

**SUMMARY REPORT  
259 BIRCH ROAD (FORMERLY 290 BIRCH ROAD)  
LAUREL BAY MILITARY HOUSING AREA  
MARINE CORPS AIR STATION BEAUFORT  
BEAUFORT, SC**

**Revision: 0  
Prepared for:**

**Department of the Navy  
Naval Facilities Engineering Command, Mid-Atlantic  
9324 Virginia Avenue  
Norfolk, Virginia 23511-3095**

**and**



**Naval Facilities Engineering Command Atlantic  
9324 Virginia Avenue  
Norfolk, Virginia 23511-3095**

**JUNE 2021**

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**Prepared by:**

**CDM - AECOM**  
Multimedia Joint Venture

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**Contract Number: N62470-14-D-9016  
CTO WE52  
JUNE 2021**

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## Table of Contents

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	BACKGROUND INFORMATION.....	1
1.2	UST REMOVAL AND ASSESSMENT PROCESS.....	2
<b>2.0</b>	<b>SAMPLING ACTIVITIES AND RESULTS .....</b>	<b>3</b>
2.1	UST REMOVAL AND SOIL SAMPLING .....	3
2.2	SOIL ANALYTICAL RESULTS.....	4
2.3	GROUNDWATER SAMPLING.....	4
2.4	GROUNDWATER ANALYTICAL RESULTS .....	5
<b>3.0</b>	<b>PROPERTY STATUS.....</b>	<b>5</b>
<b>4.0</b>	<b>REFERENCES .....</b>	<b>5</b>

## Tables

Table 1	Laboratory Analytical Results - Soil
Table 2	Laboratory Analytical Results - Groundwater

## Appendices

Appendix A	Multi-Media Selection Process for LBMH
Appendix B	UST Assessment Report
Appendix C	Laboratory Analytical Report - Groundwater
Appendix D	Regulatory Correspondence

### **List of Acronyms**

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CTO	Contract Task Order
COPC	constituents of potential concern
ft	feet
IDIQ	Indefinite Delivery, Indefinite Quantity
IGWA	Initial Groundwater Assessment
JV	Joint Venture
LBMH	Laurel Bay Military Housing
MCAS	Marine Corps Air Station
NAVFAC Mid-Lant	Naval Facilities Engineering Command Mid-Atlantic
NFA	No Further Action
PAH	polynuclear aromatic hydrocarbon
QAPP	Quality Assurance Program Plan
RBSL	risk-based screening level
SCDHEC	South Carolina Department of Health and Environmental Control
Site	LBMH area at MCAS Beaufort, South Carolina
UST	underground storage tank
VISL	vapor intrusion screening level

## **1.0 INTRODUCTION**

The CDM - AECOM Multimedia Joint Venture (JV) was contracted by the Naval Facilities Engineering Command, Mid-Atlantic (NAVFAC Mid-Lant) to provide reporting services for the heating oil underground storage tanks (USTs) located in Laurel Bay Military Housing (LBMH) area at the Marine Corps Air Station (MCAS) Beaufort, South Carolina (Site). This work has been awarded under Contract Task Order (CTO) WE52 of the Indefinite Delivery, Indefinite Quantity (IDIQ) Multimedia Environmental Compliance Contract (Contract No. N62470-14-D-9016).

As of January 2014, the LBMH addresses were re-numbered to comply with the E-911 emergency response addressing system; however, in order to remain consistent with historical sampling and reporting for LBMH area, the residences will continue to be referenced with their original address numbers in sample nomenclature and reporting documents.

This report summarizes the results the environmental investigation activities associated with the storage of home heating oil and the potential release of petroleum constituents at the referenced property. Based on the results of the investigation, a No Further Action (NFA) determination has been made by the South Carolina Department of Health and Environmental Control (SCDHEC) for 259 Birch Road (Formerly 290 Birch Road). This NFA determination indicates that there are no unacceptable risks to human health or the environment for the petroleum constituents associated with the home heating oil USTs. The following information is included in this report:

- Background information;
- Sampling activities and results; and
- A determination of the property status.

### **1.1 Background Information**

The LBMH area is located approximately 3.5 miles west of MCAS Beaufort. The area is approximately 970 acres in size and serves as an enlisted and officer family housing area. The area is configured with single family and duplex residential structures, and includes recreation, open space, and community facilities. The community includes approximately 1,300 housing units, including legacy Capehart style homes and newer duplex style homes. The housing area

is bordered on the west by salt marshes and the Broad River, and to the north, east and south by uplands. Forested areas lie along the northern and northeastern borders.

Capehart style homes within the LBMH area were formerly heated using heating oil stored in USTs at each residence. There were 1,100 Capehart style housing units in the LBMH area. The newer duplex homes within the LBMH area never utilized heating oil tanks. Heating oil has not been used at Laurel Bay since the mid-1980s. As was the accepted practice at the time, USTs were drained, filled with dirt, capped, and left in place when they were removed from service. Residential USTs are not regulated in the State of South Carolina (i.e., there are no federal or state laws governing installation, management, or removal).

In 2007, MCAS Beaufort began a voluntary program to remove the unregulated, residential USTs and conduct sampling activities to determine if, and to what extent, petroleum constituents may have impacted the surrounding environment. MCAS Beaufort coordinated with SCDHEC to develop removal procedures that were consistent with procedural requirements for regulated USTs. All tank removal activities and follow-on actions are conducted in coordination with SCDHEC. To date, all known USTs have been removed from all residential properties within the LBMH area.

## **1.2 UST Removal and Assessment Process**

During the UST removal process, a soil sample was collected from beneath the UST excavations (approximately 4 to 6 feet [ft] below ground surface [bgs]) and analyzed for a predetermined list of constituents of potential concern (COPCs) associated with the petroleum compounds found in home heating oil. These COPCs, derived from the *Quality Assurance Program Plan (QAPP) for the Underground Storage Tank Management Division, Revision 3.1* (SCDHEC, 2016) and the *Underground Storage Tank Assessment Instructions for Permanent Closure and Change-In-Service*, (SCDHEC, 2018), are as follows:

- benzene, toluene, ethylbenzene, and xylenes (BTEX),
- naphthalene, and
- five select polynuclear aromatic hydrocarbon (PAHs): benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and dibenz(a,h)anthracene.

Soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form. In accordance with SCDHEC's *QAPP for the UST Management*

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*Division* (SCDHEC, February 2016), the soil screening levels consists of SCDHEC risk-based screening levels (RBSLs). It should be noted that the RBSLs for select PAHs were revised in Revision 2.0 of the QAPP (SCDHEC, April 2013) and were revised again in Revision 3.0 (SCDHEC, May 2015). The screening levels used for evaluation at each site were those levels that were in effect at the time of reporting and review by SCDHEC.

The results of the soil sampling at each former UST location were used to determine if a potential for groundwater contamination exists (i.e., soil results greater than RBSLs) and subsequently to select properties for follow-up initial groundwater assessment (IGWA) sampling. The results of the IGWA sampling (if necessary) are used to determine the presence or absence of the aforementioned COPCs in groundwater and identify whether former UST locations will require additional delineation of COPCs in groundwater. In order to delineate the extent of impact to groundwater, permanent wells are installed and a sampling program is established for those former UST locations where IGWA sampling has indicated the presence of COPCs in excess of the SCDHEC RBSLs for groundwater. Groundwater analytical results are also compared to the site specific groundwater vapor intrusion screening levels (VISLs) to evaluate the potential for vapor intrusion and the necessity for an investigation associated with this media. A multi-media investigation selection process tree, applicable to the LBMH UST investigations, is presented as Appendix A.

## **2.0 SAMPLING ACTIVITIES AND RESULTS**

The following section presents the sampling activities and associated results for 259 Birch Road (Formerly 290 Birch Road). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 290 Birch Road* (MCAS Beaufort, 2008). The UST Assessment Report is provided in Appendix B. Details regarding the IGWA sampling activities at this site are provided in the *Investigation of Ground Water at Leaking Heating Oil UST Sites Report* (Resolution Consultants, 2008). The laboratory report that includes the pertinent IGWA analytical results for this site is presented in Appendix C.

### **2.1 UST Removal and Soil Sampling**

On July 2, 2007, two 280 gallon heating oil USTs were removed at 259 Birch Road (Formerly 290 Birch Road). Tank 1 was removed from the front landscaped bed area adjacent to the driveway. Tank 2 was removed from the front yard area adjacent to the house and Tank 1. The former UST locations are indicated in the figures of the UST Assessment Report (Appendix B).

The USTs were removed, cleaned, and shipped offsite for recycling. There was no visual evidence (i.e., staining or sheen) of petroleum impact at the time of the UST removal. According to the UST Assessment Report (Appendix B), the depths to the bases of the USTs were 4'7" (Tank 1) and 5'7" (Tank 2) bgs and a single soil sample was collected for each at that depth. An additional soil sample was collected at the side of the excavation for each tank at a depth of 3'5" (Tank 1) and 4'0" (Tank 2). The samples were collected from the fill port side of the former USTs to represent a worst case scenario.

Following UST removal, a soil sample was collected from the base and side of each excavation and shipped to an offsite laboratory for analysis of the petroleum COPCs. Sampling was performed in accordance with applicable South Carolina regulation R.61-92, Part 280 (SCDHEC, 2017) and assessment guidelines.

## **2.2 Soil Analytical Results**

A summary of the laboratory analytical results and SCDHEC RBSLs is presented in Table 1. A copy of the laboratory analytical data report is included in the UST Assessment Report presented in Appendix B. The laboratory analytical data report includes the soil results for the additional PAHs that were analyzed, but do not have associated RBSLs.

The soil sample results were submitted by MCAS Beaufort to SCDHEC utilizing SCDHEC's UST Assessment Report form (Appendix B). The results of the soil sampling at the former UST locations (Tanks 1 and 2) were used by MCAS Beaufort, in consultation with SCDHEC, to determine a path forward (i.e., additional sampling or NFA) for the property. The soil results collected from the former UST locations (Tanks 1 and 2) at 259 Birch Road (Formerly 290 Birch Road) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated August 14, 2008, SCDHEC requested IGWAs to be conducted at the former UST locations (Tanks 1 and 2) at 259 Birch Road (Formerly 290 Birch Road) to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix D.

## **2.3 Groundwater Sampling**

On July 22, 2008, three temporary monitoring wells were installed at 259 Birch Road (Formerly 290 Birch Road), in accordance with the South Carolina Well Standards and Regulations (R.61-71.H-I, updated June 24, 2016). In order to provide data that can be used to determine whether COPCs are migrating to underlying groundwater, the monitoring wells were



placed in the same general location as the former heating oil USTs (on the property surrounding Tanks 1 and 2). The former UST locations are indicated in the figures of the UST Assessment Report (Appendix B). Further details are provided in the *Investigation of Ground Water at Leaking Heating Oil UST Sites Report* (Resolution Consultants, 2008).

The sampling strategy for this phase of the investigation required a one-time sampling event of the temporarily installed monitoring wells. Following well installation and development, groundwater samples were collected using low-flow methods and shipped to an offsite laboratory for analysis of the petroleum COPCs. Upon completion of groundwater sampling, the temporary wells were abandoned in accordance with the South Carolina Well Standards and Regulations R.61-71 (SCDHEC, 2016). Field forms are provided in the *Investigation of Ground Water at Leaking Heating Oil UST Sites Report* (Resolution Consultants, 2008).

## **2.4 Groundwater Analytical Results**

A summary of the laboratory analytical results and SCDHEC RBSLs is presented in Table 2. A copy of the laboratory analytical data report is included in Appendix C.

The groundwater results collected from 259 Birch Road (Formerly 290 Birch Road) were less than the SCDHEC RBSLs and the site specific groundwater VISLs (Table 2), which indicated that the groundwater was not impacted by COPCs associated with the former USTs at concentrations that present a potential risk to human health and the environment.

## **3.0 PROPERTY STATUS**

Based on the analytical results for groundwater, SCDHEC made the determination that NFA was required for 259 Birch Road (Formerly 290 Birch Road). This NFA determination was obtained in a letter dated December 17, 2008. SCDHEC's NFA letter is provided in Appendix D.

## **4.0 REFERENCES**

Marine Corps Air Station Beaufort, 2008. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 290 Birch Road, Laurel Bay Military Housing Area*, January 2008.

Resolution Consultants, 2008. *Initial Groundwater Investigation of Ground Water at Leaking Heating Oil UST Sites Report for Laurel Bay Military Housing Area, Multiple Properties*,

*Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort, Beaufort, South Carolina, September 2008.*

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2013. *Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 2.0*, April 2013.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2015. *Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.0*, May 2015.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2016. *Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.1*, February 2016.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2017. *R.61-92, Part 280, Underground Storage Tank Control Regulations*, March 2017.

South Carolina Department of Health and Environmental Control Bureau of Land and Waste Management, 2018. *Underground Storage Tank Assessment Instructions for Permanent Closure and Change-In-Service*, March 2018.

South Carolina Department of Health and Environmental Control Bureau of Water, 2016. *R.61-71, Well Standards*, June 2016.

## Tables

**Table 1**  
**Laboratory Analytical Results - Soil**  
**259 Birch Road (Formerly 290 Birch Road)**  
**Laurel Bay Military Housing Area**  
**Marine Corps Air Station Beaufort**  
**Beaufort, South Carolina**

Constituent	SCDHEC RBSLs <sup>(1)</sup>	Results Samples Collected 07/02/07			
		290 Birch Bottom 01	290 Birch Side 02	290 Birch Bottom 03	290 Birch Side 04
<b>Volatile Organic Compounds Analyzed by EPA Method 8260B (mg/kg)</b>					
Benzene	0.003	<b>0.011</b>	<b>0.000511</b>	<b>0.190</b>	<b>0.0234</b>
Ethylbenzene	1.15	<b>0.224</b>	<b>0.00818</b>	<b>0.954</b>	<b>0.033</b>
Naphthalene	0.036	<b>1.560</b>	<b>0.0252</b>	<b>5.880</b>	<b>1.280</b>
Toluene	0.627	ND	ND	<b>0.0173</b>	ND
Xylenes, Total	13.01	<b>0.0327</b>	<b>0.000866</b>	<b>0.464</b>	<b>0.00633</b>
<b>Semivolatile Organic Compounds Analyzed by EPA Method 8270D (mg/kg)</b>					
Benzo(a)anthracene	0.66	ND	<b>0.0262</b>	<b>3.380</b>	<b>0.0795</b>
Benzo(b)fluoranthene	0.66	ND	<b>0.0302</b>	<b>1.530</b>	<b>0.0345</b>
Benzo(k)fluoranthene	0.66	ND	ND	<b>0.831</b>	ND
Chrysene	0.66	ND	<b>0.0826</b>	<b>2.980</b>	<b>0.0659</b>
Dibenz(a,h)anthracene	0.66	ND	ND	ND	ND

**Notes:**

<sup>(1)</sup> South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 1.0 and 1.1 (SCDHEC, May 2001 and SCDHEC, February 2011) and the Underground Storage Tank Assessment Guidelines (SCDHEC, February 2006).

Bold font indicates the analyte was detected.

Bold font and shading indicates the concentration exceeds the SCDHEC RBSL.

EPA - United States Environmental Protection Agency

mg/kg - milligrams per kilogram

ND - not detected at the reporting limit (or method detection limit if shown on the laboratory report). The soil laboratory report is provided in Appendix B.

RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

**Table 2**  
**Laboratory Analytical Results - Groundwater**  
**259 Birch Road (Formerly 290 Birch Road)**  
**Laurel Bay Military Housing Area**  
**Marine Corps Air Station Beaufort**  
**Beaufort, South Carolina**

Constituent	SCDHEC RBSLs <sup>(1)</sup>	Site-Specific Groundwater VISLs (µg/L) <sup>(2)</sup>	Results Samples Collected 07/22/08		
			A	B	D
<b>Volatile Organic Compounds Analyzed by EPA Method 8260B (µg/L)</b>					
Benzene	5	16.24	ND	ND	ND
Ethylbenzene	700	45.95	ND	ND	ND
Naphthalene	25	29.33	ND	ND	ND
Toluene	1000	105,445	ND	ND	ND
Xylenes, Total	10,000	2,133	ND	ND	ND
<b>Semivolatile Organic Compounds Analyzed by EPA Method 8270D (µg/L)</b>					
Benzo(a)anthracene	10	NA	ND	ND	ND
Benzo(b)fluoranthene	10	NA	ND	ND	ND
Benzo(k)fluoranthene	10	NA	ND	ND	ND
Chrysene	10	NA	ND	ND	ND
Dibenz(a,h)anthracene	10	NA	ND	ND	ND

**Notes:**

<sup>(1)</sup> South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 3.1 (SCDHEC, February 2016).

<sup>(2)</sup> Site-specific groundwater VISLs were calculated using the EPA JE Model Spreadsheets (Version 3.1, February 2004) and conservative modeling inputs representative of a small single-story house with an 8 foot ceiling. Site-specific groundwater VISLs were developed based on a target risk level of  $1 \times 10^{-6}$ , a target hazard quotient of 1 (per target organ), and a default residential exposure scenario, assuming exposure for 24 hours/day, 350 days/year, for 26 years. Modeling was performed for a range of depths to groundwater for application as appropriate in different areas of the Laurel Bay Military Housing Area. The most conservative levels are presented for comparison. Refer to Appendix H of the Uniform Federal Policy Sampling Analysis and Sampling Plan for Vapor Media, Revision 4 (Resolution Consultants, April 2017) for additional information.

Bold font indicates the analyte was detected.

Bold font and shading indicates the concentration exceeds the SCDHEC RBSL and/or the Site-Specific Groundwater VISL.

EPA - United States Environmental Protection Agency

JE - Johnson & Ettinger

NA - Not Applicable

ND - not detected at the reporting limit (or method detection limit if shown on the laboratory report). The groundwater laboratory report is provided in Appendix C.

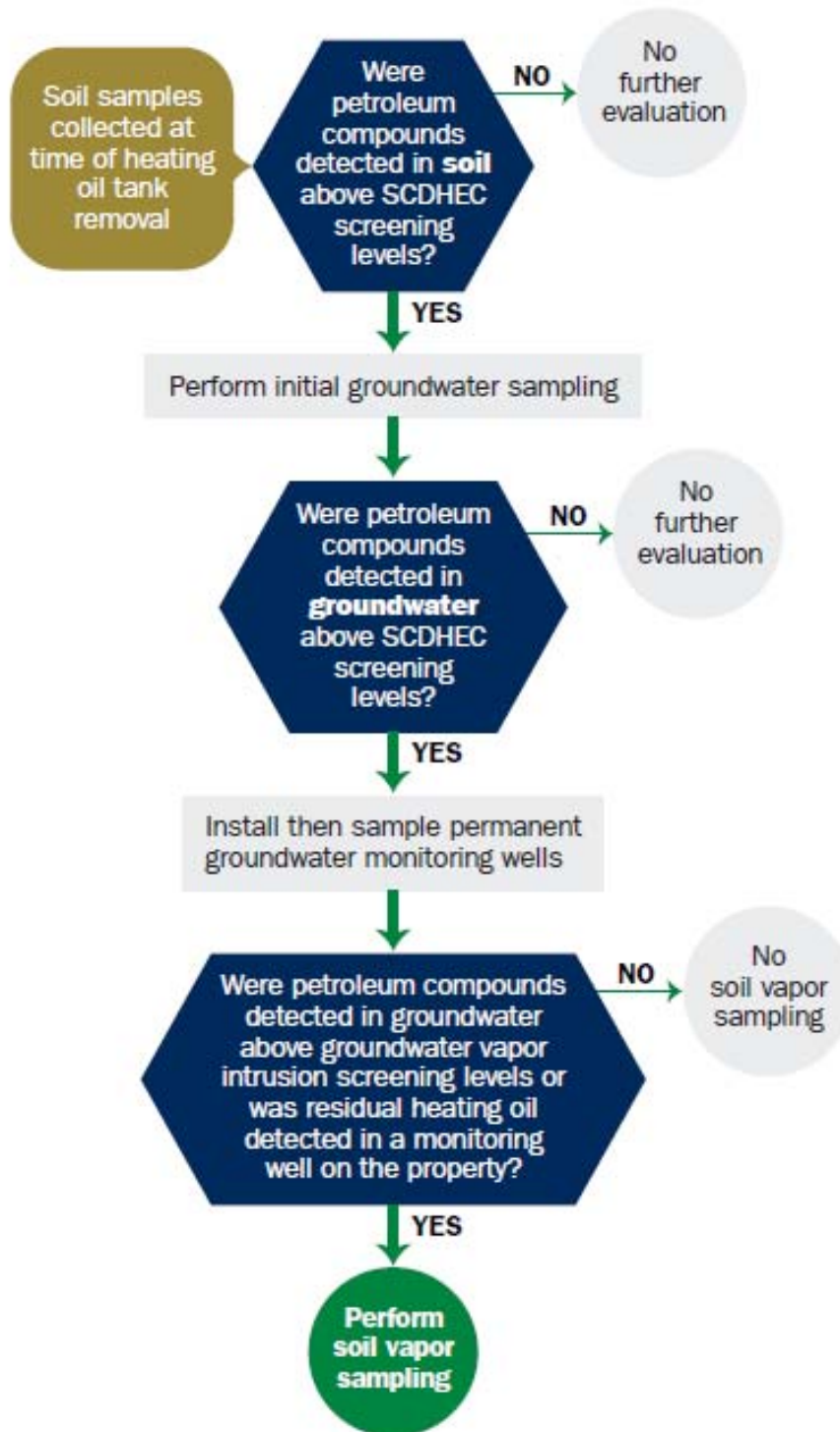
RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

µg/L - micrograms per liter

VISL - Vapor Intrusion Screening Level

**Appendix A**  
**Multi-Media Selection Process for LBMH**



Appendix A - Multi-Media Selection Process for LBMH

**Appendix B**  
**UST Assessment Report**



Attachment 1  
South Carolina Department of Health and Environmental Control (SCDHEC)  
Underground Storage Tank (UST) Assessment Report

Date Received \_\_\_\_\_  
State Use Only \_\_\_\_\_

Submit Completed Form To:  
UST Program  
SCDHEC  
2600 Bull Street  
Columbia, South Carolina 29201  
Telephone (803) 896-6240

I. OWNERSHIP OF UST (S)

Beaufort Military Complex Family Housing  
Owner Name (Corporation, Individual, Public Agency, Other)  
1510 Laurel Bay Blvd.  
Mailing Address  
Beaufort SC 29906  
City State Zip Code  
843 379-3305 Kyle Broadfoot  
Area Code Telephone Number Contact Person

II. SITE IDENTIFICATION AND LOCATION

N/A  
Permit I.D. #  
Actus LEND LEASE CONSTRUCTION  
Facility Name or Company Site Identifier  
290 Birch  
Street Address or State Road (as applicable)  
Beaufort, SC 29906 Beaufort  
City ZIP County

III. INSURANCE INFORMATION

Insurance Statement

The petroleum release reported to DHEC on N/A at Permit ID # may qualify to receive state monies to pay for appropriate site rehabilitation activities. Before participation is allowed in the State Clean-up fund, written confirmation of the existence or non-existence of an environmental insurance policy is required. **This section must be completed.**

Is there now, or has there ever been an insurance policy or other financial mechanism that covers this UST release? YES \_\_\_ NO \_\_\_ (check one)

If you answered YES to the above question, please complete the following information:

My policy provider is: \_\_\_\_\_  
The policy deductible is: \_\_\_\_\_  
The policy limit is: \_\_\_\_\_

If you have this type of insurance, please include a copy of the policy with this report.

And

I do/do not (circle one) wish to participate in the Superb Program.

IV. CERTIFICATION (To be signed by the UST owner/operator.)

I certify 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 responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

Name (Type or print.) \_\_\_\_\_

Signature \_\_\_\_\_

To be completed by Notary Public:

Sworn before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

(Name) \_\_\_\_\_

Notary Public for the state of \_\_\_\_\_  
Please affix State seal if you are commissioned outside South Carolina

V. US INFORMATION

Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6
#2	#2				
DIESEL	DIESEL				
280G	280G				
Steel	STEEL				
55"	67"				
N	N				
N	N				
Removed	REMOVED				
7-2-07	7-2-07				
N	N				
N	N				

- A. Product...(ex. Gas, Kerosene).....
- B. Capacity...(ex. 1k, 2k)..... (APPROX)
- C. Age.....
- D. Construction Material...(ex. Steel, FRP).....
- E. Month/Year of Last Use.....
- F. Depth (ft.) To Base of Tank.....
- G. Spill Prevention Equipment Y/N.....
- H. Overfill Prevention Equipment Y/N.....
- I. Method of Closure Removed/Filled.....
- J. Date Tanks Removed/Filled.....
- K. Visible Corrosion or Pitting Y/N.....
- L. Visible Holes Y/N.....

M. Method of disposal for any USTs removed from the ground (attach disposal manifests)  
Recycling - Scrap Steel

N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests)  
TREATMENT FACILITY - Broadhurst Landfill  
Solidification + Subtitle D Landfill

O. If any corrosion, pitting, or holes were observed, describe the location and extent for each UST

## VI. PIPING INFORMATION

- A. Construction Material..(ex. Steel, FRP).....
- B. Distance from UST to Dispenser.....
- C. Number of Dispensers.....
- D. Type of System Pressure or Suction.....
- E. Was Piping Removed from the Ground? Y/N
- F. Visible Corrosion or Pitting Y/N.....
- G. Visible Holes Y/N.....
- H. Age.....

Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6
Steel	STEEL				
N/A	N/A				
-0-	0				
Electra PUMP	PUMP				
Y	Y				
N	N				
N	N				

- I. If any corrosion, pitting, or holes were observed, describe the location and extent for each piping run.

Mild Corrosion was observed on the fill pipe  
and vent pipe.

## VII. BRIEF SITE DESCRIPTION AND HISTORY

Home Heating Oil TANK - RESIDENTIAL

## VIII. SITE CONDITIONS

Yes No Unk

	Yes	No	Unk
<p>A. Were any petroleum-stained or contaminated soils found in the UST excavation, soil borings, trenches, or monitoring wells?</p> <p>If yes, indicate depth and location on the site map.</p>		X	
<p>B. Were any petroleum odors detected in the excavation, soil borings, trenches, or monitoring wells?</p> <p>If yes, indicate location on site map and describe the odor (strong, mild, etc.)</p>	X		
<p>C. Was water present in the UST excavation, soil borings, or trenches?</p> <p>If yes, how far below land surface (indicate location and depth)?</p>		X	
<p>D. Did contaminated soils remain stockpiled on site after closure?</p> <p>If yes, indicate the stockpile location on the site map.</p> <p>Name of DHEC representative authorizing soil removal:</p>		X	
<p>E. Was a petroleum sheen or free product detected on any excavation or boring waters?</p> <p>If yes, indicate location and thickness.</p>		X	

IX. SAMPLE INFORMATION

A.

SCDHEC Lab Certification Number DW: 84009002

B.

Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
1	BOTTOM	S	SAND	55"	7-2-07 1040	ELHEVARRIA R. MANUEL	ND
2	SIDE	S	SAND	41"	1050	R. MANUEL	ND
3	BOTTOM	S	SAND	67"	1130		ND
4	SIDE	S	SAND	48"	1140		ND
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

\* = Depth Below the Surrounding Land Surface

X.

### SAMPLING METHODOLOGY

Provide a detailed description of the methods used to collect and store the samples. Also include the preservative used for each sample. Please use the space provided below.

EPA Method 8260 B Volatile Organic Compounds  
- Preservative: 2% Sodium Bisulfate 1EA  
EPA Method 8270 Poly Aromatic Hydrocarbons  
- No Preservative

One (1) Sidewall and one (1) Bottom  
Sample were secured from tank excavation  
Samples were stored and shipped in an  
insulated cooler w/ ice.

## XI. RECEPTORS

	Yes	No
<p>A. Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system?</p> <p>If yes, indicate type of receptor, distance, and direction on site map.</p>		X
<p>B. Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system?</p> <p>If yes, indicate type of well, distance, and direction on site map.</p>		✓
<p>C. Are there any underground structures (e.g., basements) located within 100 feet of the UST system?</p> <p>If yes, indicate type of structure, distance, and direction on site map.</p>		✓
<p>D. Are there any underground utilities (e.g., telephone, electricity, gas, water, sewer, storm drain) located within 100 feet of the UST system that could potentially come in contact with the contamination?</p> <p>If yes, indicate the type of utility, distance, and direction on the site map.</p>		✓
<p>E. Has contaminated soil been identified at a depth less than 3 feet below land surface in an area that is not capped by asphalt or concrete?</p> <p>If yes, indicate the area of contaminated soil on the site map.</p>		✓



**SUMMARY OF ANALYSIS RESULTS**

N/A

Enter the soil analytical data for each soil boring for all COC in the table below and on the following page.

CoC	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8
Benzene								
Toluene								
Ethylbenzene								
Xylenes								
Naphthalene								
Benzo(a)anthracene								
Benzo(b)flouranthene								
Benzo(k)flouranthene								
Chrysene								
Dibenz(a,h)anthracene								
TPH (EPA 3550)								

CoC	SB-9	SB-10	SB-11	SB-12	SB-13	SB-14	SB-15	SB-16
Benzene								
Toluene								
Ethylbenzene								
Xylenes								
Naphthalene								
Benzo(a)anthracene								
Benzo(b)flouranthene								
Benzo(k)flouranthene								
Chrysene								
Dibenz(a,h)anthracene								
TPH (EPA 3550)								

SUMMARY OF ANALYSIS RESULTS (cont'd)

N/A

Enter the ground water analytical data for each sample for all CoC in the table below. If free product is present, indicate the measured thickness to the nearest 0.01 feet.

CoC	RBSL (µg/l)	W-1	W-2	W-3	W-4
Free Product Thickness	None				
Benzene	5				
Toluene	1,000				
Ethylbenzene	700				
Xylenes	10,000				
Total BTEX	N/A				
MTBE	40				
Naphthalene	25				
Benzo(a)anthracene	10				
Benzo(b)flouranthene	10				
Benzo(k)flouranthene	10				
Chrysene	10				
Dibenz(a,h)anthracene	10				
EDB	.05				
1,2-DCA	.05				
Lead	Site specific				

## **ANALYTICAL RESULTS**

**You must submit the laboratory report and chain-of-custody form for the samples. These samples must be analyzed by a South Carolina certified laboratory.**

*(Attach Certified Analytical Results and Chain-of-Custody Here)  
(Please see Form #4)*

Client: EPG, INC.  
 PO BOX 1096  
 MT PLEASANT, SC 29465  
 Attn: JOHN MAHONEY

Work Order: OQG0164  
 Project: LAUREL BAY  
 Project Number: EP2362

Sampled: 07/02/07-07/06/07  
 Received: 07/10/07

**LABORATORY REPORT**  
 Sample ID: 290 BIRCH BOTTOM 01 - Lab Number: OQG0164-01 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
<b>General Chemistry Parameters</b>											
NA	% Solids	77.1	Q	%	0.100	0.100	1	07/12/07 12:45	RRP	EPA 160.3	7G12029
<b>Volatile Organic Compounds by EPA Method 8260B</b>											
71-43-2	Benzene	11.0		ug/kg dry	3.13	8.56	50	07/11/07 21:17	JWT	EPA 8260B	7G12014
100-41-4	Ethylbenzene	224		ug/kg dry	3.62	8.56	50	07/11/07 21:17	JWT	EPA 8260B	7G12014
91-20-3	Naphthalene	1560		ug/kg dry	4.73	8.56	50	07/11/07 21:17	JWT	EPA 8260B	7G12014
108-88-3	Toluene	7.40	U	ug/kg dry	7.40	8.56	50	07/11/07 21:17	JWT	EPA 8260B	7G12014
1330-20-7	Xylenes, total	32.7		ug/kg dry	4.45	8.56	50	07/11/07 21:17	JWT	EPA 8260B	7G12014
Surrogate: 1,2-Dichloroethane-d4 (73-137%)		90 %									
Surrogate: 4-Bromofluorobenzene (59-118%)		101 %									
Surrogate: Dibromofluoromethane (55-145%)		96 %									
Surrogate: Toluene-d8 (70-130%)		100 %									
<b>Polynuclear Aromatic Hydrocarbons by EPA Method 8270</b>											
83-32-9	Acenaphthene	2500		ug/kg dry	960	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
208-96-8	Acenaphthylene	1270	U	ug/kg dry	1270	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
120-12-7	Anthracene	1980	I	ug/kg dry	690	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
56-55-3	Benzo (a) anthracene	234	U	ug/kg dry	234	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
205-99-2	Benzo (b) fluoranthene	228	U	ug/kg dry	228	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
207-08-9	Benzo (k) fluoranthene	228	U	ug/kg dry	228	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
191-24-2	Benzo (g,h,i) perylene	225	U	ug/kg dry	225	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
50-32-8	Benzo (a) pyrene	266	U	ug/kg dry	266	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
90-12-0	1-Methylnaphthalene	14100		ug/kg dry	1090	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
218-01-9	Chrysene	259	U	ug/kg dry	259	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
53-70-3	Dibenz (a,h) anthracene	284	U	ug/kg dry	284	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
206-44-0	Fluoranthene	527	I	ug/kg dry	311	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
86-73-7	Fluorene	848	U	ug/kg dry	848	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
193-39-5	Indeno (1,2,3-cd) pyrene	280	U	ug/kg dry	280	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
91-57-6	2-Methylnaphthalene	19200		ug/kg dry	923	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
91-20-3	Naphthalene	3160		ug/kg dry	870	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
85-01-8	Phenanthrene	6430		ug/kg dry	511	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
129-00-0	Pyrene	1200	I	ug/kg dry	440	2170	10	07/13/07 09:31	REM	EPA 8270C	7G11007
Surrogate: 2-Fluorobiphenyl (24-121%)		100 %									
Surrogate: Nitrobenzene-d5 (19-111%)		98 %									
Surrogate: Terphenyl-d14 (44-171%)		114 %									

**LABORATORY REPORT**  
 Sample ID: 290 BIRCH SIDE 02 - Lab Number: OQG0164-02 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
<b>General Chemistry Parameters</b>											
1A	% Solids	82.7	Q	%	0.100	0.100	1	07/12/07 12:45	RRP	EPA 160.3	7G12029
<b>Volatile Organic Compounds by EPA Method 8260B</b>											
1-43-2	Benzene	0.511	J4	ug/kg dry	0.0619	0.169	1	07/11/07 10:10	JWT	EPA 8260B	7G12014
10-41-4	Ethylbenzene	8.18	J4	ug/kg dry	0.0716	0.169	1	07/11/07 10:10	JWT	EPA 8260B	7G12014

TestAmerica - Orlando, FL  
 Shali Brown  
 Project Manager

Client: EPG, INC.  
 PO BOX 1096  
 MT PLEASANT, SC 29465  
 Attn: JOHN MAHONEY

Work Order: OQG0164  
 Project: LAUREL BAY  
 Project Number: EP2362

Sampled: 07/02/07-07/06/07  
 Received: 07/10/07

### LABORATORY REPORT

Sample ID: 290 BIRCH SIDE 02 - Lab Number: OQG0164-02 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
<b>Volatile Organic Compounds by EPA Method 8260B - Cont.</b>											
91-20-3	Naphthalene	25.2	J4	ug/kg dry	0.0935	0.169	1	07/11/07 10:10	JWT	EPA 8260B	7G12014
108-88-3	Toluene	0.146	U	ug/kg dry	0.146	0.169	1	07/11/07 10:10	JWT	EPA 8260B	7G12014
1330-20-7	Xylenes, total	0.866	J4	ug/kg dry	0.0879	0.169	1	07/11/07 10:10	JWT	EPA 8260B	7G12014
	Surrogate: 1,2-Dichloroethane-d4 (73-137%)	108 %									
	Surrogate: 4-Bromofluorobenzene (59-118%)	94 %									
	Surrogate: Dibromofluoromethane (55-145%)	106 %									
	Surrogate: Toluene-d8 (70-130%)	101 %									
<b>Polynuclear Aromatic Hydrocarbons by EPA Method 8270</b>											
83-32-9	Acenaphthene	323		ug/kg dry	89.4	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
208-96-8	Acenaphthylene	118	U	ug/kg dry	118	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
120-12-7	Anthracene	341		ug/kg dry	64.4	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
56-55-3	Benzo (a) anthracene	26.2	I	ug/kg dry	21.9	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
205-99-2	Benzo (b) fluoranthene	30.2	I	ug/kg dry	21.2	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
207-08-9	Benzo (k) fluoranthene	21.2	U	ug/kg dry	21.2	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
191-24-2	Benzo (g,h,i) perylene	20.9	U	ug/kg dry	20.9	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
50-32-8	Benzo (a) pyrene	24.8	U	ug/kg dry	24.8	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
90-12-0	1-Methylnaphthalene	777		ug/kg dry	101	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
218-01-9	Chrysene	82.6	I	ug/kg dry	24.2	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
53-70-3	Dibenz (a,h) anthracene	26.5	U	ug/kg dry	26.5	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
206-44-0	Fluoranthene	29.0	U	ug/kg dry	29.0	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
86-73-7	Fluorene	79.0	U	ug/kg dry	79.0	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
193-39-5	Indeno (1,2,3-cd) pyrene	26.1	U	ug/kg dry	26.1	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
91-57-6	2-Methylnaphthalene	608		ug/kg dry	86.1	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
91-20-3	Naphthalene	81.1	U	ug/kg dry	81.1	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
85-01-8	Phenanthrene	662		ug/kg dry	47.6	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
129-00-0	Pyrene	326		ug/kg dry	41.0	202	1	07/12/07 14:40	REM	EPA 8270C	7G11007
	Surrogate: 2-Fluorobiphenyl (24-121%)	78 %									
	Surrogate: Nitrobenzene-d5 (19-111%)	71 %									
	Surrogate: Terphenyl-d14 (44-171%)	88 %									

### LABORATORY REPORT

Sample ID: 290 BIRCH BOTTOM 03 - Lab Number: OQG0164-03 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
<b>General Chemistry Parameters</b>											
	% Solids	74.6	Q	%	0.100	0.100	1	07/12/07 12:45	RRP	EPA 160.3	7G12029
<b>Volatile Organic Compounds by EPA Method 8260B</b>											
43-2	Benzene	190		ug/kg dry	2.98	8.14	50	07/11/07 21:34	JWT	EPA 8260B	7G12014
141-4	Ethylbenzene	954		ug/kg dry	3.44	8.14	50	07/11/07 21:34	JWT	EPA 8260B	7G12014
20-3	Naphthalene	5880		ug/kg dry	8.99	16.3	100	07/12/07 12:39	JWT	EPA 8260B	7G12014
-88-3	Toluene	17.3		ug/kg dry	7.03	8.14	50	07/11/07 21:34	JWT	EPA 8260B	7G12014
0-20-7	Xylenes, total	464		ug/kg dry	4.23	8.14	50	07/11/07 21:34	JWT	EPA 8260B	7G12014
	Surrogate: 1,2-Dichloroethane-d4 (73-137%)	89 %									

TestAmerica - Orlando, FL  
 Shali Brown  
 Project Manager

Client: EPG, INC.  
 PO BOX 1096  
 MT PLEASANT, SC 29465  
 Attn: JOHN MAHONEY

Work Order: OQG0164  
 Project: LAUREL BAY  
 Project Number: EP2362

Sampled: 07/02/07-07/06/07  
 Received: 07/10/07

**LABORATORY REPORT**  
 Sample ID: 290 BIRCH BOTTOM 03 - Lab Number: OQG0164-03 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
<b>Volatile Organic Compounds by EPA Method 8260B - Cont.</b>											
	Surrogate: 1,2-Dichloroethane-d4 (73-137%)	87 %									
	Surrogate: 4-Bromofluorobenzene (59-118%)	99 %									
	Surrogate: 4-Bromofluorobenzene (59-118%)	103 %									
	Surrogate: Dibromofluoromethane (55-145%)	97 %									
	Surrogate: Dibromofluoromethane (55-145%)	97 %									
	Surrogate: Toluene-d8 (70-130%)	98 %									
	Surrogate: Toluene-d8 (70-130%)	99 %									
<b>Polynuclear Aromatic Hydrocarbons by EPA Method 8270</b>											
83-32-9	Acenaphthene	13300		ug/kg dry	1980	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
208-96-8	Acenaphthylene	2620	U	ug/kg dry	2620	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
120-12-7	Anthracene	10100		ug/kg dry	1430	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
56-55-3	Benzo (a) anthracene	3380	I	ug/kg dry	485	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
205-99-2	Benzo (b) fluoranthene	1530	I	ug/kg dry	471	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
207-08-9	Benzo (k) fluoranthene	831	I	ug/kg dry	471	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
191-24-2	Benzo (g,h,i) perylene	465	U	ug/kg dry	465	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
50-32-8	Benzo (a) pyrene	1050	I	ug/kg dry	551	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
90-12-0	1-Methylnaphthalene	114000		ug/kg dry	2250	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
218-01-9	Chrysene	2980	I	ug/kg dry	536	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
53-70-3	Dibenz (a,h) anthracene	588	U	ug/kg dry	588	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
206-44-0	Fluoranthene	9680		ug/kg dry	644	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
86-73-7	Fluorene	1750	U	ug/kg dry	1750	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
193-39-5	Indeno (1,2,3-cd) pyrene	580	U	ug/kg dry	580	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
91-57-6	2-Methylnaphthalene	202000		ug/kg dry	19100	44800	200	07/13/07 15:32	REM	EPA 8270C	7G11007
91-20-3	Naphthalene	42000		ug/kg dry	1800	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
85-01-8	Phenanthrene	44200		ug/kg dry	1060	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
129-00-0	Pyrene	9400		ug/kg dry	910	4480	20	07/13/07 09:54	REM	EPA 8270C	7G11007
	Surrogate: 2-Fluorobiphenyl (24-121%)	*	Z3,U								
	Surrogate: Nitrobenzene-d5 (19-111%)	104 %									
	Surrogate: Terphenyl-d14 (44-171%)	100 %									

**LABORATORY REPORT**  
 Sample ID: 290 BIRCH SIDE 04 - Lab Number: OQG0164-04 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
<b>General Chemistry Parameters</b>											
NA	% Solids	83.0	Q	%	0.100	0.100	1	07/12/07 12:45	RRP	EPA 160.3	7G12029
<b>Volatile Organic Compounds by EPA Method 8260B</b>											
71-43-2	Benzene	23.4		ug/kg dry	0.0469	0.128	1	07/11/07 10:29	JWT	EPA 8260B	7G12014
100-41-4	Ethylbenzene	33.0		ug/kg dry	0.0542	0.128	1	07/11/07 10:29	JWT	EPA 8260B	7G12014
91-20-3	Naphthalene	1280		ug/kg dry	3.41	6.17	50	07/11/07 21:51	JWT	EPA 8260B	7G12014
108-88-3	Toluene	0.111	U	ug/kg dry	0.111	0.128	1	07/11/07 10:29	JWT	EPA 8260B	7G12014
1330-20-7	Xylenes, total	6.33		ug/kg dry	0.0665	0.128	1	07/11/07 10:29	JWT	EPA 8260B	7G12014
	Surrogate: 1,2-Dichloroethane-d4 (73-137%)	115 %									

TestAmerica - Orlando, FL  
 Shali Brown  
 Project Manager

Client: EPG, INC.  
PO BOX 1096  
MT PLEASANT, SC 29465  
Attn: JOHN MAHONEY

Work Order: OQG0164  
Project: LAUREL BAY  
Project Number: EP2362

Sampled: 07/02/07-07/06/07  
Received: 07/10/07

### LABORATORY REPORT

Sample ID: 290 BIRCH SIDE 04 - Lab Number: OQG0164-04 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
<b>Volatile Organic Compounds by EPA Method 8260B - Cont.</b>											
	Surrogate: 1,2-Dichloroethane-d4 (73-137%)	91 %									
	Surrogate: 4-Bromofluorobenzene (59-118%)	82 %									
	Surrogate: 4-Bromofluorobenzene (59-118%)	104 %									
	Surrogate: Dibromofluoromethane (55-145%)	106 %									
	Surrogate: Dibromofluoromethane (55-145%)	96 %									
	Surrogate: Toluene-d8 (70-130%)	103 %									
	Surrogate: Toluene-d8 (70-130%)	97 %									
<b>Polynuclear Aromatic Hydrocarbons by EPA Method 8270</b>											
83-32-9	Acenaphthene	905		ug/kg dry	89.2	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
208-96-8	Acenaphthylene	118	U	ug/kg dry	118	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
120-12-7	Anthracene	436		ug/kg dry	64.2	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
56-55-3	Benzo (a) anthracene	79.5	I	ug/kg dry	21.8	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
203-99-2	Benzo (b) fluoranthene	34.5	I	ug/kg dry	21.2	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
207-08-9	Benzo (k) fluoranthene	21.2	U	ug/kg dry	21.2	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
191-24-2	Benzo (g,h,i) perylene	20.9	U	ug/kg dry	20.9	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
50-32-8	Benzo (a) pyrene	24.8	U	ug/kg dry	24.8	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
90-12-0	1-Methylnaphthalene	3460		ug/kg dry	101	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
218-01-9	Chrysene	65.9	I	ug/kg dry	24.1	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
53-70-3	Dibenz (a,h) anthracene	26.4	U	ug/kg dry	26.4	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
286-44-0	Fluoranthene	231		ug/kg dry	28.9	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
86-73-7	Fluorene	1470		ug/kg dry	78.8	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
193-39-5	Indeno (1,2,3-cd) pyrene	26.1	U	ug/kg dry	26.1	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
91-57-6	2-Methylnaphthalene	4340		ug/kg dry	85.8	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
91-20-3	Naphthalene	228		ug/kg dry	80.8	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
85-01-8	Phenanthrene	4250		ug/kg dry	47.5	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
129-00-0	Pyrene	240		ug/kg dry	40.9	201	1	07/12/07 15:25	REM	EPA 8270C	7G11007
	Surrogate: 2-Fluorobiphenyl (24-121%)	77 %									
	Surrogate: Nitrobenzene-d5 (19-111%)	79 %									
	Surrogate: Terphenyl-d14 (44-171%)	91 %									

### LABORATORY REPORT

Sample ID: 288 BIRCH BOTTOM 01 - Lab Number: OQG0164-05 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
<b>General Chemistry Parameters</b>											
NA	% Solids	82.5	Q	%	0.100	0.100	1	07/12/07 12:45	RRP	EPA 160.3	7G12029
<b>Volatile Organic Compounds by EPA Method 8260B</b>											
71-43-2	Benzene	40.1		ug/kg dry	3.69	10.1	50	07/11/07 22:08	JWT	EPA 8260B	7G12014
100-41-4	Ethylbenzene	1110		ug/kg dry	4.26	10.1	50	07/11/07 22:08	JWT	EPA 8260B	7G12014
91-20-3	Naphthalene	8050		ug/kg dry	11.1	20.1	100	07/12/07 12:56	JWT	EPA 8260B	7G12014
108-88-3	Toluene	8.70	U	ug/kg dry	8.70	10.1	50	07/11/07 22:08	JWT	EPA 8260B	7G12014
1330-20-7	Xylenes, total	1250		ug/kg dry	5.23	10.1	50	07/11/07 22:08	JWT	EPA 8260B	7G12014
	Surrogate: 1,2-Dichloroethane-d4 (73-137%)	88 %									

TestAmerica - Orlando, FL  
Shali Brown  
Project Manager

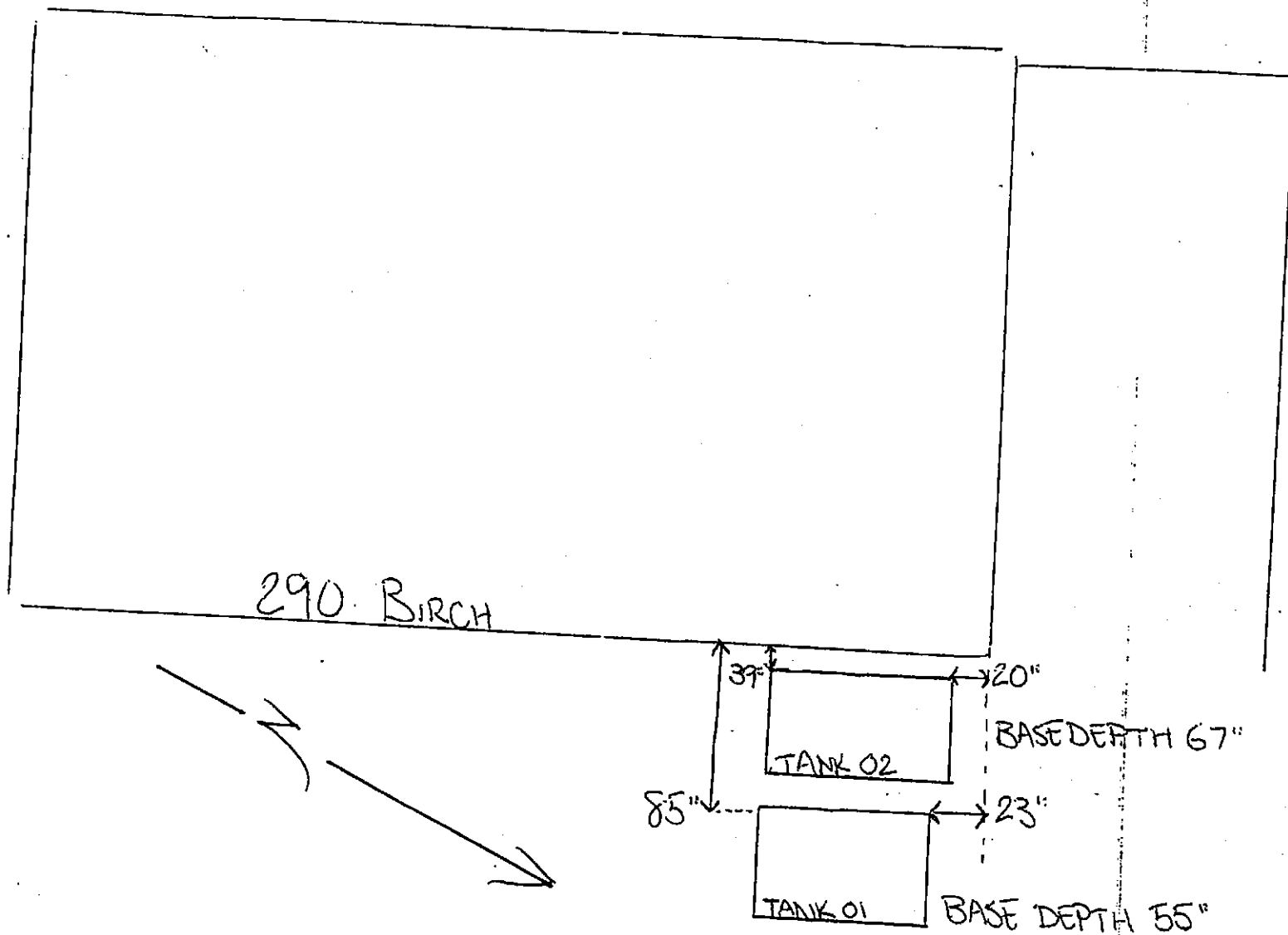




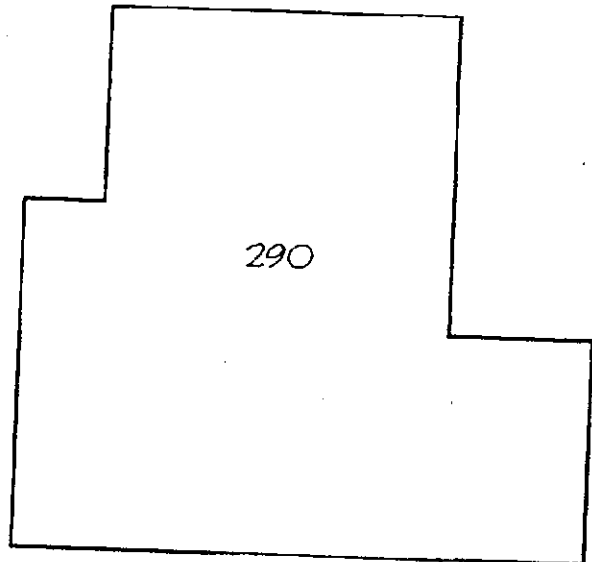


290 BIRCH

06-27-2007 16:13



(Mild petroleum odor was present near fill pipe of Tank #2)



290

C D X TANK 2 BASE 67"  
 A B TANK 1 BASE 55"



BIRCH DRIVE



TANK 1 EXCAVATION  
 A-SOIL TEST SIDE SAMPLE @ 45"  
 B-SOIL TEST BOTTOM SAMPLE @ 55"

TANK 2 EXCAVATION  
 C-SOIL TEST SIDE SAMPLE @ 56"  
 D-SOIL TEST BOTTOM SAMPLE @ 67"  
 X-MILD DIESEL ODOR @ FILL PIPE

CUSTOMER: <b>BEAUFORT MILITARY COMPLEX FAMILY HOUSING</b>	SCALE: 1/16"=1'-0"	<b>EPG INC.</b> P.O. BOX 1096 MOUNT PLEASANT, SC 29465-1096
SITE ADDRESS: <b>290 BIRCH DRIVE</b>	SUPPLIER: <b>EPG INC.</b>	
	DATE: <b>9/27/2007</b>	

**Appendix C**  
**Laboratory Analytical Report - Groundwater**

### ANALYTICAL RESULTS

Project: LAUREL BAY MILITARY HOUSING  
Pace Project No.: 9224083

**Sample: 288 BIRCH B**      **Lab ID: 9224083006**      Collected: 07/22/08 14:45      Received: 07/24/08 12:45      Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**8260 MSV Low Level**      Analytical Method: EPA 8260

Dibromofluoromethane (S)	104 %		85-115	1		07/29/08 15:04	1868-53-7	
1,2-Dichloroethane-d4 (S)	105 %		79-120	1		07/29/08 15:04	17060-07-0	
Toluene-d8 (S)	101 %		70-120	1		07/29/08 15:04	2037-26-5	

**Sample: 290 BIRCH A**      **Lab ID: 9224083007**      Collected: 07/22/08 15:45      Received: 07/24/08 12:45      Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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**8270 MSSV PAH by SIM SPE**      Analytical Method: EPA 8270 by SIM      Preparation Method: EPA 3535

Acenaphthene	ND ug/L		2.0	1	07/28/08 00:00	07/30/08 05:46	83-32-9	
Acenaphthylene	ND ug/L		1.5	1	07/28/08 00:00	07/30/08 05:46	208-96-8	
Anthracene	ND ug/L		0.050	1	07/28/08 00:00	07/30/08 05:46	120-12-7	
Benzo(a)anthracene	ND ug/L		0.10	1	07/28/08 00:00	07/30/08 05:46	56-55-3	
Benzo(a)pyrene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 05:46	50-32-8	
Benzo(b)fluoranthene	ND ug/L		0.30	1	07/28/08 00:00	07/30/08 05:46	205-99-2	
Benzo(g,h,i)perylene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 05:46	191-24-2	
Benzo(k)fluoranthene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 05:46	207-08-9	
Chrysene	ND ug/L		0.10	1	07/28/08 00:00	07/30/08 05:46	218-01-9	
Dibenz(a,h)anthracene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 05:46	53-70-3	
Fluoranthene	ND ug/L		0.30	1	07/28/08 00:00	07/30/08 05:46	206-44-0	
Fluorene	ND ug/L		0.31	1	07/28/08 00:00	07/30/08 05:46	86-73-7	
Indeno(1,2,3-cd)pyrene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 05:46	193-39-5	
1-Methylnaphthalene	ND ug/L		2.0	1	07/28/08 00:00	07/30/08 05:46	90-12-0	
2-Methylnaphthalene	ND ug/L		2.0	1	07/28/08 00:00	07/30/08 05:46	91-57-6	
Naphthalene	ND ug/L		1.5	1	07/28/08 00:00	07/30/08 05:46	91-20-3	
Phenanthrene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 05:46	85-01-8	
Pyrene	ND ug/L		0.10	1	07/28/08 00:00	07/30/08 05:46	129-00-0	
Nitrobenzene-d5 (S)	43 %		50-150	1	07/28/08 00:00	07/30/08 05:46	4165-60-0	1g
2-Fluorobiphenyl (S)	63 %		50-150	1	07/28/08 00:00	07/30/08 05:46	321-60-8	
Terphenyl-d14 (S)	93 %		50-150	1	07/28/08 00:00	07/30/08 05:46	1718-51-0	

**8260 MSV Low Level**      Analytical Method: EPA 8260

Benzene	ND ug/L		1.0	1		07/29/08 15:28	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/29/08 15:28	100-41-4	
Naphthalene	ND ug/L		1.0	1		07/29/08 15:28	91-20-3	
Toluene	ND ug/L		1.0	1		07/29/08 15:28	108-88-3	
m&p-Xylene	ND ug/L		2.0	1		07/29/08 15:28	1330-20-7	
o-Xylene	ND ug/L		1.0	1		07/29/08 15:28	95-47-6	
4-Bromofluorobenzene (S)	97 %		87-109	1		07/29/08 15:28	460-00-4	
Dibromofluoromethane (S)	103 %		85-115	1		07/29/08 15:28	1868-53-7	
1,2-Dichloroethane-d4 (S)	105 %		79-120	1		07/29/08 15:28	17060-07-0	
Toluene-d8 (S)	100 %		70-120	1		07/29/08 15:28	2037-26-5	

### ANALYTICAL RESULTS

Project: LAUREL BAY MILITARY HOUSING  
Pace Project No.: 9224083

<b>Sample: 290 BIRCH D</b>	<b>Lab ID: 9224083008</b>	Collected: 07/22/08 15:50	Received: 07/24/08 12:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

**8270 MSSV PAH by SIM SPE**

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3535

Acenaphthene	ND ug/L		2.0	1	07/28/08 00:00	07/30/08 01:40	83-32-9	
Acenaphthylene	ND ug/L		1.5	1	07/28/08 00:00	07/30/08 01:40	208-96-8	
Anthracene	ND ug/L		0.050	1	07/28/08 00:00	07/30/08 01:40	120-12-7	
Benzo(a)anthracene	ND ug/L		0.10	1	07/28/08 00:00	07/30/08 01:40	56-55-3	
Benzo(a)pyrene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 01:40	50-32-8	
Benzo(b)fluoranthene	ND ug/L		0.30	1	07/28/08 00:00	07/30/08 01:40	205-99-2	
Benzo(g,h,i)perylene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 01:40	191-24-2	
Benzo(k)fluoranthene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 01:40	207-08-9	
Chrysene	ND ug/L		0.10	1	07/28/08 00:00	07/30/08 01:40	218-01-9	
Dibenz(a,h)anthracene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 01:40	53-70-3	
Fluoranthene	ND ug/L		0.30	1	07/28/08 00:00	07/30/08 01:40	206-44-0	
Fluorene	ND ug/L		0.31	1	07/28/08 00:00	07/30/08 01:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 01:40	193-39-5	
1-Methylnaphthalene	ND ug/L		2.0	1	07/28/08 00:00	07/30/08 01:40	90-12-0	
2-Methylnaphthalene	ND ug/L		2.0	1	07/28/08 00:00	07/30/08 01:40	91-57-6	
Naphthalene	ND ug/L		1.5	1	07/28/08 00:00	07/30/08 01:40	91-20-3	
Phenanthrene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 01:40	85-01-8	
Pyrene	ND ug/L		0.10	1	07/28/08 00:00	07/30/08 01:40	129-00-0	
Nitrobenzene-d5 (S)	55 %		50-150	1	07/28/08 00:00	07/30/08 01:40	4165-60-0	
2-Fluorobiphenyl (S)	57 %		50-150	1	07/28/08 00:00	07/30/08 01:40	321-60-8	
Terphenyl-d14 (S)	63 %		50-150	1	07/28/08 00:00	07/30/08 01:40	1718-51-0	

**8260 MSV Low Level**

Analytical Method: EPA 8260

Benzene	ND ug/L		1.0	1		07/29/08 15:52	71-43-2	
Ethylbenzene	ND ug/L		1.0	1		07/29/08 15:52	100-41-4	
Naphthalene	ND ug/L		1.0	1		07/29/08 15:52	91-20-3	
Toluene	ND ug/L		1.0	1		07/29/08 15:52	108-88-3	
m&p-Xylene	ND ug/L		2.0	1		07/29/08 15:52	1330-20-7	
o-Xylene	ND ug/L		1.0	1		07/29/08 15:52	95-47-6	
4-Bromofluorobenzene (S)	99 %		87-109	1		07/29/08 15:52	460-00-4	
Dibromofluoromethane (S)	102 %		85-115	1		07/29/08 15:52	1868-53-7	
1,2-Dichloroethane-d4 (S)	106 %		79-120	1		07/29/08 15:52	17060-07-0	
Toluene-d8 (S)	101 %		70-120	1		07/29/08 15:52	2037-26-5	

<b>Sample: 290 BIRCH B</b>	<b>Lab ID: 9224083009</b>	Collected: 07/22/08 16:10	Received: 07/24/08 12:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

**8270 MSSV PAH by SIM SPE**

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3535

Acenaphthene	ND ug/L		2.0	1	07/28/08 00:00	07/30/08 06:13	83-32-9	
Acenaphthylene	ND ug/L		1.5	1	07/28/08 00:00	07/30/08 06:13	208-96-8	
Anthracene	ND ug/L		0.050	1	07/28/08 00:00	07/30/08 06:13	120-12-7	
Benzo(a)anthracene	ND ug/L		0.10	1	07/28/08 00:00	07/30/08 06:13	56-55-3	
Benzo(a)pyrene	ND ug/L		0.20	1	07/28/08 00:00	07/30/08 06:13	50-32-8	
Benzo(b)fluoranthene	ND ug/L		0.30	1	07/28/08 00:00	07/30/08 06:13	205-99-2	

Date: 07/30/2008 03:09 PM

### REPORT OF LABORATORY ANALYSIS

Page 10 of 16

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### ANALYTICAL RESULTS

Project: LAUREL BAY MILITARY HOUSING  
Pace Project No.: 9224083

Sample: 290 BIRCH B Lab ID: 9224083009 Collected: 07/22/08 16:10 Received: 07/24/08 12:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV PAH by SIM SPE</b>		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3535						
Benzo(g,h,i)perylene	ND	ug/L	0.20	1	07/28/08 00:00	07/30/08 06:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.20	1	07/28/08 00:00	07/30/08 06:13	207-08-9	
Chrysene	ND	ug/L	0.10	1	07/28/08 00:00	07/30/08 06:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.20	1	07/28/08 00:00	07/30/08 06:13	53-70-3	
Fluoranthene	ND	ug/L	0.30	1	07/28/08 00:00	07/30/08 06:13	206-44-0	
Fluorene	ND	ug/L	0.31	1	07/28/08 00:00	07/30/08 06:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.20	1	07/28/08 00:00	07/30/08 06:13	193-39-5	
1-Methylnaphthalene	ND	ug/L	2.0	1	07/28/08 00:00	07/30/08 06:13	90-12-0	
2-Methylnaphthalene	ND	ug/L	2.0	1	07/28/08 00:00	07/30/08 06:13	91-57-6	
Naphthalene	ND	ug/L	1.5	1	07/28/08 00:00	07/30/08 06:13	91-20-3	
Phenanthrene	ND	ug/L	0.20	1	07/28/08 00:00	07/30/08 06:13	85-01-8	
Pyrene	ND	ug/L	0.10	1	07/28/08 00:00	07/30/08 06:13	129-00-0	
Nitrobenzene-d5 (S)	45 %		50-150	1	07/28/08 00:00	07/30/08 06:13	4165-60-0	1g
2-Fluorobiphenyl (S)	71 %		50-150	1	07/28/08 00:00	07/30/08 06:13	321-60-8	
Terphenyl-d14 (S)	74 %		50-150	1	07/28/08 00:00	07/30/08 06:13	1718-51-0	

<b>8260 MSV Low Level</b>		Analytical Method: EPA 8260						
Benzene	ND	ug/L	1.0	1		07/29/08 16:16	71-43-2	
Ethylbenzene	ND	ug/L	1.0	1		07/29/08 16:16	100-41-4	
Naphthalene	ND	ug/L	1.0	1		07/29/08 16:16	91-20-3	
Toluene	ND	ug/L	1.0	1		07/29/08 16:16	108-88-3	
m&p-Xylene	ND	ug/L	2.0	1		07/29/08 16:16	1330-20-7	
o-Xylene	ND	ug/L	1.0	1		07/29/08 16:16	95-47-6	
4-Bromofluorobenzene (S)	96 %		87-109	1		07/29/08 16:16	460-00-4	
Dibromofluoromethane (S)	102 %		85-115	1		07/29/08 16:16	1868-53-7	
1,2-Dichloroethane-d4 (S)	104 %		79-120	1		07/29/08 16:16	17060-07-0	
Toluene-d8 (S)	100 %		70-120	1		07/29/08 16:16	2037-26-5	

Sample: 292 BIRCH A Lab ID: 9224083010 Collected: 07/22/08 16:30 Received: 07/24/08 12:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>8270 MSSV PAH by SIM SPE</b>		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3535						
Acenaphthene	ND	ug/L	2.0	1	07/28/08 00:00	07/30/08 06:40	83-32-9	
Acenaphthylene	ND	ug/L	1.5	1	07/28/08 00:00	07/30/08 06:40	208-96-8	
Anthracene	ND	ug/L	0.050	1	07/28/08 00:00	07/30/08 06:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	07/28/08 00:00	07/30/08 06:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.20	1	07/28/08 00:00	07/30/08 06:40	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.30	1	07/28/08 00:00	07/30/08 06:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.20	1	07/28/08 00:00	07/30/08 06:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.20	1	07/28/08 00:00	07/30/08 06:40	207-08-9	
Chrysene	ND	ug/L	0.10	1	07/28/08 00:00	07/30/08 06:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.20	1	07/28/08 00:00	07/30/08 06:40	53-70-3	
Fluoranthene	ND	ug/L	0.30	1	07/28/08 00:00	07/30/08 06:40	206-44-0	
Fluorene	ND	ug/L	0.31	1	07/28/08 00:00	07/30/08 06:40	86-73-7	

Date: 07/30/2008 03:09 PM

### REPORT OF LABORATORY ANALYSIS

Page 11 of 16

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**Appendix D**  
**Regulatory Correspondence**

BOARD:  
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Edwin H. Cooper, III  
Vice Chairman  
Steven G. Kisner  
Secretary



C. Earl Hunter, Commissioner

*Promoting and protecting the health of the public and the environment*

BOARD:  
Henry C. Scott  
M. David Mitchell, MD  
Glenn A. McCall  
Coleman F. Buckhouse, MD

14 August 2008

Beaufort Military Complex Family Housing  
ATTN: Kyle Broadfoot  
1510 Laurel Bay Blvd.  
Beaufort, SC 29906

Re: MCAS – Laurel Bay Housing – 290 Birch  
Site ID # 04000  
UST Closure Reports received 31 January 2008  
Beaufort County

Dear Mr. Broadfoot:

The purpose of this letter is to verify a release of fuel oil at the referenced residence. According to information received by the Department, the source of the release is from past onsite use of fuel oil USTs. To date, initial activities by the facility have included tank removal and soil sampling. Based on the information contained in the closure report, a potential violation of the South Carolina Pollution Control Act has occurred in that there has been an unauthorized release of petroleum to the environment.

Additional assessment activities are required for this site. Specifically the Department requests that a groundwater sample be collected from this site. Please note, the Department approved a groundwater sampling proposal for Laurel Bay submitted by MCAS under separate cover dated 16 June 2008.

Should you have any questions, please contact me at 803-898-3553 (office phone), 803-898-2893 (fax) or [bishopma@dhec.sc.gov](mailto:bishopma@dhec.sc.gov).

Sincerely,

Michael Bishop, Hydrogeologist  
Groundwater Quality Section  
Bureau of Water

cc: Region 8 District EQC (via pdf)  
MCAS, Commanding Officer, Attention: S-4 NREAO (William Drawdy) (via pdf)  
Technical File



C. Earl Hunter, Commissioner

*Promoting and protecting the health of the public and the environment.*

17 December 2008

Commanding Officer  
ATTN: S-4 NREAO (Craig Ehde)  
MCAS  
PO Box 55001  
Beaufort, SC 29904-5001

Re: MCAS – Laurel Bay Housing – 290 Birch  
**Site ID # 04000**  
Groundwater Sampling Results received 6 November 2008  
Beaufort County

Dear Mr. Ehde:

Per the Department's request, a groundwater sample was collected from the referenced site. The groundwater results were reported as non-detect. Based on the information and analytical data submitted, the Department recognizes that MCAS has adequately addressed the known environmental contamination identified on the property to date in accordance with the approved scope of work. Consequently, no further investigation is required at this time. Please note, this statement pertains only to the portion of the site addressed in the referenced report and does not apply to other areas of the site and/or any other potential regulatory violations. Further, the Department retains the right to request further investigation if deemed necessary.

Should you have any questions, please contact me at 803-896-4179 (office phone), 803-896-6245 (fax) or [cookejt@dhec.sc.gov](mailto:cookejt@dhec.sc.gov).

Sincerely,  
AST Petroleum Restoration  
& Site Environmental Investigations Section  
Land Revitalization Division  
Bureau of Land and Waste Management  
SC Dept. of Health & Environmental Control

Jan T. Cooke, Hydrogeologist

B. Thomas Knight, Manager

cc: Region 8 District EQC  
Tri-Command Communities; Attn: Mr. Robert Bible; 600 Laurel Bay Road Beaufort, SC  
29906  
Technical File