

**SUMMARY REPORT
FORMER 201 BALSAM STREET (CURRENT EMPTY LOT)
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:



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

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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 former 201 Balsam Street. 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 heating oil 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, February 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*

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 IGWA sampling process utilizes temporary groundwater sampling points that are typically installed and sampled within the same day. The intent of the sampling point is to determine the presence or absence of the aforementioned COPCs in groundwater and identify whether former UST locations may require additional delineation of COPCs in groundwater. These sampling points are not subjected to the same installation standards as permanent monitoring wells and, as such; the data obtained from the IGWA wells can sometimes be biased high and is considered preliminary data. In order to confirm the presence of any impact to groundwater, a permanent well is installed where IGWA sampling has indicated the presence of COPCs is in excess of the SCDHEC RBSLs for groundwater. If COPCs are found to be present in the permanent well, additional permanent wells are installed to delineate the extent of impact to groundwater and a sampling program is established. Groundwater analytical results from permanent wells 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 former 201 Balsam Street. The sampling activities at former 201 Balsam Street comprised a soil investigation, IGWA sampling and installation and sampling of a permanent well. Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 201 Balsam Street* (MCAS Beaufort, 2007). 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* (Pandey Environmental, 2008). The laboratory report that includes the pertinent IGWA analytical results for this site is presented in Appendix C. Details regarding the permanent well installation and sampling

activities at this site are provided in the *Report of Findings for Laurel Bay Military Housing Area Investigation of Potential Impacts to Groundwater from Former Heating Oil Underground Storage Tanks* (Tetra Tech NUS, Inc, 2010). The pertinent groundwater analytical results for this site is presented in Appendix D.

2.1 UST Removal and Soil Sampling

On August 15, 2006, a single 280 gallon heating oil UST was removed from former 201 Balsam Street. The former UST location is indicated on the sketch in the UST Assessment Report (Appendix B). The UST was removed and properly disposed of (i.e., shipped offsite for recycling or transported to a landfill). 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 depth to the base of the UST was 6'0" bgs and a single soil sample was collected from that depth. The sample was collected from the fill port side of the former UST to represent a worst case scenario. An additional soil sample was collected from a side wall of the excavation.

Following UST removal, soil samples were collected from the base and the side of the 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 location 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 former 201 Balsam Street were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated November 2, 2007, SCDHEC requested an IGWA for former 201 Balsam Street to determine if the groundwater was impacted by petroleum COPCs. SCDHEC's request letter is provided in Appendix E.

2.3 Initial Groundwater Sampling

On July 30, 2008, a temporary monitoring well was installed at former 201 Balsam Street, 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 well was placed in the same general location as the former heating oil UST. The former UST location is indicated on the sketch in the UST Assessment Report (Appendix B). Further details are provided in the *Investigation of Ground Water at Leaking Heating Oil UST Sites* (Pandey Environmental, 2008).

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

2.4 Initial 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 former 201 Balsam Street were greater than the SCDHEC RBSLs and the site specific groundwater VISLs (Table 2), which indicated further investigation was required. In a letter dated December 8, 2008, SCDHEC requested a permanent well be installed for former 201 Balsam Street to confirm the impact to groundwater detected in the temporary well sample. SCDHEC's request letter is provided in Appendix E.

2.5 Permanent Well Groundwater Sampling

In February 2010, three permanent monitoring wells were installed at former 201 Balsam Street, in accordance with the South Carolina Well Standards and Regulations (R.61-71.H-I, updated June 24, 2016). MW101 was installed on February 1, 2010. MW102 and MW103 were installed on February 2, 2010. In order to provide data that can be used to determine whether COPCs are migrating to underlying groundwater, MW102 was placed in the same general location as the former heating oil UST and the IGWA sample location. The former UST location

is indicated on the sketch in the UST Assessment Report (Appendix B). MW101 and MW103 were placed around the property to delineate the extent of groundwater impact from the former heating oil tank. Further details are provided in the *Report of Findings for Laurel Bay Military Housing Area Investigation of Potential Impacts to Groundwater from Former Heating Oil Underground Storage Tanks* (Tetra Tech NUS, Inc, 2010).

The sampling strategy for this phase of the investigation required a one-time sampling event of the permanent 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. Field forms are provided in the *Report of Findings for Laurel Bay Military Housing Area Investigation of Potential Impacts to Groundwater from Former Heating Oil Underground Storage Tanks* (Tetra Tech NUS, Inc, 2010).

2.6 Permanent Well Groundwater Analytical Results

A summary of the laboratory analytical results and SCDHEC RBSLs is presented in Table 3. A copy of the analytical data is included in Appendix D.

The groundwater results collected from former 201 Balsam Street were less than the SCDHEC RBSLs and the site specific groundwater VISLs (Table 3), which indicated that the groundwater was not impacted by COPCs associated with the former UST at concentrations that present a potential risk to human health and the environment.

3.0 PROPERTY STATUS

Based on the analytical results for groundwater collected from the permanent monitoring wells, SCDHEC made the determination that NFA was required for former 201 Balsam Street. This NFA determination was obtained in a letter dated April 6, 2011. SCDHEC's NFA letter is provided in Appendix E.

4.0 REFERENCES

Marine Corps Air Station Beaufort, 2007. *South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank Assessment Report – 201 Balsam Street, Laurel Bay Military Housing Area*, August 2007.

Pandey Environmental, 2008. *Investigation of Ground Water at Leaking Heating Oil UST Sites for Laurel Bay Military Housing Area, Multiple Properties, Marine Corps Air Station Beaufort, Beaufort, South Carolina*, November 2008.

Tetra Tech NUS, Inc, 2010. *Report of Findings for Laurel Bay Military Housing Area Investigation of Potential Impacts to Groundwater from Former Heating Oil Underground Storage Tanks*, July 2010.

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
Former 201 Balsam Street
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Results Samples Collected 08/15/06	
		201 Balsam - 01 Bottom	201 Balsam - 02 Side
Volatile Organic Compounds Analyzed by EPA Method 8260B (mg/kg)			
Benzene	0.003	ND	ND
Ethylbenzene	1.15	2.37	ND
Naphthalene	0.036	16.6	0.000414
Toluene	0.627	ND	ND
Xylenes, Total	13.01	1.81	ND
Semivolatile Organic Compounds Analyzed by EPA Method 8270 (mg/kg)			
Benzo(a)anthracene	0.066	ND	0.519
Benzo(b)fluoranthene	0.066	ND	0.219
Benzo(k)fluoranthene	0.066	ND	0.228
Chrysene	0.066	0.464	0.577
Dibenz(a,h)anthracene	0.066	ND	ND

Notes:

⁽¹⁾ South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 1.0 (SCDHEC, May 2001).

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 - Initial Groundwater
Former 201 Balsam Street
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Site-Specific Groundwater VISLs ($\mu\text{g}/\text{L}$) ⁽²⁾	Results Sample Collected 07/30/08
Volatile Organic Compounds Analyzed by EPA Method 8260B ($\mu\text{g}/\text{L}$)			
Benzene	5	16.24	4.5
Ethylbenzene	700	45.95	12.9
Naphthalene	25	29.33	62.8
Toluene	1000	105,445	ND
Xylenes, Total	10,000	2,133	10.0
Semivolatile Organic Compounds Analyzed by EPA Method 8270D ($\mu\text{g}/\text{L}$)			
Benzo(a)anthracene	10	NA	ND
Benzo(b)fluoranthene	10	NA	ND
Benzo(k)fluoranthene	10	NA	ND
Chrysene	10	NA	ND
Dibenz(a,h)anthracene	10	NA	ND

Notes:

(1) South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 1.0 (SCDHEC, May 2001).

(2) 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 1×10^{-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

$\mu\text{g}/\text{L}$ - micrograms per liter

VISL - Vapor Intrusion Screening Level

Table 3
Laboratory Analytical Results - Permanent Well Groundwater
Former 201 Balsam Street
Laurel Bay Military Housing Area
Marine Corps Air Station Beaufort
Beaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Site-Specific Groundwater VISLs ($\mu\text{g/L}$) ⁽²⁾	Results		
			Samples Collected 02/22/10	MW101	MW102
Volatile Organic Compounds Analyzed by EPA Method 8260B ($\mu\text{g/L}$)					
Benzene	5	16.24	ND	0.62	ND
Ethylbenzene	700	45.95	ND	1.95	ND
Naphthalene	25	29.33	ND	1.52	ND
Toluene	1000	105,445	ND	ND	ND
Xylenes, Total	10,000	2,133	ND	ND	ND
Semivolatile Organic Compounds Analyzed by EPA Method 8270D ($\mu\text{g/L}$)					
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:

⁽¹⁾ South Carolina Risk-Based Screening Levels from the Quality Assurance Program Plan for the Underground Storage Tank Management Division, Revision 1.0 (SCDHEC, May 2001).

⁽²⁾ 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 1×10^{-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 D.

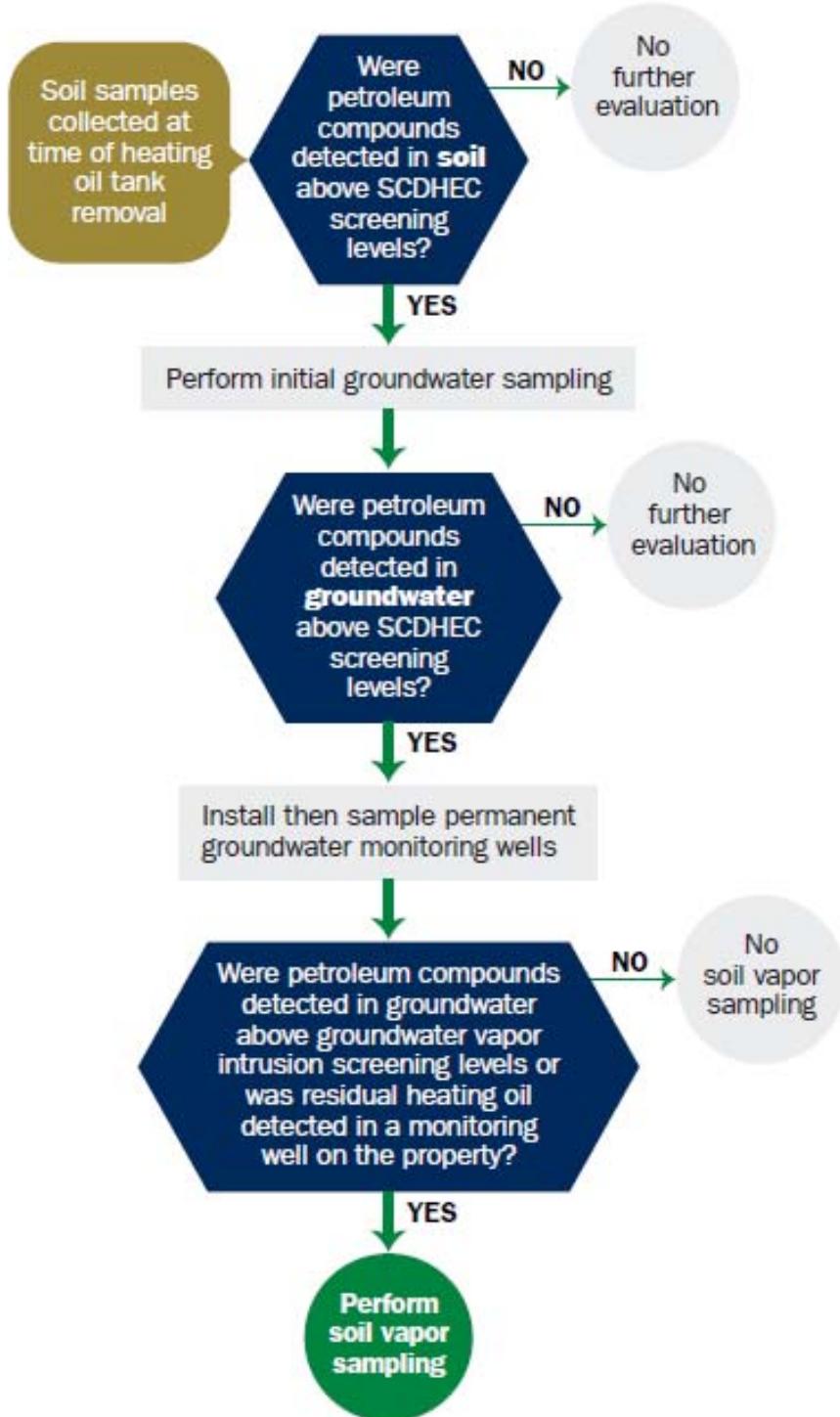
RBSL - Risk-Based Screening Level

SCDHEC - South Carolina Department Of Health and Environmental Control

$\mu\text{g/L}$ - 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

201 BALSAM

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

RECEIVED

AUG 15 2001

Water Monitoring Assessment &
Protection Division

I. OWNERSHIP OF UST (S)

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

II. SITE IDENTIFICATION AND LOCATION

<u>N/A</u>	
Permit I.D. #	<u>Actus LEND Lease Construction</u>
Facility Name or Company Site Identifier	
<u>1510 Laurel Bay Blvd.</u>	
Street Address or State Road (as applicable)	
<u>Beaufort, SC</u>	<u>29906</u>
City	ZIP
<u>Beaufort</u>	
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. UST INFORMATION

- 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.....

Tank 1	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6
# 2 DIESEL					
350g					
Steel					
N					
N					
Removed					
8/15/09					
N					
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)

- 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					
N/A					
-0-					
Electra Pump					
N					
N					

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

VII. BRIEF SITE DESCRIPTION AND HISTORY

Home Heating Oil TANK - Residential

VIII. SITE CONDITIONS

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

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		S				A. MANUCHY	ND
2		S				A. MANUCHY	ND
3							
4							
5							
6							
7							
8							
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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: 2ea 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
A. Are there any lakes, ponds, streams, or wetlands located within 1000 feet of the UST system? If yes, indicate type of receptor, distance, and direction on site map.		
B. Are there any public, private, or irrigation water supply wells within 1000 feet of the UST system? If yes, indicate type of well, distance, and direction on site map.		✓
C. Are there any underground structures (e.g., basements) Located within 100 feet of the UST system? If yes, indicate type of structure, distance, and direction on site map.		✓
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? If yes, indicate the type of utility, distance, and direction on the site map.		✓
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? If yes, indicate the area of contaminated soil on the site map.		✓

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)								

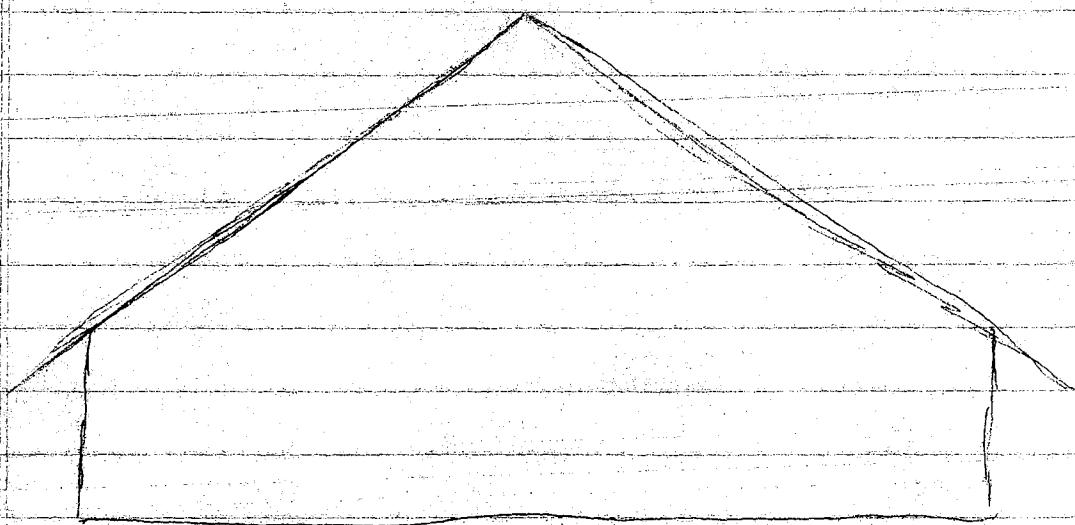
SUMMARY OF ANALYSIS RESULTS (cont'd)

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 ($\mu\text{g/l}$)	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				

201 Balsam



size of tank 5ft

length of hole 13 ft

depth " " bft

width " " 5ft 11in

house to center of tank 4ft 3in

201 Balsam

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)

August 25, 2006

Client:	EPG, INC.	Work Order:	OPH0362
	PO BOX 1096	Project Name:	LAUREL BAY
	MT PLEASANT, SC 29465	Project Number:	EP 2362
		Date Received:	08/18/06
Attn:	JOHN MAHONEY		

SAMPLE IDENTIFICATION	LAB NUMBER	COLLECTION DATE AND TIME
441-01 BOTTOM	OPH0362-01	08/14/06 10:15
441-02 SIDE	OPH0362-02	08/14/06 10:15
143 LBB-01 BOTTOM	OPH0362-03	08/14/06 14:00
143 LBB-02 SIDE	OPH0362-04	08/14/06 14:00
143 LBB-03 BOTTOM	OPH0362-05	08/14/06 14:30
143 LBB-04 SIDE	OPH0362-06	08/14/06 14:30
270 BIRCH-01 BOTTOM	OPH0362-07	08/15/06 08:45
270 BIRCH-02 SIDE	OPH0362-08	08/15/06 08:50
201 BALSAM-01 BOTTOM	OPH0362-09	08/15/06 13:40
201 BALSAM-02 SIDE	OPH0362-10	08/15/06 13:45
1468 CARDINAL 01 BOTTOM	OPH0362-11	08/16/06 09:25
1468 CARDINAL 02 SIDE	OPH0362-12	08/16/06 09:25
1472 CARDINAL 01 BOTTOM	OPH0362-13	08/16/06 13:30
1472 CARDINAL 02 SIDE	OPH0362-14	08/16/06 14:00

Samples were received into laboratory at a temperature of 5.00 °C.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager. Any opinions, if expressed, are outside the scope of the Laboratory's accreditation.

This material is intended only for the use of the individual(s) or entity to whom it is addressed, and may contain information that is privileged and confidential. If you are not the intended recipient, or the employee or agent responsible for delivering this material to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this material is strictly prohibited. If you have received this material in error, please notify us immediately.

Results are reported on a wet weight basis unless otherwise noted

The reported results were obtained in compliance with 2003 NELAC standards unless otherwise noted.

South Carolina Certification Number: 96012001

Approved By:

TestAmerica - Orlando, FL

Shali Brown

Project Manager

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

Work Order: OPH0362
 Project: LAUREL BAY
 Project Number: EP 2362

Sampled: 08/14/06-08/16/06
 Received: 08/18/06

LABORATORY REPORT
 Sample ID: 143 LBB-01 BOTTOM - Lab Number: OPH0362-03 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
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Volatile Organic Compounds by EPA Method 8260B - Cont.

Surrogate: 4-Bromofluorobenzene (59-118%) 106 %

Surrogate: Dibromofluoromethane (55-145%) 106 %

Surrogate: Toluene-d8 (80-117%) 104 %

Polynuclear Aromatic Hydrocarbons by EPA Method 8270

83-32-9	Acenaphthene	89.8	U	ug/kg dry	89.8	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
208-96-8	Acenaphthylene	119	U	ug/kg dry	119	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
120-12-7	Anthracene	64.6	U	ug/kg dry	64.6	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
56-55-3	Benzo (a) anthracene	21.9	U	ug/kg dry	21.9	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
205-99-2	Benzo (b) fluoranthene	21.3	U	ug/kg dry	21.3	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
207-08-9	Benzo (k) fluoranthene	21.3	U	ug/kg dry	21.3	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
191-24-2	Benzo (g,h,i) perylene	21.0	U	ug/kg dry	21.0	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
50-32-8	Benzo (a) pyrene	24.9	U	ug/kg dry	24.9	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
90-12-0	1-Methylnaphthalene	102	U	ug/kg dry	102	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
218-01-9	Chrysene	24.2	U	ug/kg dry	24.2	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
53-70-3	Dibenz (a,h) anthracene	26.6	U	ug/kg dry	26.6	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
206-44-0	Fluoranthene	29.2	U	ug/kg dry	29.2	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
86-73-7	Fluorene	79.3	U	ug/kg dry	79.3	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
193-39-5	Indeno (1,2,3-cd) pyrene	26.2	U	ug/kg dry	26.2	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
91-57-6	2-Methylnaphthalene	86.4	U	ug/kg dry	86.4	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
91-20-3	Naphthalene	81.4	U	ug/kg dry	81.4	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
85-01-8	Phenanthrene	47.8	U	ug/kg dry	47.8	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
129-00-0	Pyrene	41.2	U	ug/kg dry	41.2	203	1	08/24/06 19:48	LCS	EPA 8270C	6H22026
Surrogate: 2-Fluorobiphenyl (24-121%)		87 %									
Surrogate: Nitrobenzene-d5 (19-111%)		78 %									
Surrogate: Terphenyl-d14 (44-171%)		94 %									

LABORATORY REPORT
 Sample ID: 143 LBB-02 SIDE - Lab Number: OPH0362-04 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
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General Chemistry Parameters

NA	% Solids	89.8		%.	0.100	0.100	1	08/18/06 17:19	AKA	EPA 160.3	6H21005
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Volatile Organic Compounds by EPA Method 8260B

71-43-2	Benzene	0.178	U	ug/kg dry	0.178	0.487	1	08/18/06 14:10	JLS	EPA 8260B	6H21019
100-41-4	Ethylbenzene	0.206	U	ug/kg dry	0.206	0.487	1	08/18/06 14:10	JLS	EPA 8260B	6H21019
91-20-3	Naphthalene	0.269	U	ug/kg dry	0.269	0.487	1	08/18/06 14:10	JLS	EPA 8260B	6H21019
108-88-3	Toluene	0.420	U	ug/kg dry	0.420	0.487	1	08/18/06 14:10	JLS	EPA 8260B	6H21019
1330-20-7	Xylenes, total	0.253	U	ug/kg dry	0.253	0.487	1	08/18/06 14:10	JLS	EPA 8260B	6H21019
Surrogate: 1,2-Dichloroethane-d4 (73-137%)		113 %									
Surrogate: 4-Bromofluorobenzene (59-118%)		104 %									
Surrogate: Dibromofluoromethane (55-145%)		105 %									
Surrogate: Toluene-d8 (80-117%)		103 %									

Polynuclear Aromatic Hydrocarbons by EPA Method 8270

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

Work Order: OPH0362
 Project: LAUREL BAY
 Project Number: EP 2362

Sampled: 08/14/06-08/16/06
 Received: 08/18/06

LABORATORY REPORT
Sample ID: 270 BIRCH-02 SIDE - Lab Number: OPH0362-08 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
Polynuclear Aromatic Hydrocarbons by EPA Method 8270 - Cont.											
85-01-8	Phenanthrene	41.4	U	ug/kg dry	41.4	175	1	08/24/06 22:08	LCS	EPA 8270C	6H22026
129-00-0	Pyrene	35.6	U	ug/kg dry	35.6	175	1	08/24/06 22:08	LCS	EPA 8270C	6H22026
<i>Surrogate: 2-Fluorobiphenyl (24-121%)</i>		94 %									
<i>Surrogate: Nitrobenzene-d5 (19-111%)</i>		87 %									
<i>Surrogate: Terphenyl-d14 (44-171%)</i>		123 %									

LABORATORY REPORT
Sample ID: 201 BALSAM-01 BOTTOM - Lab Number: OPH0362-09 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
General Chemistry Parameters											
NA	% Solids	85.4		%	0.100	0.100	1	08/18/06 17:19	AKA	EPA 160.3	6H21006
Volatile Organic Compounds by EPA Method 8260B											
71-43-2	Benzene	44.3	RL2,U	ug/kg dry	44.3	121	250	08/18/06 17:47	JLS	EPA 8260B	6H21019
100-41-4	Ethylbenzene	2370		ug/kg dry	51.2	121	250	08/18/06 17:47	JLS	EPA 8260B	6H21019
91-20-3	Naphthalene	16600		ug/kg dry	66.8	121	250	08/18/06 17:47	JLS	EPA 8260B	6H21019
108-88-3	Toluene	104	U	ug/kg dry	104	121	250	08/18/06 17:47	JLS	EPA 8260B	6H21019
1330-20-7	Xylenes, total	1810		ug/kg dry	62.8	121	250	08/18/06 17:47	JLS	EPA 8260B	6H21019
<i>Surrogate: 1,2-Dichloroethane-d4 (73-137%)</i>		101 %									
<i>Surrogate: 4-Bromo Fluorobenzene (59-118%)</i>		107 %									
<i>Surrogate: Dibromo Fluoromethane (55-145%)</i>		101 %									
<i>Surrogate: Toluene-d8 (80-117%)</i>		103 %									
Polynuclear Aromatic Hydrocarbons by EPA Method 8270											
83-32-9	Acenaphthene	2250		ug/kg dry	867	1960	10	08/24/06 22:36	LCS	EPA 8270C	6H22026
208-96-8	Acenaphthylene	114	U	ug/kg dry	114	196	1	08/24/06 22:36	LCS	EPA 8270C	6H22026
120-12-7	Anthracene	11200		ug/kg dry	624	1960	10	08/25/06 12:35	LCS	EPA 8270C	6H22026
56-55-3	Benzo (a) anthracene	21.2	U	ug/kg dry	21.2	196	1	08/24/06 22:36	LCS	EPA 8270C	6H22026
205-99-2	Benzo (b) fluoranthene	20.6	U	ug/kg dry	20.6	196	1	08/24/06 22:36	LCS	EPA 8270C	6H22026
207-08-9	Benzo (k) fluoranthene	20.6	U	ug/kg dry	20.6	196	1	08/24/06 22:36	LCS	EPA 8270C	6H22026
191-24-2	Benzo (g,h,i) perylene	20.3	U	ug/kg dry	20.3	196	1	08/24/06 22:36	LCS	EPA 8270C	6H22026
50-32-8	Benzò (a) pyrene	24.1	U	ug/kg dry	24.1	196	1	08/24/06 22:36	LCS	EPA 8270C	6H22026
90-12-0	1-Methylnaphthalene	21500		ug/kg dry	982	1960	10	08/25/06 12:35	LCS	EPA 8270C	6H22026
218-01-9	Chrysene	464	I	ug/kg dry	234	1960	10	08/24/06 22:36	LCS	EPA 8270C	6H22026
53-70-3	Dibenzo (a,h) anthracene	25.7	U	ug/kg dry	25.7	196	1	08/24/06 22:36	LCS	EPA 8270C	6H22026
206-44-0	Fluoranthene	706	I	ug/kg dry	281	1960	10	08/24/06 22:36	LCS	EPA 8270C	6H22026
86-73-7	Fluorene	2490		ug/kg dry	76.5	196	1	08/24/06 22:36	LCS	EPA 8270C	6H22026
193-39-5	Indeno (1,2,3-cd) pyrene	25.3	U	ug/kg dry	25.3	196	1	08/24/06 22:36	LCS	EPA 8270C	6H22026
91-57-6	2-Methylnaphthalene	25500		ug/kg dry	834	1960	10	08/24/06 22:36	LCS	EPA 8270C	6H22026
91-20-3	Naphthalene	4220		ug/kg dry	785	1960	10	08/24/06 22:36	LCS	EPA 8270C	6H22026
85-01-8	Phenanthrene	11100		ug/kg dry	461	1960	10	08/25/06 12:35	LCS	EPA 8270C	6H22026
129-00-0	Pyrene	1530	I	ug/kg dry	397	1960	10	08/24/06 22:36	LCS	EPA 8270C	6H22026
<i>Surrogate: 2-Fluorobiphenyl (24-121%)</i>		85 %									
<i>Surrogate: Nitrobenzene-d5 (19-111%)</i>		39 %									

Client: EPG, INC. PO BOX 1096 MT PLEASANT, SC 29465 Attn: JOHN MAHONEY	Work Order: OPH0362 Project: LAUREL BAY Project Number: EP 2362	Sampled: 08/14/06-08/16/06 Received: 08/18/06
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LABORATORY REPORT
Sample ID: 201 BALSAM-01 BOTTOM - Lab Number: OPH0362-09 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
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Polynuclear Aromatic Hydrocarbons by EPA Method 8270 - Cont.

Surrogate: Terphenyl-d14 (44-171%) 83 %

LABORATORY REPORT
Sample ID: 201 BALSAM-02 SIDE - Lab Number: OPH0362-10 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
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General Chemistry Parameters

NA	% Solids	91.6		%. .	0.100	0.100	1	08/18/06 17:19	AKA	EPA 160.3	6H21006
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Volatile Organic Compounds by EPA Method 8260B

71-43-2	Benzene	0.161	U	ug/kg dry	0.161	0.440	1	08/18/06 15:55	JLS	EPA 8260B	6H21019
100-41-4	Ethylbenzene	0.186	U	ug/kg dry	0.186	0.440	1	08/18/06 15:55	JLS	EPA 8260B	6H21019
91-20-3	Naphthalene	0.414	I	ug/kg dry	0.243	0.440	1	08/18/06 15:55	JLS	EPA 8260B	6H21019
108-88-3	Toluene	0.380	U	ug/kg dry	0.380	0.440	1	08/18/06 15:55	JLS	EPA 8260B	6H21019
1330-20-7	Xylenes, total	0.229	U	ug/kg dry	0.229	0.440	1	08/18/06 15:55	JLS	EPA 8260B	6H21019

Surrogate: 1,2-Dichloroethane-d4 (73-137%) 116 %

Surrogate: 4-Bromofluorobenzene (59-118%) 98 %

Surrogate: Dibromofluoromethane (55-145%) 106 %

Surrogate: Toluene-d8 (80-117%) 99 %

Polynuclear Aromatic Hydrocarbons by EPA Method 8270

83-32-9	Acenaphthene	80.8	U	ug/kg dry	80.8	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
208-96-8	Acenaphthylene	107	U	ug/kg dry	107	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
120-12-7	Anthracene	58.1	U	ug/kg dry	58.1	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
56-55-3	Benzo (a) anthracene	519		ug/kg dry	19.7	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
205-99-2	Benzo (b) fluoranthene	219		ug/kg dry	19.2	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
207-08-9	Benzo (k) fluoranthene	228		ug/kg dry	19.2	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
191-24-2	Benzo (g,h,i) perylene	833		ug/kg dry	18.9	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
50-32-8	Benzo (a) pyrene	923		ug/kg dry	22.4	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
90-12-0	1-Methylnaphthalene	91.5	U	ug/kg dry	91.5	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
218-01-9	Chrysene	577		ug/kg dry	21.8	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
53-70-3	Dibenz (a,h) anthracene	23.9	U	ug/kg dry	23.9	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
206-44-0	Fluoranthene	26.2	U	ug/kg dry	26.2	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
86-73-7	Fluorene	71.4	U	ug/kg dry	71.4	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
193-39-5	Indeno (1,2,3-cd) pyrene	718		ug/kg dry	23.6	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
91-57-6	2-Methylnaphthalene	77.7	U	ug/kg dry	77.7	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
91-20-3	Naphthalene	73.2	U	ug/kg dry	73.2	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
85-01-8	Phenanthrene	43.0	U	ug/kg dry	43.0	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026
129-00-0	Pyrene	37.0	U	ug/kg dry	37.0	182	1	08/24/06 23:04	LCS	EPA 8270C	6H22026

Surrogate: 2-Fluorobiphenyl (24-121%) 94 %

Surrogate: Nitrobenzene-d5 (19-111%) 79 %

Surrogate: Terphenyl-d14 (44-171%) 78 %

Client: EPG, INC.	Work Order: OPH0362	Sampled: 08/14/06-08/16/06
PO BOX 1096	Project: LAUREL BAY	Received: 08/18/06
MT PLEASANT, SC 29465	Project Number: EP 2362	
Attn: JOHN MAHONEY		

LABORATORY REPORT
Sample ID: 1472 CARDINAL 02 SIDE - Lab Number: OPH0362-14 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	By	Method	Batch
Polynuclear Aromatic Hydrocarbons by EPA Method 8270											
83-32-9	Acenaphthene	92.4	U	ug/kg dry	92.4	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
208-96-8	Acenaphthylene	122	U	ug/kg dry	122	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
120-12-7	Anthracene	66.5	U	ug/kg dry	66.5	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
56-55-3	Benzo (a) anthracene	22.6	U	ug/kg dry	22.6	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
205-99-2	Benzo (b) fluoranthene	21.9	U	ug/kg dry	21.9	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
207-08-9	Benzo (k) fluoranthene	21.9	U	ug/kg dry	21.9	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
191-24-2	Benzo (g,h,i) perylene	21.6	U	ug/kg dry	21.6	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
50-32-8	Benzo (a) pyrene	25.7	U	ug/kg dry	25.7	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
90-12-0	1-Methylnaphthalene	1050	U	ug/kg dry	1050	2080	10	08/25/06 00:56	LCS	EPA 8270C	6H22026
218-01-9	Chrysene	24.9	U	ug/kg dry	24.9	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
53-70-3	Dibenz (a,h) anthracene	27.4	U	ug/kg dry	27.4	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
206-44-0	Fluoranthene	30.0	U	ug/kg dry	30.0	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
86-73-7	Fluorene	81.6	U	ug/kg dry	81.6	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
193-39-5	Indeno (1,2,3-cd) pyrene	27.0	U	ug/kg dry	27.0	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
91-57-6	2-Methylnaphthalene	889	U	ug/kg dry	889	2080	10	08/25/06 00:56	LCS	EPA 8270C	6H22026
91-20-3	Naphthalene	837	U	ug/kg dry	837	2080	10	08/25/06 00:56	LCS	EPA 8270C	6H22026
85-01-8	Phenanthrene	49.2	U	ug/kg dry	49.2	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
129-00-0	Pyrene	42.4	U	ug/kg dry	42.4	208	1	08/25/06 00:56	LCS	EPA 8270C	6H22026
<i>Surrogate: 2-Fluorobiphenyl (24-121%)</i>											
<i>Surrogate: Nitrobenzene-d5 (19-111%)</i>											
<i>Surrogate: Terphenyl-d14 (44-171%)</i>											
		27 %									
		46 %									
		16 %		J1							

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

Work Order: OPH0362
Project: LAUREL BAY
Project Number: EP 2362

Sampled: 08/14/06-08/16/06
Received: 08/18/06

SAMPLE EXTRACTION DATA

Parameter	Lab Number	Wt/Vol Extracted	Extracted Vol	Date	Analyst	Method
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-01	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-02	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-03	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-04	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-05	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-06	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-07	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-08	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-09	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-10	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-11	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-12	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-13	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS
Polynuclear Aromatic Hydrocarbons by EPA Method 8270	OPH0362-14	30.0 g	1.0 mL	08/22/2006	YGM	EPA 3545 MS

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

Work Order: OPH0362
 Project: LAUREL BAY
 Project Number: EP 2362

Sampled: 08/14/06-08/16/06
 Received: 08/18/06

PROJECT QUALITY CONTROL DATA
Blank

Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number
General Chemistry Parameters					
% Solids	0.100	U	%.	6H21005	6H21005-BLK1
% Solids	0.100	U	%.	6H21006	6H21006-BLK1
Volatile Organic Compounds by EPA Method 8260B					
Benzene	0.183	U	ug/kg wet	6H21019	6H21019-BLK2
Benzene	0.183	U	ug/kg wet	6H21019	6H21019-BLK1
Ethylbenzene	0.212	U	ug/kg wet	6H21019	6H21019-BLK2
Ethylbenzene	0.212	U	ug/kg wet	6H21019	6H21019-BLK1
Naphthalene	0.276	U	ug/kg wet	6H21019	6H21019-BLK1
Naphthalene	0.276	U	ug/kg wet	6H21019	6H21019-BLK2
Toluene	0.432	U	ug/kg wet	6H21019	6H21019-BLK1
Toluene	0.432	U	ug/kg wet	6H21019	6H21019-BLK2
Xylenes, total	0.260	U	ug/kg wet	6H21019	6H21019-BLK1
Xylenes, total	0.260	U	ug/kg wet	6H21019	6H21019-BLK2
Surrogate: <i>I,2-Dichloroethane-d4</i>	48.6		ug/kg wet	6H21019	6H21019-BLK1
Surrogate: <i>I,2-Dichloroethane-d4</i>	50.1		ug/kg wet	6H21019	6H21019-BLK2
Surrogate: <i>4-Bromofluorobenzene</i>	50.6		ug/kg wet	6H21019	6H21019-BLK2
Surrogate: <i>4-Bromofluorobenzene</i>	50.0		ug/kg wet	6H21019	6H21019-BLK1
Surrogate: <i>Dibromoformmethane</i>	50.9		ug/kg wet	6H21019	6H21019-BLK1
Surrogate: <i>Dibromoformmethane</i>	51.0		ug/kg wet	6H21019	6H21019-BLK2
Surrogate: <i>Toluene-d8</i>	51.0		ug/kg wet	6H21019	6H21019-BLK2
Surrogate: <i>Toluene-d8</i>	51.2		ug/kg wet	6H21019	6H21019-BLK1
Polynuclear Aromatic Hydrocarbons by EPA Method 8270					
Acenaphthene	74.0	U	ug/kg wet	6H22026	6H22026-BLK1
Acenaphthylene	97.7	U	ug/kg wet	6H22026	6H22026-BLK1
Anthracene	53.2	U	ug/kg wet	6H22026	6H22026-BLK1
Benzo (a) anthracene	18.1	U	ug/kg wet	6H22026	6H22026-BLK1
Benzo (b) fluoranthene	17.6	U	ug/kg wet	6H22026	6H22026-BLK1
Benzo (k) fluoranthene	17.6	U	ug/kg wet	6H22026	6H22026-BLK1
Benzo (g,h,i) perylene	17.3	U	ug/kg wet	6H22026	6H22026-BLK1
Benzo (a) pyrene	20.6	U	ug/kg wet	6H22026	6H22026-BLK1
1-Methylnaphthalene	83.8	U	ug/kg wet	6H22026	6H22026-BLK1
Chrysene	20.0	U	ug/kg wet	6H22026	6H22026-BLK1
Dibenz (a,h) anthracene	21.9	U	ug/kg wet	6H22026	6H22026-BLK1
Fluoranthene	24.0	U	ug/kg wet	6H22026	6H22026-BLK1
Fluorene	65.4	U	ug/kg wet	6H22026	6H22026-BLK1
Indeno (1,2,3-cd) pyrene	21.6	U	ug/kg wet	6H22026	6H22026-BLK1
2-Methylnaphthalene	71.2	U	ug/kg wet	6H22026	6H22026-BLK1
Naphthalene	67.1	U	ug/kg wet	6H22026	6H22026-BLK1
Phenanthrene	39.4	U	ug/kg wet	6H22026	6H22026-BLK1
Pyrene	33.9	U	ug/kg wet	6H22026	6H22026-BLK1
Surrogate: <i>2-Fluorobiphenyl</i>	2870		ug/kg wet	6H22026	6H22026-BLK1

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

Work Order: OPH0362
 Project: LAUREL BAY
 Project Number: EP 2362

Sampled: 08/14/06-08/16/06
 Received: 08/18/06

PROJECT QUALITY CONTROL DATA
Blank - Cont.

Analyte	Blank Value	Q	Units	Q.C. Batch	Lab Number
Polynuclear Aromatic Hydrocarbons by EPA Method 8270					
Surrogate: Nitrobenzene-d5	2500		ug/kg wet	6H22026	6H22026-BLK1
Surrogate: Terphenyl-d14	3990		ug/kg wet	6H22026	6H22026-BLK1

PROJECT QUALITY CONTROL DATA
Duplicate

Analyte	Orig. Val.	Duplicate	Q	Units	RPD	RPD Limit	Q.C. Batch	Sample Duplicated
General Chemistry Parameters								
% Solids	93.8	94.0		%	0.2	15.9	6H21006	OPH0362-07
% Solids	90.1	90.4		%	0.3	15.9	6H21005	OPH0361-01
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<0.320	0.320	U	ug/kg dry	30	6H21019	OPH0363-02	
Ethylbenzene	<0.370	0.370	U	ug/kg dry	30	6H21019	OPH0363-02	
Naphthalene	<0.483	0.483	U	ug/kg dry	30	6H21019	OPH0363-02	
Toluene	<0.755	0.755	U	ug/kg dry	30	6H21019	OPH0363-02	
Xylenes, total	<0.454	0.454	U	ug/kg dry	30	6H21019	OPH0363-02	
Surrogate: 1,2-Dichloroethane-d4	58.3			ug/kg dry		6H21019	OPH0363-02	
Surrogate: 4-Bromofluorobenzene	50.6			ug/kg dry		6H21019	OPH0363-02	
Surrogate: Dibromoefluoromethane	52.6			ug/kg dry		6H21019	OPH0363-02	
Surrogate: Toluene-d8	51.1			ug/kg dry		6H21019	OPH0363-02	

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

Work Order: OPH0362
 Project: LAUREL BAY
 Project Number: EP 2362

Sampled: 08/14/06-08/16/06
 Received: 08/18/06

PROJECT QUALITY CONTROL DATA
LCS

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec.	Target Range	Q.C. Batch
General Chemistry Parameters							
% Solids	380	382		%.	101	90 - 110	6H21006
% Solids	380	382		%.	101	90 - 110	6H21005
Volatile Organic Compounds by EPA Method 8260B							
Benzene	50.0	48.4		ug/kg wet	97	84 - 113	6H21019
Benzene	50.0	47.0		ug/kg wet	94	84 - 113	6H21019
Ethylbenzene	50.0	47.2		ug/kg wet	94	85 - 124	6H21019
Ethylbenzene	50.0	45.0		ug/kg wet	90	85 - 124	6H21019
Naphthalene	50.0	55.1		ug/kg wet	110	90 - 137	6H21019
Naphthalene	50.0	53.8		ug/kg wet	108	90 - 137	6H21019
Toluene	50.0	48.8		ug/kg wet	98	82 - 112	6H21019
Toluene	50.0	49.0		ug/kg wet	98	82 - 112	6H21019
Xylenes, total	150	137		ug/kg wet	91	84 - 127	6H21019
Xylenes, total	150	144		ug/kg wet	96	84 - 127	6H21019
Surrogate: 1,2-Dichloroethane-d4	50.0	51.7		ug/kg wet	103	73 - 137	6H21019
Surrogate: 1,2-Dichloroethane-d4	50.0	50.2		ug/kg wet	100	73 - 137	6H21019
Surrogate: 4-Bromofluorobenzene	50.0	50.7		ug/kg wet	101	59 - 118	6H21019
Surrogate: 4-Bromofluorobenzene	50.0	51.2		ug/kg wet	102	59 - 118	6H21019
Surrogate: Dibromoformmethane	50.0	51.1		ug/kg wet	102	55 - 145	6H21019
Surrogate: Dibromoformmethane	50.0	51.4		ug/kg wet	103	55 - 145	6H21019
Surrogate: Toluene-d8	50.0	52.0		ug/kg wet	104	80 - 117	6H21019
Surrogate: Toluene-d8	50.0	51.3		ug/kg wet	103	80 - 117	6H21019
Polynuclear Aromatic Hydrocarbons by EPA Method 8270							
Acenaphthene	3330	2880		ug/kg wet	86	51 - 124	6H22026
Acenaphthylene	3330	3430		ug/kg wet	103	58 - 124	6H22026
Anthracene	3330	3190		ug/kg wet	96	61 - 122	6H22026
Benzo (a) anthracene	3330	2940		ug/kg wet	88	51 - 139	6H22026
Benzo (b) fluoranthene	3330	2610		ug/kg wet	78	57 - 129	6H22026
Benzo (k) fluoranthene	3330	2860		ug/kg wet	86	53 - 127	6H22026
Benzo (g,h,i) perylene	3330	3560		ug/kg wet	107	34 - 123	6H22026
Benzo (a) pyrene	3330	2840		ug/kg wet	85	65 - 109	6H22026
1-Methylnaphthalene	3330	2700		ug/kg wet	81	18 - 115	6H22026
Chrysene	3330	2960		ug/kg wet	89	55 - 130	6H22026
Dibenz (a,h) anthracene	3330	3630		ug/kg wet	109	48 - 125	6H22026
Fluoranthene	3330	2810		ug/kg wet	84	58 - 129	6H22026
Fluorene	3330	3360		ug/kg wet	101	61 - 128	6H22026
Indeno (1,2,3-cd) pyrene	3330	3740		ug/kg wet	112	44 - 126	6H22026
2-Methylnaphthalene	3330	2940		ug/kg wet	88	20 - 125	6H22026
Naphthalene	3330	2690		ug/kg wet	81	23 - 118	6H22026
Phenanthrene	3330	3140		ug/kg wet	94	61 - 120	6H22026

Client: EPG, INC.	Work Order: OPH0362	Sampled: 08/14/06-08/16/06
PO BOX 1096	Project: LAUREL BAY	Received: 08/18/06
MT PLEASANT, SC 29465	Project Number: EP 2362	
Attn: JOHN MAHONEY		

PROJECT QUALITY CONTROL DATA
LCS - Cont.

Analyte	Known Val.	Analyzed Val	Q	Units	% Rec.	Target Range	Q.C. Batch
Polynuclear Aromatic Hydrocarbons by EPA Method 8270							
Pyrene	3330	3550		ug/kg wet	107	45 - 141	6H22026
Surrogate: 2-Fluorobiphenyl	3330	3450		ug/kg wet	104	24 - 121	6H22026
Surrogate: Nitrobenzene-d5	3330	2870		ug/kg wet	86	19 - 111	6H22026
Surrogate: Terphenyl-d14	3330	3760		ug/kg wet	113	44 - 171	6H22026

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

Work Order: OPH0362
Project: LAUREL BAY
Project Number: EP 2362

Sampled: 08/14/06-08/16/06
Received: 08/18/06

CERTIFICATION SUMMARY

TestAmerica - Orlando, FL

Method	Matrix	Nelac	South Carolina
EPA 160.3	Solid/Soil		
EPA 8260B	Solid/Soil	X	X
EPA 8270C	Solid/Soil	X	X

DATA QUALIFIERS AND DEFINITIONS

- I Analyte detected at a level less than the reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). Concentrations in this range are estimated.
- J1 Surrogate recovery limits have been exceeded.
- RL2 Reporting limit raised due to high concentrations of hydrocarbons.
- U The compound was analyzed for but not detected

ADDITIONAL COMMENTS

When insufficient sample volume is received for Matrix Spike and Matrix Spike Duplicate, Laboratory Control Spike and Laboratory Control Spike Duplicate data is used for batch QC.

Results are reported on a wet weight basis unless otherwise noted.

TestAmerica

ANALYTICAL TESTING CORPORATION

4310 East Anderson Road • Orlando, FL 32812 • 407-851-2560 • Fax: 407-856-0886 • 800-851-

Client: EPG, INC.

Project: OPH0362

Shipped By: Fed Ex

Tracking Number: 858282354468

Cooler Received On: 08/18/06 09:20

And Opened On (Date/time):

8/18/06

Received By: Jessica Batura

Logged in by: Jessica Batura

Were custody seals on the outside of cooler? YES / NO / If Yes # _____ Location _____

Were custody seals intact? YES / NO / N/A / (no seals present)

Chain of Custody Complete? YES / NO / If No Discrepancy _____

Cooler Temperture When Opened: 5.00 Degrees Celsius

Temperture Blank Included: YES / NO /

Packing Material: Bubblewrap / NONE / Other: _____

Received on Ice: YES / NO / Other: _____ Total # Of Containers: 20 # Vials 42

Any Bottles Broken? YES / NO / If Yes Which One(s)? _____

Any Missing Samples? YES / NO / If Yes Which One(s)? _____

pH Levels: H₂SO₄ <=2? _____ HNO₃ <=2? _____ HCl <=2? _____ NaOH >=10? _____

Of Containers Unpreserved between 6 and 8? 48, 14 methanol

Any Air Bubbles in VOA Vials? YES / NO / N/A / (no VOA vials received)

Was there enough sample shipped in each container? YES / NO /

Correct Preservatives Used? YES / NO / If No, please explain: _____

Project Manager: Shali Brown

Corrective Actions Taken

1468 cardinal oz side - 1 jar had no sample date or time,

1472 cardinal at bottom - 1 jar had no sample time,

TestAmerica

INCORPORATED

6PH0562 page 1 of 2

To assist us in using the proper analytical methods,
is this work being conducted for regulatory purposes?
Compliance Monitoring

Client Name EPG

Client #: 2411

Address:

City/State/Zip Code:

Project Manager: John Mahaney

Telephone Number: / Fax: 8260

Sampler Name: (Print Name) Al Manucy

Sampler Signature: Al Manucy

TAT
 Standard
 Rush (surcharges may apply)

Date Needed: _____

Fax Results: Y N

SAMPLE ID

441-01	Bottom	8-14	1015
441-02	Side	8-14	1015
143LBB-01	Bottom	8-14	1400
143LBB-02	Side	8-14	1400
143LBB-03	Bottom	8-14	1430
143LBB-04	Side	8-14	1430
270 Birch - 01	Bottom	8-15	8:45
270 Birch - 02	Side	8-15	8:50
201 Balsam-01	Bottom	8-15	1340
201 Balsam-02	Side	8-15	1345

Matrix	Preservation & # of Containers					
	SL - Sludge	DW - Drinking Water	GW - Groundwater	S - Soil/Solid	WW - Wastewater	Other
HNO ₃						
HCl						
NaOH						
H ₂ SO ₄						
Methanol						
None						
Other (Specify)						

Project Name: LAUREL BAY

Project #: EP 2362

Site/Location ID: _____ State: _____

Report To: _____

Invoice To: _____

Quote #: _____ PO#: _____

QC Deliverables
 None
 Level 2
 (Batch QC)
 Level 3
 Level 4
 Other: _____

REMARKS

b1
b2
b3
b4
b5
b6
b7
b8
b9
b10

Special Instructions:

Report in dry weight

LABORATORY COMMENTS:

Init Lab Temp:

50

Rec Lab Temp:

Custody Seals: Y N N/A
 Bottles Supplied by Test America: Y N
 Method of Shipment: Fed Ex to TA - Okinawa
 8582 8235 4498

Relinquished By: A. Manucy

Date: 8/17

Time: 1715

Received By: J. Brunecky

Date: 8/17/96

Time: 1715

Relinquished By: J. Brunecky

Date: 8/17

Time: 1730

Received By: J. Brunecky

Date: 8/18

Time: 9:20

Relinquished By:

Date:

Time:

Received By:

Date:

Time:

Appendix C
Laboratory Analytical Report - Initial Groundwater

ANALYTICAL RESULTS

Project: LAUREL BAY 7/30/08

Pace Project No.: 9224584

Sample: 201 BALSAM A	Lab ID: 9224584004	Collected: 07/30/08 11:00	Received: 08/01/08 07:55	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							
Nitrobenzene-d5 (S)	53 %		50-150	1	08/04/08 00:00	08/13/08 08:44	4165-60-0	
2-Fluorobiphenyl (S)	52 %		50-150	1	08/04/08 00:00	08/13/08 08:44	321-60-8	
Terphenyl-d14 (S)	64 %		50-150	1	08/04/08 00:00	08/13/08 08:44	1718-51-0	
8260 MSV Low Level	Analytical Method: EPA 8260							
Benzene	4.5 ug/L		1.0	1		08/05/08 16:45	71-43-2	
Ethylbenzene	12.9 ug/L		1.0	1		08/05/08 16:45	100-41-4	
Naphthalene	62.8 ug/L		2.0	1		08/05/08 16:45	91-20-3	
Toluene	ND ug/L		1.0	1		08/05/08 16:45	108-88-3	
m&p-Xylene	10.0 ug/L		2.0	1		08/05/08 16:45	1330-20-7	
o-Xylene	ND ug/L		1.0	1		08/05/08 16:45	95-47-6	
4-Bromofluorobenzene (S)	98 %		87-109	1		08/05/08 16:45	460-00-4	
Dibromofluoromethane (S)	95 %		85-115	1		08/05/08 16:45	1868-53-7	
1,2-Dichloroethane-d4 (S)	98 %		79-120	1		08/05/08 16:45	17060-07-0	
Toluene-d8 (S)	100 %		70-120	1		08/05/08 16:45	2037-26-5	
Sample: 293 BIRCH A	Lab ID: 9224584005	Collected: 07/30/08 11:30	Received: 08/01/08 07:55	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	08/04/08 00:00	08/13/08 09:07	83-32-9	
Acenaphthylene	ND ug/L		1.5	1	08/04/08 00:00	08/13/08 09:07	208-96-8	
Anthracene	ND ug/L		0.050	1	08/04/08 00:00	08/13/08 09:07	120-12-7	
Benzo(a)anthracene	ND ug/L		0.10	1	08/04/08 00:00	08/13/08 09:07	56-55-3	
Benzo(a)pyrene	ND ug/L		0.20	1	08/04/08 00:00	08/13/08 09:07	50-32-8	
Benzo(b)fluoranthene	ND ug/L		0.30	1	08/04/08 00:00	08/13/08 09:07	205-99-2	
Benzo(g,h,i)perylene	ND ug/L		0.20	1	08/04/08 00:00	08/13/08 09:07	191-24-2	
Benzo(k)fluoranthene	ND ug/L		0.20	1	08/04/08 00:00	08/13/08 09:07	207-08-9	
Chrysene	ND ug/L		0.10	1	08/04/08 00:00	08/13/08 09:07	218-01-9	
Dibenz(a,h)anthracene	ND ug/L		0.20	1	08/04/08 00:00	08/13/08 09:07	53-70-3	
Fluoranthene	ND ug/L		0.30	1	08/04/08 00:00	08/13/08 09:07	206-44-0	
Fluorene	ND ug/L		0.31	1	08/04/08 00:00	08/13/08 09:07	86-73-7	
Indeno(1,2,3-cd)pyrene	ND ug/L		0.20	1	08/04/08 00:00	08/13/08 09:07	193-39-5	
1-Methylnaphthalene	ND ug/L		2.0	1	08/04/08 00:00	08/13/08 09:07	90-12-0	
2-Methylnaphthalene	ND ug/L		2.0	1	08/04/08 00:00	08/13/08 09:07	91-57-6	
Naphthalene	ND ug/L		1.5	1	08/04/08 00:00	08/13/08 09:07	91-20-3	
Phenanthrene	ND ug/L		0.20	1	08/04/08 00:00	08/13/08 09:07	85-01-8	
Pyrene	ND ug/L		0.10	1	08/04/08 00:00	08/13/08 09:07	129-00-0	
Nitrobenzene-d5 (S)	56 %		50-150	1	08/04/08 00:00	08/13/08 09:07	4165-60-0	
2-Fluorobiphenyl (S)	55 %		50-150	1	08/04/08 00:00	08/13/08 09:07	321-60-8	
Terphenyl-d14 (S)	79 %		50-150	1	08/04/08 00:00	08/13/08 09:07	1718-51-0	
8260 MSV Low Level	Analytical Method: EPA 8260							
Benzene	0.0 ug/L			1		08/06/08 12:30	71-43-2	

Date: 08/14/2008 04:21 PM

REPORT OF LABORATORY ANALYSIS

Page 7 of 29

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Appendix D
Analytical Data – Permanent Well Groundwater

TABLE 4-1
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
REPORT OF FINDINGS - LAUREL BAY MILITARY HOUSING
MCAS BEAUFORT, SOUTH CAROLINA
PAGE 1 OF 12

201 Balsam Street				
LOCATION	South Carolina	LBMW101	LBMW102	LBMW103
SAMPLE ID	State Screening	BEA-LB201GW1010210	BEA-LB201GW1020210	BEA-LB201GW1030210
SAMPLE DATE	Values ⁽¹⁾	20100222	20100222	20100222
PAHS (UG/L)				
1-METHYLNAPHTHALENE	10	0.566 U	1.45	0.566 U
2-METHYLNAPHTHALENE	10	0.566 U	0.562 J	0.566 U
ACENAPHTHENE	NC	0.585 U	0.554 U	0.585 U
ACENAPHTHYLENE	NC	0.377 U	0.357 U	0.377 U
ANTHRACENE	NC	0.377 U	0.357 U	0.377 U
BENZO(A)ANTHRACENE	10	0.377 U	0.357 U	0.377 U
BENZO(A)PYRENE	10	0.377 U	0.357 U	0.377 U
BENZO(B)FLUORANTHENE	10	0.377 U	0.357 U	0.377 U
BENZO(G,H,I)PERYLENE	NC	0.377 U	0.357 U	0.377 U
BENZO(K)FLUORANTHENE	10	0.377 U	0.357 U	0.377 U
CHRYSENE	10	0.377 U	0.357 U	0.377 U
DIBENZO(A,H)ANTHRACENE	10	0.377 UJ	0.357 UJ	0.377 UJ
FLUORANTHENE	NC	0.377 U	0.357 U	0.377 U
FLUORENE	NC	0.377 U	0.401 J	0.377 U
INDENO(1,2,3-CD)PYRENE	NC	0.377 U	0.357 U	0.377 U
PHENANTHRENE	NC	0.377 U	0.242 J	0.377 U
PYRENE	NC	0.566 U	0.536 U	0.566 U
VOCS (UG/L)				
BENZENE	5	0.6 U	0.62 J	0.6 U
ETHYLBENZENE	700	0.5 U	1.95	0.5 U
METHYL TERT-BUTYL ETHER ⁽²⁾	40			
NAPHTHALENE	25	0.5 U	1.52	0.5 U
TOLUENE	1000	0.5 U	0.5 U	0.5 U
TOTAL XYLEMES	10000	0.6 U	0.6 U	0.6 U

Appendix E
Regulatory Correspondence

BOARD:
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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
Paul C. Aughtry, III
Glenn A. McCall
Coleman F. Buckhouse, MD

2 November 2007

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

Re: MCAS – Laurel Bay Housing – 201 Balsam
Site ID # 03742
UST Closure Reports received 15 August 2007
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 sampling proposal be generated for this site.

Please submit a groundwater sampling proposal to conduct the necessary assessment and/or remedial measures at this site no later than 29 February 2007. Should you have any questions, please contact me at 803-898-3553 (office phone), 803-898-2893 (fax) or bishopma@dhec.sc.gov.

Sincerely,



Michael Bishop, Hydrogeologist
Groundwater Quality Section
Bureau of Water

cc: Region 8 District EQC
United States Marine Corps Air Station, Commanding Officer, Attention: S-4 NREAO (William Drawdy), P.O.
Box 55001, Beaufort, SC 29904-5001
Technical File



C. Earl Hunter, Commissioner

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

8 December 2008

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

Re: MCAS – Laurel Bay Housing – 201 Balsam
Site ID # 03742
Groundwater Sampling Results received 6 November 2008
Beaufort County

Dear Mr. Ehde:

The Department has completed review of the referenced document. The submitted analytical results indicate that chemicals of concern are above established Risk-Based Screening Levels and additional investigative and/or remedial actions are warranted.

The Department recommends that a permanent groundwater monitoring well be installed to verify the results of the temporary groundwater monitoring well. Please submit the proposal to conduct the necessary assessment and/or remedial measures at this site no later than 29 February 2009.

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

Sincerely,

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

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

Received 4/14/11

BOARD:
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Bureau of Land and Waste Management
 Division of Waste Management

April 6, 2011

Commanding Officer
 Attention: NREAO Mr. William A. Drawdy
 United States Marine Corps Air Station
 Post Office Box 55001
 Beaufort, South Carolina 29904-5001

Facility: Marine Corps Air Station, Beaufort
 EPA ID #: SC1 750 216 169

RE: Review
 Report of Findings for Laurel Bay Military Housing Area
 Dated July 2010 and
 Well Installation and Sampling Work Plan for
 Laurel Bay Military Housing
 Dated March 2011

Dear Mr. Drawdy:

The South Carolina Department of Health and Environmental Control (the Department) received the above referenced Report of Findings for Laurel Bay Military Housing Area on July 23, 2010 and Addendum to Well Installation and Sampling Work Plan for Laurel Bay Military Housing on March 4, 2011. Heating oil stored in underground storage tanks (USTs) historically heated homes in Laurel Bay. The USTs are no longer used for storing heating oil, and MCAS Beaufort is currently removing these USTs and evaluating their integrity. This Report of Findings and Well Installation and Sampling Work Plan document the groundwater conditions following limited soil sampling and temporary monitoring wells showed evidence of groundwater contamination related to some of the heating oil USTs.

Based on this review, the Department has generated the attached memorandum by Michael W. Danielsen from the Federal Facilities Groundwater Section. The response to the Department's comments may be addressed by submitting revised pages to be inserted into the original document, or by submitting another document. If new or revised pages

are submitted, please indicate whether each submitted page is a revision to an existing page in the original document or a new page not contained in the original document. Each revised page should be coded. For example, 32(R-7/30/07) would be page 32, revised 7/30/07. In addition to revisions, please provide a summary of the comment responses and revision pages.

Please note that the Department's review is based on available information provided by the MCAS. Any information found to be contradictory to this decision might require additional action. Furthermore, the Department retains the right to request further investigation if deemed necessary.

If you have any questions regarding this issue, please contact me at (803) 896-6675 or petruslb@dhec.sc.gov.

Sincerely,



Laurel B. Petrus, Environmental Engineer Associate
Corrective Action Engineering Section

Attachments

cc: Michael W. Danielsen, Hydrogeologist
Russell Berry, EQC Region 8
Dan Owens, NAVFAC SE



South Carolina Department of Health
and Environmental Control

**Federal Facilities
Groundwater Section**
2600 Bull Street
Columbia, SC 29201
Telephone (803) 896-4000
Fax (803) 896-4002

MEMORANDUM

TO: Laurel Petrus, Environmental Engineer Associate
Corrective Action Engineering Section
Division of Waste Management
Bureau of Land and Waste Management

FROM: Michael W. Danielsen, Hydrogeologist
Federal Facilities Groundwater Section
Division of Waste Management
Bureau of Land and Waste Management

DATE: April 5, 2011

RE: Marine Corps Air Station (MCAS)
Beaufort, South Carolina
SC1 750 216 169

Report of Findings for Laurel Bay Military Housing Area
Dated July 2010 (Received July 23, 2010)

Addendum to Well Installation and Sampling Work Plan for
Laurel Bay Military Housing Area
Dated March 2011 (Received March 4, 2011)

The above referenced Findings Report provides information from the installation of 35 monitoring wells as part of an ongoing effort to remove underground residential heating oil tanks (USTs) from the Laurel Bay Military Housing Area.

The Addendum to Well Installation and Sampling Work Plan provides the proposed well installation locations and sampling recommended in the Finding Report.

The documents referenced above have been reviewed with respect to the S.C. Pollution Control Act 48-1-10 and the S.C. Hazardous Waste Management Act, and other appropriate guidance documents.

Please see the attached comments.

CC: BLWM file # 50500

**Report of Findings for Laurel Bay Military Housing Area and
Addendum to Well Installation and Sampling Work Plan for
Laurel Bay Military Housing Area
MCAS**
Federal Facilities Groundwater Section
Comments prepared by
Michael W. Danielsen April 5, 2011

Report of Findings for Laurel Bay Military Housing Area

1. Page 11 Section 6.0, Recommendations

This section recommends no further action (NFA), annual monitoring, or expansion of the monitoring well network as follows:

NFA for:

- 201 Balsam Street,
- 390 Acorn Drive,
- 391 Acorn Drive,
- 299 Birch Lane,
- 1118 Iris Lane,

Annual groundwater monitoring for benzene, toluene, ethylene, xylene (BTEX), naphthalene, and polyaromatic hydrocarbons (PAH) at:

- 398 Acorn Drive,
- 388 Acorn Drive,
- 441 Elderberry Lane,
- 282 Birch Road,
- 1054 Gardenia Drive,

Expansion of the monitoring well networks and performance of annual groundwater monitoring for 1-methylnaphthalene, 2-methylnaphthalene, and/or naphthalene at the following:

- 437 Elderberry Lane- Install three additional monitoring wells downgradient of MW133.
- 1472 Cardinal Lane- Install three additional monitoring wells sidegradient and downgradient of MW130 to bound the contaminant plume.

In addition, all new monitoring wells will be sampled for BTEX, naphthalene, and PAH.