SUMMARY REPORT 269 GARDENIA DRIVE (FORMERLY 1045 GARDENIA DRIVE) 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



Summary Report 269 Gardenia Drive (Formerly 1045 Gardenia Drive) Laurel Bay Military Housing Area, Marine Corps Air Station Beaufort June 2021

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List of Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
СТО	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 269 Gardenia Drive (Formerly 1045 Gardenia Drive). 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*



Division (SCDHEC, 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, 2013) and were revised again in Revision 3.0 (SCDHEC, 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 269 Gardenia Drive (Formerly 1045 Gardenia Drive). Details regarding the soil investigation at this site are provided in the *SCDHEC UST Assessment Report – 1045 Gardenia Drive* (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 August 2, 2007, a single 280 gallon heating oil UST was removed from the front of the house at 269 Gardenia Drive (Formerly 1045 Gardenia Drive). The former UST location is indicated in the figure of the UST Assessment Report (Appendix B). The UST was 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 depth to the base of the UST was 5'8" bgs and a single soil sample was collected from that depth. An additional soil sample was collected from the side of the excavation at a depth of 3'10" bgs. The samples were collected from the fill port side of the former UST to represent a worst case scenario.

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 269 Gardenia Drive (Formerly 1045 Gardenia Drive) were greater than the SCDHEC RBSLs, which indicated further investigation was required. In a letter dated August 20, 2008, SCDHEC requested an IGWA for 269 Gardenia Drive (Formerly 1045 Gardenia Drive) 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 29, 2008, a temporary monitoring well was installed at 269 Gardenia Drive (Formerly 1045 Gardenia Drive), 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 in the figure 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 well. 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 well was abandoned in accordance with the South Carolina Well Standards and Regulations R.61-71 (SCDHEC, 2016).

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 269 Gardenia Drive (Formerly 1045 Gardenia Drive) 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 UST at concentrations that present a potential risk to human health and the environment. Field forms are provided in the *Investigation of Ground Water at Leaking Heating Oil UST Sites Report* (Resolution Consultants, 2008).

3.0 **PROPERTY STATUS**

Based on the analytical results for groundwater, SCDHEC made the determination that NFA was required for 269 Gardenia Drive (Formerly 1045 Gardenia Drive). 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 – 1045 Gardenia Drive, Laurel Bay Military Housing Area*, November 2008.

Resolution Consultants, 2008. 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, November 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 1Laboratory Analytical Results - Soil269 Gardenia Drive (Formerly 1045 Gardenia Drive)Laurel Bay Military Housing AreaMarine Corps Air Station BeaufortBeaufort, South Carolina

		Results Samples Collected 08/02/07		
Constituent	SCDHEC RBSLs ⁽¹⁾	1045 Gardenia Bottom 01	1045 Gardenia Side 02	
Volatile Organic Compounds Analyzed	l by EPA Method 8260B (mg/kg)			
Benzene	0.003	0.000593	0.000333	
Ethylbenzene	1.15	0.00320	ND	
Naphthalene	0.036	0.0507	ND	
Toluene	0.627	0.00170	0.00112	
Xylenes, Total	13.01	0.00338	0.000400	
Semivolatile Organic Compounds Ana	lyzed by EPA Method 8270C (mg/kg)		-	
Benzo(a)anthracene	0.66	ND	ND	
Benzo(b)fluoranthene	0.66	ND	ND	
Benzo(k)fluoranthene	0.66	ND	ND	
Chrysene	0.66	0.0677	ND	
Dibenz(a,h)anthracene	0.66	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 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 269 Gardenia Drive (Formerly 1045 Gardenia Drive) Laurel Bay Military Housing Area Marine Corps Air Station Beaufort Beaufort, South Carolina

Constituent	SCDHEC RBSLs ⁽¹⁾	Site-Specific Groundwater VISLs (µg/L) ⁽²⁾	Results Sample Collected 07/29/08
Volatile Organic Compounds Analyzed	l by EPA Method 8260B (μg/L)	
Benzene	5	16.24	ND
Ethylbenzene	700	45.95	ND
Naphthalene	25	29.33	ND
Toluene	1000	105,445	ND
Xylenes, Total	10,000	2,133	ND
Semivolatile Organic Compounds Ana	lyzed by EPA Method 822	70D (µg/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 3.1 (SCDHEC, February 2016).

 $^{(2)}$ 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

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

DateReceiven

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

<u>I.</u>	OWNERSHIP OF UST (S)	• · · ·
Beaufo	xt Military Complex FAMILY. Housing	۲
1510	LAUREL BAY BLUD.	
Mailing Addres	ufort SC 29906	
City 843	State Zip Code	1. Paulo
Area Code	Telephone Number Contac	ct Person

<u> </u>	TIFICATION AND LOCA	TION	
NA			
Permit I.D. # Actus	LEND LEASE CO.	NSTRUCTION	
Facility Name or Company Site	Identifier	<u> </u>	
Street Address or State Road (as	annlicable		—
Begy Fort SC	29906	Ren fort	ŀ
City	ZIP	County	-
	· · · · · · · · · · · · · · · · · · ·		

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Attachment 2 III. INSURANCE INFORMATION

Insurance Statement

The petroleum release reported to DHEC on μ/μ at Permit ID # <u>may</u> 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. <u>This</u> <u>section must be completed.</u>
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

· ·			Tank 1	Tai	Tank 3	Tank 4	Tank 5	Tank
A.	Product(ex. Gas, Kerosene)		# Z DIESEL		· · · · ·	· · · · · · · · · · · · · · · · · · ·		
B.	Capacity(ex. 1k, 2k)		350g.					
C.	Age							
D.	Construction Material(ex. Steel, FRP)		steel					
2.	Month/Year of Last Use							
	Depth (ft.) To Base of Tank		68''			·		
ł.	Spill Prevention Equipment Y/N		N					
•	Overfill Prevention Equipment Y/N		N	+				
	Method of Closure Removed Filled	R	emored					
	Date Tanks Removed/Filled							
	Visible Corrosion or Pitting Y/N	0	-2- +					
	Visible Holes Y/N	<u> </u>	J					
			Y					
	Method of disposal for any USTs removed from t	he gro	und (atta	ich dispo	sal mani	fests)	4	<u> </u>
	Recycling - Seconst	a.l					- 	

N. Method of disposal for any liquid petroleum, sludges, or wastewaters removed from the USTs (attach disposal manifests)

Republic - BROADHURST LANDFILL Solidification & Subtitle D LANDFILL Solidification

O. If any corrosion, pitting, or holes were observed, describe the location and extent for each UST TANK HAD PREVIOUSLY BEEN CUT OPEN AND FILLED W/SAND

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VI. PIPI INFORMATION

	ļ .	Ì				
n Material(ex. Steel, FRP)	Stee.					
om UST to Dispenser	NIA					
Dispensers						
tem Pressure or Suction	=0=					
Removed from the Ground? Y/N	PUMP					
rosion or Pitting Y/N	4					
es Y/N	N					
-	N					
	on Material(ex. Steel, FRP) om UST to Dispenser Dispensers stem Pressure or Suction Removed from the Ground? Y/N rosion or Pitting Y/N es Y/N	Image: Image: Steel, FRP)SteelImage: Steel, Steel, FRP) $N A$ Image: Dispensers $N A$ Dispensers $-O -$ Image: Steel, Steel, Steel, Steel, N A $-O -$ Image: Steel, Steel, Steel, Steel, Steel, N A $-O -$ Image: Steel, Steel, Steel, Steel, Steel, N A $-O -$ Image: Steel, Steel, Steel, Steel, Steel, N A $-O -$ Image: Steel, Steel, Steel, Steel, Steel, N A $-O -$ Image: Steel, Steel	Im Material(ex. Steel, FRP) $5teel$ Im UST to Dispenser N/A Dispensers $-0 -$ Interview of Suction $Electron Removed from the Ground? Y/N V Im Step Y/N N Im Step Y/N N $	Im Material (ex. Steel, FRP) $5teel$ Im UST to Dispenser $N A$ Dispensers $-0 -$ Interview of Suction $-0 -$ Interview of Suction $Electral Number V Interview of Suction V Interview of Suction of Pitting V/N V Interview of Suction of Pitting V/N N Interview of Suction of Pitting V/N $	Im Material(ex. Steel, FRP) $5feel$ Im UST to Dispenser $N h$ Dispensers $-0 -$ Intermediation $-0 -$	Im Material(ex. Steel, FRP) $5teel$ Im UST to Dispenser $N A$ Dispensers $N A$ Dispensers $-0 -$ Im Pressure or Suction $-0 -$ Removed from the Ground? Y/N V rosion or Pitting Y/N V Im Stem Pressure or Suction V N V N N

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

INOR COPROSION WAS present on Fillpipe And Vent pipe. -MINOR

VII. BRIEF SITE DESCRIPTION AND HISTORY

Home Heating Dil TANK - RESIDENTIAL

VIII. SITE COM TIONS

	· · · · · · · · · · · · · · · · · · ·	Yes	No	Unk
	· · · · · · · · · · · · · · · · · · ·			
A. We	ere any petroleum-stained or contaminated soils found in the UST			
EXC	availon, son borings, irenches, or monitoring weils?			
If y	es, indicate depth and location on the site map.		×	4
B. We tren	re any petroleum odors detected in the excavation, soil borings, ches, or monitoring wells?			•
If ye mild	es, indicate location on site map and describe the odor (strong, l, etc.)		×	
C. Was	s water present in the UST excavation, soil borings, or trenches?			
If ye	s, how far below land surface (indicate location and depth)?		x	
D. Did	contaminated soils remain stockpiled on site after closure?			
If ye	s, indicate the stockpile location on the site map.			
Nam	e of DHEC representative authorizing soil removal:			
			X .	
E. Was or bo	a petroleum sheen or free product detected on any excavation ring waters?			
If ye	s, indicate location and thickness.		x	

IX. SAM E INFORMATION

A.

SCDHEC Lab Certification Number DW: 54009002

<u>B.</u>							
Sample #	Location	Sample Type (Soil/Water)	Soil Type (Sand/Clay)	Depth*	Date/Time of Collection	Collected by	OVA #
					8-2-7	M Jones	
1	BOTTOM	5	SANd	68''	11:30-4.14	AMANHEL	ND
2	SIDE	5	SAND	46'	11:30-A.M	A-MANNET	ND
3							
4							
5							
6							
7			-				
8					·		
9			· · · · · · · · · · · · · · · · · · ·				
10 .							
11							
12	•						·
13	•						
14					· · ·		
15		·					
16		· · · ·					
17							
18							
19						-	
20							

* = Depth Below the Surrounding Land Surface

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SAMPLING METHODOLG

X.]

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.

Volatile ORGANic Compounds Method 8260 B Reservative: 24 Sodium Bisulfate 1eA Poly AROMATIC Hydra CARBONS EPA METHON 8270 PRESERVATIVE No

DNC SIDEWALF And Bottom ONE from tANK Secured were MANATIO) AND Shipped en toned in AP Well AN INSURATED Cooler w IČE

XI. RECEPTC.....

		Yes	No
А.	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.		×
В.	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.		1
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.		2
Ē.	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?		1
	If yes, indicate the area of contaminated soil on the site map.		

SUMMARY OF ANALYSIS RESULTS

NIA

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				Ī				
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)

NIA

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				
МТВЕ	40				
Naphthalene	25				
Benzo(a)anthracene	10				
Benzo(b)flouranthene	10				
Benzo(k)flouranthene	10				
Chrysene	10				
Dibenz(a,h)anthracen e	10				
EDB	.05				
1,2-DCA	.05				
Lead	Site specific				

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		\mathbf{X}
J\$TOMER :	SCALE:	
USTOMER : BEAUFORT MILITARY COMPLEX FAMILY HOUSING	SCALE : 1/16"= 1'-0" SUPPLIER :	EPG INC.

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)

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Client Name	<u>PG</u>						Clin	ent#	k												
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City/State/Zip Code:		- ~ ~											P	roject#	: <u> </u>	20	<u>, z</u>	36	Ζ_	ļ	
Project Manager:	bhn	YVC	ahc	2m	Ľ	L						Sit	e/Loca	ation ID	:					Stat	e:
Telephone Number:					F	ax:					<u> </u>		Re	port To	:						
Sampler Name: (Print Name) ///	ack	<u>. \</u>	ond	25)							Q	Inv	oice To	:						
Sampler Signature:								v		-	,	S S	C	Quote #	:				PO	# :	
			Matrix	Pres	servat	8 101	# of (Conta	inera		Ó	V.		Analy	ze For						1
Standard Rush (surcharges may apply) Date Needed:		omposite	Drinking Water S - Soll/Solid Specify Other								Maple.		/		/		/				None None Level 2 (Betch QC)
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THE LEADER IN ENVIRONMENTAL TESTING

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

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

Enid Ortiz For Shali Brown

Project Manager

Work Order: Project: Project Number:

OQH0599 LAUREL BAY EP-2362 Sampled: 07/30/07-08/02/07 Received: 08/24/07

LABORATORY REPORT

Sample ID: 1043 GARDENIA SIDE 02 - Lab Number: OQH0599-06 - Matrix: Solid/Soil

CAS#	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	Ву	Method	Batch
Volatile	Organic Compounds by EPA Toluene-d8 (80-117%)	A Method 826 104 %	0B - Co	nt.							
General	Chemistry Parameters										
Solids	% Dry Solids	93.9	SPS	%	0.500	0.500	1	08/28/07 18:25	AEB	SW-846	7085830
Polyaror	natic Hydrocarbons by EPA	8270C									
33 -32-9	Acenaphthene	0.0375	Q,U	mg/kg dry	0.0375	0.0698	1	09/02/07 21:34	SCS	SW846 827	0C7085615
208-96-8	Acenaphthylene	0.0459	Q,U	mg/kg dry	0.0459	0.0698	1	09/02/07 21:34	SCS	SW846 827	0C7085615
120-12-7	Anthracene	0.0914	Q	mg/kg dry	0.0417	0.0698	1	09/02/07 21:34	SCS	SW846 827	0C7085615
56-55-3	Benzo (a) anthracene	1.92	Q	mg/kg dry	0.0386	0.0698	1	09/02/07 21:34	SCS	SW846 827	0C7085615
50-32-8	Benzo (a) pyrene	0.882	Q	mg/kg dry	0.0417	0.0698	1	09/02/07 21:34	SCS	SW846 827	0C7085615
205-99-2	Benzo (b) fluoranthene	1.25	Q	mg/kg dry	0.0396	0.0698	1	09/02/07 21:34	SCS	SW846 827	OC7085615
191-24-2	Benzo (g,h,i) perylene	0.279	Q	mg/kg dry	0.0281	0.0698	1	09/02/07 21:34	SCS	SW846 827	0C7085615
207-08-9	Benzo (k) fluoranthene	0.933	Q	mg/kg dry	0.0479	0.0698	1	09/02/07 21:34	SCS	SW846 827	007085615
218-01-9	Chrysene	2.14	Q	mg/kg dry	0.0407	0.0698	1	09/02/07 21:34	SCS	SW846 827	0C7085615
53-70-3	Dibenz (a,h) anthracene	0.168	Q	mg/kg dry	0.0271	0.0698	1	09/02/07 21:34	SCS	SW846 827	OC7085615
206-44-0	Fluoranthene	3.28	Q	mg/kg dry	0.0438	0.0698	1	09/02/07 21:34	SCS	SW846 827	0C7085615
36-73-7	Fluorene	0.0448	Q,U	mg/kg dry	0.0448	0.0698	1	09/02/07 21:34	SCS	SW846 827	OC7085615
193-39-5	Indeno (1,2,3-cd) pyrene	0.333	Q	mg/kg dry	0.0354	0.0698	1	09/02/07 21:34	SCS	SW846 827	OC7085615
)1-20-3	Naphthalene	0.0417	Q,Ū	mg/kg dry	0.0417	0.0698	1	09/02/07 21:34	SCS	SW846 827	0C7085615
35-01-8	Phenanthrene	0.123	Q	mg/kg dry	0.0417	0.0698	1	09/02/07 21:34	SCS	SW846 827	OC7085615
129-00-0	Pyrene	2.88	Q	mg/kg dry	0.0490	0.0698	1	09/02/07 21:34	SCS	SW846 827	OC7085615
)0-12-0	1-Methylnaphthalene	0.0375	Q,U	mg/kg dry	0.0375	0.0698	1	09/02/07 21:34	SCS	SW846 827	OC7085615
)1- 57-6	2-Methylnaphthalene	0.0375	Q,U	mg/kg dry	0.0375	0.0698	1	09/02/07 21:34	SCS	SW846 827	OC7085615
Surrogate:	Terphenyl-d14 (49-123%)	71 %									
Surrogate: 1	2-Fluorobiphenyl (30-93%)	62 %									
Surrogate: 1	Nitrobenzene-d5 (34-87%)	59 %									

LABORATORY REPORT

Sample ID: 1045 GARDENIA BOTTOM 01 - Lab Number: OQH0599-07 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	Ву	Method	Batch
General	Chemistry Parameters			1747AL 27 1 1 1				e e construir e	•		
₹A	% Solids	78.0	Q	%.	0.100	0.100	1	08/28/07 18:25	RRP	EPA 160.3	7H28046
Volatile (Organic Compounds by EPA	Method 826	0B								· .
1-43-2	Benzene	0.593	Q,I	ug/kg dry	0.293	0.801	1	08/27/07 18:09	JWT	EPA 8260B	7H24014
00-41-4	Ethylbenzene	3.20	Q	ug/kg dry	0.339	0.801	1	08/27/07 18:09	JWT	EPA 8260B	7H24014
1-20-3	Naphthalene	50.7	Q	ug/kg dry	0.443	0.801	1	08/27/07 18:09	JWT	EPA 8260B	7H24014
08-88-3	Toluene	1.70	Q	ug/kg dry	0.692	0.801	1	08/27/07 18:09	JWT	EPA 8260B	7H24014
330-20-7	Xylenes, total	3.38	Q	ug/kg dry	0.416	0.801	1	08/27/07 18:09	JWT	EPA 8260B	7H24014
urrogate: 1	1,2-Dichloroethane-d4 (73-137%)	109 %									
'urrogate: 4	4-Bromofluorobenzene (59-118%)	93 %									
'urrogate: l	Dibromofluoromethane (55-145%)	110 %			·						
'urrogate: T	Toluene-d8 (80-117%)	104 %									
General (Chemistry Parameters									•	
Tes	tAmerica - Orlando, FL								•		



THE LEADER IN ENVIRONMENTAL TESTING

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

: JOHN MAHONEY

Attn: JOHN M.

Work Order: Project: Project Number:

OQH0599 LAUREL BAY EP-2362

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

Sampled: 07/30/07-08/02/07 Received: 08/24/07

LABORATORY REPORT Sample ID: 1045 GARDENIA BOTTOM 01 - Lab Number: OQH0599-07 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	Ву	Method	Batch
General	Chemistry Parameters									•••	
Solids	% Dry Solids	78.0	SPS	%	0.500	0.500	1	08/28/07 18:25	AEB	SW-846	7085830
Polyaror	natic Hydrocarbons by EPA	A 8270C									
33-32-9	Acenaphthene	0.0448	Q,U	mg/kg dry	0.0448	0.0834	1	09/02/07 21:56	SCS	SW846 827	OC7085615
208-96-8	Acenaphthylene	0.0548	Q,U	mg/kg dry	0.0548	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
120-12-7	Anthracene	0.164	Q	mg/kg dry	0.0498	0.0834	1	09/02/07 21:56	SCS	SW846 827	/0C7085615
56-55-3	Benzo (a) anthracene	0.0461	ប,ប	mg/kg dry	0.0461	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
50- 32-8	Benzo (a) pyrene	0.0498	Q,U	mg/kg dry	0.0498	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
205-99-2	Benzo (b) fluoranthene	0.0473	Q,U	mg/kg dry	0.0473	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
(91-24-2	Benzo (g,h,i) perylene	0.0336	Q,U	mg/kg dry	0.0336	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
207-08-9	Benzo (k) fluoranthene	0.0573	Q,U	mg/kg dry	0.0573	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
218-01-9	Chrysene	0.0677	Q,I	mg/kg dry	0.0486	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
53-70-3	Dibenz (a,h) anthracene	0.0324	ð'n	mg/kg dry	0.0324	0.0834	1	09/02/07 21:56	SCS	SW846 827	007085615
206-44-0	Fluoranthene	0.116	Q	mg/kg dry	0.0523	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
36-73-7	Fluorene	0.539	Q	mg/kg dry	0.0535	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
.93-39-5	Indeno (1,2,3-cd) pyrene	0.0423	Q,U	mg/kg dry	0.0423	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
)1-20-3	Naphthalene	0.0498	Q,U	mg/kg dry	0.0498	0.0834	1	09/02/07 21:56	SCS	SW846 827	0C7085615
35-01-8	Phenanthrene	1.06	Q	mg/kg dry	0.0498	0.0834	1	09/02/07 21:56	SCS	SW846 827	0C7085615
.29-00-0	Ругепе	0.264	Q	mg/kg dry	0.0585	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
0-12-0	1-Methylnaphthalene	0.982	Q	mg/kg dry	0.0448	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
1-57-6	2-Methylnaphthalene	1.05	Q	mg/kg dry	0.0448	0.0834	1	09/02/07 21:56	SCS	SW846 827	70C7085615
urrogate:	lerphenyl-d14 (49-123%)	76 %									
Surrogate: 2	2-Fluorobiphenyl (30-93%)	69 %									
urrogate: i	Vitrobenzene-d5 (34-87%)	77 %									-

LABORATORY REPORT

Sample ID: 1045 GARDENIA SIDE 02 - Lab Number: OQH0599-08 - Matrix: Solid/Soil

CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	Ву	Method	Batch
General	Chemistry Parameters	_				-					
IA.	% Solids	91.4	Q	%.	0.100	0.100	1	08/28/07 18:25	RRP	EPA 160.3	7H28047
Volatile	Organic Compounds by EPAd	Method 826	0B								
1-43-2	Benzene	0.333	Q,I	ug/kg dry	0.244	0.667	1	08/24/07 15:47	JLS	EPA 8260B	7H24014
00-41-4	Ethylbenzene	0.282	Q,U	ug/kg dry	0.282	0.667	1	08/24/07 15:47	JLS	EPA 8260B	7H24014
1 -20-3	Naphthalene	0.368	Q,U	ug/kg dry	0.368	0.667	1	08/24/07 15:47	JLS	EPA 8260B	7H24014
08-88-3	Toluene	1.12	Q	ug/kg dry	0.576	0.667	1	08/24/07 15:47	JLS	EPA 8260B	7H24014
330-20-7	Xylenes, total	0.400	Q,I	ug/kg dry	0.346	0.667	1	08/24/07 15:47	JLS	EPA 8260B	7H24014
urrogate:	1,2-Dichloroethane-d4 (73-137%)	115 %						,			
urrogate:	4-Bromofluorobenzene (59-118%)	93 %									
urrogate: 1	Dibromofluorometivane (55-145%)	111 %				· · ·				•	
urrogate:	Toluene-d8 (80-117%)	103 %									
General ¹ olids	Chemistry Parameters % Dry Solids	91.4	SPS	%	0.500	0.500	· 1	08/28/07 18:25	AEB	SW-846	7085830
olyaron	natic Hydrocarbons by EPA 8	270C									•

TestAmerica - Orlando, FL Enid Ortiz For Shali Brown Project Manager



THE LEADER IN ENVIRONMENTAL TESTING

4310 East Anderson Road Orlando, FL 32812 * 800-851-2560 * Fax 407-856-0686

Work Order: Project: Project Number:

OQH0599 LAUREL BAY EP-2362

Sampled: 07/30/07-08/02/07 Received: 08/24/07

PO BOX 1096 MT PLEASANT, SC 29465 Attn: JOHN MAHONEY

Client: EPG, INC.

	LABORATORY REPORT													
	Sample ID: 1	045 GARDEN	IA SID	E 02 - Lab I	umber: (JQH059	9-08 - 1	Matrix: Solid/	Soil					
CAS #	Analyte	Result	Q	Units	MDL	PQL	Dil Factor	Analyzed Date/Time	Ву	Method	Batch			
Polyaron	natic Hydrocarbons by EP/	A 8270C			·			· · · · ·						
33-32-9	Acenaphthene	0.0390	QU	mg/kg dry	0.0390	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
208-96-8	Acenaphthylene	0.0477	Q,U	mg/kg dry	0.0477	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
120-12-7	Anthracene	0.0434	Q,U	mg/kg dry	0.0434	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
56-55-3	Benzo (a) anthracene	0.0401	Q,U	mg/kg dry	0.0401	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
50-32-8	Benzo (a) pyrene	0.0434	Q,U	mg/kg dry	0.0434	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
205-99-2	Benzo (b) fluoranthene	0.0412	Q,U	mg/kg dry	0.0412	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
191-24-2	Benzo (g,h,i) perylene	0.0293	Q,U	mg/kg dry	0.0293	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
207-08-9	Benzo (k) fluoranthene	0.0499	Q,U	mg/kg dry	0.0499	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
218-01-9	Chrysene	0.0423	Q,U	mg/kg dry	0.0423	0.0727	I	09/02/07 22:18	SCS	SW846 827	0C7085615			
53-70-3	Dibenz (a,h) anthracene	0.0282	Q,U	mg/kg dry	0.0282	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
206-44-0	Fluoranthene	0.0456	Q,U	mg/kg dry	0.0456	0.0727	I	09/02/07 22:18	SCS	SW846 827	0C7085615			
26-73-7	Finorene	0.0466	្មរប	mg/kg dry	0.0466	0.0727	1	09/02/07 22:18	SCS	SW846 827	007085615			
193-39-5	Indeno (1,2,3-cd) pyrene	0.0369	Q,U	mg/kg dry	0.0369	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
71-20-3	Naphthalene	0.0434	Q,U	mg/kg dry	0.0434	0.0727	I	09/02/07 22:18	SCS	SW846 827	0C7085615			
35-01-8	Phenanthrene	0.0434	Q,U	mg/kg dry	0.0434	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
129-00-0	Рутепе	0.0510	Q,U	mg/kg dry	0.0510	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
<i>v</i> 0-12-0	1-Methylnaphthalene	0.0390	Q,U	mg/kg dry	0.0390	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
)1-57-6	2-Methylnaphthalene	0.0390	Q,U	mg/kg dry	0.0390	0.0727	1	09/02/07 22:18	SCS	SW846 827	0C7085615			
Surrogate: 1	Terphenyl-d14 (49-123%)	77 %												
urrogate: 2	2-Fluorobiphenyl (30-93%)	65 %												
urrogate: I	Nitrobenzene-d5 (34-87%)	65 %												

LABORATORY REPORT

Sample ID: 1051 GARDENIA BOTTOM 01 - Lab Number: OQH0599-09 - Matrix: Solid/Soil

CAS #	Anaiyte	Result	Q	Units	MDL	PQL	Dii Factor	Analyzed Date/Time	Ву	Method	Batch
General	Chemistry Parameters										
JA	% Solids	94.4	Q	%.	0.100	0.100	1	08/28/07 18:25	RRP	EPA 160.3	7H28047
Volatile (Organic Compounds by EPA M	ethod 820	60B								
1-43-2	Benzene	0.212	Q,U	ug/kg dry	0.212	0.578	1	08/24/07 16:04	JLS	EPA 8260B	7H24014
00-41-4	Ethylbenzene	0.245	Q,U	_ug/kg dry	0.245	0.578	. 1	08/24/07 16:04	JLS	EPA 8260B	7H24014
1-20-3	Naphthalene	0.319	Q,U	ug/kg dry	0.319	0.578	1	08/24/07 16:04	JLS	EPA 8260B	7H24014
08-88-3	Toluene	0.499	Q.U	ug/kg dry	0.499	0.578	1	08/24/07 16:04	JLS	EPA 8260B	7H24014
330-20-7	Xylenes, total	0.300	QU	ug/kg dry	0.300	0.578	1	08/24/07 16:04	JLS	EPA 8260B	7H24014
urrogate: 1	,2-Dichloroethane-d4 (73-137%)	114 %									
urrogate: 4	-Bromofluorobenzene (59-118%)	95 %									
urrogate: l	Dibromofluoromethane (55-145%)	109 %									
urrogate: I	Toluene-d8 (80-117%)	104 %									
Jeneral (Chemistry Parameters										
olids	% Dry Solids	94.4	SPS	%	0.500	0.500	1	08/28/07 18:25	AEB	SW-846	7085830
Polyaron	natic Hydrocarbons by EPA 827	0 C									
3-32-9	Acenaphthene	0.0371	Q.U	mg/kg dry	0.0371	0.0691	1	09/02/07 22:40	SCS	SW846 8270	C7085615
08-96-8	Acenaphthylene	0.0454	Q,U	mg/kg dry	0.0454	0.0691	1	09/02/07 22:40	SCS	SW846 8270	C7085615

Project Manager

Surrogate: Nitrobenzene-d5 (34-87%)

Appendix C Laboratory Analytical Report - Groundwater





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Pace Analytical Services, Inc. 2225 Riverside Dr. Asheville, NC 28804 (828)254-7176 Pace Analytical Services, Inc. 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 (704)875-9092

ANALYTICAL RESULTS

Project: LAUREL BAY SAMPLING 7/29/08

Pace Project No.: 9224564

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Sample: 1044 GARDENIA A	Lab ID: 9224564003		Collected: 07/29/08 11:40		Received: 07/31/08 13:40 Matrix: Wat			3r				
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											
Indeno(1,2,3-cd)pyrene	ND ug/L		0.20	1	08/03/08 00:00	08/12/08 21:04	193-39-5					
1-Methylnaphthalene	ND ug/L		2.0	1	08/03/08 00:00	08/12/08 21:04	90-12-0					
2-Methylnaphthalene	ND ug/L		2.0	1	08/03/08 00:00	08/12/08 21:04	91-57-6					
Naphthalene	ND ug/L		1.5	1	08/03/08 00:00	08/12/08 21:04	91-20-3					
Phenanthrene	ND ug/L		0.20	1	08/03/08 00:00	08/12/08 21:04	85-01-8					
Pyrene	ND ug/L		0.10	1	08/03/08 00:00	08/12/08 21:04	129-00-0					
Nitrobenzene-d5 (S)	52 %		50-150	1	08/03/08 00:00	08/12/08 21:04	4165-60-0					
2-Fluorobiphenvl (S)	56 %		50-150	1	08/03/08 00:00	08/12/08 21:04	321-60-8					
Terphenyl-d14 (S)	65 %		50-150	1	08/03/08 00:00	08/12/08 21:04	1718-51-0					
8260 MSV Low Level	Analytical Method:	EPA 82	260									
Benzene	ND ug/l		1.0	1		08/05/08 18:20	71-43-2					
Ethylbenzene	ND ug/L		1.0	1		08/05/08 18:20	100-41-4					
Nanhthalene	ND ug/L		20	1		08/05/08 18:20	91-20-3					
Toluene	ND ug/L		2.0	1		08/05/08 18:20	108-88-3					
m&n-Xylene			1.0	1		08/05/08 18:20	1220-20-7					
o Yvlene	ND ug/L		2.0	1		00/05/00 10.20	1330-20-7					
A Bromofluorabanzana (S)			1.0	1		00/05/00 10.20	95-47-0					
4-Biomofluoroberizerie (S)	97 %		07-109	1		08/05/08 18:20	400-00-4					
1.2 Disblorosthens d4 (S)	95 %		00-110	1		08/05/08 18:20	1000-03-7					
Taluana da (C)	99 %		79-120			08/05/08 18:20	17060-07-0					
Toluene-uo (S)	101 %		70-120	1		08/05/08 18:20	2037-26-5					
Sample: 1045 GARDENIA A	Lab ID: 9224564004 Collected: 07/29/08 12:00 Received: 07/31/08 13:40 Matrix:				latrix: 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		20	1	08/03/08 00:00	08/12/08 21.27	83-32-9					
Acenaphthylene	ND ug/L		1.5	1	08/03/08 00:00	08/12/08 21:27	208-96-8					
Anthracene	ND ug/L		0.050	1	08/03/08 00:00	08/12/08 21:27	120-12-7					
Benzo(a)anthracene	ND ug/L		0.000	1	08/03/08 00:00	08/12/08 21:27	56-55-3					
Benzo(a)ovrene	ND ug/L		0.10	1	08/03/08 00:00	08/12/08 21:27	50-32-8					
Benzo(b)fluoranthene	ND ug/L		0.20	1	08/03/08 00:00	08/12/08 21:27	205-92-0					
Benzo(g h i)pervlene	ND ug/L		0.50	1	00/03/08 00:00	09/12/00 21:27	101 24 2					
Benzo(k)fluoropthono	ND ug/L		0.20	1	08/03/08 00:00	00/12/00 21.27	191-24-2					
Chrysene	ND ug/L		0.20	1	08/03/08 00:00	00/12/00 21.27	207-00-9					
Dibenz(a h)anthraceno			0.10	1	08/03/08 00.00	00/12/00 21.27	£ 10-01-8 53.70.2					
Fluoranthene			0.20	1	00/03/08 00.00	00/12/00 21.27	206-44-0					
Eluorana			0.30	1		00/12/00 21.27	200-44-0					
Indepo(1.2.2 od)pyrana			0.31	1		00/12/08 21:27	102 20 5					
1 Mothylaanhthalene	ND ug/L		0.20	1	08/03/08 00:00	00/12/08 21:27	193-39-5					
	ND ug/L		2.0	1	08/03/08 00:00	08/12/08 21:27	90-12-0 01 67 0					
∠-ivietnyinaphtnaiene	ND ug/L		2.0	1	08/03/08 00:00	08/12/08 21:27	91-97-0					

Date: 08/14/2008 04:20 PM

Naphthalene

Pyrene

Phenanthrene

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1.5

0.20

0.10

1

1

1

ND ug/L

ND ug/L

ND ug/L

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08/03/08 00:00 08/12/08 21:27 91-20-3

08/03/08 00:00 08/12/08 21:27 85-01-8

08/03/08 00:00 08/12/08 21:27 129-00-0

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Pace Analytical Services, Inc. 2225 Riverside Dr. Asheville, NC 28804 (828)254-7176 Pace Analytical Services, Inc. 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 (704)875-9092

ANALYTICAL RESULTS

Project: LAUREL BAY SAMPLING 7/29/08

Pace Project No.: 9224564

Sample: 1045 GARDENIA A	Lab ID: 9224564004		Collected: 07/29/08 12:00		Received: 07/31/08 13:40 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	08/03/08 00:00	08/12/08 21:27	4165-60-0				
2-Fluorobiphenyl (S)	76 %		50-150	1	08/03/08 00:00	08/12/08 21:27	321-60-8				
Terphenyl-d14 (S)	100 %		50-150	1	08/03/08 00:00	08/12/08 21:27	1718-51-0				
8260 MSV Low Level	Analytical Method:	: EPA 82	260								
Benzene	ND ug/L		1.0	1		08/05/08 18:43	71-43-2				
Ethylbenzene	ND ug/L		1.0	1		08/05/08 18:43	100-41-4				
Naphthalene	ND ug/L		2.0	1		08/05/08 18:43	91-20-3				
Toluene	ND ug/L		1.0	1		08/05/08 18:43	108-88-3				
m&p-Xylene	ND ug/L		2.0	1		08/05/08 18:43	1330-20-7				
o-Xylene	ND ug/L		1.0	1		08/05/08 18:43	95-47-6				
4-Bromofluorobenzene (S)	98 %		87-109	1		08/05/08 18:43	460-00-4				
Dibromofluoromethane (S)	95 %		85-115	1		08/05/08 18:43	1868-53-7				
1.2-Dichloroethane-d4 (S)	98 %		79-120	1		08/05/08 18:43	17060-07-0				
Toluene-d8 (S)	101 %		70-120	1		08/05/08 18:43	2037.26-5				
	101 /8		70-120	•		00/05/06 10.45	2037-20-3				
Sample: 1043 GARDENIA A	Lab ID: 922456	4005	Collected: 07/29/0	08 12:15	Received: 07	/31/08 13:40 N	Atrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual			
8270 MSSV PAH by SIM SPE	Analytical Method	: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3535						
Acenaphthene	ND ug/L		2.0	1	08/03/08 00:00	08/12/08 21:50	83-32-9				
Acenaphthylene	ND ug/L		1.5	1	08/03/08 00:00	08/12/08 21:50	208-96-8				
Anthracene	0.057 ug/L		0.050	1	08/03/08 00:00	08/12/08 21:50	120-12-7				
Benzo(a)anthracene	ND ug/L		0.10	1	08/03/08 00:00	08/12/08 21:50	56-55-3				
Benzo(a)pyrene	ND ug/L		0.20	1	08/03/08 00:00	08/12/08 21:50	50-32-8				
Benzo(b)fluoranthene	ND ug/L		0.20	1	08/03/08 00:00	08/12/08 21:50	205-99-2				
Benzo(a h i)perviene			0.00	4	08/03/08 00:00	08/12/08 21:50	101-24-2				
Benzo(k)fluoranthene			0.20	4	08/03/08 00:00	08/12/08 21:50	207 08-0				
Christian	ND ug/L		0.20	1	08/03/08 00.00	08/12/08 21:50	207-00-9				
Dibana (a b) anthrasana	ND ug/L		0.10	1	00/03/08 00:00	00/12/00 21:50	210-01-9				
Dibenz(a,n)anthacene	ND ug/L		0.20	1	08/03/08 00:00	08/12/08 21:50	53-70-3				
Fluoranmene	ND ug/L		0.30	1	08/03/08 00:00	08/12/08 21:50	206-44-0				
	ND ug/L		0.31	1	08/03/08 00:00	08/12/08 21:50	86-73-7				
Indeno(1,2,3-cd)pyrene	ND ug/L		0.20	1	08/03/08 00:00	08/12/08 21:50	193-39-5				
1-Methylnaphthalene	ND ug/L		2.0	1	08/03/08 00:00	08/12/08 21:50	90-12-0				
2-Methylnaphthalene	ND ug/L		2.0	1	08/03/08 00:00	08/12/08 21:50	91-57-6				
Naphthalene	ND ug/L		1.5	1	08/03/08 00:00	08/12/08 21:50	91-20-3				
Phenanthrene	ND ug/L		0.20	1	08/03/08 00:00	08/12/08 21:50	85-01-8				
Pyrene	ND ug/L		0.10	1	08/03/08 00:00	08/12/08 21:50	129-00-0				
Nitrobenzene-d5 (S)	55 %		50-150	1	08/03/08 00:00	08/12/08 21:50	4165-60-0				
2-Fluorobiphenyl (S)	64 %		50-150	1	08/03/08 00:00	08/12/08 21:50	321-60-8				
Terphenyl-d14 (S)	76 %		50-150	1	08/03/08 00:00	08/12/08 21:50	1718-51-0				
8260 MSV Low Level	Analytical Method:	: EPA 82	260								
Benzene	ND ug/L		1.0	1		08/05/08 19:07	71-43-2				

Date: 08/14/2008 04:20 PM

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Appendix D Regulatory Correspondence



BOARD: Paul C. Aughtry, III Chairman

Edwin H. Cooper, Ill Vice Chairman

Steven G. Kisner Secretary



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

C. Earl Hunter, Commissioner Promoting and protecting the health of the public and the environment

20 August 2008

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

Re: MCAS – Laurel Bay Housing – 1045 Gardenia Site ID # 04015 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.

Sincerely,

cc:

Michael Bishop, Hydrogeologist Groundwater Quality Section Bureau of Water

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



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 – 1045 Gardenia **Site ID # 04015** 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.

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