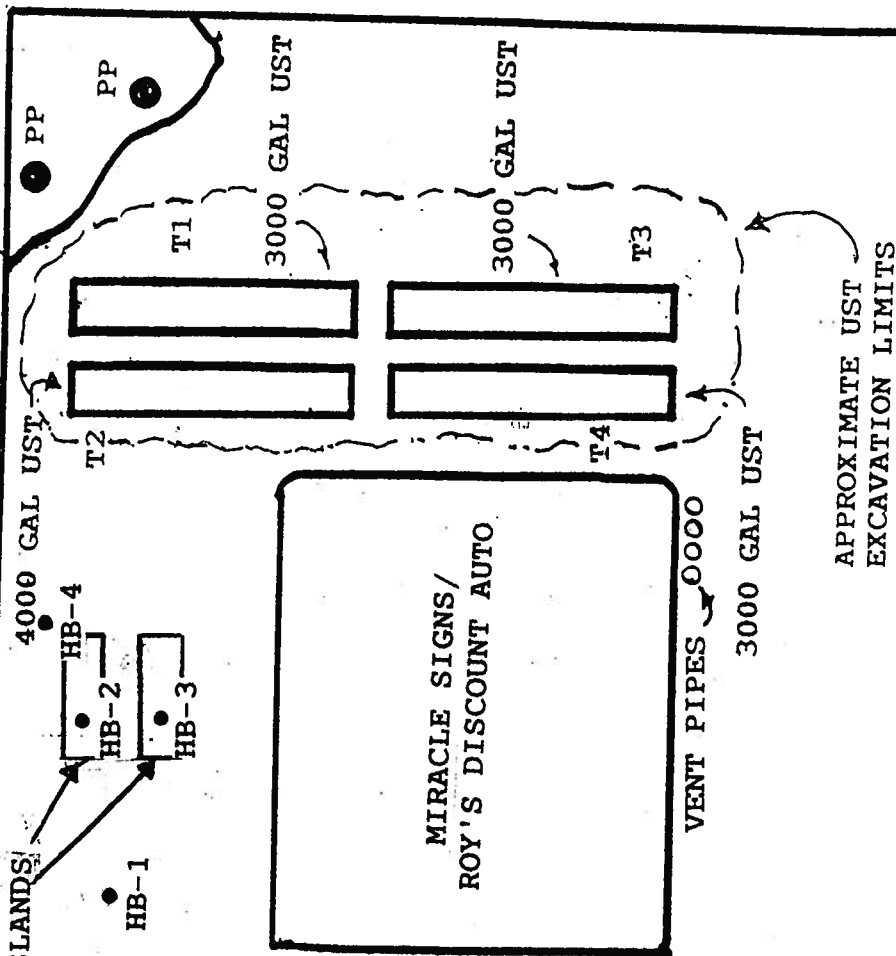
SUPPLEMENT TO CORRECTIVE ACTION PLAN
MIRACLE SIGNS/ROY'S DISCOUNT AUTO, JACKSONVILLE

COASTAL ENVIRONMENTAL SERVICES CO.
ENVIRONMENTAL CONSULTING WILMINGTON, NORTH CAROLINA

DRAWING NUMBER
FIGURE 2

US 17 NORTH

GUM BRANCH RD



SITE PLAN SHOWING LOCATIONS OF HAND AUGER BORINGS ASSOCIATED WITH SOIL GAS ANALYSES

APPROVED BY:

SCALE: NTS

DRAWN BY DWD

DATE: 3-3-93

REVISED HEC

COMPREHENSIVE SITE ASSESSMENT
MIRACLE SIGN CO, JACKSONVILLE, NC

HB = HAND AUGER BORINGS

COASTAL ENVIRONMENTAL SERVICES CO.
ENVIRONMENTAL CONSULTING
WILMINGTON, NORTH CAROLINA

DRAWING NUMBER
FIGURE 4



State of North Carolina
Department of Environment, Health, and Natural Resources
Wilmington Regional Office

James G. Martin, Governor
William W. Cobey, Jr., Secretary

Bob Jamieson
Regional Manager

DIVISION OF ENVIRONMENTAL MANAGEMENT

Groundwater Section

November 5, 1992

Ms. Lillian Kharrat
Post Office Box 1541
Wilmington, North Carolina 28402

Subject: Tank Closure
Miracle Signs
Jacksonville
Onslow County

Dear Ms. Kharrat:

I have received notice of your intent to remove (or close in place) an underground storage tank. Because the tank owner, not the contractor, is held responsible for proper tank closure, I have enclosed several documents to help you. After you have read the information, call me at (919) 395-3900 if you have any questions.

Please call me two days before you begin work so that a representative of the Division may be present.

After tank closure, return the enclosed GW/UST-2 and your report of tank closure with soil sample results. Our central billing office will then stop invoicing you for the annual tank fees. This letter does not imply that you will be eligible for reimbursement of any costs associated with tank closure from the Leaking Petroleum Underground Storage Tank Trust Fund.

Thank you for your cooperation.

Sincerely,

Deborah T. Mayo
Hydrogeological Technician

DTM/jp

cc: William Burnett
Ed Jones
Onslow County Fire Marshall

~~WIRO-GWS~~

Enclosures: (1) GW/UST-2
(2) Tank Closure Guidelines

UST\MIRACLE.NOV
11/05/92

127 Cardinal Drive Extension, Wilmington, N.C. 28405-3845 • Telephone 919-395-3900 • Fax 919-350-2004

An Equal Opportunity Affirmative Action Employer

Notice of Intent: UST Permanent Closure or Change-In-Service

FOR
TANKS
IN
NC

Return Completed Form To:

The appropriate DEM Regional Office according to the county of the facility's location. [SEE REVERSE SIDE OF OWNER'S COPY (BLUE) FOR REGIONAL OFFICE ADDRESS].

State Use Only

I. D. Number _____

Date Received _____

INSTRUCTIONS

Complete and return thirty (30) days prior to closure or change-in-service.

I. OWNERSHIP OF TANK(S)

Tank Owner Name: LILLIAN KHARRAT

(Corporation, Individual, Public Agency, or Other Entry)

Street Address: P.O. BOX 1541

County: NEW HANOVER

City: WILMINGTON State: NC Zip Code: 28402

Tele. No. (Area Code): (919) 452-0065

II. LOCATION OF TANK(S)

Facility Name or Company MIRACLE SIGNS

Facility ID # (if available) _____

Street Address or State Road: JCT. GUM BRANCH ROAD 2 1/2 MI. N

County: ONSLOW City: JACKSONVILLE Zip Code: 28540

Tele. No. (Area Code): (919) 346-6494

III. CONTACT PERSON

Name: WILLIAM E. BURNETT JR. Title: REP. Telephone Number: (919) 686-9617

IV. TANK REMOVAL, CLOSURE IN PLACE, CHANGE-IN-SERVICE

1. Contact Local Fire Marshall.
2. Plan the entire closure event.
3. Conduct Site Soil Assessments.
4. If Removing Tanks or Closing in Place refer to API Publications, 2015 "Cleaning Petroleum Storage Tanks" & 1604 "Removal & Disposal of Used Underground Petroleum Storage Tanks".
5. Provide a sketch locating piping, tanks and soil sampling locations.
6. Fill out form GW/UST-2 "Site Investigation Report for Permanent Closure" and return within 30 days following the site investigation.
7. Keep records for 3 years.

V. WORK TO BE PERFORMED BY:

(Contractor) Name: ONSLOW ENVIRONMENTAL CONTRACTORS, INC.

Address: 3109 GUM BRANCH RD. State: N.C. Zip Code: 28540

Contact: MRED JONES Phone: (919) 347-9010

VI. TANK(S) SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

TANK ID#	TANK CAPACITY	LAST CONTENTS	PROPOSED ACTIVITY		
			CLOSURE		CHANGE-IN-SERVICE
			Removal	Abandonment In Place	New Contents Stored
<u>1</u>	<u>4,000</u>	<u>GASOLINE</u>	☒	☐	
<u>2</u>	<u>3,000</u>	<u>GASOLINE</u>	☒	☐	
<u>3</u>	<u>3,000</u>	<u>GASOLINE</u>	☒	☐	
<u>4</u>	<u>2,000</u>	<u>GASOLINE</u>	☒	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	

VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

Print name and official title

WILLIAM E. BURNETT, JR. REGISTERED ENVIRONMENTAL PROFESSIONAL

Signature: William E. Burnett

*Scheduled Removal Date: 10/29/92

Date Submitted: 10/28/92

*If scheduled work date changes, notify your appropriate DEM Regional Office 48 hours prior to originally scheduled date.

APPENDIX B
GEOPHYSICAL REPORT



July 12, 2010

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

RE: State Project: W-5147
 WBS Element: 45362.1.1
 County: Onslow
 Description: Northern Quadrant of US 17 (Marine Blvd.) and SR 1308 (Gum Branch Road) - Jacksonville

**Subject: Project 09210013.26, Report on Geophysical Surveys
 Onslow 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 site. The report includes one 11x17 color figure.

INTRODUCTION

The work described in this report was conducted on June 28, 2010, by Schnabel under our 2009 contract with the NCDOT. The work was conducted within the accessible areas of the proposed right-of-way and/or easement as indicated on the NCDOT's preliminary plan sheets to support their environmental assessment of the subject property (Kharrat Properties I, LLC). The property is located in the north quadrant of the intersection of US 17 (Marine Blvd.) and SR 1308 (Gum Branch Road) in Jacksonville, NC. The purpose of the geophysical surveys was to locate possible metal underground storage tanks (UST's) and associated metal product lines in the accessible areas of the right-of-way and/or easement.

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

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 (manholes, 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 anomalous EM readings not attributed to cultural features. The GPR data were reviewed in the field to evaluate the possible presence of UST's. The GPR data also were recorded digitally and later transferred to a desktop computer for further review.

Preliminary results for the subject parcel were communicated to Richard Garrett of Catlin Engineers and Scientists on June 28, 2010.

DISCUSSION OF RESULTS

The contoured early time gate EM61 data for the subject parcel are shown on Figure 1. The early time gate data provide the more sensitive detection of metal objects. The early time gate results show anomalies apparently caused by buried utilities or known site features (Figure 1). The GPR data collected at the site do not indicate the presence of metallic UST's within the right-of-way and/or easement.

CONCLUSIONS

Our evaluation of the geophysical data collected on the subject property on Project W-5147 in Jacksonville, NC indicates the following:

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

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

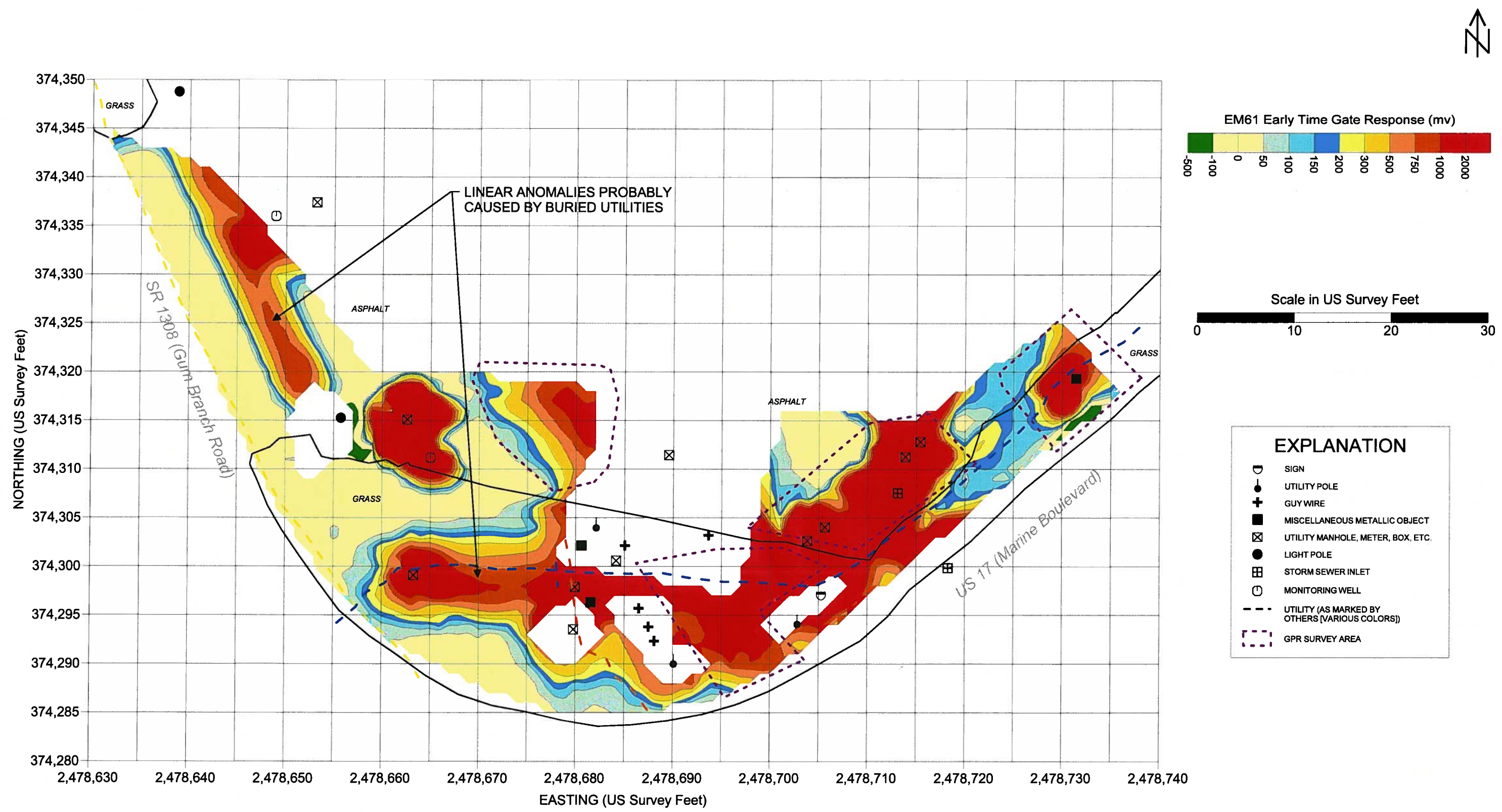


Edward D Billington, LG
Senior Vice President

JS:JW:NB

Attachments: Figure 1

FILE: G:\2009 PROJECTS\09210013 (NCDOT 2009 GEOTECH UNIT SERVICES)\09210013.26 (W-5147, ONSLOW COUNTY)\REPORT\SCHNABEL GEOPHYSICAL REPORT ON W-5147.DOCX



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 28, 2010, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on June 28, 2010, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.



STATE PROJECT W-5147
 ONSLOW COUNTY, NORTH CAROLINA
 NC DEPARTMENT OF TRANSPORTATION
 PROJECT NO. 09210013.26

EM61
 EARLY TIME GATE
 RESPONSE

FIGURE 1

APPENDIX C

BORING LOGS

BORING LOG


CATLIN
 Engineers and Scientists

WBS Element: 45362.1.1

State Project: W-5147

Wilmington, NC

PROJECT NO.:	210069	STATE:	NC	COUNTY:	Onslow	LOCATION:	Jacksonville
PROJECT NAME:	Northern Quadrant of US 17 and SR 1308 - Jacksonville			LOGGED BY:	Ben Ashba		BORING ID: DPT-01
				DRILLER:	Richard Garrett		
NORTHING:	374,362.71	EASTING:	2,478,632.30	CREW:			
SYSTEM: NCSP NAD 83 (USft)		BORING LOCATION: Edge of driveway					LAND ELEV.: NM
DRILL MACHINE:	Power Probe	METHOD:	Direct Push	0 HOUR DTW:	N/A	BORING DEPTH: 8.0	
START DATE:	6/29/10	FINISH DATE:	6/29/10	24 HOUR DTW:	N/A	ROCK DEPTH: --	

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
0.0							0.0	LAND SURFACE	
							0.3	Asphalt	
					GW			Sandy GRAVEL sub-base.	
	DIRECT PUSH	▲2					1.0		
					SM			Med. gray brown, Silty SAND.	
2.0							2.0		
					CL			Grayish brown, Silty CLAY. Low plasticity.	
	DIRECT PUSH	▲3					2.8		
					CL			Tan w/yellowish orange mottling, CLAY. Med. plasticity. Firm.	
4.0							4.0		
	DIRECT PUSH	▲4		DPT-01 (4-6')					
					CL				
6.0								Tan to med. gray w/yellowish orange mottling, Sandy CLAY. Slight plasticity w/thin (1"-2") layers of increased clay content and higher plasticity. Damp.	
	DIRECT PUSH	▲3							
8.0							8.0		
								Boring Terminated at Depth 8.0 ft	

CATLIN ENVIRO. LOG 210069 NCDOT KAHARRAT PROPERTIES.GPJ CATLIN.GDT 7/13/10

▽ = 0hr. DTW

▼ = 24hr. DTW

BORING LOG


CATLIN
 Engineers and Scientists

 WBS Element: 45362.1.1
 State Project: W-5147

Wilmington, NC

PROJECT NO.:	210069	STATE:	NC	COUNTY:	Onslow	LOCATION:	Jacksonville
PROJECT NAME:	Northern Quadrant of US 17 and SR 1308 - Jacksonville				LOGGED BY:	Ben Ashba	BORING ID:
					DRILLER:	Richard Garrett	DPT-02
NORTHING:	374,339.67	EASTING:	2,478,643.56	CREW:			
SYSTEM:	NCSP NAD 83 (USft)	BORING LOCATION:					LAND ELEV.: NM
DRILL MACHINE:	Power Probe	METHOD:	Direct Push	0 HOUR DTW:	N/A	BORING DEPTH:	8.0
START DATE:	6/29/10	FINISH DATE:	6/29/10	24 HOUR DTW:	N/A	ROCK DEPTH:	--

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
0.0							0.0	LAND SURFACE	
					SM			Yellowish orange, Silty, f. SAND.	
	DIRECT PUSH	▲6					1.0		
							1.3	Layer of Asphalt.	
					SM			Yellowish orange, Silty, f. SAND.	
2.0							2.0		
	DIRECT PUSH	▲8		DPT-02 (2-4')	CH			Yellowish orange, mottled, CLAY. Mod. high plasticity. Firm.	
							4.0		
4.0									
	DIRECT PUSH	▲5			SC			Med. gray w/yellow orange mottling, Clayey SAND. Clay content decreases w/depth.	
							6.0		
6.0									
	DIRECT PUSH	▲6			SP			Light gray to buff, v.f. SAND. Friable. Moi. to damp.	
							7.0		
					OL			Dark gray, Clayey SILT. Root frags. Soft. Wet. Sharp contact w/above.	
8.0							8.0		
								Boring Terminated at Depth 8.0 ft	

CATLIN ENVIRO. LOG 210069 NCDOT KAHARRAT PROPERTIES GPJ CATLIN.GDT 7/13/10

▽ = 0hr. DTW

▼ = 24hr. DTW

BORING LOG


CATLIN
 Engineers and Scientists

 WBS Element: 45362.1.1
 State Project: W-5147

Wilmington, NC

PROJECT NO.: 210069	STATE: NC	COUNTY: Onslow	LOCATION: Jacksonville
PROJECT NAME: Northern Quadrant of US 17 and SR 1308 - Jacksonville		LOGGED BY: Ben Ashba	BORING ID:
		DRILLER: Richard Garrett	DPT-03
NORTHING: 374,315.75	EASTING: 2,478,651.03	CREW:	
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION: Driveway		LAND ELEV.: NM
DRILL MACHINE: Power Probe	METHOD: Direct Push	0 HOUR DTW: N/A	BORING DEPTH: 8.0
START DATE: 6/29/10	FINISH DATE: 6/29/10	24 HOUR DTW: N/A	ROCK DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
0.0							0.0	LAND SURFACE	
					SM			Topsoil.	
							0.7		
							0.9	Asphalt layer.	
	DIRECT PUSH	▲5			GW		1.3	Sandy GRAVEL sub-base.	
					SM			Yellow brown, mottled, Silty, v.f. SAND. Firm to hard.	
2.0							2.0		
	DIRECT PUSH	▲6							
4.0					SC			Yellow orange mottled w/gray, Clayey, v.f. SAND. Clay content increases w/depth to 6' then decreases below. Damp @ 6'.	
	DIRECT PUSH	▲5		DPT-03 (4-6')					
6.0									
	DIRECT PUSH	▲6					7.0		
					SP			Tan to buff, v.f. SAND. Mod. well sorted. Sub-angular. Sat.	
8.0							8.0		
								Boring Terminated at Depth 8.0 ft	

CATLIN ENVIRONMENTAL LOG - 210069 NC DOT KAHARRAT PROPERTIES.GPJ CATLIN.GDT 7/13/10

= 0hr. DTW

= 24hr. DTW

BORING LOG


CATLIN
 Engineers and Scientists

 WBS Element: 45362.1.1
 State Project: W-5147

Wilmington, NC

PROJECT NO.: 210069	STATE: NC	COUNTY: Onslow	LOCATION: Jacksonville
PROJECT NAME: Northern Quadrant of US 17 and SR 1308 - Jacksonville	LOGGED BY: Ben Ashba	BORING ID: DPT-04	
	DRILLER: Richard Garrett		
NORTHING: 374,310.16	EASTING: 2,478,672.09	CREW:	
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION: Grass island @ corner/edge of asphalt.	LAND ELEV.: NM	
DRILL MACHINE: Power Probe	METHOD: Direct Push	0 HOUR DTW: N/A	BORING DEPTH: 8.0
START DATE: 6/29/10	FINISH DATE: 6/29/10	24 HOUR DTW: N/A	ROCK DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm)	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
0.0			0 1000 2000 3000 4000				0.0	LAND SURFACE	
					SM		0.7	Topsoil.	
							0.9	Asphalt layer.	
	DIRECT PUSH	▲5			GW		1.3	Sandy GRAVEL sub-base.	
					CH		2.0	Tan to med. gray, CLAY. High plasticity. Firm.	
2.0									
	DIRECT PUSH	▲5		DPT-04 (2-4')	SM			Med. brown, Silty, v.f. to f. SAND.	
							4.0		
4.0									
	DIRECT PUSH	▲3			OL		5.0	Dark brown, Silty CLAY. Med. plasticity. Firm.	
6.0									
	DIRECT PUSH	▲2			CL/CH			Med. gray. Mottled w/orange and yellow, CLAY w/some v.f. Sand. Med. to high plasticity.	
							8.0		
8.0								Boring Terminated at Depth 8.0 ft	

CATLIN ENVIRO. LOG 210069 NCDOT KAHARRAT PROPERTIES GP L CATLIN.GDT 7/13/10

= 0hr. DTW

= 24hr. DTW

BORING LOG

**CATLIN**
Engineers and Scientists

VBS Element: 45362.1.1

State Project: W-5147

Wilmington, NC

PROJECT NO.:	210069	STATE:	NC	COUNTY:	Onslow	LOCATION:	Jacksonville
PROJECT NAME:	Northern Quadrant of US 17 and SR 1308 - Jacksonville				LOGGED BY:	Ben Ashba	BORING ID:
					DRILLER:	Richard Garrett	DPT-05
NORTHING:	374,313.62	EASTING:	2,478,705.04	CREW:			
SYSTEM:	NCSP NAD 83 (USft)	BORING LOCATION:	Near edge of canopy				LAND ELEV.: NM
DRILL MACHINE:	Power Probe	METHOD:	Direct Push	0 HOUR DTW:	N/A	BORING DEPTH:	8.0
START DATE:	6/29/10	FINISH DATE:	6/29/10	24 HOUR DTW:	N/A	ROCK DEPTH:	--

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
0.0							0.0	LAND SURFACE	
							0.3	Asphalt	
					SW		0.5	Light gray, Gravelly SAND fill-base	
	DIRECT PUSH	▲6			CL			Light gray, CLAY w/Silt. Little to no plasticity.	
2.0							2.0		
	DIRECT PUSH	▲7			SM			Med. brown w/mottling, Silty, v.f. SAND. Increase of clay content w/depth. Friable. V. moist.	
4.0							4.0		
	DIRECT PUSH	▲7		DPT-05 (4-6')	OH		5.0	Dark brown, Clayey SILT. Loose. Wet to Sat.	
6.0									
	DIRECT PUSH	▲7						Yellow orange, Silty CLAY. Med. plasticity. Soft. Hydrocarbon Odor.	
8.0							8.0	Boring Terminated at Depth 8.0 ft	

CATLIN ENVIRO. LOG 210069.NC.DOT.KAHARRAT.PROPERTIES.GPJ.CATLIN.GDT 7/13/10

▽ = 0hr. DTW

▼ = 24hr. DTW

BORING LOG


CATLIN
 Engineers and Scientists

WBS Element: 45362.1.1

State Project: W-5147

Wilmington, NC

PROJECT NO.:	210069	STATE:	NC	COUNTY:	Onslow	LOCATION:	Jacksonville
PROJECT NAME:	Northern Quadrant of US 17 and SR 1308 - Jacksonville			LOGGED BY:	Ben Ashba		BORING ID:
				DRILLER:	Richard Garrett		DPT-06
NORTHING:	374,326.94	EASTING:	2,478,732.71	CREW:			
SYSTEM:	NCSP NAD 83 (USft)		BORING LOCATION: At canopy near former dispenser.				LAND ELEV.: NM
DRILL MACHINE:	Power Probe		METHOD:	Direct Push		0 HOUR DTW:	N/A
START DATE:	6/29/10		FINISH DATE:	6/29/10		24 HOUR DTW:	N/A
						BORING DEPTH:	8.0
						ROCK DEPTH:	--

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm)	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
0.0			0 1000 2000 3000 4000				0.0	LAND SURFACE	
					SM		0.4	Organic rich Topsoil.	
	DIRECT PUSH		▲48	DPT-06 (0-2')	SM			Light gray, Silty, v.f. to f. SAND w/some med. to cse. grains.	
2.0					CL		2.0	Brown to med. gray, Silty CLAY.	
	DIRECT PUSH		▲9		OL		3.5	Dark brown to dark gray, Organic SILT. Slight Hydrocarbon Odor.	
4.0					CL		4.5	Med. gray w/yellow, CLAY. Mod. plasticity. Wet.	
	DIRECT PUSH		▲14		SP		7.0	Gray to buff, v.f. SAND. Mod. sorting. Friable. Sub-angular.	
6.0							8.0	Boring Terminated at Depth 8.0 ft	
	DIRECT PUSH		▲5						
8.0									

CATLIN ENVIRO. LOG 210069.NC.DOT.KAHARRAT PROPERTIES.GPJ.CATLIN.GDI 7/13/10

▽ = 0hr. DTW

▼ = 24hr. DTW

APPENDIX D

**LABORATORY REPORT AND
CHAIN OF CUSTODY RECORD**



Ben Ashba
Richard Catlin & Associates
P.O. Box 10279
Wilmington, NC 28404-0279

Report Number: G128-2550

Client Project: NCDOT Kharra Prop

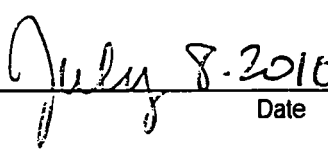
Dear Ben Ashba,

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. 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 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.

 
Project Manager Date
Barbara Hager

List of Reporting Abbreviations
And Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantification Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% solids = Percent Solids

Special Notes:

- 1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.
- 2) Uncertainty for all reported data is less than or equal to 30 percent.

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-01 (4-6')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-1B
Lab Project ID: G128-2550
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 6/29/2010 14:00
Date Received: 6/30/2010
Matrix: Soil
Solids 80.72

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.26	mg/Kg	1	07/01/10 16:54

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	95.4	95.4		70-130

Comments:

Batch Information

Analytical Batch: VP070110
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 7.07 g
Final Volume: 5 mL

Analyst: WMC

NC Certification #481

Reviewed By: GD
GRO.XLS

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-02 (2-4')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-2B
Lab Project ID: G128-2550
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 6/29/2010 14:30
Date Received: 6/30/2010
Matrix: Soil
Solids 78.98

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.15	mg/Kg	1	07/01/10 17:21

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	95.0	95.0		70-130

Comments:**Batch Information**

Analytical Batch: VP070110
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 7.37 g
Final Volume: 5 mL

Analyst: imc

NC Certification #481

Reviewed By: BAO
GRO.XLS

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-03 (4-6')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-3B
Lab Project ID: G128-2550
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 6/29/2010 15:00
Date Received: 6/30/2010
Matrix: Soil
Solids 84.83

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	4.92	mg/Kg	1	07/01/10 17:48

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	94.3	94.3		70-130

Comments:

Batch Information

Analytical Batch: VP070110
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 7.19 g
Final Volume: 5 mL

Analyst: WMC

NC Certification #481

Reviewed By: BAO
GRO.XLS

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-04 (2-4')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-4B
Lab Project ID: G128-2550
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 6/29/2010 15:30
Date Received: 6/30/2010
Matrix: Soil
Solids 87.26

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.43	mg/Kg	1	07/01/10 18:15

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	96.2	96.2		70-130

Comments:**Batch Information**

Analytical Batch: VP070110
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 6.33 g
Final Volume: 5 mL

Analyst: WMC

NC Certification #481

Reviewed By: BAO
GRO.XLS

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-05 (4-6')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-5B
Lab Project ID: G128-2550
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 6/29/2010 16:30
Date Received: 6/30/2010
Matrix: Soil
Solids 79.31

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	5.97	mg/Kg	1	07/01/10 18:42

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	93.3	93.3		70-130

Comments:**Batch Information**

Analytical Batch: VP070110
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 6.34 g
Final Volume: 5 mL

Analyst: mmC

NC Certification #481

Reviewed By: BAO
GRO.XLS

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-06 (0-2')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-6B
Lab Project ID: G128-2550
Report Basis: Dry Weight

Analyzed By: BAO
Date Collected: 6/29/2010 16:00
Date Received: 6/30/2010
Matrix: Soil
Solids 93.61

Analyte	Result	RL	Units	Dilution Factor	Date Analyzed
Gasoline Range Organics	BQL	6.37	mg/Kg	1	07/01/10 19:09

Surrogate Spike Results

	Added	Result	Recovery	Flag	Limits
BFB	100	96.1	96.1		70-130

Comments:

Batch Information

Analytical Batch: VP070110
Analytical Method: 8015
Instrument ID: GC4
Analyst: BAO

Prep Method: 5035
Initial Wt/Vol: 5.03 g
Final Volume: 5 mL

Analyst: WMC

NC Certification #481

Reviewed By: BAO
GRO.XLS

Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-01 (4-6')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-1D
Lab Project ID: G128-2550

Date Collected: 6/29/2010 14:00
Date Received: 6/30/2010
Matrix: Soil
Solids 80.72
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	0.075	mg/Kg	1	07/06/10 21:38
Surrogate Spike Results					
		Spike Added	Control Limits	Spike Result	Percent Recovery
OTP		40	40-140	34.8	87

Comments:

Batch Information

Analytical Batch: EP070610
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16945
Prep Method: 3541
Prep Date: 07/02/10
Initial Prep Wt/Vol: 3306 G
Prep Final Vol: 10 mL

Analyst: FX

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DRC.XLS
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Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-02 (2-4')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-2D
Lab Project ID: G128-2550

Date Collected: 6/29/2010 14:30
Date Received: 6/30/2010
Matrix: Soil
Solids 78.98
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	7.90	7.66	mg/Kg	1	07/06/10 22:06
Surrogate Spike Results					
		Spike Added	Control Limits	Spike Result	Percent Recovery
OTP		40	40-140	36.5	91.2

Comments:

Batch Information

Analytical Batch: EP070610
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16945
Prep Method: 3541
Prep Date: 07/02/10
Initial Prep Wt/Vol: 33.04 G
Prep Final Vol: 10 mL

Analyst: FA

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Reviewed By: CRD
DRO.XLS
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Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-03 (4-6')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-3D
Lab Project ID: G128-2550

Date Collected: 6/29/2010 15:00
Date Received: 6/30/2010
Matrix: Soil
Solids 84.83
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.26	mg/Kg	1	07/06/10 22:34
Surrogate Spike Results					
		Spike Added	Control Limits	Spike Result	Percent Recovery
OTP		40	40-140	33.2	83

Comments:

Batch Information

Analytical Batch: EP070610
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16945
Prep Method: 3541
Prep Date: 07/02/10
Initial Prep Wt/Vol: 32.48 G
Prep Final Vol: 10 mL

Analyst: FA

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Results for Total Petroleum Hydrocarbons
by GC/FID 8015

Client Sample ID: DPT-04 (2-4')
Client Project ID: NCDOT Kharrrat Prop
Lab Sample ID: G128-2550-4D
Lab Project ID: G128-2550

Date Collected: 6/29/2010 15:30
Date Received: 6/30/2010
Matrix: Soil
Solids 87.26
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.02	mg/Kg	1	07/06/10 23:02

Surrogate Spike Results

	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	34.9	87.3

Comments:

Batch Information

Analytical Batch: EP070610
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16945
Prep Method: 3541
Prep Date: 07/02/10
Initial Prep Wt/Vol: 32.64 G
Prep Final Vol: 10 mL

Analyst: FDH

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**Results for Total Petroleum Hydrocarbons
by GC/FID 8015**

Client Sample ID: DPT-05 (4-6')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-5D
Lab Project ID: G128-2550

Date Collected: 6/29/2010 16:30
Date Received: 6/30/2010
Matrix: Soil
Solids 79.31
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	BQL	7.64	mg/Kg	1	07/06/10 23:30

Surrogate Spike Results

	Spike Added	Control Limits	Spike Result	Percent Recovery
OTP	40	40-140	34.6	86.4

Comments:

Batch Information

Analytical Batch: EP070610
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16945
Prep Method: 3541
Prep Date: 07/02/10
Initial Prep Wt/Vol: 32.99 G
Prep Final Vol: 10 mL

Analyst: FA

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**Results for Total Petroleum Hydrocarbons
by GC/FID 8015**

Client Sample ID: DPT-06 (0-2')
Client Project ID: NCDOT Kharrat Prop
Lab Sample ID: G128-2550-6D
Lab Project ID: G128-2550

Date Collected: 6/29/2010 16:00
Date Received: 6/30/2010
Matrix: Soil
Solids 93.61
Report Basis: Dry Weight

Parameter	Result	RL	Units	Dilution Factor	Date Analyzed
Diesel Range Organics	120	6.49	mg/Kg	1	07/06/10 23:59
Surrogate Spike Results					
		Spike Added	Control Limits	Spike Result	Percent Recovery
OTP		40	40-140	38.1	95.2

Comments:

Batch Information

Analytical Batch: EP070610
Analytical Method: 8015
Instrument: GC6
Analyst: DTF

Prep batch: 16945
Prep Method: 3541
Prep Date: 07/02/10
Initial Prep Wt/Vol: 32.93 G
Prep Final Vol: 10 mL

Analyst: FX

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