



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue, Governor

Division of Waste Management  
UST Section

Dee Freeman, Secretary  
Dexter R. Matthews, Director

August 6, 2009

Ms. Alysia Bailey-Taylor  
City & Regional Planning Division  
One Exchange Plaza, Suite 204  
Raleigh, NC 27602

Re: Notice of No Further Action  
15A NCAC 2L .0407(d)  
Risk-based Assessment and Corrective Action for  
Petroleum Underground Storage Tanks

Raleigh's 500 E. Davie Street Property  
Facility # N/A  
500 E. Davie Street  
Raleigh, NC 27601  
Wake County  
Incident Number: 33560  
Risk Classification: N/A  
Ranking: N/A

Dear Ms. Bailey-Taylor:

The UST Closure Report received by the Underground Storage Tank (UST) Section, Raleigh Regional Office on August 5, 2009 has been reviewed. The review indicates that soil contamination does not exceed the residential maximum soil contaminant concentrations (MSCCs), established in Title 15A NCAC 2L .0411 and that groundwater contamination does not exceed the groundwater quality standards established in Title 15A NCAC 2L .0202.

The UST Section determines that no further action is warranted for this incident. This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0407(a) you have a continuing obligation to notify the Department of any changes that might affect the risk or land use classifications that have been assigned.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,

Mark Powers  
UST Section Regional Supervisor  
Raleigh Regional Office

cc: Raleigh Regional Office/JFM- 1628 Mail Service Center, Raleigh, NC 27699 (919) 791-4200



**UST Closure Report**  
**Incident #: 33560**  
**City of Raleigh - 500 E. Davie Street Property**  
**500 E. Davie Street**  
**Raleigh, North Carolina**

**H&H Job No. RAL-002**

**July 31, 2009**



2923 S. Tryon Street, Suite 100  
Charlotte, NC 28203  
704-586-0007

3334 Hillsborough Street  
Raleigh, NC 27607  
919-847-4241

## UST Closure Report

### A. Site Information

#### 1. Site Identification

Date of Report: July 31, 2009  
Facility ID: N/A UST Incident Number: 33560  
Site Name: City of Raleigh -500 E. Davie Street Property  
Site Street Address: 500 E. Davie Street  
City, Town: Raleigh, NC Zip Code: 27601 County: Wake  
Description of Geographical Data Point: UST Fill Port  
Location Method: Topographic Map-Raleigh, West, NC, Revised 1988  
Latitude: 35°46'30.67" N Longitude: 78°37'56.13" W

#### 2. Information about Contacts Associated with the Leaking UST System

UST Owner: City of Raleigh, NC, City & Regional Planning Division  
Address: One Exchange Plaza, Suite 204, Raleigh, NC 27602 Tel.: 919-516-2650  
UST Operator: N/A - Orphan Tank  
Address: \_\_\_\_\_ Tel: \_\_\_\_\_  
Property Owner: City of Raleigh, NC  
Address: One Exchange Plaza, Suite 204, Raleigh, NC 27602 Tel.: 919-516-2650  
Property Occupant: N/A - Site is unoccupied  
Address: \_\_\_\_\_ Tel: \_\_\_\_\_  
Consultant/Contractor: Hart & Hickman, PC  
Address: 3334 Hillsborough Street, Raleigh, NC 27607 Tel: 919-847-4241  
Analytical Laboratory: Prism Laboratories, Inc. State Certification No. 402  
Address: 449 Springbrook Road, Charlotte, NC 28217 Tel: 704-529-6364

#### 3. Information About Release

Date Discovered: N/A - Data for samples did not indicate impact by petroleum fuels  
Estimated Quantity of Release: N/A  
Cause of Release: N/A  
Source of Release (Dispenser/Piping/UST): N/A  
Sizes and contents of UST system(s) from which the release occurred): N/A -No Release documented from 1,500 Gal. UST

#### 4. Certification

I, Leonard Moretz, PG, a Professional Geologist for Hart & Hickman, PC, do certify that the information contained in this report is correct and accurate to the best of my knowledge.

*Leonard Moretz*



Hart & Hickman, PC is licensed to practice geology/engineering in North Carolina. The certification numbers of the company are C-245/C-1269.

**B. Site History**

**1. UST Owner and Operator Information:**

UST ID Number	1		Facility ID Number	N/A Orphan UST
Name of Owner			Dates of Operation (mm/dd/yy to mm/dd/yy)	
City of Raleigh, NC - City & Regional Planning Division			Unknown	
Street Address				
One Exchange Plaza, Suite 204				
City	State	Zip	Telephone Number	
Raleigh	NC	27602	919-516-2650	
Name of Operator			Dates of Operation (mm/dd/yy to mm/dd/yy)	
Unknown – Orphan UST			Unknown	
Street Address				
500 E. Davie Street				
City	State	Zip	Telephone Number	
Raleigh	NC	27601	N/A	

2. Site History - UST/AST System Information:

UST ID Number	Current/Last Contents *	Previous Contents *	Capacity (in gallons)	Construction Details **	Tank Dimensions	Description of Associated Piping and Pumps	Date Tank Installed	Status of UST ***	Was release associated with the UST System?
1	Gasoline	Unknown	1,500	Single wall Steel	120"X66"	NA	Unknown	Closed- In Place	NO

Notes:

NA – Information not available

**3. Non-UST spills at the site:**

Contamination of soils within the 500 E. Davie Street building have been documented through the performance of Brownfield Phase I and Phase II Environmental Site Assessments. Cleanup of impacted soils within the building interior under a Brownfields agreement with the City of Raleigh was performed at the site during June, 2008.

**4. Location of current UST system to historical UST releases, non-UST releases, and off-site releases:**

No other UST systems are known to have existed on the property. A Brownfields Cleanup was performed at the site during June, 2008, which included the removal of impacted sumps, underlying soils and the excavation of a coal bin formerly located at the rear of the property. These activities were documented in Hart & Hickman's report entitled "Brownfields Cleanup Report-500 E. Davie Street", dated September 4, 2008.

The nearest documented release from a UST system was from two gasoline USTs removed from the former Klyman Estate property, located at 412 E. Davie Street in 1993 (NC DENR Incident # 10820). Upon UST removal, the two gasoline USTs were found to be heavily pitted, and numerous small holes were observed in the larger of the two tanks. Subsequent investigation and remediation efforts included the removal of approximately 330 tons of impacted soil and the installation of ten groundwater monitoring wells. Ultimately a Corrective Action Plan (CAP) was submitted for the release which recommended natural attenuation of the site groundwater. A closure letter was issued for the incident on October 19, 1998. The location of the former Klyman Estate property has since been developed as the Carlton Place condominium complex.

**5. Site characteristics:**

The subject site is an approximate 0.83-acre parcel of land and idle commercial buildings that was historically divided into four (4) separate parcels referred to as 500, 502-504 and 510 E. Davie Street, and 411 East Street. The combined site is now listed in the county tax roll as the 500 East Davie Street Property (Site). The subject site and associated buildings are currently unoccupied, but were utilized for a variety of commercial and community-based operations from about 1930 through 2005.

This site is located within a mixed commercial and residential neighborhood near, but not within, the Southeast Raleigh Historic District. The subject site is bounded by E. Davie Street to the north, the Rex Senior Health Center (512 E. Davie Street) to the east, a vacant lot and residential area along E. Cabarrus Street to the south, and the new Carlton Place residential condominium development that encompasses the entire city block to the west along S. East Street. A site location map and site plan are included as Figures 1 and 2.

The property is in a densely developed urban area of Raleigh (United States Geological Survey (USGS) topographic map, 7.5 minute series, Raleigh West, NC, 1988). According to Wake County topographic data ([www.wakegov.com](http://www.wakegov.com)), the subject site is located at an elevation between 304 ft. above mean sea level (msl) in the northeast corner of the property to about 292 feet above msl in the southwest corner of the property. The topographic gradient is generally to the southwest toward S. East Street

The subject site is located in the Piedmont Physiographic Province of North Carolina. According to the *Geologic Map of North Carolina* dated 1985, the subject site lies within the Raleigh Belt of the Piedmont. The Raleigh Belt is composed of a suite of metamorphic rocks; the downtown Raleigh area is generally underlain by biotite gneiss and schist intruded by sills and dikes of granite, pegmatite, aplite, and minor hornblende gneiss.

Visual observations during the advancement of soil borings in the tank basin indicate that soil in the area of the UST consists of silty sand and sandy silt. Based on previous assessments at the site, depth to ground water at the site ranges from approximately 15 ft to 20 ft below ground surface and the ground water flow direction is to the east.

As part of previous assessment activities at the site, H&H conducted a potential receptor survey in the vicinity of the site. The effort included a survey of water supply wells, municipal water availability, surface water features, sensitive habitats, and other potential receptors within an approximate 1,500-foot radius from the site.

Results of the receptor survey indicated that all developed properties within the 1,500 foot radius were identified as having a municipal water service connection. Further, no evidence was found of potential water supply wells within the 1,500 foot radius of the site. The closest surface water body is an un-named tributary of Walnut Creek. This un-named tributary lies approximately 2,500 ft. south-southeast of the site.

## C. Closure Procedure

### 1. Preparations for closure including the steps taken to notify authorities, permits obtained and the steps taken to clean and purge the tanks:

H&H contacted NC One Call prior to closure of the UST to ensure that subsurface utilities were located in the area. H&H also contacted the AT&T field representative so he could be on-site during closure proceedings, as an AT&T fiber optic bank was found to run through the UST location. H&H also contacted the City of Raleigh Fire Marshall's Office, who indicated they might send a representative to the site during the closure, however, no representative visited the site during closure. Tank disposal documentation is included in **Appendix A**.

**2. Closure procedures:**

Closure procedures were performed on July 2, 2009 and included the excavation and exposure of the upper end of the UST surrounding the tank fill port by Eastern Environmental Management (EEM) of Rocky Mount, NC, followed by the introduction of inert foam material into the tank by Tailored Chemical Products (TCP) of Hickory, NC. The materials overlying the UST and surrounding the fill port were removed with a tracked mini-excavator, after which an approximate 1-foot hole was cut into the upper surface of the tank. Initial plans were to clean the interior of the tank, and pump any residuals from the UST, followed by the introduction of foam. However, upon exposure of the tank interior, the UST was found to contain approximately 3-feet of soil, assumed to have been associated with the installation of the AT&T fiber optic bank, running through the center of the UST. The fiber optic cable casing was visible lying at the top of the soil within the UST, and the AT&T representative stated that it was impractical to disturb the materials in the tank (e.g., excavation of the soil) for fear of damaging the fiber optic trunk line(s). For this reason, the foam was introduced into the UST without disturbing the materials in the tank. After sufficient foam material was introduced into the tank, the excavated area was backfilled with soil and finished at surface grade with concrete.

**3. Note the amount of residual material pumped from the tank and describe the storage, sampling and disposal of the residual material and the disposal of the tank, pumps and piping:**

No residual fluids were noted in the tank, therefore none were removed. The tank contained approximately 3-feet of soil.

**4. Soil excavation activities:**

No soils were excavated as a part of the closure activities.

**D. Site investigation:**

**1. Description of field screening:**

Field screening of soils overlying the UST were conducted with a photoionization detector (PID). Discreet samples were placed in plastic Ziploc® bags, and after sufficient time had passed, the samples were screened with the PID. Results of field screening of soils during the UST closure did not indicate the presence of volatile vapors in soils surrounding the UST fill port as measured with the PID.

**2. Soil Sampling Information:**

Prior to in-place closure of the UST, H&H obtained soil samples from each end of the UST and submitted these samples for laboratory analysis. The soil samples were obtained through the use of a GeoProbe® rig utilizing a MacroCore® sampler on June 11, 12009. Troxler Geologic Services (Troxler) of Raleigh, NC installed borings SB-1 and SB-2 at the locations depicted on Figure 2. Samples retrieved from the borings were logged as to soil type(s) and moisture content, and screened for volatile vapor content with a PID. Screening of soil samples

from the borings indicated the presence of volatile vapors at levels between 8.7 and 17.3 parts per million (ppm) in samples from SB-1, and 7.8 to 33.3 ppm in samples from boring SB-2. Results of soil screening are presented on boring logs in **Appendix C**.

After screening, one soil sample from each boring was submitted to Prism Laboratories, Inc. (Prism), and NC DENR Certified laboratory (Certification # 402) for analysis of total petroleum hydrocarbons (TPH) by EPA Methods 8015/5030 (TPH as gasoline) and 8015/3550 (TPH as diesel fuel). Soil samples within the borings were submitted from the 6-7' depth range in each boring, corresponding to the approximate base of the UST. The soil sample results are summarized in **Table 1** and the laboratory analytical data reports are provided in **Appendix B**. As shown in **Table 1**, TPH were not detected at levels in excess of the method detection limit(s) for either of the samples submitted for analysis.

**3. Ground water and surface water sampling information:**

Based on the lack of soil detections, no surface water or ground water sampling was required in association with the subject UST.

**4. Quality-control information:**

During the soil assessment activities prior to UST closure, soil samples were collected using a nitrile glove-covered hand and placed into laboratory-supplied sample containers and then labeled as to content, analyses requested, sample date and time, and sampler's name. The samples were placed in a cooler with ice upon collection and were subsequently submitted to Prism under chain-of-custody protocol.

**5. Soil and ground water investigation results:**

As shown in **Table 1**, all target compound concentrations for the June 11, 2009 samples retained from borings SB-1 and SB-2 were beneath laboratory detection limits.

As no compounds were detected in samples SB-1 and SB-2, obtained prior to in-place closure of the UST, no groundwater sampling was required under DENR's UST closure guidelines.

**E. Conclusions and Recommendations:**

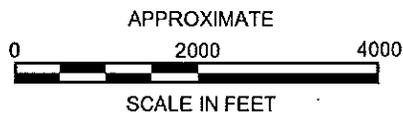
- A Site Investigation Report Form (GW/UST-2) is included in **Appendix D**.
- Screening of soil samples obtained from SB-1 and SB-2 in preparation for in-place closure of the UST indicated the presence of volatile vapors at levels as high as 17.3 ppm (SB-1, 6') and 33.3 ppm (SB-2, 10').

- Analytical data for samples SB-1 (6-7') and SB-2 (6-7') did not show the presence of targeted gasoline or diesel TPH at levels above the method detection limits for EPA Methods 8015/5030 or 8015/3550.
- The presence of a fiber optic trunk owned by AT&T running through the center of the UST prevented the removal of soil within the tank. As this material was unable to be removed, chemical foam was emplaced within the tank to complete the UST closure.
- As there is no evidence of a release from the UST, H&H requests that NC DENR issue a "No Further Action" (NFA) letter for the subject UST closure.

**Table 1**  
**Summary of Soil Analytical Data**

Sample ID	Sample Depth (ft)	Result (mg/kg)	
		EPA-5030	EPA-3550
SB-1 6-7'	6-7'	< 5.8	< 8.1
SB-2 6-7'	6-7'	< 6.3	< 8.8

## Figures

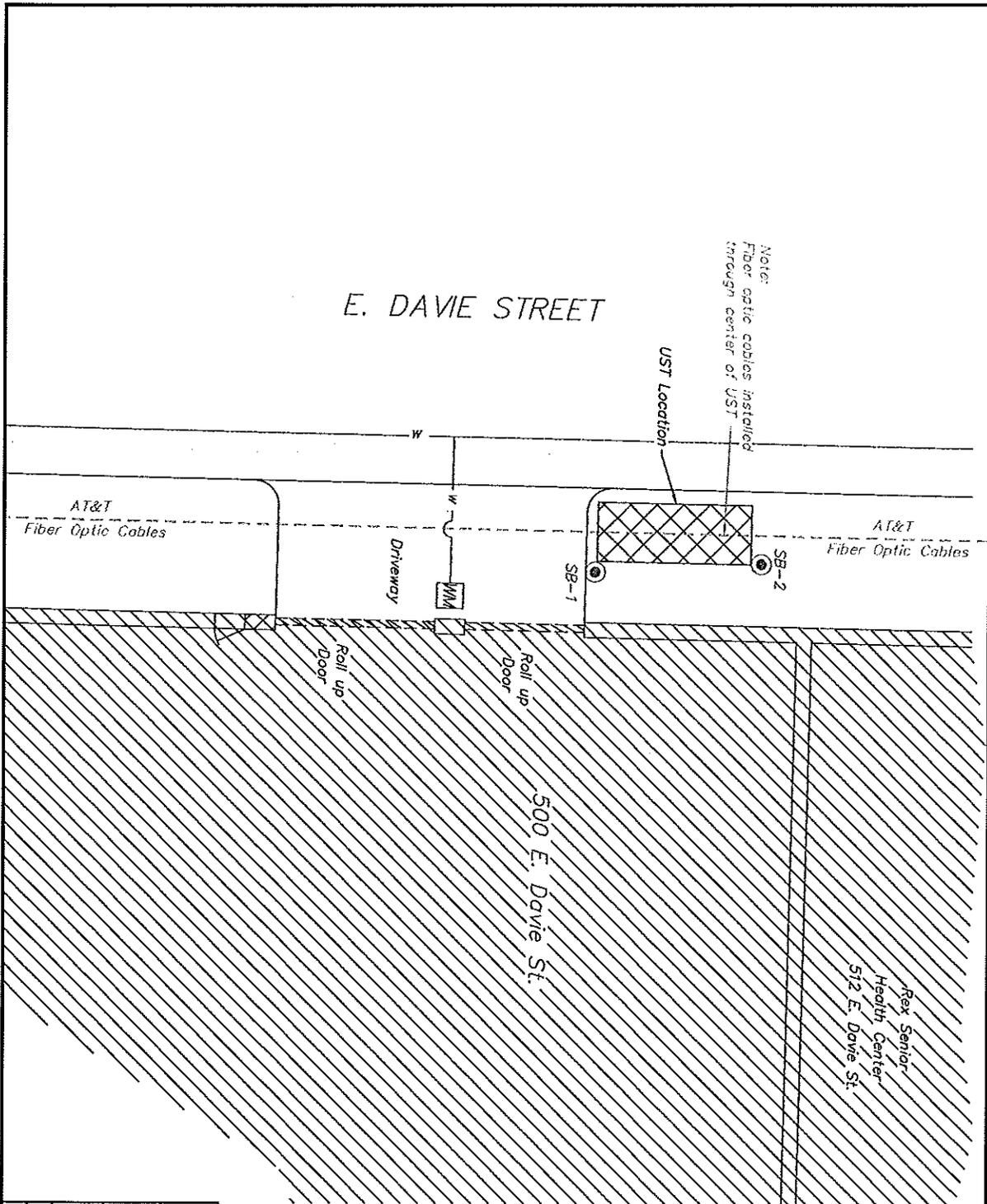


U.S.G.S. QUADRANGLE MAP

**RALEIGH WEST, NC 1968**  
**REVISED 1988**

QUADRANGLE  
 7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE	SITE TOPOGRAPHIC MAP	
PROJECT	500 E. DAVIE STREET PROPERTY RALEIGH, NORTH CAROLINA	
	 <b>Hart &amp; Hickman</b> <small>A PROFESSIONAL CORPORATION</small>	
	3334 Hillsborough Street Raleigh, North Carolina 27607 919-847-4241 (P) 919-847-4261 (F)	
DATE:	07/30/09	REVISION NO: 0
JOB NO:	RAL-002	FIGURE NO: 1



Note:  
Fiber optic cables installed  
through center of UST

**LEGEND**

- TEL ..... Fiber Optic Phone Lines
- W ..... Water Line
- MM Water Meter
- SB-1 Soil Boring Location



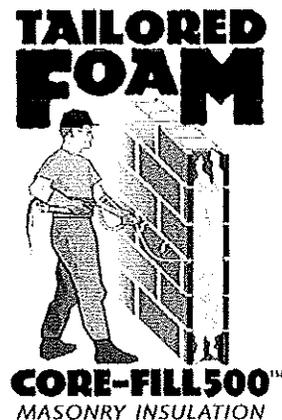
0 10 20  
APPROXIMATE  
SCALE IN FEET

<b>UST &amp; SOIL BORING LOCATIONS</b>	
500 EAST DAVIE STREET RALEIGH, WAKE COUNTY, NORTH CAROLINA	
3334 Hillsborough Street Raleigh, North Carolina 27607 A PROFESSIONAL CORPORATION 919.847.4100 919.847.4200	
DATE: 07/29/09	REVISION NO. 0
JOB NO: RAL-002	FIGURE NO. 2

**Appendix A**  
**Tank Closure Documentation**

July 31, 2009

Bill Rawls  
Eastern Environmental  
P.O. Box 4030  
Rocky Mount, North Carolina 27803



Project: **City of Raleigh - UST  
Raleigh, North Carolina**

Dear Mr. Rawls,

Please be advised that we have completed the filling of the above referenced USTs with our **Perma Fill®** underground storage tank abandonment system foam. All accessible outlets have been filled with concrete. Tim Sigmon, certified applicator, on July 2, 2009, performed the work on this tank. **Perma Fill®** meets the requirements of the EPA for an inert solid fill material for abandonment of USTs.

Should you have any additional questions, please feel free to call me at (800) 627-1687. Thank you for allowing us to be of service to you.

With kind regards,

Brad Sexton  
Sales Representative



Tailored Foam, Inc.  
PO Box 4186 Hickory, NC 28603 828.322.6512 800.627.1687 fax 828.322.7688 www.core-fill500.com



## **Appendix B**

### **Laboratory Analytical Data & Chain of Custody**



## Case Narrative

Date: 06/19/09  
Company: Hart & Hickman  
Contact: Leonard Moretz  
Address: 3334 Hillsborough St.  
Raleigh, NC 27607

Client Project ID: Raleigh Brownsfields  
Prism COC Group No: G0609381  
Collection Date(s): 06/11/09  
Lab Submittal Date(s): 06/12/09

This data package contains the analytical results for the project identified above and includes a Case Narrative, Laboratory Report and Quality Control Data totaling 4 pages. A chain-of-custody is also attached for the samples submitted to Prism for this project.

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

### Semi Volatile Analysis

No Anomalies Reported

### Volatile Analysis

No Anomalies Reported

### Metals Analysis

N/A

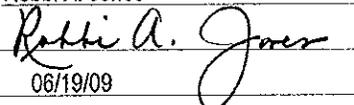
### Wet Lab and Micro Analysis

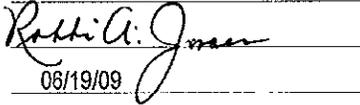
N/A

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

Data Reviewed by: Robbi A. Jones

Project Manager: Robbi A. Jones

Signature: 

Signature: 

Review Date: 06/19/09

Approval Date: 06/19/09

### **Data Qualifiers Key Reference:**

B: Compound also detected in the method blank.

#: Result outside of the QC limits.

DO: Compound diluted out.

E: Estimated concentration, calibration range exceeded.

J: The analyte was positively identified but the value is estimated below the reporting limit.

H: Estimated concentration with a high bias.

L: Estimated concentration with a low bias.

M: A matrix effect is present.

Notes: This report should not be reproduced, except in its entirety, without the written consent of Prism Laboratories, Inc. The results in this report relate only to the samples submitted for analysis.



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

# Laboratory Report

06/19/09

Hart & Hickman  
 Attn: Leonard Moretz  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project ID: Raleigh Brownsfields  
 Sample Matrix: Soil

Client Sample ID: SB-1 6-7'  
 Prism Sample ID: 248705  
 COC Group: G0609381  
 Time Collected: 06/11/09 9:45  
 Time Submitted: 06/12/09 8:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b><u>Percent Solids Determination</u></b>									
Percent Solids	86.2	%			1	SM2540 G	06/15/09 14:30	mbarber	
<b><u>Diesel Range Organics (DRO) by GC-FID</u></b>									
Diesel Range Organics (DRO)	BRL	mg/kg	8.1	1.3	1	8015B	06/16/09 13:52	pbarr	Q42279
Sample Preparation:				25 g /	1 mL	3545	06/15/09 13:00	pbarr	P24809
						<b>Surrogate</b>	<b>% Recovery</b>	<b>Control Limits</b>	
						o-Terphenyl	71	49 - 124	
<b><u>Sample Weight Determination</u></b>									
Weight 1	5.86	g			1	GRO	06/16/09 0:00	lbrown	
Weight 2	5.86	g			1	GRO	06/16/09 0:00	lbrown	
<b><u>Gasoline Range Organics (GRO) by GC-FID</u></b>									
Gasoline Range Organics (GRO)	BRL	mg/kg	5.8	0.71	50	8015B	06/17/09 18:54	grappaccioli	Q42321
						<b>Surrogate</b>	<b>% Recovery</b>	<b>Control Limits</b>	
						aaa-TFT	106	55 - 129	

**Sample Comment(s):**

*BRL = Below Reporting Limit*

*J- Estimated value between the Reporting Limit and the MDL*

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

*All results are reported on a dry-weight basis*

Angela D. Overcash, V.P. Laboratory Services

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

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



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

# Laboratory Report

06/19/09

Hart & Hickman  
 Attn: Leonard Moretz  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project ID: Raleigh Brownsfields  
 Sample Matrix: Soil

Client Sample ID: SB-2 6-7'  
 Prism Sample ID: 248706  
 COC Group: G0609381  
 Time Collected: 06/11/09 10:15  
 Time Submitted: 06/12/09 8:15

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
<b><u>Percent Solids Determination</u></b>									
Percent Solids	79.3	%			1	SM2540 G	06/15/09 14:30	mbarber	
<b><u>Diesel Range Organics (DRO) by GC-FID</u></b>									
Diesel Range Organics (DRO)	BRL	mg/kg	8.8	1.4	1	8015B	06/16/09 14:28	pbarr	Q42279
Sample Preparation:			25.07 g	/	1 mL	3545	06/15/09 13:00	pbarr	P24809
						<b>Surrogate</b>	<b>% Recovery</b>	<b>Control Limits</b>	
						o-Terphenyl	69	49 - 124	
<b><u>Sample Weight Determination</u></b>									
Weight 1	6.03	g			1	GRO	06/16/09 0:00	lbrown	
Weight 2	4.94	g			1	GRO	06/16/09 0:00	lbrown	
<b><u>Gasoline Range Organics (GRO) by GC-FID</u></b>									
Gasoline Range Organics (GRO)	BRL	mg/kg	6.3	0.77	50	8015B	06/17/09 20:30	grappaccioli	Q42321
						<b>Surrogate</b>	<b>% Recovery</b>	<b>Control Limits</b>	
						aaa-TFT	109	55 - 129	

**Sample Comment(s):**

BRL = Below Reporting Limit

J- Estimated value between the Reporting Limit and the MDL

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

All results are reported on a dry-weight basis

Angela D. Overcash, V.P. Laboratory Services

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

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



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

# Level II QC Report

6/19/09

Hart & Hickman  
 Attn: Leonard Moretz  
 3334 Hillsborough St.  
 Raleigh, NC 27607

Project ID: Raleigh Brownsfields

COC Group Number: G0609381  
 Date/Time Submitted: 6/12/09 8:15

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

Method Blank									
	Result	RL	Control Limit	Units			QC Batch ID		
Diesel Range Organics (DRO)	ND	7	<3.5	mg/kg			Q42279		
Laboratory Control Sample									
	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	QC Batch ID		
Diesel Range Organics (DRO)	61.0	80		mg/kg	76	55-109	Q42279		
Matrix Spike									
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	QC Batch ID		
248705 Diesel Range Organics (DRO)	55.8	80		mg/kg	70	50-117	Q42279		
Matrix Spike Duplicate									
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
248705 Diesel Range Organics (DRO)	56.7	80		mg/kg	71	50-117	2	0 - 24	Q42279

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

Method Blank									
	Result	RL	Control Limit	Units			QC Batch ID		
Gasoline Range Organics (GRO)	ND	5	<2.5	mg/kg			Q42321		
Laboratory Control Sample									
	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	QC Batch ID		
Gasoline Range Organics (GRO)	52.65	50		mg/kg	105	67-116	Q42321		
Matrix Spike									
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	QC Batch ID		
248705 Gasoline Range Organics (GRO)	53.4	50		mg/kg	107	57-113	Q42321		
Matrix Spike Duplicate									
Sample ID:	Result	Spike Amount		Units	Recovery %	Recovery Ranges %	RPD %	RPD Range %	QC Batch ID
248705 Gasoline Range Organics (GRO)	53.15	50		mg/kg	106	57-113	0	0 - 23	Q42321

#-See Case Narrative



## **Appendix C**

### **Boring Logs**



# BORING NUMBER SB-1

2923 South Tryon Street-Suite 100  
 Charlotte, North Carolina 28203  
 704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
 Raleigh, North Carolina 27607  
 919-847-4241(p) 919-847-4261(f)

PROJECT: 500 East Davie St.

JOB NUMBER: RAL-002

LOCATION: Raleigh, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					Concrete		0.0	
					Moist Brownish Orange CLAY			
				8.7	Moist Orange Medium to Coarse SAND		2.5	
				14.6	Moist White/Tan Medium to Coarse SAND		5.0	
		GB		17.3	Moist to Wet Tannish White & Dark Gray Weathered Rock (Like a Coarse SAND)		7.5	
				16			7.5	
				15.4	Moist to Wet Tannish White, Dark Gray, and Orange Weathered Rock (Like a Coarse SAND)		10.0	
				17.2	Wet White & Tan Weathered Rock (Like a Coarse SAND)		12.5	
				11.1			15.0	
15.0					Refusal at 15.0 feet. Bottom of borehole at 15.0 feet.		15.0	

WELL LOG - HART HICKMAN.GDT - 7/30/09 15:52 - C:\PROGRAM FILES\GINT\PROJECTS\RAL-001 DAVIE ST.GPJ

**DRILLING CONTRACTOR:** Troxler Geologic  
**DRILL RIG/ METHOD:** Geoprobe / Direct Push  
**SAMPLING METHOD:** DPT Sleeves  
**LOGGED BY:** SWV  
**DRAWN BY:** SWV

**BORING STARTED:** 6/11/09  
**BORING COMPLETED:** 6/11/09  
**TOTAL DEPTH:** 15 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**





# BORING NUMBER SB-2

2923 South Tryon Street-Suite 100  
 Charlotte, North Carolina 28203  
 704-586-0007(p) 704-586-0373(f)

3334 Hillsborough Street  
 Raleigh, North Carolina 27607  
 919-847-4241(p) 919-847-4261(f)

**PROJECT:** 500 East Davie St.  
**JOB NUMBER:** RAL-002  
**LOCATION:** Raleigh, NC

DEPTH (ft)	RECOVERY (%)	SAMPLE TYPE NUMBER	OVA (ppm)		LITHOLOGY	MATERIAL DESCRIPTION	WELL DIAGRAM	DEPTH (ft)
			BKG.	SAMP.				
0.0					Concrete		0.0	
					Moist Orange & Brown CLAY			
					Moist CLAY. Stained Dark Gray/Brown w/Odor of Creosote/Coal/Oil			
					Moist Red Micaceous SILT			
2.5				7.8			2.5	
					Moist Light Brown & Red SILTY Coarse SAND			
5.0				9.3			5.0	
		GB						
7.5				9.9			7.5	
					Moist Tan Micaceous SILTY SAND			
10.0				11.7			10.0	
					Moist Red Micaceous SILT			
12.5				33.3			12.5	
					Bottom of borehole at 12.0 feet.			
				12.2				



WELL LOG - HART HICKMAN.GDT - 7/30/09 15:52 - C:\PROGRAM FILES\GINT\PROJECTS\RAL-001 DAVIE ST.GPJ

**DRILLING CONTRACTOR:** Troxler Geologic  
**DRILL RIG/ METHOD:** Geoprobe / Direct Push  
**SAMPLING METHOD:** DPT Sleeves  
**LOGGED BY:** SWV  
**DRAWN BY:** SWV

**BORING STARTED:** 6/11/09  
**BORING COMPLETED:** 6/11/09  
**TOTAL DEPTH:** 12 ft.  
**TOP OF CASING ELEV:**  
**DEPTH TO WATER:**

**Remarks:**

**Appendix D**  
**GW/UST-2 (Site Investigation Report Form)**

# UST-2 Site Investigation Report for Permanent Closure or Change-in-Service of UST

Return completed form to:

The DWM Regional Office located in the area where the facility is located. Send a copy to the Central Office in Raleigh so that the status of the tank may be changed to "PERMANENTLY CLOSED" and your tank fee account can be closed out. SEE MAP ON THE BACK OF THIS FORM FOR THE CENTRAL AND REGIONAL OFFICE ADDRESSES.

STATE USE ONLY:

I.D. # \_\_\_\_\_

Date Received \_\_\_\_\_

## INSTRUCTIONS (READ THIS FIRST)

For more than five UST systems you may attach additional forms as needed.

**Permanent closure** – For permanent closure, complete all sections of this form.

**Change-in-service** – For change-in-service where UST systems will be converted from containing a regulated substance to storing a non-regulated substance, complete sections I, II, III, IV, and VIII

Effective February 1, 1995, all UST closure/change-in-service reports must be submitted in the format provided in the UST-12 form. UST closure and change-in-service must be completed in accordance with the latest version of the *Guidelines for Tank Closure*. A copy of the UST-12 form and the *Guidelines for Tank Closure* can be obtained at [www.wastenolnc.org](http://www.wastenolnc.org).

You must make sure that USTs removed from your property are disposed of properly. When choosing a closure contractor, ask where the tank(s) will be taken for disposal. Usually, USTs are cleaned and cut up for scrap metal. This is dangerous work and must be performed by a qualified company. Tanks disposed of illegally in fields or other dumpsites can leak petroleum products and sludge into the environment. If your tanks are disposed of improperly, you could be held responsible for the cleanup of any environmental damage that occurs.

**NOTE:** If a release from the tank(s) has occurred, the site assessment portion of the tank closure must be conducted under the supervision of a P.E. or L.G., with all closure site assessment reports bearing the signature and seal of the P.E. or L.G.

I. OWNERSHIP OF TANKS				II. LOCATION OF TANKS			
Owner Name (Corporation, Individual, Public Agency, or Other Entity) <i>CITY OF RALEIGH - CITY &amp; REGIONAL PLANNING DIV.</i>				Facility Name or Company <i>500 E. DAVIE ST. PROPERTY</i>			
Street Address <i>ONE EXCHANGE PLAZA, SUITE 204</i>				Facility ID # (If known) <i>N/A - ORPHAN UST</i>			
City <i>RALEIGH</i>		County <i>WAKE</i>		Street Address <i>500 E. DAVIE STREET</i>			
State <i>NC</i>		Zip Code <i>27602</i>		City <i>RALEIGH</i>		County <i>WAKE</i>	
Phone Number <i>919-516-2650</i>				Zip Code <i>27601</i>		Phone Number <i>N/A</i>	

## III. CONTACT PERSONNEL

Contact for Facility:		Job Title:		Phone. No:	
Closure Contractor Name: <i>BILLY RAWLS</i>		Closure Contractor Company: <i>EASTERN ENVIRONMENTAL</i>		Address: <i>518 S. PEARL ST. ROCKY MOUNT NC 27804</i>	
Primary Consultant Name: <i>LEONARDO MORETZ</i>		Primary Consultant Company: <i>HART &amp; HICKMAN, PC</i>		Address: <i>333A HILLSBOROUGH ST. RALEIGH NC 27607</i>	
				Phone. No: <i>252-493-2224</i>	
				Phone. No: <i>919-847-4241</i>	

## IV. UST INFORMATION FOR REGISTERED UST SYSTEMS

## V. EXCAVATION CONDITION

Tank ID No.	Size in Gallons	Tank Dimensions	Last Contents	Last Use Date	Permanent Close Date	Change-in-Service Date	Water in excavation		Free product		Notable odor or visible soil contamination	
							Yes	No	Yes	No	Yes	No
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				
							<input type="checkbox"/>	<input type="checkbox"/>				

## VI. UST INFORMATION FOR UNREGISTERED UST SYSTEMS

## VII. EXCAVATION CONDITION

Tank ID No.	Size in Gallons	Tank Dimensions	Last Contents	Last Use Date	Permanent Close Date	Tank Owner Name *	Water in excavation		Free product		Notable odor or visible soil contamination	
							Yes	No	Yes	No	Yes	No
<i>1</i>	<i>1,500</i>	<i>5'3" x 10'</i>	<i>GASOLINE</i>	<i>UNKNOWN</i>	<i>07/02/09</i>	<i>CITY OF RALEIGH</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\* If the tank owner address is different from the one listed in Section I., then enter the street address, city, state, zip code and telephone no. below:

## VIII. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true accurate and complete.

Print name and official title of owner or owner's authorized representative <i>Leonard Moretz - Project Director</i>	Signature <i>Leonard Moretz</i>	Date Signed <i>7-31-09</i>
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UST-2 Rev 11/2006

**ORIGINAL**